

THE SCIENCE OF RAILWAYS

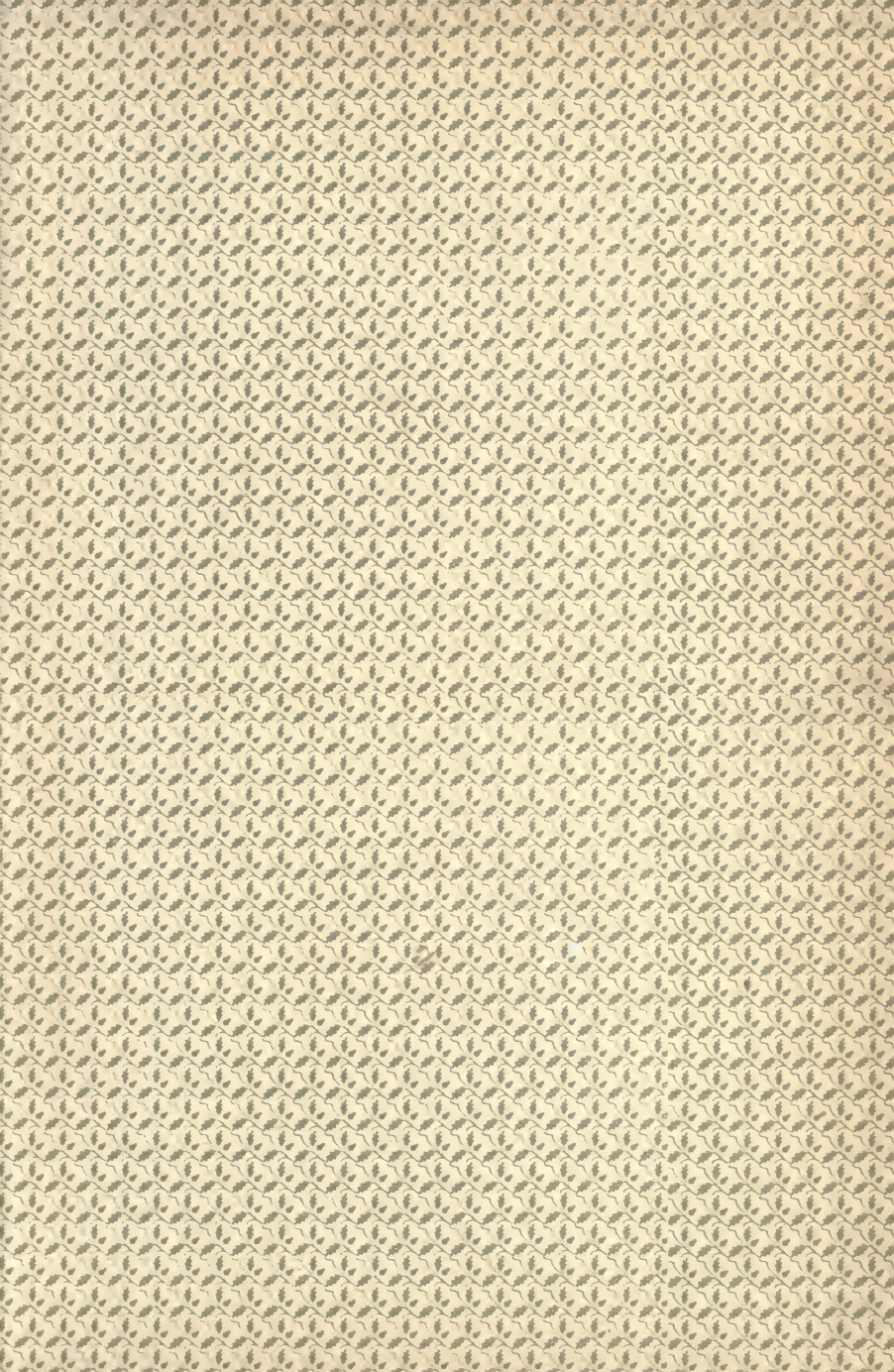
FISCAL AFFAIRS
DISBURSEMENTS 

MARSHALL M. KIRKMAN



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Frontispiece.

THE SCIENCE OF RAILWAYS.

FISCAL AFFAIRS—
DISBURSEMENTS.

AIMS SOUGHT AND ATTAINED—VAST IMPORTANCE OF THE SUBJECT — PRINCIPLES AND METHODS TO BE OBSERVED — OPERATING EXPENSES, CONSTRUCTION AND OTHER EXPENDITURES — FISCAL REGULATIONS — ENGLISH METHODS.

WITH ILLUSTRATIONS

OF THE
INCEPTION, GROWTH AND EVOLUTION OF

PRIMITIVE TRANSPORTATION.

BY

MARSHALL M. KIRKMAN.

IN TWELVE VOLUMES—VOL. IX

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PREFACE.

To recount the administrative methods of a railroad is to generally describe the practices of other enterprises of a similar nature,—public corporations, banks, and kindred enterprises. In laying down the rules for one we lay them down for all. To make them fit, we need only to change a few meaningless words, one idiomatic phrase for another; to drop out one immaterial thing, to insert another immaterial thing.

Wherever men work for others their obligations are the same. Methods of governing men differ, but the principles are always the same. These are reiterated in different ways under different conditions, in the prosaic affairs of life, countless millions of times every year. In issuing this book, intended to regulate disbursements of carriers, I only reiterate under another form an oft told tale, and it is a good illustration of the evolution of railroad affairs to state that this is the eighth volume I have written on the subject in the last nineteen years, and that this book differs radically and wholly from those previously issued.

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CHAPTER I.

ANCIENT AND MODERN DEVICES OF BUSINESS.

Many of the devices used in business today were suggested in the age of Crœsus, the Lydian king, when the art of coining money was yet new and the practice of buying and selling at retail still in its infancy. The merchants of Babylon used blank forms answering the same general purpose as those contained in the appendix of this book. The goods transported upon the backs of camels across the deserts of Syria or the vast steppes of Central Asia three thousand years ago, involved fiscal methods similar to those practiced today. The carrier of that remote age exercised watchfulness as we do over the goods he handled. Nor were the revenues derived therefrom less important to him than to us. Merchants marked their goods with care, were particular to procure the acknowledgment of the carrier, and looked with closeness to questions of overcharges, losses, damages and delays. Human nature is the same now as then. The forms in use today are more numerous and complicated than formerly. They are also more easily destroyed. We use paper. The Chaldeans used tablets of clay; they were not elaborate but, like ours, adapted to particular uses. Instead of

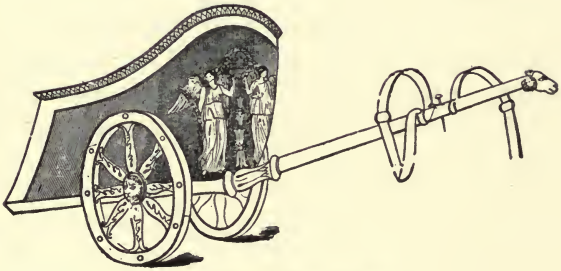
a pen they used a style; instead of letters, cuneiform characters. The form of draft in use today is a device of these ancient people. We have simply enlarged its use.

The methods by which business is facilitated have, it is probable, been extended more during the last fifty years than during the whole period of man's previous history. Our fiscal affairs, among other things, have been greatly improved. Forms that were at one time laboriously written out one by one are now printed by hundreds of thousands. This is necessary to meet our multiplied transactions. The merchant of Sidon embraced in one consignment of purple the product of a year's work. We produce corresponding results in an hour. This unexampled development of facilities is in the main the outgrowth of better transportation facilities.

Compared with the stable acquisitions of business those of other callings sink into insignificance. Other vocations give scope to particular characteristics; may and do develop in man an idealized personality. But none of them, nor, indeed, all of them combined, afford the substantial benefits of a great and varied business. Here is man's greatest field of usefulness. The business man, the man of affairs, is the king of men. His knowledge of human nature is superior to that of all others, while the facility with which he adjusts himself to ever changing conditions evinces his versatility and genius. Wherever the influences of business men are felt the

effect is beneficial. Fluctuations and uncertainties ever characterize societies not fostered by such associations.

The business of the world has its special votaries; its subdivisions, departments and bureaus. What one class creates, another handles; another utilizes. The intermediary element, that between the producer and consumer, forms an innumerable throng, a vast army. The common carrier belongs to this class. His work is subdivided into innumerable departments and bureaus. This book treats of one of these bureaus, that relating to certain phases of expenditures. Its object, while also explanatory, is intended to add to the effectiveness and economical working of the service.



Carriage in Ancient Greece.

CHAPTER II.

FISCAL AFFAIRS CONNECTED WITH MATERIAL AND LABOR—LIMITATIONS OF KNOWLEDGE.

The railway science is so new and covers a field so vast that experts in particular departments are ignorant of the requirements of other departments. This will continue to be the case, as the evolutions of railway management are so rapid that the greatest industry upon the part of particular men is not sufficient to enable them to keep advised of its progress.

Inability to supplement the practical knowledge of individuals with the extended knowledge of groups of men exercises a retarding influence in the management of corporations. With more extended experience in the art of governing large bodies of men we shall be better able to concentrate and utilize the knowledge of the force as a mass. An obstacle at present is the lack of initiative; of individual freedom and interest, also the presence, more or less, of personal jealousies. As we progress in the art of governing, groups will be able to act as a unit with the singleness of purpose of individuals.

The operations of railroads evince each day the necessity of more definite knowledge of their workings. We discover this want in the relations

of the railroads to the government, to each other and to other industries. We discover it especially in their internal workings. The question that presents itself continually in the management of these properties is: What do we know about this thing or that? Wherein is our knowledge of it correct; wherein incorrect? What is the best disposition to make of it? We are met everywhere by unknown quantities. This is so in reference to the fiscal affairs of railroads quite as much as in regard to their physical aspect. What are their limitations? What value attaches to exhibits professing to show details of earnings, operating expenses and construction? These exhibits represent things of the greatest importance, both of a private and public nature; the measure of income and outgo; the value of a property to the proprietor; its usefulness to the public; the relation of cause and effect; the gross and tare. If the information we derive is true, then our conclusions are intelligent. If not, not.

In considering the value of fiscal data, we are struck with the importance of that which enables a company to determine the cost of particular things. If it rebuilds a bridge, or constructs a building anew, or improves a particular section of track, or reconstructs a locomotive or car, it should know the cost. Not exactly, perhaps, because there will be small discrepancies; supplies, for instance, are not measured for use with mathematical accuracy; the divisions of labor are not always exactly accurate; other petty dis-

crepancies will creep in. Absolute accuracy of statement will thus be prevented, but the differences will be so small that no material interest will be affected thereby. These differences, it must also be remembered, arise mainly out of our economical methods; out of efforts to secure efficiency rather than theoretical perfection when the latter entails added cost. A company must know all its items of expense with approximate accuracy. Here definite knowledge ceases. It would be valuable to know precisely the expense of operating particular parts of a road; the cost of the passenger business; the expense of the freight traffic, and many other impracticable things. If managers could determine the prime sources of outlay I have named, they would be able to act knowingly in some cases where they now act only upon shrewd conjecture. But they can not. The extent of these outlays is largely surmise.

Theory and practice are not farther apart than the means by which railways arrive at an understanding of their affairs through the medium of their returns. While the aim is substantially the same in every case, the *modus operandi* of reaching the end sought differs. But so carefully and ingeniously have the various systems been thought out and applied that it is oftentimes impossible to discover which is the best, which has the greater advantage. They are all meritorious.

Each will excite the wonder of those able to comprehend the infinitude of thought and labor it involves.

To the mere looker on it would seem as if the owners of railroads would find this diversity of method cumbersome and expensive; that the public would find it burdensome. Such is not the case. Both the stockholder and the public have been benefited by it through the interest the subject has excited and still excites among the vast army of men employed. The saving in



Carriage in Ancient Assyria.

cost and time effected by their inventions and devices can not be computed. And when we remember that every dollar expended in accounting is unproductive, we may form some idea of the value to the community of these cheapening processes. The subject, however, is still in its infancy.

Cost of accounting is dependent upon many things:

1. Cost of labor will depend very much upon the location of the property and the number of years the company has been in business.

2. Cost of supplies will depend upon ability to buy in the cheapest market, and as needed.

3. Upon the number of accounting divisions into which a property is divided.

4. Upon the skill of the officers and employes.

5. Upon the method of accounting.

In this connection it should not be forgotten that the cheapest form of accounting (*i. e.*, the accounting department that is run at the least cost) may be the most expensive to a company, because of the inefficiency and irresponsibility it engenders; because of the absence of reliable details of administration. A system may, moreover, engender dishonesty by its failure to provide proper checks and safeguards. Thus it is a fact that the unsuspected depredations that go on where methods of accounting are inefficient greatly exceed those that are found out; that the unknown pilferings greatly exceed the known defalcations. Thus, an imperfect or cheap system of accounts may involve many times its cost in losses never known to owners or managers.

In reference to the fiscal systems outlined in this and the accompanying volumes, they are believed to be effective and economical.

The diversities that exist in railway accounting are not confined to any particular branch of the service. They are noticeable in both disbursements and receipts and in all the thousand and one things that grow out of them.

Methods for keeping disbursement accounts are not all equally good, yet all have many favor-

able points. The capacity of those in charge is important. A system that would work admirably under one man would not work well under another, in the same sense that a sword one man could wield effectively another could not lift.

Uniformity in accounts is not to be expected or desired any more than uniformity in business. Railway affairs are too diversified, too complicated, too changeable; the talent, experience and interest of those in charge too dissimilar. We are indebted for the advances that have been made up to this time to the interest of individuals; to men of genius and research; to the open field they have had. We must still look to them. The uniformist ignores this class. Uniformity in business methods means the subjection of ideas to a dead level. The returns of railways to the government should be uniform. But their appliances and methods may well be as diverse as the character of the country they traverse or the measure of ability of those in charge.*

* My attention was first called to the subject of a uniform method of *keeping* accounts by a railroad commissioner, a lawyer and a gentleman of the highest distinction. His position and the persistence with which he urged the matter dignified the subject. I have accordingly referred to it in my recent books. A uniform method of keeping *railway* accounts appears to me very much like having our hats, boots, breeches, shirts, men and horses of a uniform size. It is an admission that progress is practically at an end. Its immediate effect would be to benumb the intelligence and interest of a hundred thousand men connected with railway accounts in the United States alone and substitute therefor the interest, experience and intelligence of a very limited number of men.

In publishing this and other treatises on fiscal affairs I wish it to be understood that I do not attempt to discuss the subject exhaustively. Nor do I claim that the methods I suggest are the best; I give them simply for what they are worth; for the information of those concerned. Of course I think them as good as any, or I would not publish them. There is nothing unreasonable or egotistical in this. When, therefore, in my books I speak definitely or authoritatively, the reader will understand that I aim only to be precise in reference to the particular thing referred to; not that I think my way is the only way, or necessarily the best.

In reference to the fiscal regulations governing Labor and Material, there are so many things that tend to render systematic and effective accounting difficult that the subject invites the most exhaustive enquiry. Those who have studied it find their labors never ending.

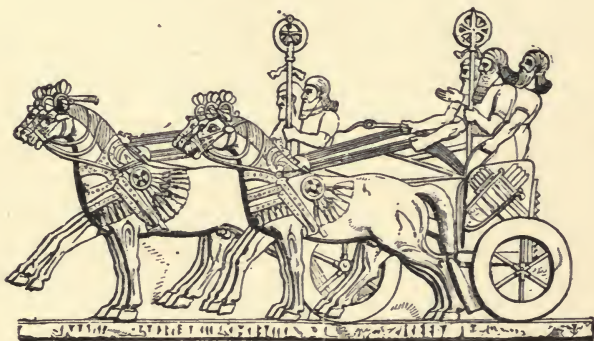
Definiteness in accounting for Material and Labor may be secured approximately but not absolutely.

The service requires the enforcement of arbitrary regulations that will prevent omissions, errors and improper practices; that will enforce responsibility; that will secure authoritative returns; that will not allow the accountant to run into extravagance and diletanteism.

Extravagance in accounting can not be too severely condemned. On the other hand, pinching economy that fails to recognize and enforce

responsible methods, merely to keep down the pay roll, is infinitely worse than extravagance. This fact can not be too strongly impressed upon owner and manager.

The diversity that characterizes the practices of railroads in connection with their fiscal affairs and in their methods of management is noticeable in the systems they have severally adopted for handling the Material they use. Upon many



Carriage in Nineveh.

roads the purchasing agent has entire charge of everything relating to material. He buys, receives, inspects, cares for and disburses. His powers are autocratic. No check is placed upon him. He is trusted implicitly. Upon other roads his jurisdiction is restricted. A check is placed upon him as it is upon the treasurer; his authority is only concurrent. He makes the purchases while some other department, perhaps the master mechanic, superintendent or engineer,

cares for and disburses. Upon still another line he simply buys while the accounting department receives, cares for and disburses the material under orders from the operating department. Under this last named method the concurrence of two (and in some cases three) independent departments of the service is secured. This insures a check in harmony with the principles governing corporate accounts.

The diversity that characterizes the keeping of material accounts is also noticeable in connection with those relating to Labor. Upon some roads the time of employes is kept by the operating department, master mechanics, superintendents and others. Some companies have timekeepers especially appointed to perform that office. The methods by which the Labor accounts may be kept are infinite. However, the method is not nearly so important as that it shall enforce accuracy and truthfulness; that the time of employes shall be correctly kept and faithfully charged to the thing upon which expended.

The keeping of the Wages of men and the distribution of the same to the accounts affected can not be left to chance or to the hazards that attend irresponsible methods, any more than a company's traffic or its money can safely be left to chance. We must know that the men have worked and that the rate allowed is right, otherwise the crowding of the pay roll with fictitious names, while it may not become a matter of universal occurrence, will be frequent. To en-

force accuracy in keeping the wages of men, the time must be kept under the direction of persons acting independently of the person who hires or the official who directs. In fact, the principle of corporate accounting must be observed, namely, that the persons who manage shall not also act as their own auditors.

Mechanical devices, while important, may be safely left to the ingenuity of those in charge.

There are two methods of keeping the Material and Labor accounts of railroads; one in which only Results are known at headquarters; another in which all the Details are known. The accompanying book provides for the latter. Thus, if twenty thousand dollars are expended in constructing a passenger depot, the items that make up this sum are accurately, *and without extra cost*, known to all interested.

I consider it of the utmost importance that every detail of expenditure, no matter how far away from the general office the expenditure may have been made, should be known to the operating officers and those in charge of accounts at headquarters. Some who admit the desirability of this, object to it on the ground of cost. Cost does not cut any figure. The information may be known without the expenditure of a dollar. Not only this, but the details may also be known to all local officers without extra expenditure. In explanation I respectfully refer the reader to the chapters on Labor and Material. It is very simple. The details of these accounts

as written up by those in charge along the line of a road should be transcribed on forms prepared for the purpose. At the end of the month, when the accounts are closed, an impression is taken of the returns, after which they are bound in book form and sent to headquarters, and in being sent to headquarters are sent through the intermediary local offices. Thus everyone interested is kept informed.

The chapter on Material relates to receiving, inspecting, caring for, disbursing and using supplies.

The chapter on Labor refers to the manner of keeping the time of men, certifying thereto and charging the same to the account upon which they work, making the pay roll, etc.

The volume contains still other chapters.

The chapters on material and labor are short and so simple that a school boy may understand them without difficulty. I invite attention to them, not because I believe they describe the only, or the best way, perhaps, but as helps. They treat of mechanical methods. They also explain the necessity of clothing those who have the care of material and labor with proper authority. They point out the value of well balanced systems. They are impersonal. They do not aim at the aggrandizement of any particular department. They look only to the efficiency of the service—only to its good.

The accompanying volume does not attempt to do more than describe the manner of keeping ac-

count of disbursements for material, labor and other purposes. It does not attempt to treat the subject exhaustively—one volume would not be sufficient for that.*

The accompanying volume may be used as a manual. It aims to secure fullness of information, insure efficiency, and prevent irregularities; to secure the maximum of efficiency at the minimum of cost. It is applicable alike to a road ten thousand miles long or to one only ten miles long. The principles it lays down and the rules and



Carriage in Ancient Saxony.

regulations it specifies are as necessary to the one as to the other, and relatively as beneficial. It may be used as a manual just as it is, without the change of a word or a comma.

*Those who desire to study the best method of handling the material railway companies use in their operations, I would refer to the volume "Economical Purchase, Care and Use of Material." I there discuss the subject from the standpoint of the manager as to what is best for a company to do in order to attain the greatest possible efficiency in the purchase, inspection, care and use of material. The *expenditures* of railways for *construction* purposes and the various questions that affect *cost of construction and operation* I discuss in still another volume, "Financing, Building and Maintaining."

The chapters on labor and material are preceded by a description of primary conditions. This description is essential to a proper understanding of the subject. Its purpose is to secure co-operative effort and impress those in charge with the responsibility that attaches to their acts.

In regard to the manner in which the disbursement accounts shall be kept, the returns that shall be made, forms and other particulars, reference is made to the headings covering these details throughout the book. These headings explain themselves better than I can explain them here and cover the whole panorama of railway expenditures, both from the standpoint of the expert and the student.*

The accompanying book is not written for experts alone. It is intended to be useful to students and new beginners. It is explanatory, not delphic.

I do not attempt to explain herein, except briefly and incidentally, the method of treating returns after they reach the general office, *i. e.*, the method of spreading them on the general books. That is not immediately germane to the subject; it concerns, in fact, an entirely different class of readers. Those who compile the disbursement accounts along the line of a road have little or nothing to do with handling them at headquarters. This phase of the subject is therefore treated apart.†

* See "Table of Contents."

† See volume "General Fiscal Affairs."

The manner of keeping material and labor accounts at shops and elsewhere must be fully thought out in advance. Upon it depends faithful service, efficiency, reliability, economy of expenditure, or the reverse. Upon it depends whether the supply of material on hand shall be kept down as much as possible, whether material shall be carefully inspected when received, shall be carefully guarded afterward, shall be disbursed only so far as the service requires and shall be protected after being disbursed; upon it depends whether the time of men is accurately kept, whether the wages are right, whether men have worked as represented; also whether the pay roll is charged to the accounts upon which the labor was expended. These are vital things and upon them depend whether a company shall have an efficient or inefficient management; whether there shall be economy or extravagance; energy or sloth; honesty or trickery; responsibility or irresponsibility.

The accompanying system, while far from being perfect, is sufficiently comprehensive to protect with reasonable fullness the company using it. It is in the right direction. From its study and that of other systems something better will grow. It shows under what heads disbursements are to be charged and a careful division of Operating and Construction accounts is given. These classifications are those officially promulgated by the United States government. They are not the result of any particular man's labor.

They represent what may be called the accretions of years. They are practically perfect in this, that they embody the more specific things that such distributions should contain. They will not, however, it is probable, please everyone. Some will require that the divisions be more minute; others that they be not so minute.

The enumeration of items that enter into each operating and construction account, as given in detail herein, was first collated by the writer many years ago. To the casual observer it does not seem important, but to practical accountants its value is apparent. It is only by such minute designation that we can hope for a uniform classification of disbursements. It enables storekeepers, timekeepers and others to charge exactly the same thing to the same account everywhere and at all times and under all circumstances; without it they could not do this.

For many years after the introduction of railroads they were governed by word of mouth—largely by tradition. But as they grew in extent and employes multiplied these loose methods became more and more unsatisfactory. This is how I came to write my first book on railway subjects.

Wherever two or more men are expected to co-operate intelligently, without clashing or contention, they must be governed by well understood rules. There is the same necessity for

such rules in the government of railways that there is for general laws. Each road, however, requires rules and regulations peculiar to itself, just as states, cities and towns require laws peculiar to themselves; just as businesses alike in nature but carried on by different men or under different circumstances require different methods of administration.

The accompanying volume is intended to give in detail some of the more important practical rules and regulations governing labor and material. It



Carriage in Ancient Persia.

explains certain methods found by practice to be efficacious. The attention of the reader is invited to the forms used. The value of these will grow upon him as he becomes more familiar with them. Seemingly dry and unimportant, it is no exaggeration to say that the gross revenue of railroad companies would not be sufficient to pay for keeping their accounts if they followed the old method of bookkeeping that our forefathers observed. The money now divided in the shape of dividends and paid out in interest would not be enough to pay for clerk hire and

stationery. But while economy is sought, the necessity that exists for accurate and scientific accounting in connection with the operation of railways is not for an instant lost sight of; the methods devised, while cheaper than those of merchants and bankers, are even more carefully constructed, even more secure, even more effective in their operation.

The accompanying book shows how the time of men is kept; how it is charged to the thing upon which expended; how the pay roll is made; the kind of returns that are sent to headquarters, who makes them, when and how they are made.

It explains the duty of those who order material, inspect it, disburse it, charge it to the account upon which it is used; the kind of returns that are made for material, who makes them, when and how they are made.*

It also enumerates all other classes of disbursements incident to the operation of a railroad, how they arise, what they are, how they are accounted for.

It enumerates the various headings under which operating, construction and other accounts are kept.

It points out how operating expenses may be apportioned to the several divisions of a railroad.

* In connection with the disbursement of labor and material is incidentally described the method of accounting for *material sold or traded, labor performed for others, accounts against persons and corporations etc.* ("See Various Persons' Accounts.")

It describes in detail and as a whole disbursements for operating, taxes, interest, rentals, dividends and kindred items.

The volume is intended, as its name implies, to afford the reader an accurate and concise description of the disbursement accounts of a road, what they are, how they are kept, and how



Carriage in Ancient Egypt.

they are grouped. I have not attempted anywhere to discuss the subject except from the practical standpoint, the standpoint of those who desire to know concisely and accurately what the subject covers, what is necessary to be done in order to provide necessary facilities for keeping the disbursement accounts of a road and surrounding them with needed safeguards.

CHAPTER III.

DEFINITION OF TITLES OF RAILWAY OFFICERS AND EMPLOYEES—KEY TO THEIR SIGNIFICANCE.

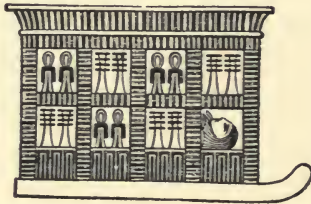
As titles seldom have the same meaning upon different roads or a like meaning for any length of time on the same road, it is necessary, in any discussion of matters affecting railroads generally, to avoid the confusion their use would occasion. This may be done by using only those of a general character. This is the rule I have tried to observe in my books. Thus when I refer to the "treasurer" I mean the financial officer in charge; on one road he may be a treasurer; on another a vice-president, comptroller, cashier, paymaster or clerk. The title "accounting officer" is used in the same way; under that general head all officers who have authority in connection with the accounts are grouped, and when reference is made to the accounting officer it means the particular officer whose duty covers the thing in question, whether performed by a chief clerk, ticket accountant, freight auditor, auditor, comptroller or vice-president. In the same way the title of "storekeeper" represents the person who has charge of the supplies of a company at the shops and along the line of a road or who renders return thereof. Two distinct officials may perform these duties. The title of storekeeper also appropriately covers the person who keeps the time of men and renders account thereof, because he generally has charge of material as well. Upon some roads the storekeeper will be the master mechanic, upon others the foreman, division superintendent, civil engineer, stationer, clerk, timekeeper and so on.* The title of "agent" naturally covers those in authority at stations;† it includes the agent, ticket seller, cashier, clerk and other attaches. The title of "counsel" covers those connected with the legal department; "traffic manager" those having charge of the traffic; "division superintendent" the official having charge of the operating department of a division, including the civil engineer of a division, although the latter may be an independent officer. The title of "manager" is used in a general sense to

*Indeed, all of these officials have more or less to do with material and labor accounts. I suggest the title of "storekeeper" because it applies more generally than any other.

†The title of "agent" is also sometimes used to designate every person in the employ of a railroad.

designate the officers collectively who manage the property. The title of "general manager" means the highest known managing officer; he may be a president, general manager or superintendent.

With this explanation the general application of titles in the sense I use them will be understood. When I find it necessary to use a title of any kind I use that which seems most appropriate, not as expressing an opinion directly or indirectly as to what a particular title should be or what the official possessing that title should do in all cases.



Carriage in Ancient Egypt (Hearse).

CHAPTER IV.

MATERIAL — PRACTICES GOVERNING THOSE WHO ORDER, BUY, CARE FOR, DISBURSE, OR ACCOUNT FOR MATERIAL.

[NOTE.—REQUISITIONS AND ORDERS. For rules and regulations governing Requisitions, Orders and Requests for material, see chapter devoted to that subject in the volume entitled "Economical Purchase, Care and Use of Material." The chapter in question is the most exhaustive study ever given the subject, and to any railway company or great corporation whose material accounts have not been thoroughly systematized on the basis of practical experience and needs, the chapter in question is invaluable. worth to it, in fact, many hundred times the value of this whole series of books.]

Before taking up specific rules and regulations governing the purchase, care and distribution of material, let us examine the philosophy of the subject. It is only thus we can understand it in its entirety, or judge of the necessity for specific rules.*

The material accounts of a company concern all its operating officers, but more particularly those who order, buy, receive, inspect, care for, disburse and use material.

The measure of responsibility and extent of knowledge required of those in charge of material is not the same in all cases—they differ just

*I wish to refer here to what is said at the commencement of the chapter on Labor in this book. Its perusal will enable the reader to understand the Material accounts better.

as they do in other departments of the service—but it is essential that the theory and practice of accounts governing material and labor should be understood by everyone, otherwise they will not be able to act harmoniously, and the service will suffer from inefficiency, extravagance and contention.

In the conduct of material and labor accounts the design should be that each storekeeper and timekeeper should have his particular sphere of duty; that he should be respected therein; that those about him should co-operate in every way with him to increase his usefulness, and that he in his turn should be particular not to infringe upon the duties and responsibilities of others; and, finally, that all should act harmoniously for the common good.*

At many points on a line the care of material is a mere incident, the value and quantity on hand neither necessitating nor justifying a storekeeper. Nevertheless, the material should be looked after with the same intelligence and faithfulness that petty cash collections are looked

*Those who have charge of the receipt, care and disbursement of material and are charged with the responsibility of accounting therefor, are, for convenience, designated herein as "storekeepers." This title applies alike to the person in charge of the material at a shop or storehouse or fuel supply depot, to a division superintendent, civil engineer, roadmaster, stationer or other person *who is charged with the responsibility of receiving, caring for and disbursing material and rendering returns thereof.* Those occupying a less responsible position who handle material are designated by some other title so as not to confound the duties or responsibilities exercised by them respectively.

after at small stations. The amount of cash is never a matter of consideration in providing for its safety; everything necessary to protect it is studied in advance and rigidly enforced. A loss of cash, no matter if it does not amount to more than a few shillings, is not looked upon as excusable. The same principle should govern the care of material. It should be protected everywhere and under all circumstances without reference to the quantity or particular value, so far as it is possible without incurring expense out of proportion to the risk involved.

Those with whom the duty of looking after material is an incident only should still take accurate account of the material they receive and expend, should guard the supplies entrusted to them with unceasing vigilance, and while they may not possess the discretion of division and shop storekeepers, it is their duty to report any act or impression connected with the handling of material whereby the service may be benefited. The interests of all are alike in this regard.

At the shop storehouses of a company the extent of the work requires the employment of a particular person to take charge of the accounts and supplies. He is called a storekeeper, He must be especially versed in his business; it is necessary that he should understand not only the theories but the practices connected with material accounts; he should also be familiar with the kinds of material that the company uses, and with each article thereof, so that he

may be able to judge of its merits. This last is necessary to enable him to inspect it properly and determine whether it corresponds with that paid for by the company. He should understand the question of supplies in general and particular. Unless this is so he will be unable to avoid embroiling his company in disputes with merchants as to the merits and value of articles received from them that might otherwise be avoided. The storekeeper must not only be ex-



Carriage in Ancient Rome.

perienced, faithful and observing, but he should be obliging, courteous and frank.

The storekeeper's association with and dependence upon others require that he should possess tact and patience. While exercising the utmost watchfulness to see that his company receives that which it pays for, he should not under any circumstance or pretence attempt by direct or indirect means to wrong a person from whom material is bought, or deduct anything from that which is really his due. The storekeeper is

a custodian, and is bound to report the facts exactly as they exist, neither omitting nor adding anything. This is the duty of the accountant everywhere and under all circumstances. He is a historian merely of that which occurs about him.

It is the duty of the storekeeper to see that that which he receives is genuine; to carefully husband it, and to disburse it only upon authenticated orders.

The duties of the storekeeper, no matter how great or how small the amount of material entrusted to him, require that he should take the best possible advantage of the facilities at his command; that he should so arrange his storehouse and dispose of his material as to most conveniently receive, inspect, watch and disburse that which passes through his hands. This will require him to study his resources carefully and make the most of them. He should so arrange his material as to prevent its being taken without his knowledge, or, if otherwise obtained, that the abstraction may at once be called to his attention. This duty is extremely difficult where the material is scattered, as it necessarily is at many shops. Nevertheless, it should be so arranged as to be under his inspection from day to day, if not actually under lock and key. He should, so far as he can, devise means to protect the supplies from the weather, and to so arrange them as to save labor in handling, and reduce the cost of inspecting and inventorying

to the minimum. His duties are what his title implies. Whether he is a good storekeeper or a poor one will depend upon the measure of his talent and industry. There are good and bad storekeepers in mercantile life. The former are those who study the situation and take advantage of its opportunities. The same rule holds good with the storekeepers of a railway company. The one who gives his duties the most thought and attention will be the best, and his reward in the long run will be the greatest.

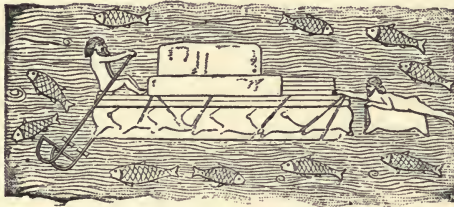
The material that a company uses in its construction and operating work covers every article known in the mercantile world. Not all of these, however, pass through the hands of every storekeeper; their duties are varied according to the location and particular purpose of the storehouse; thus, a construction storehouse is opened for new roads built or old ones extended; a storehouse for material used at shops and roundhouses; for track material; for bridge and building material; for stationery and blank books; for supplies for dining and business cars and lunch rooms, and so on. Some of these may be consolidated. Those in charge require to be especially versed in the duties of their office. Notwithstanding this practical knowledge, the good of the service requires them to seek hearty and active co-operation of those about them who are more familiar than they by actual experience with material, more especially those likely to render them good advice. The store-

keeper should combine the intelligence of those about him with his own, and not seek to stand alone. In no other way can he keep himself advised or familiar with the value and purposes of material or the changes that occur from day to day. The changes in this branch of the service are more important and more frequent than in any other department of industry in the world. In every field railway appliances are in a transition state. They are not perfect in the machinery department, the track department, the train department, the station department or accounting department. Betterment is the watchword in every branch of the service. It is the duty of storekeepers to keep themselves advised of these changes as they occur. Otherwise they cannot handle intelligently the material they receive.

The duties of storekeepers, as will be seen from the foregoing, require something more than involuntary or mechanical service. And while they may have no discretion in regard to the quality of material bought, can not add a jot to the facilities they possess for handling supplies, nor be able to say that material may or may not be used, they, nevertheless, possess wide discretion, and have ample scope in which to exercise intelligence and display business ability. Their knowledge of the uses of material, acquired by handling it, renders them of great assistance in determining the kind and amount required. It also enables them to discover any surplus on

hand or any old or new material not needed, or that has become obsolete. This knowledge is of great value in preventing the unnecessary accumulation of material, and of disposing of that which it no longer needs.

The value of a storekeeper's services to officers and others, in connection with the ordering and use of material, adds greatly to his usefulness. But his value in this regard, it may be observed, will be measured by the intelligence, zeal and



Carriage on the Tigris, 1000 B. C.

tact he displays in communicating his knowledge to those who have practical use for it.

The duty that devolves upon storekeepers of looking after supplies while in their hands, should not cease altogether after the material has passed into the possession of others. Their jurisdiction, so far as they are able to exercise it, requires them to see that material is not misappropriated or lost afterward; and in the event it is, to require reparation therefor. This duty is especially urgent in the case of brasses, tools and utensils of common use. It is within the discre-

tion of storekeepers to require, in making disbursements, that the old or worn out article that is to be replaced should be returned or duly accounted for. This duty is very far reaching in its application. It extends not only to the tools used by carpenters, machinists, blacksmiths, painters and others about shops and roundhouses, but to the implements that are used upon trains, upon the track, and at stations, water sheds, fuel houses and yards; everywhere, in fact, where the return of the old article will prove that it has been properly used. In many cases the articles thus returned will have no value, or but a nominal value at best. However this may be, the application of the rule will be useful in enforcing care in the use of a company's property. Moreover, in many cases articles thus returned may be repaired and reused, with little expense, that would otherwise be thrown away as useless. No one except those who are familiar with the purchase and handling of material can judge in such matters. Many articles that apparently have no value whatever may, with the expenditure of a trifling sum, be made serviceable, or may be made to realize something in the market. It is the duty of storekeepers to keep themselves advised in regard to matters of this kind; it is in their power to add greatly to the economical use of supplies and to realize through their zeal, experience and tact in the use of tools and other implements and the return thereof, vast sums of money which under other circumstances would

be lost without anyone suspecting the fact or realizing the amount.

One of the reasons why the original outlay and expense account of corporations is greater than that of private concerns is because of the increased cost of petty things. It is possible by the exercise of minute and salutary rules to correct this evil in many respects.

The proper disposition of material passing through a storehouse is of the greatest importance to a company, from whatever point viewed. The exact measure of discretion, however, that may be allotted storekeepers in order to derive the greatest benefit from their services, can only be approximately determined. It can not, however, extend absolutely beyond the inspection, count and custodianship of the goods. The right to watch over their use after they have passed from their hands they must exercise with others. It is primarily the duty of the operating officer into whose hands goods pass to see that they are expended economically and in good faith. The measure of discretion that the storekeeper will be able to exercise outside of his defined duties, it is apparent, will depend upon his industry, experience, faithfulness and ability to work harmoniously with those about him. The call for his services will depend upon the possession and exercise of these qualities. As the recipient of material bought the storekeeper is practically the auditor thereof; his record of material disbursed forms the basis of all charges on such account.

The precautions to be observed in the care of material, it is manifest, depend very much upon its nature. Many articles do not offer temptation or facility to pilferers. On the other hand, the list of those having an immediate appreciable value is very great. These require to be watched with the same care that a cashier watches money in his drawer. They comprise oils, brasses, tools, hardware and portable articles of a general nature that the company uses in its service. There is still much to be learned in regard to the best manner of protecting property of this kind; but that which has been found most simple and efficacious is the system of exchanges, namely, the requiring of the return of the old article when a new one is needed to replace it. Its enforcement does not require elaborate accounting; it is very simple and inexpensive. Its immediate effect is to emphasize the relative care exercised by those who use material of this description. If they are careful it is at once apparent; if negligent, the fact can not be long withheld. The great value to a company of the system of exchanges in the case of brasses has long been determined; its introduction in one instance at once cut down the cost to the company of such material one-third.

The necessity of returning an article when through with it suggests the necessity of protecting it meanwhile. The enforcement of a rule requiring the return of old or broken tools and other utensils, it is believed, will be quite as

salutary as in the case of brasses. It will emphasize the fact of ownership in a company, and the return of the old implement will serve as a voucher for the procurement of another to replace it. The pride that men feel in caring for property entrusted to them, and the further fact that such care is known and appreciated, will accelerate their interest.



Grecian.

In carrying out the principle of substitution, elaborate bookkeeping is not necessary. An account should be opened with the person to whom articles are given; when they are returned the storekeeper may run his pen through the entry or a mark may be set opposite showing that they have been returned and new ones issued in their places. The method of accounting is unimportant, except that it should be simple and inexpensive, and yet comprehensive enough to accomplish the purpose desired. As often as once a month a

general inventory should, if practicable, be taken of articles thus outstanding. At shops an inventory should be taken much oftener; indeed, it would be well that tools should be returned at night and redistributed in the morning. A very simple means of accomplishing this is to assign each workman a box or pigeon hole: when he takes away tools in the morning he leaves a card giving his name and a list of the articles; when he returns them at night he takes up this ticket. The place of deposit, it is manifest, should be convenient to the workmen, and it may be found desirable to assign the duty of receiving and disbursing the tools to some person other than the storekeeper; but whoever he may be, he should act under his supervision and instruction.

While the discretion of storekeepers in regard to the disbursement of material is restricted, nevertheless in the event any order they receive should seem to be ill timed, excessive or improper, their privilege and duty require them to call the matter to the attention of the responsible operating officer immediately in charge. A faithful cashier, when he receives a check that while technically right seems yet to be wrong, will, before acting upon it, take measures to ascertain its genuineness; in the same way storekeepers will consult freely and fully with the officers in charge in reference to matters of interest or concern about which there are any doubts.

The duties of the storekeeper concern not only supplies awaiting use, but extend also to scrap

and other old material. Every ounce of material of this kind possesses a value that is no more to be disregarded than the small change that finds its way into a ticket seller's cash drawer; it should be looked after carefully, should be accurately weighed—as far as facilities will permit—and should be brought upon the company's books with as much concern as if it were of inestimable value. The duty of looking after the scrap of a company and securing due return thereof is one of extreme difficulty, and invites the earnest attention and forethought of everyone.

While the duties of storekeepers in reference to the care of material have been thus fully defined, it should not be forgotten that the duties of operating officers in the premises are even more imperative. They should be active in every direction to prevent the extravagant use or misappropriation of a company's supplies. And in order that discipline and concurrence of knowledge may be secured everywhere and at all times, it is made the duty of operating officers at shops and elsewhere to see that those who have the custody of material, whether as storekeepers or foremen, exercise prudence and faithfulness in the performance of their duty, and that they carefully guard the supplies in their charge and enforce such measures of precaution and economy as may be necessary. This supervisory duty is an important one, but is not onerous from the fact that the presence of the official in charge,

on the ground, renders the task easy. His duties and those of the storekeeper are reciprocal.

The supplies of a company represent cash. They cost cash. Their waste, improvident use or loss is the same to the company as the loss of cash. The same principles should, therefore, govern. A storekeeper is the same as a cashier. His implements are different, that is all. It is his duty to see that that which he receives is genuine; that the count is full; that the goods are faithfully protected and guarded; that they are disbursed only on properly authenticated vouchers; and, finally, that full and complete records and returns are made.

In order to secure harmony and efficiency, the duties of different departments (and, as nearly as possible, of different officials) should be defined as accurately as circumstances will admit, so far as they relate to the handling of material. The service should be impersonal; those concerned should co-operate heartily with each other without transgressing the limits of their particular duties. The great quantity of material and the widely separated territory over which it is handled, render this necessary.

Material must not be charged to an expense or construction account until actually used. An exception may, however, be made in the cases of petty supplies sent to stations for actual use where the cost of accounting would be considerable and the measure of information furnished of no practical value. But in regard to supplies

stored at shops and other depots and centers of supply, or in the hands of trackmen or men engaged in repairs and construction of bridges, culverts, buildings, fences and platforms, it is intended that they should be charged when brought to the person responsible for their custody and proper distribution, and this person



Slavonic.

should not, under any circumstances, charge them to an account until they are expended thereon. Those in charge of track, buildings, bridges, culverts, shops, roundhouses, fuel depots, as well as storekeepers proper, are required to make return of material taken from store for actual use; also the amount of material and scrap on hand. In this way a company is kept advised, not only of

the gross amount of material on hand, but the amount at different places, also the particular kinds of material. This positive knowledge enables officials to act intelligently and to prevent the unnecessary accumulation of material that would occur if the company's measures did not enable it to determine at a glance exactly the material on hand, and the quantity, location and value thereof.*

Generally speaking, the method of business that accomplishes results with the least expense and friction is the most desirable for business purposes, and the one that experienced and practical men will most readily accept and carry out. This is the method sought to be embodied herein; its purpose is to achieve results by the simplest and least expensive means consistent with necessary safeguards. Observances are held subordinate to practical results. The forms used are the best and cheapest that experience suggests; they will require to be modified or enlarged from time to time, according to the vicissitudes of business and experience. For this reason those in charge of

* It was formerly the practice to charge much of the material used directly to the account upon which it was to be used, when bought. This was especially so in regard to road material. The practice grew out of the difficulty of securing effective accounting. This difficulty has been largely overcome, and measures are so perfected in this direction at the present time as to enable a company to keep in many respects as intelligent and effective account of its supplies as that kept by a merchant or manufacturer. These methods, however, are not by any means perfect, and all concerned in the handling of material should keep in mind the necessity of further perfecting them.

material accounts should not allow the glamour of forms or practices to take too firm a hold upon them; they should keep themselves unprejudiced, so that they may view the work of the accounting department with the same cynicism that those about them observe. They are expected to pursue practical things; to avoid the purely ideal; to weigh forms and devices by the benefits derived therefrom. Any method that does not have a present or prospective value over and above its cost, is extravagant, wasteful and demoralizing.

Material may not be ordered by a storekeeper except to meet actual demands, based on the expressed wants of others, nor can he disburse it except upon orders from the official in charge, or his duly accredited representative. These orders are his vouchers and he should preserve them with the scrupulous care that a banker preserves drafts that he has paid.

The routine of bookkeeping, as it affects material, is very simple. Each transaction, however, involves a special phase of accounting.

When material is received by a storekeeper he compares it with the invoice and duly records the quantity, price and total value on his books and in his accounts. He re-embodies this information in the returns which he makes of material received. This latter forms the basis for making the charge against him and for crediting the official who bought the material or the storekeeper by whom it was shipped. When material is disbursed, the storekeeper should have an order

therefor, which he files away. If material is shipped, an invoice accompanies or precedes it. Material disbursed is charged to the account upon which expended. If it is shipped to another storekeeper, it is charged specifically to such person. If it is used for construction or operating, it is charged thereto. Each storekeeper enters the disbursements he makes, like receipts, in due order in his returns. The amount he disburses is credited to him. All this information is needed by the accounting officer or person who audits the accounts of storekeepers; it may be rendered in separate statements or all embodied in a consolidated return; the latter plan is the one suggested herein. A detailed and separate statement is made by each storekeeper of the material he receives, ships away, sells, exchanges, otherwise disburses, or uses; at the end of the month he takes an impression of these statements, after which he binds them together in the form of a book and forwards them through the proper channel to the officer whose duty it is to finally examine and place the results they disclose on the books of the company. The plan is simple, cheap and effective.*

In accounting for material scattered along a line, the following provision has been found effective: Petty supplies distributed by storekeepers for current use or supply at places having no clerical facilities are accounted for by the store-

* For a more detailed description of it see what is said in reference to the "General distribution of material book."

keeper making the disbursement. The same rule is followed in reference to station and train material. Track supplies for each line are accounted for by the storekeeper for such line; in some cases he is the superintendent; in others a storekeeper proper, in others an engineer. Material used by gangs of men engaged in repairs of buildings, bridges, culverts, fences, stockyards, platforms, etc., for each line or division is accounted for by a central storekeeper.

The rules and regulations for handling the accounts contained herein are such as experi-



Pompeian.

ence suggests. The central idea is to make the writing up of the records at the initial point on the line answer the varied purposes of all officials who have occasion to keep themselves advised. Thus the records written up at the storehouses for material are sent forward through the offices of the various operating officials interested in such matters. Before these returns are forwarded, an impression copy is taken of them by the storekeeper as already stated.* In this way

* In the event the sending of the distribution of material book through the offices of operating officials would engender too

all the operating officers interested have an opportunity to inspect the returns in detail without the company being put to the expense of retranscribing them in their several offices. In the event officers at any time require details of an account, they may quickly and easily obtain it by reference to the office where the record was originally written, or where it is finally lodged. The official who becomes custodian of the returns uses them as vouchers. He need not retranscribe them in detail upon his books; only the footings need be posted. Thus the records of storekeepers, superintendents, civil engineers, roadmasters, bridge and building foremen, stationers and others who perform the duties of storekeeper, no matter what their titles may be, will be finally lodged in one office and form the basis of the company's report of disbursements.

The system of accounts provided for herein contemplates a minute classification of disbursements as between operating expenses and construction; in the event of doubt or dispute, the matter is to be referred to the proper accounting officer for decision. It is not the province of a storekeeper (or timekeeper) to favor one account

much delay or occasion inconvenience, an extra impression of these returns may be taken by the storekeeper and forwarded to the operating officer in charge, and through him in turn to all others interested. (In copying way bills as many as six or eight impressions are taken, and there is no reason why two or more impressions should not be taken of the distribution of material book; also of the distribution of labor book.)

at the expense of another. It is his duty to record the facts exactly as they occur. This is one of the objects sought to be attained through the system embodied herein. It is a vital matter. In the event a storekeeper is also responsible for the expenditure—in other words, where he acts both as principal and accountant—he must still render unprejudiced returns. In such cases it is his duty to appoint a competent person to take charge of the accounts of his office and act as storekeeper; this latter should be unimpeded in the discharge of his duties; he should apportion expenditures exactly as they occur in accordance with the facts, without reference to how the showing affects the official in charge. Thus, those in charge of track accounts will not attempt to debit to construction, expenditures that properly belong to operating, or *vice versa*. Unless the accountant (be he who he may) is impartial in the discharge of his duties, the deception the company risks and the losses to which it may be subjected in consequence will readily suggest themselves; they as readily suggest the necessity of putting the accounts in the hands of those who will render impartial returns thereof.

Impartiality is one of the objects sought to be attained in suggesting that storekeepers at shops be relieved from immediate responsibility to those who buy or use supplies, all incentive to act prejudicially being thus avoided. Not being responsible for the purchase of material, it follows naturally that they will render true returns

thereof; not being responsible for expenditures of material, it follows correspondingly that they will make true returns thereof. They occupy the same relation to the operating department that the commissary occupies to the quartermaster's department of the United States army. One buys; the other audits.

Such is in general an outline of the system embodied herein. But in order that so far as possible there may be absolute unanimity in the handling of supplies and the conduct of accounts, formal rules and regulations become necessary. Those that occur to me I give below. They should be carefully studied by those interested, not only in relation to particular things, but in the relation they bear to the method of handling supplies as a whole. These rules, like those contained elsewhere in this book, apply to everyone, and should not be disregarded except special and particular reason exists therefor, of which the official in charge of material accounts should be the judge.

ACCOUNTING FOR MATERIAL.*

[NOTE.—In explanation of the terms "Debit" and "Credit" it may be said that all material (including fuel) that is reported as received in store is a charge against the recipient; all material (and fuel) that is included in the returns as being disbursed, sold, or shipped away, is a credit to the person making the report and a charge against the thing upon which it is disbursed; in the final entries on the books of the company made from the summaries of returns, debits and credits have this basis. Thus, material embraced on one side of a return is the same as a charge, while if included in the other, it is tantamount to credit. This principle is observed throughout the material and traffic accounts.]

* Embracing all kinds of material *not in use*, such as shop supplies, scrap, miscellaneous track material, rails, ties, brasses, tools, utensils of common use, stationery, dining car supplies, fuel, etc.



Carriage in Zululand.

The material accounts of a company represent supplies in store. They also include scrap on hand.

Material should be debited to the storekeeper having it in charge. An account should be opened with each storekeeper.

Material should be charged to the person who purchases it. Afterward such person should be credited upon its being reported as received by a storekeeper, the latter being charged.

As a rule, payment should not be made for material until its receipt has been acknowledged by a storekeeper. In this way responsibility will be secured and risk avoided.

Vouchers audited in advance of the acknowledgment of the receipt of material by a storekeeper should be charged to the person certifying to such voucher, and should remain thus charged until the material is reported as received.

No material should be charged to a storekeeper until he reports it in his returns.

In the case of transfers of material, the person receiving it should be charged and the person forwarding it credited.

Storekeepers should be charged with all scrap (old material) that accumulates; they should take up such property in their returns in the month in which it accumulates.

The following rules and regulations, in the absence of instructions to the contrary, will govern:

Material disbursed each month by storekeepers, as shown in their returns, should be credited to them in the month in which the return is made. The account upon which material is disbursed should be simultaneously charged, provided such charges are found to be correct. It will not be difficult, therefore, for a storekeeper at any time to ascertain from his books the balance that stands to his debit on the general books of the company.*

In order that the accounts upon which supplies are expended shall show the full cost thereof, it is desirable, so far as practicable, that the cost of handling should be added thereto. In the case of material, this should include the wages of storekeepers and men engaged about storehouses in handling supplies; in the case of fuel, it should include the cost of loading, unloading into store, arranging, inspecting, watching, sawing and piling wood, and, finally, the expense incurred in preventing and putting out fires.

The wages of storekeepers and their assistants while engaged in handling and disbursing material and fuel should be charged to the accounts upon which they are engaged.

When several accounts are affected the amount should be apportioned among them at the end of the month on the basis of the amount of material charged each.

*The balance of material on hand may be arrived at by adding to the last inventory the gross amount of material received, no matter from what source, and by deducting the total amount of material disbursed, sold or shipped away. The balance represents material on hand. A balance of this kind should be struck monthly by every storekeeper.

Material should be charged at invoice price, plus subsequent charges. If it has been carried forward from a preceding year, it should be charged at the last inventory price.

The diversity in material and the different uses to which it is put, and the fact that officers of a company are not equally interested or responsible for the various kinds, coupled with differences in handling and accounting, render it desirable to classify the material account upon the general books. Thus, while all supplies that a company uses, including its scrap, are embraced under the general head of Material, they should be subdivided upon the books, in order to secure responsibility, under the heads of "material," "wood" and "coal."

While this classification is all that it is necessary to observe on the general books, storekeepers will effect a more minute separation. Thus, they should open an account with "rails," "ties" and "miscellaneous track material," so that any deficiency or surplus in either may be placed where it belongs and the accounts adjusted accordingly.

In the event a company manufacture supplies of any kind, an account should be opened by the storekeeper with each kind so as to ascertain the exact cost thereof. In his returns, however, he should embrace all charges of this character under the general head of "manufactured material." Labor expended in handling a particular kind of material should be charged thereto, so that when it is finally disposed of the account upon which expended may be charged with actual cost.

Fuel sent to shops and roundhouses for heating and stationary engines should, for convenience in accounting, be charged to the storekeeper at such shop as "material."* This fuel the storekeeper should thereafter account for and charge to the thing upon which used, the same as other shop material; at the end of the year any such fuel on hand should be inventoried the same as other material. In this way fuel consigned to shops for use thereat for the above purpose will be transferred from the fuel to the material account. Fuel used by blacksmiths, including Blossburg coal, coke, charcoal, etc., should be charged directly to material when purchased.

No material should be charged to an account until it is taken from the storehouse to be used.

Material shipped to points on the road where there is no storekeeper should be accounted for by the storekeeper who ships it.

In the event the person to whom material is shipped possesses facilities that will enable him to account for it in detail as

*If a storekeeper has both a material and fuel account he will transfer from the latter to the former fuel taken for the purposes designated. One reason for classing such fuel with material is that the blanks for fuel returns are comparatively simple, as the number of accounts upon which fuel is used in the general operation of a road is very small. But fuel used at shops for the purposes indicated it may be necessary to charge to innumerable accounts. Hence it needs the same facilities and flexibility of bookkeeping that material proper does.

it is used, it should be charged to him by the storekeeper making the shipment. It is the duty of the latter in such cases to see that he is kept advised of the quantity used each month, and that the amount thus reported is incorporated in his returns for such month.

Petty supplies forwarded to stations and offices and delivered to trains for current use should be charged when shipped to the account upon which they are intended to be used.

TRANSPORTATION CHARGES ON MATERIAL.

Advanced charges on material for a company's use received from other lines should not, in the absence of instructions to the contrary, be way billed forward. At the end of the month a statement of such charges should be rendered to the proper official with a view to having a voucher made therefor.*

When there are local charges on material, the station agent should deliver the receipts (expense bills) thereof to the storekeeper with the goods; the latter, after satisfying himself of the receipt of the goods, should write or stamp across the face of the instrument, "material received," signing his name thereto. On the last day of each month the agent should forward these receipts to the freight auditor, who should make voucher in favor of the agent. This voucher, when made, should be forwarded by the freight auditor to the storekeeper interested. The latter should immediately compare the same with his books of record, and if correct, should enter the total amount of the voucher on his distribution book. He should then forward the voucher to the final approving officer. No delay should occur in connection with vouchers of this nature, as it is desirable that they should be audited before the accounts for the month are closed, so that the agent may receive due credit and the proper accounts corresponding debit.

Advanced and local charges on material, except in those cases where the charges are afterward reimbursed by the seller, should be added to the original price, so that when the goods are used they will be charged at cost with the charges added. Exception is made to this rule, however, in the case of local charges on material designed for the construction of new lines; such charges should be debited in a separate sub-account directly to the cost of the line on which the material is used.

Storekeepers should be debited with transportation charges on construction material and they should keep a book in which to record the same as the material arrives at their storehouses. They should open an account with each class of material received, as say "transportation of ties," and so on. When the material

*This rule is necessary to enable a company to see that payment of freight is not made on goods that should be delivered free, or that payment of a different rate of freight is not made from that deducted by the shipper from the invoice rendered by him.

thus covered by an account is used, the transportation charges thereon should be entered on the distribution book to the debit of the account affected, as say "transportation of material for blank extension." Thus, as the material is disbursed, the line upon which used will be charged with its exact proportion of transportation and the storekeeper's account will secure credit.

Under the above method of treating transportation, it will result that all charges of that nature will be debited to the storekeeper the same as the cost of the supplies, and will remain thus charged until accounted for on his distribution book as described.

All errors in way billing material, corrections of weights, and mistakes of every nature, should, so far as possible, be rectified



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in the month in which they occur; and it should be the duty of storekeepers and others to accelerate this work and make it as thorough as possible.

Errors not corrected before the voucher for transportation is audited, should be reported by the storekeeper to the freight auditor, so that reclamation may be made or correction otherwise effected on the books of the company.

All transportation or other charges on material consigned to a storehouse for contractors and others should be charged to them forthwith on the storekeeper's books, and a "various persons" bill made as in other cases. It is desirable, however, when practicable, that all material of this nature should be consigned directly to the party concerned, and that such party should

settle the charges thereon with the agent; but where it is necessary to consign the material to a storekeeper, and charges thereon can not be settled by the owner directly with the agent, it should be treated as above.

INVOICES.

An invoice is a statement or account accompanying or preceding the goods, containing a full description thereof, including quantity, price and other particulars necessary to be known by the person receiving the property. For the purpose of railway accounting, two kinds of invoices are used, viz.: an "invoice of material purchased"* and an "invoice of material transferred between storehouses."† The former is made by the person who sells goods to the company, and the latter by the storekeeper who sends supplies to another storehouse along the line, or to any person for use on account of the company. The "invoice of material purchased" specifies the name and address of the person of whom the goods are bought; where the supplies are sent; particulars of the requisition under which they were purchased; date of shipment; description of articles, prices, items and total value thereof. The "invoice of material transferred" shows the place from whence the goods are forwarded; the point to which sent; request number; date of shipment; description of articles, prices, items and total value thereof.

The invoice is intended to afford the recipient a complete history and description of the goods. The following specific rules and regulations govern its use:

An invoice should accompany or precede each consignment of material, whether such material is purchased from a merchant or is transferred from one storehouse to another, or shipped to a station, section house, office, or other place.

On receipt of an invoice by a storekeeper, whether of material purchased or transferred, he should carefully compare it with the check book written up by the storeroom foreman at time of receipt of goods.

If variations, deficiencies or errors are discovered in articles, quantity, quality, price or amount, they should be plainly noted on the face of the invoice. The receiving storekeeper should then stamp on the face of the invoice the month in which he takes it up on his books and returns.

Storekeepers should embody in their returns the details of "invoices of material purchased," while they need only give the totals for "invoices of material transferred." The reason for this distinction is obvious.

In case of delay in the receipt of material or in the adjustment of differences, an invoice may be carried to the account of

* See Form No. 21, Appendix E.

† See Form No. 22, Appendix E.

the following month. An invoice should never be taken into the accounts until everything connected with it has been satisfactorily adjusted.

No charge should be made in the returns against a storekeeper until he has acknowledged (by signing and returning the invoice) the receipt of the material.

Invoices should never be receipted until they have been compared with the requisition or order on which they are based.

When an invoice has been receipted, the date it is receipted should be noted on the copy of the request.

When the receiving storekeeper is through with an invoice, he should receipt it and return it to the sender; it is the duty of the latter to compare it with his record of material forwarded and note thereon its return and also any corrections that may have been made by the receiving storekeeper.

Invoices should be carefully labeled and filed away for convenient reference.

INVOICES OF MATERIAL PURCHASED.*—Invoices of material purchased should be sent to the purchasing agent by merchants; he should forward them to the storekeeper who receives the goods.

On receipt of an invoice, the storekeeper should enter it on the blank provided therefor; this blank forms a part of his distribution of material book; as fast as these blanks are filled, an impression of them should be taken in a tissue book. This impression book will constitute the office record of material received.†

Before receipting invoices of material purchased, storekeepers should see that any advances that may have been made for freight or other purposes, chargeable against the seller, are noted on the invoice and deducted from the price of the goods.

INVOICES OF MATERIAL TRANSFERRED.‡—A particular form is provided in this connection. It should be filled up by the forwarding storekeeper in accordance with its provisions. It should state upon its face the month in which it will be charged to the receiving storekeeper. It should be sent forward by passenger train.

Upon receipt of the invoice the receiving storekeeper should take an impression of it in a tissue book provided for the purpose. As already mentioned, this book constitutes his record of material received.‡

* See Form No. 21, Appendix E.

† Where the system of accounts on a line does not render it possible to keep a record of material received by taking impressions of invoices in the manner described, a detailed statement of material received will have to be written in a record provided therefor, as a "record of material received" should be kept at every shop or storehouse.

‡ See Form No. 22, Appendix E.

§ It will be noticed from the foregoing that the receiving storekeeper's record is made by taking an impression copy of the invoice sent him by the forwarding storekeeper. In order to do this it is necessary that the forwarding storekeeper should not take such an impression. How, then, does the for-

Storekeepers should be particular to see that invoices of material forwarded near the time for closing the returns reach the shop or storehouse to which consigned before the storekeeper at such place has closed his accounts.

In order to prevent delay in closing the accounts, all material transferred between storehouses or storekeepers after the 25th of the month should be embraced in the succeeding month's accounts; the invoices in such cases, however, should not be dated ahead. Storekeepers will understand, without this being done, that the invoices are to be carried forward.

Each storekeeper is required to send on the 25th of each month to every other storekeeper to whom he has forwarded material, a statement thereof for the latter to examine and return; this statement should describe in detail each invoice. If it agrees with the books of the receiving storekeeper the fact should be noted and the statement returned; if it does not agree, the points wherein they disagree should be noted. This interchange of statements is to enable storekeepers to harmonize their accounts before sending in their returns.

In making corrections on an invoice care should be taken to see that the notation is shown distinctly on its face; also on the impression copy.

When material is shipped to a point where there is no storekeeper, an invoice should be sent to the place where the material is to be delivered; it will be required for use in inspecting and receiving the property. In case the material is to be taken up on the books of another storekeeper, a duplicate invoice should be sent to him.

In invoicing material, the exact facts are required to be embodied; the quantity of material and the condition thereof should be accurately stated; the price should be neither more nor less than its cost as represented upon the books of the person making the invoice. Nothing can be more reprehensible than any departure from this principle.

INVOICING SCRAP.—In invoicing old material (scrap), the following should be observed: A memorandum invoice describing the material should be sent by the person forwarding it. Upon receipt of the material the receiving storekeeper should make an invoice therefor specifying the various kinds of material received, the actual weight of each kind, and the market value thereof.

warding storekeeper keep a record of invoices that he sends out? The following provision is made for this purpose by the writer: By the use of carbon sheets the forwarding storekeeper, when making the invoice, fills up at the same time two other blanks, namely, the instructions to the station agent to bill the freight and the record that the storekeeper preserves of the material forwarded. When these three documents are filled up (as they are at one writing) the forwarding storekeeper detaches the invoice and sends it forward, and as it is written in copying ink or indelible pencil an impression copy may be taken of it by the receiving storekeeper. In this way a great deal of clerical work is saved. This device forms a part of the writer's Multiplex System of Accounts which has long been in use.

This invoice he should copy in his material received book as if it had been made by the forwarding storekeeper; the original he will send to the forwarding storekeeper, who should paste it in his record book of material forwarded*

RECEIVING AND INSPECTING MATERIAL.

The duty of receiving and inspecting material is one of the most important that devolves upon the storekeeper and his assist-



Carriage in Zambesia.

ants. Clerical skill and honesty in this respect, while absolutely essential, are not alone sufficient. In order to perform the work effectively the receiver should understand the nature of material. Not only this, he should exercise also the greatest watchfulness,

* This variation from the ordinary practice pursued in invoicing material transferred is rendered necessary by the fact that the forwarding storekeeper seldom has the means at hand for accurately classifying the material, weighing it, or stating the market value thereof. When he does the customary rules and regulations should be observed.

to detect irregularities, omissions, errors or subterfuges. He should be sufficiently versed in clerical matters to be able to record accurately and clearly that which he observes, to note fully and perspicuously the details of each consignment, including the quantity, price and amount. The work that he performs affects not only the company, but the person from whom the material is bought; the latter is, in some respects, at the mercy of the storekeeper, and if he is unskillful, inexperienced or disposed to take unfair advantage, will, for the moment, suffer at his hands.

It is not the duty or office of the storekeeper to discriminate for or against that which he receives. It is his business to report the facts exactly as they occur; to state truthfully the nature of material, its condition and quantity, and to faithfully record the same upon his books. He should possess the confidence of the company and, reasonably, of the seller. In order to do this he should be honest, experienced and capable. To the extent that he is deficient in any of these qualities he is lacking in usefulness.

In connection with the duty of inspecting material it may be assumed that there will be many and repeated efforts to deceive the company in regard to the quantity and quality of material sold and delivered to it. The manner in which deception will be sought to be practiced will vary according to surrounding circumstances and the ingenuity of the seller. No specific rule can be laid down except that of unremitting vigilance. Efforts to deceive will not be advertised in advance. Every storekeeper should, therefore, at all times be on his guard and should approach the discharge of his duty in this respect with the utmost circumspection.

The following, among other necessary rules, should be specifically observed:

Storekeepers should inspect material with the same care that they would if it belonged to themselves.

Breakages or defects of any kind, or variations from the specifications under which it was bought, should be noted and forthwith reported in writing to the proper official. Defective material should be kept apart, awaiting directions as to its disposition.

It will be understood in this connection that no greater latitude should be allowed in receiving material from storekeepers of the company than from merchants, although in the former case it is merely a transfer, while in the latter it is the receipt of new material the acceptance of which and the price to be paid depend upon the inspection.

Whenever possible, the price of the article should be marked or painted thereon when received, so that it may be easily and quickly determined afterward. In the case of castings and other heavy material, the weight or quantity should also be noted for the same reason. It is also desirable in many cases, where the

name of the manufacturer or seller is not plainly branded on the article, that some mark should be placed thereon that will facilitate its identification afterward, in the event it should prove defective or otherwise than as agreed upon. In the case of round iron this may be done by painting the end or a portion thereof with some distinctive color. It will never be difficult for storekeepers to find some simple and effective way to mark material, so that no matter where it may be used afterward, it may be identified.*

In receiving oils it is especially necessary to exercise the greatest care to see that they are up to the required standard. Samples of all oils received by purchase should be tested, unless otherwise directed, and a report of the quality thereof made to the storekeeper.

In the case of valve, car, engine and other oils, where the chemical analysis is not conclusive, the quality of the article must be judged by actual use, and the observation and experience of those who handle it systematically sought to determine its character and worth.

It is in many cases impossible to determine by inspection whether articles come up to the standard claimed for them, or not. An accurate account should be kept of the date of the receipt of such material, when put into use, time in use, conditions of use, and such other details as may be necessary to determine its character.

It is the duty of storekeepers and others, whenever necessary or practicable, to invite the advice of foremen and others having practical knowledge of material, so that the company may receive the benefit of their information and experience.

An accurate description of material should be made in a blotter (check book) as it is inspected and checked at the storehouse door. Afterward the description thus made should be compared with the invoice; after this comparison the entry in the blotter should be stamped or marked to indicate that it has been compared with the invoice and that the invoice has been signed and returned.

In receiving and inspecting material at points remote from a storehouse, it can not be too particularly impressed upon foremen and others that the utmost care should be observed, as imposition is much more likely to be practiced under such circumstances than in others. †

As it is impossible that storekeepers should in all cases be able personally to receive material delivered at points remote from their offices, they will require that the foreman or other

* A record should be kept in the office of all these distinguishing marks.

† This has been especially noticed in the case of bridge and switch ties and timber delivered at points along a line, and it has been found necessary, in consequence, in some cases, to send an inspector to receive them as they were loaded for shipment, when not practicable to inspect them at the place of destination.

person who receives such material should make an accurate return thereof to them; and, as in some cases such material may not be accompanied by an invoice, the foreman will in such case embody the particulars of the receipt of the material in a memorandum or book, which he should send at the close of the month to the storekeeper interested.

TIES—INSPECTING THE SAME.—The duties attending the inspection of material of this kind are different from those in connection with other supplies and are conducted under much greater disadvantage; there is, moreover, a greater liability of the company being defrauded in the count and kind of material and in the sale of the same article to the company over and over again. Those who have charge of the duty of receiving and inspecting ties are therefore required to be men of fidelity and experience. They should be thorough in their methods, careful in the records they make and methodical in putting the mark of the company on all they buy.

The method of procuring ties varies upon different lines. Upon some they are delivered at points along the road; upon others they are delivered at some central point. The difficulties in handling those delivered along the line are greater than where they are received at a central point, and the labor of inspecting and the necessity of watchfulness also much greater. The measure of concern that should be exercised in each case should be commensurate with the work, and such as may be necessary to protect the company's interests absolutely.

The following rules and regulations in reference to the receipt and inspection of ties suggest themselves. They should be supplemented by such further measures as the circumstances of the case require.

In the inspection of ties each and every tie should be carefully examined and the returns made in accordance therewith.

To accomplish the work effectively, the ties should be inspected as delivered, or if piled in ranks should be removed, one by one, for examination.

Ties are purchased by agreement or special contract.

The ties that answer fully the specifications under which they are bought, as to quality, width of face, length, thickness, place of delivery, etc., should be piled together in tiers by the inspector as first class.

Those that do not come up to this standard, but are of good quality, suitable for sidings, or meet certain clearly defined specifications, should be arranged in separate ranks; they are termed "culls."*

Ties not fit to be classed as culls should be wholly rejected and directions given for their removal by the owner.

The end of each tie accepted should be distinctively marked

* This is on the supposition that the buyer agrees under certain circumstances to accept "culls." If he does not they should be rejected.



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with paint, by the inspector, so that the same tie may not be submitted a second time for inspection.

Ties inspected at isolated and remote points should be marked as described, on both ends.

Storekeepers are charged with the ties located upon the territory under their charge. When shipped away they should invoice them as in the case of other material.

An account should be kept with the ties at each place, namely, the number received; also those shipped or used.

It is sufficient to show in this account the number and kind of ties separately, without regard to valuation.

The storekeeper will, through these accounts, obtain a valuable check upon the business, necessary to verify the inventories and to correct errors or omissions in reporting the disposition of ties on the part of employes.

The return* of the official whose duty it is to inspect the ties purchased should give: First, the name and address of the person from whom ties are purchased; second, the exact location of the ties on the road (viz: the place, side of track, distance from track, etc.); third, the exact number of ties furnished of each quality, specifying the kind of wood by name; fourth, when both hard and soft wood ties are furnished by the same person, such ties should be separately enumerated and classified in the return.

As payment for ties is based upon these returns, the greatest care should be exercised to insure correctness and reliability.

Each inspector should number the returns made by him, commencing with number one at the beginning of each fiscal year.

Returns of inspectors should be entered in a record book in detail in the order in which they are numbered, for preservation and convenient reference.

After inspection and acceptance, and not before, a voucher should be made.

The material should be debited, as in other cases, to the storekeeper in charge.

The following suggestions in regard to the purchase and delivery to the company of wood, ties, piles, lumber, etc., are based on practical knowledge: †

1. Contracts should expressly state in detail the kinds of wood that will be accepted; the various sizes, length, thickness and manufacture; the time and place of delivery; the manner of piling the same, in detail; the length and height of piles. Contracts should specify that each kind of material shall be piled in separate places on land designated by the company's agent at or above the grade of the railway track; that it shall be inspected and accepted by the company's agent, such inspection and acceptance being final and conclusive between the parties; that all material not accepted shall be taken from the company's ground on notice. It is the duty of the company's agent to designate the place of delivery and to watch the deliveries to know that the material bought is of the kind wanted, well manufactured and suitably piled, it being always understood that the seller will furnish as poor material

* See Form No 23, Appendix E.

† I am indebted for them to H. E. Southwell, a gentleman of the highest probity and of long experience in such matters.

as the inspector will accept, it being the aim of the former to make money out of his contract. A company should not allow poor material to be piled on its ground, but insist on the delivery of suitable material, well manufactured and well piled. A little care here will save much contention in the end.

2. The inspector stands between the contractor and the company. He should be a man well versed in the details of his business, have experience, knowledge and common sense. He should spare no time to get at the facts, honestly, and without prejudice between the parties, keeping accurate account of his work and making a report thereof to each party, being ready to verify the same by facts. The office of inspector or agent of the company is of importance and the incumbent should be a man of ability and integrity.

3. Every inspector should divide his territory for receiving material into sections, numbering them and making a diagram of the same. Each pile of wood, ties, or other material, should be marked on the diagram to show the place of delivery; it should be numbered and the number plainly marked thereon. The company's private mark should also be put in various places on the same, together with the date of inspection; also the length, height, etc., so that from the office record an order can be made for each and every pile of material on the track sufficiently accurate to enable trainmen to find the same.

4. Material should be charged to the division storekeeper where and when received; he should have an invoice of each and every pile of material, showing the number, kind, amount, place, and where delivered. This description should correspond with the numbers on the pile. Material should be moved only on his order, and an accurate account should be kept by him of the same when moved. No material should be allowed to be moved except on a written order and full returns thereof.

In those cases where sellers deliver freight at isolated places along the line, and also load the same for shipment, as frequently occurs in the case of bridge ties, switch ties and timber, it will be found advisable, as a rule, to send an agent of the company to inspect the property as it is loaded. The facilities for performing this work at the receiving place are not in every case adequate, and in the event a company does not have an agent on the ground to receive the property and see that it is shipped, deception may be practiced; in some cases the goods will not be delivered at all, in others there will be a deficiency in quality or count, the seller hoping to escape detection through the inability of the company to properly inspect the goods at the receiving point. The necessity of inspecting at the shipping point will not, of course, operate in those cases where the goods bought are forwarded to a person competent to receive and inspect them, but goods loaded by the seller to be delivered at bridges, culverts, sidings and other places along the line away from the inspection and care of storekeepers should, as a rule, be inspected and counted when loaded. There can then be no question, either as regards the delivery, quantity or quality, and all cause of misunderstanding or dispute will be avoided.

MATERIAL RECEIVED BOOK.

The manner in which this book is compiled has been referred to elsewhere in connection with "invoices." When an invoice for material purchased is received by a storekeeper, it is copied on a blank forming a part of the "distribution of material book." When the blank is filled an impression of

it is taken in an impression book. This impression book is the "material received book." The object of pursuing this plan is to save the cost of writing up the material received book. Moreover, exact conformity of record is thus secured.*

The foregoing refers to material purchased; for material transferred between storehouses, the invoice made by the forwarding storekeeper is written in copying ink; an impression of this invoice is taken by the receiving storekeeper in the material received book.

Thus, a full record is arrived at of all material received, both that bought and transferred.

The pages of the impression book as fast as filled should be footed and the footings carried forward.†

The material received book is necessary to preserve a consecutive history of material. Its object is to afford the storekeeper a record of each consignment, from whom received, number of requisition, date of receipt, articles, quantity, price and amount.

From it may be gleaned in detail every article of material received for which the storekeeper is responsible. Taken in connection with material on hand and material disbursed, as shown on the distribution book, the exact status of each storehouse may at any time be determined and the measure of accuracy that has been observed in handling and accounting for particular articles ascertained. This research may be made by the storekeeper himself. By comparing the articles on hand and those that have been charged to different accounts with those received, he can determine whether anything has been taken from the storehouse that has not been embraced in the returns rendered by him. This *résumé* of affairs is recommended to each storekeeper as a means of determining the measure of accuracy exercised by him in caring for, disbursing and accounting for material. If the balance standing on the company's books at the end of the year to his debit differs from the amount of his inventory, it will explain to him the reason why; he will see that this difference does not arise so much from change in prices as from clerical errors and omissions, and from the taking of articles from the storehouse without the storekeeper's knowledge.

In order to prevent the possibility of receipting invoices in duplicate, the fact that an invoice has been receipted should in every case be noted on this book opposite the particulars of the consignment.

* The "distribution of material book" referred to is described elsewhere herein. Loose blanks adapted to the various requirements of this book are provided each storekeeper. When the month's business is written up, these blanks are bound in book form and so constitute the book.

† At the end of the month the amount of material purchased, also the amount received from each storekeeper, should be ascertained, separately, for insertion in the Recapitulation of the "distribution of material book." These amounts added together should correspond with the total footings of the material received book.



Carriage Among the Indians.

CARE OF MATERIAL.

Defects in arranging for handling and storing material, dating back, in the majority of instances, to the original construction of the road, prevent in many cases its being handled economically or effectively. The remedying of these defects naturally enlists the attention and intelligent effort of all who are concerned in this department of the service. This interest should not be allowed to lag, and every advantage should be taken of the situation that experience and thought suggest.

In storing and caring for material the methods of merchants should be observed, namely, to place it so that it will be protected from misappropriation, so far as possible, and from damage by the weather, and at the same time be most convenient for receiving and disbursing. The necessity of arranging it so that the storekeeper may discover at a glance, as he passes through the storehouse and yards, material no longer needed, or that is in excess of the demand or that falls short thereof, will naturally suggest itself to those in charge.

Method and order should characterize everything that is done about a storehouse.

In the care of supplies the necessity of special watchfulness in regard to particular articles of material will suggest itself to storekeepers. In many cases no danger of misappropriation attends the custody of articles, no matter where placed. This is so in regard to heavy castings, car wheels and kindred articles. They may therefore be left in the yards or in open sheds without danger, except to see that they are accounted for as used. In the case of many articles, however, great care should be exercised to prevent their being taken improperly, or used without the knowledge of the storekeeper. The particular articles that come in this category will suggest themselves to every storekeeper. They embrace, among others, oils, tools, brasses, articles of common use, hardware, etc. Secure provisions should be made in such cases. Where it does not already exist it should be provided as soon as possible, as there can be neither economy nor wisdom in a condition of affairs that fails to protect the supplies of a company with all reasonable effectiveness against misappropriation, either casual or predatory.

In relation to much of the material disbursed, especially brasses, tools and implements in common use, the supervision of the storekeeper is expected to extend beyond the delivery of the article. He should watch over it, so far as he can, until it is no longer fit for use, or no longer needed, when it should be returned to him. In the performance of this duty all those who have supervision over employes, including the employes themselves, are expected to co-operate; indeed, it is mainly to them that the company must look, as storekeepers' duties in this connection are necessarily circumscribed.

It is the duty of storekeepers as far as possible to see that material is used for the purpose designated by those to whom it is delivered, and in the event it is not, to secure accurate and full returns thereof, so that no account may be charged with more than belongs to it, and the disbursements of the road may be accurately and properly apportioned.

The following specific rules should be observed in the care of material. They should be supplemented by all needful regulations wherever it is necessary; the purpose being, here as elsewhere, not so much to form a perfect code of rules, as to suggest, by giving those of a more salient nature, the others that are required.

The first thing that suggests itself as necessary in the care of material is to deny access to it to all not directly concerned in its manipulation. Supplies should be placed, so far as possible, in a manner most likely to protect them from misappropriation and damage.

Approaches to supply depots should be restricted, and should, so far as possible, be under the immediate eye of those responsible for the material.

Every article should have a place assigned to it, so that its location may be accurately known, and access to it easy and systematic.

If possible, the storehouse should be divided into sections, each section being lettered.

The classes of material that each division contains should be catalogued, and the section in which it is placed numbered.

Racks should be provided, suitable for the purpose, for different kinds of sheet and bar iron, and should be located conveniently for use and in such a manner that the quantity can be determined at a glance.

Articles similar in appearance but differing in value and utility should be kept separate.

Oils, varnishes and other liquids should, if facilities allow, be kept in cans or tanks so arranged that they may be filled at the minimum cost and from whence supplies may be taken as needed, without loss and at the lowest expense.

Dry paint and material such as emery, including powders of all kinds, should, if possible, be kept in bins.

Shelves should be so arranged that the contents of the various compartments may be ascertained at a glance.

Material that can not be put in the storeroom should be placed in sheds, and if this is impossible, should be so arranged that only the minimum amount of damage will accrue from exposure.

Supplies should be arranged with a view to their use, those which are most frequently in demand being placed in the most accessible place for delivery.

Articles such as locks should be carefully tied in packages, so as to prevent the parts becoming separated.

Patterns should be arranged in order and catalogued, and so systematized that when one is removed a record of its disposition will be put in its place as a convenient reference and constant reminder of its absence.

Lumber and timber should be classified and piled with the care and method that is observed in lumber yards.

Storerooms should be kept clean and orderly, and such expedients and devices used as the best knowledge in regard to handling material suggests.

If the facilities are not adequate for the storage of coarser articles, such material should be concentrated in particular places as much as possible.

The place in which supplies are kept should be located as near as possible to those who use them, but the protection should in every case be such as to prevent material being taken except under authorized rules.

Such provision as is possible should be made for preventing fires, and for extinguishing them should they occur.

As already stated, the storekeeper's duty does not end with the delivery of material for use. He should, so far as possible, follow it afterward until it is consumed, and should note how used and the measure of economy exercised in connection therewith.

In the operation of business it will be necessary in many cases to forward material to isolated points on the road, either for particular or general purposes. In many cases it will be neither practicable nor desirable to charge such material to an expense or construction account when thus shipped. In such cases a separate account should be opened with each lot thus distributed and frequent returns should be required from foremen and others in charge, of the uses made of it, quantity on hand, etc.

In the case of oils, storekeepers are required to exercise the utmost care, and to adopt every possible means that ingenuity suggests to prevent leakage, evaporation and loss.

Oil should be unloaded immediately on arrival and forthwith placed in the tank or other receptacle provided therefor. In the event there is no tank provided for its storage or the amount received is greater than the capacity thereof, care should be taken, if possible, to see that the barrels are kept wet or that they are stored in a damp place, so that the loss from evaporation and leakage may be reduced to the minimum.

Under no circumstances may oil be left in barrels exposed to the sun.

The greatest care should be taken to see that oil is not stored in proximity to combustible material, such as waste, etc. Danger from fire should be carefully guarded against at all times.

The person in charge of oil supplies, also those whose duty it is to fill lamps, lanterns, torches, etc., should be, so far as their duties in that direction are concerned, under the direction of the storekeeper, and he should be held responsible therefor.



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RAILS.—The inspection of these supplies should be as rigid as the circumstances will permit; but as this inspection in the first instance is largely superficial, it should be supplemented by careful and minute records of their duration and worth in practical use.

As a rule, material of this kind is bought under contract, stipulating that it shall last a certain length of time.

A record should be kept of the date rails are laid, from whom bought, when taken up, character of injury, etc., so that if bought under contract it may be enforced and the seller held to his agreement. But the record in question should be kept even if rails are not bought under a time contract.

So far as practicable rails should be inspected when received. They should be carefully counted and their weight determined. They will not be treated in the accounts differently from other material; they should be invoiced when shipped, and should be charged to the person to whom they are sent.

When charging rails to repairs or renewals of track, the credit for old rails taken up should be made coincidently; in the event the wear and tear of the latter is very great, allowance should be made therefor. In debiting rails to track the total value should be charged; the same rule should be observed as to credits in the case of old rails taken up.

As a general thing, no definite rule can be made in regard to the place where rails will be received from the seller. Whenever practicable, they should be forwarded to the general storehouse for inspection and disbursement as required; but this rule will not be observed (if other provision can be made) when attended with expense.

In order to facilitate accounting, however, all rails should, in the absence of instructions to the contrary, be charged to the general storekeeper. If the rails are delivered at some other point, they should, nevertheless, be invoiced to him and he should take them up in his account of material received. It is his duty to invoice the rails to the storekeeper in whose charge they are. It is believed that this plan will secure more authentic accounting than any other, and it should be observed when other provision is not made.*

The great value of rails and the necessity of the management being constantly advised in regard to the quantity on hand, both old and new, suggested the form of monthly return † appended for furnishing this information. It shows the rails at each mill, also those passing to and fro; also the rails, both old and new, not in use, on hand at storehouses and along the line of road; it

*The general storekeeper can not be held responsible for the inspection or count of material not received immediately by him or by an inspector under him. When, therefore, material which is charged to him is delivered elsewhere, a competent storekeeper should be delegated to receive it and to make a report thereof to him.

†See Form No. 24, Appendix E.

specifies the number of tons and lineal feet of each kind of rail. It is intended to be full, accurate and comprehensive, and should be made as of the last day of the month.

The regulations governing old rails are provided for in connection with scrap.

TOOLS, IMPLEMENTS OF COMMON USE, UTENSILS, BRASSES, PERSONAL PROPERTY, ETC.—The especial need of care in the storing and use of these articles is frequently referred to elsewhere. Their value, and the fact that they are easily disposed of or are of general use, adds to the difficulty of guarding them. The danger of loss after passing from the hands of the storekeeper is greater than when in his possession, as they are thereafter less carefully guarded, unless especial effort is made in this direction. The most feasible method that has been suggested of securing proper care is to require the possessor to return the old article in every case when a new one is needed to take its place. This system of exchange has been found to work admirably in the case of brasses, reducing the consumption thereof one-third. It should be enforced by storekeepers in every direction where it is practicable, in the case of tools and articles of common use in the hands of employes of a company. When a new article is required to be given out in exchange, the old one should be returned or a satisfactory explanation given for not returning it.

In the event articles can not be returned or accounted for, or they are injured through the neglect or carelessness of the employe, the official of the company immediately in charge should fix the amount of compensation, if any, to be paid by the delinquent.

In the event an employe who has property of a company in his possession leaves the service, it should be formally turned over to his successor and a receipt taken therefor, which latter should be forwarded to the storekeeper so that he may transfer the charge on his books. This is the plan that would be observed with a cash working fund; personal property is the same as cash to a company.

Property no longer required for use should be promptly returned to the storekeeper, and the charge upon the books cancelled in accordance therewith.

Employes using tools, implements and utensils should be required, so far as possible, to order uniformly of a particular storekeeper.

Tools used at shops should be under the care of the storekeeper or some person designated by him; he should, so far as practicable, distribute them in the morning and receive them back at night. Where the facilities allow and the number of tools in use justifies the expedient, a place should be set apart for storing the tools, a compartment therein being assigned to each workman. When the tools are distributed originally to the men, a receipt should be taken therefor; on the return of the tools at night, this receipt should be given up to the employe;

when the tools are required again in the morning, the receipt should be delivered again to the storekeeper or custodian of the tools and placed by him in the compartment in lieu thereof, and so on.

Articles in use by trackmen or by isolated gangs of men should be in the care of the foreman thereof, whose duty it should be to see that every tool is accounted for or the fact duly reported and adjusted.

Articles used at stations should be in the care of station agents.

Articles used on trains should be in the care of conductors.

In distributing brasses, tools and articles of common use, a duplicate of the receipt taken therefor should be retained by the person receiving the property so that he may have accurate account of the articles charged to him.

Separate compartments should be provided for the storage of these supplies, or if the supply does not warrant this, a cupboard or other secure enclosure should be made (especially in the case of brasses) which may be securely locked.

A special return* and inventory is required to be made at the end of the month of brasses, showing the number of each kind on hand at the commencement of the month, the number received during the month and the number on hand at the end of the month. It should also specify the number of old brasses shipped or sent away during the month, and the number on hand on the last day of the month.

The rules and regulations governing personal property in the hands of employes may be summarized as follows:

When personal property is given an employe or officer for temporary use, a record of the fact should be kept by the storekeeper or official making the disbursement; it is his duty to see that the property is returned or duly accounted for when its use is no longer required. To enable him to do this intelligently he should keep a record book in which to enter transactions of this nature, giving in all cases the final disposition of the property. The material should be charged to the account upon which it is used when it passes into the possession of the employe; when returned it should be credited at its then cash value, to the account to which it was originally charged. The effect of this will be to bring it back into the material account of the company to the debit of the storekeeper into whose possession it passes. Thereafter it should be treated the same as other material.

DINING CAR SUPPLIES.—The great number of articles used in this branch of the service, and their especial value and adaptability to the needs of everyone, renders it especially difficult to surround their care with adequate safeguards. They require to be guarded at all times with the same watchfulness and intelligence that a vendor of groceries displays in protecting his goods. Access to them should be forbidden except to those concerned in the handling of

* See Form No. 25, Appendix E.

the goods. The account that is kept of them should be full and minute. When disbursed for use, account should be kept with each kind of material in detail.

Storekeepers should open an account with each dining car.

Each conductor of a dining car is responsible for the utensils and supplies furnished his car. It is his duty to see that any breakages or losses that occur are accounted for in accordance with the instructions of the official in charge of the department.

An order* should be made by conductors for the supplies they require. This order should be addressed to the storekeeper and should be certified by the superintendent in charge.

At the close of each trip the conductor should render to the superintendent in charge an itemized return of all cooks' sup-



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plies, pantry supplies, liquors, cigars, chinaware, kitchen equipment, etc., on hand at the date of the last return; the number received since; the number delivered up; the number destroyed or lost; also the number on hand. This return should be carefully compared with the previous return and afterward filed away for reference. At least once a month the return should be verified by personal inspection by the storekeeper.

The storekeeper is required to keep an account showing an itemized statement of linen furnished each car. At the close of each trip the conductor should deliver to him all soiled linen and receive in exchange therefor corresponding pieces of clean linen.

The quantity of linen on each car should be verified by the storekeeper at the close of each trip to see that it agrees with the articles charged.

*See Form No. 26, Appendix E.

To facilitate accounting a blank is used by conductors in making requisitions, containing a printed list of articles; opposite each article the conductor notes the quantity on hand, also the quantity he requires. Following this he notes the quantity received of the storekeeper in answer to his requisition; also the quantity that he finds it necessary to buy on the line, and, following, the balance on hand at the close of the trip. The difference between the amount of material received and the amount on hand at the end of the trip represents the supplies consumed. This return affords a clear account of each article. It should be filed at the close of the trip with the storekeeper in charge of dining car supplies. It is his duty to examine it with the utmost care; after doing this, he should insert the cost in the column provided opposite the articles. This cost he embraces in his distribution of material book where it belongs.

METHOD OF TREATING THE DINING CAR SERVICE ACCOUNTS.—Collections on account of this service are not properly creditable to earnings. In many, perhaps the majority, of cases, they are more than offset by debits. They may be called receipts, but not earnings. A proper disposition of them suggests that they be apportioned pro rata at headquarters and among the various dining car accounts named below and the balances added to or deducted from the proper operating expense accounts.

In order to properly exploit the accounts, they should be kept by storekeepers under appropriate headings,—say those named below. Accordingly a separate account should be opened with each car under each head. Thus the receipts and expenditures of every car will be accurately known. At the close of the accounts thus severally classified, a recapitulation, showing the amount charged each car, should follow.

“Repairs of dining cars.”—Under this head the cost of all *ordinary* renewals and repairs of dining cars and furniture and fixtures appertaining thereto should be included, the same as directed for “Repairs and Renewals of Passenger Cars,” including repairs of the cooking range and utensils, cupboards, tables, etc.

It does not embrace, however, renewals of china, glassware, cutlery, plate, table linen, etc., these items being chargeable to “Dining Car Supplies,” as hereinafter described.

“Dining car service.”—This account includes the wages of the person in charge of dining cars and his assistants, and of the conductors, stewards, waiters, cooks, and other employes in the operating department of the service, including storekeepers.

“Dining car supplies.”—This account includes the cost of meats, fish, vegetables, fruits, flour, groceries, wines, liquors, cigars, fuel for heating and cooking purposes, oil for lighting and lubricating,* crockery, china, glassware, silverware, cutlery,

* Oil used in lighting dining cars and oil, waste and tallow used in lubricating dining cars should be charged to “Train supplies and expenses.” “Dining car supplies” should be charged with its proportion of the foregoing expenses on the basis of the relation that the mileage of dining cars bears to the total mileage of passenger cars.

table linen, napkins, and other supplies furnished the cars. The cost of washing the linen used in the cars, including the aprons, caps and jackets of the cooks and waiters, is also chargeable to this account.

SCRAP.—(OLD MATERIAL—MATERIAL NO LONGER USABLE.)—The care of scrap requires the constant watchfulness of all who are in any manner responsible for it.

Scattered along the road and about the yards of shops, it especially invites the attention of those thievishly inclined. This fact should be kept in mind and every practicable measure taken to reduce the risk to the minimum. This will not be difficult if given due attention and systematically prosecuted.

Not only must the scrap be duly guarded, but it should be carefully assorted and reassorted with a view to discovering any articles that may be used again, or have especial value, and with a view to classifying it in such a manner as to secure the best price, which latter can not be obtained if sold in the aggregate.

In order that scrap may be collected at points most desirable for disposition and sale, it is made the duty of the official who is to sell it to designate such point or points. All orders of this nature, however, should be forwarded through the general storekeeper so that perfect concert of action may be maintained. In the absence of specific instructions in regard to the disposition of scrap, as fast as a carload is obtained it should be forwarded to the general storehouse, where it should be weighed and a return made without delay to the consignor.

Scrap (except old rails) should be collected daily and assorted with a view to determine that which is usable from that which is not.

Scrap should be protected and cared for with the same intelligence and vigilance as the other supplies of a company.

In the breaking up of buildings and other structures, the material that is susceptible of further use (*i. e.*, usable scrap) should be carefully separated from the other and taken into stock and placed with supplies of a like nature.

When the facilities will allow, storekeepers should arrange to collect the scrap in stalls or bins arranged to accommodate the different classes thereof; these receptacles should be convenient for collecting, watching and shipping.

Storekeepers should keep a record book in which the daily accumulation of scrap should be entered, the amount being shown in detail; also the source from whence derived. This will enable proper credit to be given. Particulars of all scrap shipped away should be entered in this book.

Brass scrap requires to be especially guarded; it should be kept under lock and key and when shipped should be similarly treated.

Old engine material should be collected by some person especially designated to perform that duty. He should weigh the same and designate the account to which credit should be given.

In order that due advice may be had of scrap a monthly return* should be made to the general storekeeper of the quantity at the various storehouses, amount disposed of, how disposed of, and such other particulars as he may require. These returns he should forward to the official in charge of scrap after he is through with them.

It is the duty of storekeepers to see that all old material is turned over to them as fast as it accumulates, in order that it may be duly accounted for on the books while the facts are known, and loss or improper use thereof prevented.

The bulk of the scrap accumulates about the shops and along the track. The difficulty of collecting the former is not great as it is restricted to narrow limits, and is, moreover, under the immediate eye of a storekeeper whose business it is to look after such matters. The disposition of old track material is more difficult and the liability to loss greater.†

In shipping scrap it will frequently occur that it will not be convenient for a particular storehouse or division to await the collection of a carload of old material. To prevent cars being only partially loaded, the accumulations of several depots should, if possible under such circumstances, be grouped together. The scrap should be invoiced to some local storekeeper, who should take it up on his books and add it to the scrap that has accumulated about his own storehouse; when there are no facilities for accurately weighing old material thus transferred, the weight may be estimated as in other cases and credit given on the basis of such estimate. In the final disposition of the scrap it should be invoiced to its destination, there to be reweighed and correct returns made to the shipper.

The method of forwarding scrap outlined in the foregoing rule will apply only in cases of partial carloads and is designed to avoid the added cost of shipping small lots, when by bulking the accumulations of two or more storehouses full carloads may be secured.

When practicable, cars on their way to the shops to be repaired should be used in shipping scrap.

The old books, papers and records of a company, when no longer required, will be treated as scrap and disposed of for the benefit of the company; they should be forwarded (under the

* See Form No. 27, Appendix E.

† The following method should be observed when a more convenient and practicable method does not suggest itself: "Each section foreman should have a platform for storing scrap picked up along the road. He will pick up every piece of scrap and put it on the pile at his tool house daily. Any article too large to be placed on his car he will remove on his dump car, or else have a way freight train stop long enough to permit him to load it. In this way the scattered scrap will be taken care of and saved from loss. Each month the roadmaster should start a car on some way freight train for the purpose of gathering up scrap at section foremen's houses and at depots, and ship it to some central point where it may be assorted, and such articles as are fit for use separated from the others; the latter being sent away, while the former is redistributed for use."—*H. G. Burt.*

direction of the proper officer) to the general storekeeper as in other cases and treated in all respects by him the same as other scrap.

Scrap should be credited to the account to which it was charged as material in the first instance. Thus the value of old wheels or trucks removed from cars should be credited to the repair of the class of cars from which taken. If the particular thing from which the scrap accrues is not renewed or replaced (in other words, is abandoned like a track taken up) the value of the scrap should be credited to construction or the thing originally charged. Thus, if a car is broken up and is not replaced, the scrap which accrues therefrom should be credited to rolling stock rather than to repairs. This rule is general in its application.

In reference to old rails and other scrap, it is the duty of the storekeeper to whom it is finally consigned to weigh each shipment and make return thereof to the person forwarding it; also



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to give due credit for the amount. A weekly return should also be made by him to the official who has charge of scrap, giving the particulars, such as the date of receipt, kind of scrap, number of car, who from, quantity, etc.*

No scrap should be sold or exchanged without being weighed in advance, or intelligent and proper measures being taken to secure accurate returns thereof.

A return † should be made monthly to the proper officer of deliveries to rolling mills, specifying the particulars of each shipment. As it is not always possible to ascertain in advance the weight of such scrap, measures should be taken to secure correct weights from the mill.

In reference to the method of bringing scrap upon the books of the company, the most simple and economical plan that suggests itself is for the storekeeper to deduct the value thereof from his charge for the current month for new material disbursed;

* See Form No. 23, Appendix E.

† See Form No. 29, Appendix E.

thus, scrap properly creditable to "repairs of freight cars" should be deducted from the charge for the month to that account, and so on. In this way by reducing his credit the storekeeper will, in effect, be charging himself from month to month with the amount of scrap received by him, as only the net amount charged by him for current expenditures is credited by the accounting officer. In this way the value of the scrap will be brought upon the books without any special entry therefor.

In the event there is nothing chargeable against a particular thing for which there is a credit, an account may still be opened with it, and the amount of the credit duly posted thereunder.

In order to distinguish them quickly all credits should be entered in red ink.

Scrap after being brought upon the books, should be treated in all respects the same as other material. For instance, if it is forwarded to another storehouse it should be invoiced and charged in the same way as new material. Or if it is used for any purpose, it should be charged to the account upon which it is used, the same as if it were new.

The price at which scrap is to be entered on the books should be based on the current market rates for such old material.

When this price is not known, application should be made to the proper official for the rate.

Storekeepers should consult with heads of shops and foremen in charge where scrap accumulates and use every precaution to see that no errors occur in keeping the record; that it is duly brought upon the books; is charged when used, sold or traded, and is invoiced as in other cases when shipped.

The difficulties that attend the care of and accounting for scrap are very great. They are embarrassing to the accountant because of the difficulty of ascertaining the exact quantity and price. It is only after it has reached some central place that the quantity can be accurately determined. Nevertheless, it is intended to make the accounting in connection with scrap as correct and comprehensive as in the case of new material.

DISBURSING MATERIAL.

The duties of storekeepers in disbursing material correspond with those of a bank teller. They are at all times responsible and onerous.

The storekeeper should see: First, that the documents upon which supplies are issued are authentic; second, that the persons to whom they are delivered are authorized to receive them; third, that the amount issued is reasonable and such as the use to which it is to be put requires.

In the event high priced or expensive articles are ordered for any particular purpose where cheaper material would do, the attention of the official in charge should be promptly called to the matter.

The storekeeper exercises an office of trust. His duties are also inquisitorial.

He should take cognizance of everything connected with the handling and use of material; after its delivery by him it is his business to look after its proper use and safety so far as practicable.

He should observe the purposes to which it is put and collect the remnants left in connection with every piece of work, or see that they are duly accounted for.

He should see that goods are accurately weighed or counted when disbursed, and, in order to facilitate easy delivery, they should be arranged with this view.

The quantity of material on hand of each kind should be adequate to the needs; a happy mean should be observed, avoiding extravagance on one hand, or undue risk on the other, by too great a reduction of the supply.

In the event supplies are not promptly furnished upon requests, the fact should be forthwith reported to the proper officer in writing.

The good of the service requires that the storekeeper in disbursing material should exercise the utmost watchfulness and intelligence; that his work should be performed with methodical accuracy and promptness.

He should not only take cognizance at all times of the use to which material is to be put, but consider the probable needs in that direction.

He should be especially watchful and painstaking in those cases where material is sold or exchanged.

He should remember, in such cases, that neglect or omission on his part to make the necessary charges will occasion loss to the extent of such neglect.

He should see that material sold is charged, item by item, as delivered, and that the record thereof is maintained inviolate until finally returned to headquarters under the rules and regulations governing such matters.*

The duties and responsibilities of storekeepers in connection with the disbursement of material can not be adequately defined by explicit rules. Some that occur as being fundamental are given here. Storekeepers should, however, supplement them by such further requirements as the necessities of the service demand.

Storekeepers should charge material to the account upon which it is used, at the time it is used, even if no invoice has been received for it.

* The same rule applies in regard to labor performed for others. Accurate account should be kept of it and charge made to the utmost farthing. It is not generally the policy of railroads to encourage the practice of performing labor at shops or elsewhere for others, nor to sell the material of the company; when exception is made to the rule, the utmost care should be observed to see that the person indebted is duly and properly charged.

When it is necessary to disburse supplies at night or in the absence of the storekeeper, a capable and trustworthy person should be selected by him to perform the duty. But the storekeeper will remain responsible, as in other cases, for the proper performance of the duty.

In order that the disbursement of train and station supplies may be intelligently accomplished, storekeepers should open an account with each person to whom they are furnished, recording therein the dates and quantities of the supplies furnished. This will enable storekeepers to see that such orders are restricted within reasonable limits and that supplies are carefully and economically used. A similar rule should also be observed in connection with stationery, books, blanks, etc. Employes should order train and station supplies from a particular storekeeper; they should not change from one storekeeper to another.

Material delivered for use in the company's foundries should be accounted for by a person especially appointed for the purpose. Material should be issued by such person only upon orders properly signed. A debit and credit account should be kept by storekeepers with each foundry, charging them with the cost of material and labor used and crediting them with the product thereof. An account with a foundry should be of the same general nature as an account with articles in course of manufacture, described elsewhere.

When the nature of the work in paint and upholstery shops renders it necessary that a stock of material should be kept in such places, it will be the duty of the foreman in charge thereof to keep a record of the same, and report daily to the storekeeper the amount disbursed. A debit and credit account should be kept of such material to prevent neglect or improper use.

In disbursing material, that which is oldest or most likely to deteriorate should be used first.

In shipping material it is desirable to economize as much as possible in the use of cars. Thus, when material is shipped in small quantities it should, if practicable, be forwarded as way freight. Under ordinary circumstances material should be taken to the station and way billed the same as other freight. If shipped in carloads it may be loaded directly at the storehouse, if facilities permit. Full particulars should in every case be given agents for billing.

Care should be exercised in loading material to render its unloading and inspection as easy as practicable.

A memorandum or order* for use of subordinates should be used in preparing material for shipment. It is convenient to handle, and specifies the articles, date, destination, and other necessary details.

All material should be plainly marked or tagged with the name and address of the person to whom shipped. Should way

* See Form No. 30, Appendix E.

bills become lost or separated from the cars, the mark or tag will identify the material and secure its being sent forward. The careful marking or tagging of material is especially necessary in cars going to different points, where the material is liable to be misappropriated. If it is impracticable to tag each article, a tag should be placed upon one of the articles, and should show the number of articles in the lot.

All material requiring it should be weighed, and the weight entered by the person performing the work, on the request or



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order opposite the name of the article; the number of the car in which material is shipped should also be inserted thereon, and a distinguishing mark placed opposite the name of each article as it is loaded.

Cars containing company's material should be sealed and plainly marked by card, with their destination.

In disbursing oil especial care should be exercised to see that it is not extravagantly used; if for use on a locomotive, the amount delivered should not generally exceed the requirements

of a round trip; if for use at a station, a month's supply should be the maximum amount furnished.

Local supply depots for lubricating cars, supplying trains, etc., should be limited to current needs.

Storekeepers are required to see that the supply of oil is restricted to the minimum, without transgressing the bounds of safety, so that by frequent and limited disbursement its use may be carefully scrutinized.

To avoid the additional cost of shipping small lots of scrap, and in order to secure full carloads for shipment, the accumulations of several storehouses should be grouped together by arrangement between the storekeepers as directed elsewhere; in furtherance of this, scrap should be invoiced to a designated storekeeper, who should take it up on his books and add thereto such scrap as has accumulated about his own storehouse.

Scrap should if possible be weighed before shipment; it should also be reweighed by the receiver, and, if necessary, the invoice corrected by the latter.

For convenience in disbursing material, the blank orders of foremen and others on storekeepers should be printed and bound in small books convenient for the pocket.

Orders on storekeepers should in every case specify the kind and quantity of material and the purpose for which it is needed.

Orders for tools should be approved by the official superior to the person making the order.

In exchanging old tools for new an order should be procured as in other cases. This is necessary as a voucher for the storekeeper.*

No material should be disbursed by storekeepers except upon an order properly signed.

Orders should be scrutinized to see that they are not excessive, and in the event they are thought to be so the matter should be referred to the proper official.

When an order has been filled the price of the article should be inserted thereon, and the order used in writing up the accounts.

Orders should be carefully filed for preservation and future use.

CLASSIFYING EXPENDITURES OF MATERIAL—DISTRIBUTION OF MATERIAL.—The charging of material to the thing upon which it is used is of the utmost importance. The great amount of material used and the diversity of things upon which it is expended, render a systematic classification of expenditures necessary, and unless this classification is governed by minute rules, the purpose of an expenditure can only be surmised and all statements and accounts will be rendered practically valueless for purposes of comparison.

* For additional rules and regulations governing the disbursement of tools, brasses and articles of common use, see reference thereto.

This last is of the greatest importance, as comparative statements form, in a measure, the basis of all reliable inquiry and investigation by railroads.

The classification, moreover, should be in sufficient detail to enable a management to fix responsibility upon those immediately responsible and afford at the same time an accurate and intelligent history of a company's affairs.

It should be so minute that the cost of a thing and the relative economy exercised may be analyzed and judged.

Furthermore, such subdivisions should be made of standard accounts as the enlightenment of officials and employes require.

In opening accounts, the nature of the disbursement should be accurately indicated thereby; also the place or location of the expenditure. The details throughout should be so explicit that they have only to be studied in order that the scope and purpose of the expenditure may be accurately understood.

So far as the exigencies of accounts will permit, without undue expense, it is designed that everything that enters into the cost of a thing should be charged thereto. Thus, the cost of handling material, the outlay for the construction or repair of a building, platform, yard, fence, bridge, culvert, engine or car should so far as practicable be charged thereto. When, however, the expense of accounting is greatly increased by too minute a subdivision of expenses, and the value of the information thus obtained is not commensurate with the outlay, it should not be attempted.

Accounts should in every case be based on their value as a source of information and their necessity as a check; they are justifiable only so far as they are necessary; anything outside of this is wasteful, extravagant and unjustifiable.*

In addition to the expenditures of a company for operating, construction, manufacturing and similar outlays, more or less work is performed for others for which a company is entitled to receive pay. Accounts are required to be kept of all such expenditures so that they may be brought to the notice of the accounting and financial officers of a company, in order that the same may be duly and clearly recorded and the amount collected.

In order that all these things may be successfully accomplished without confusion or failure, it is of the greatest importance that those who have the handling of and accounting for material should be familiar with the various classifications of a com-

* It is the design of the system of accounts embodied herein, as explained elsewhere, to reduce the expense of accounting to the minimum; to make the primary clerical work necessary to be expended in compiling returns for labor and material answer the purposes of all the various offices, departments and branches of the service interested therein; to avoid duplication of clerical labor in the different offices and departments through which information flows; to afford the maximum amount of information at the minimum cost; to reduce the cost of accounting, in fact, to the last cent compatible with accuracy and permanency of record, and such classification of accounts as the interests of a company and the necessities of managers require.

pany, and the machinery by which they are carried into effect; also the general and specific objects that such classifications and accounts are designed to accomplish. This requires that they should not only study the mechanical appliances but the theory and principles that the blank forms are intended to carry out. This study will enable them to perform their work intelligently and will sharpen their appreciation of its needs, so that better knowledge of the conduct of accounts and greater efficiency therein will grow out of it.

In order to classify the expenses systematically and preserve a clear and permanent record of the same, distribution books are provided.* Accounts are to be opened in these for each expenditure having a separate identity in the classified list, such accounts being entered in their due order and sequence, care being taken in every case to use the designation prescribed by the rules governing the same.

In writing up the accounts, the record throughout should be so clear an exposition of the subject that it may be fully understood and analyzed without correspondence or further reference to the person making it. Thus, the items of each account should be given, including description of material disbursed, quantity or weight, price and amount for each separately; also the total cost or aggregate of all the items.

In giving the name of an account, especial care should be taken to make it so explicit and clear that it may be easily identified, and details of cost easily collected from the various books in which it is mentioned.

In classifying expenditures it should be understood that the work is not to be performed at random in any instance, but according to preconceived rules and regulations; if the disposition of an expense is not known or not clearly indicated by an analogous account, information should be asked of the accounting officer; this will not only insure uniformity, but will also enable the company to supply omissions or correct inaccuracies in its classification.

In the majority of cases material and labor disbursed are chargeable to a particular thing. It will frequently occur, however, that the disbursement must be distributed amongst several accounts; this should be done according to the benefit derived. This division will be necessary in the case of the wages of timekeepers, storekeepers and their assistants, laborers employed upon general work about shops and others. Common expenditures of this nature require to be apportioned according to the specific benefit they confer. Thus, if for a given amount of labor or material a particular account derives benefit therefrom equal to sixty per cent. of the cost of such labor or material and another account forty per cent., the apportionment between them

* These distribution books are written up by the person who disburses the material or in the office of the official to whom returns thereof are sent, as specifically directed in each case.

should be on that basis. When the exact degree of benefit can not be ascertained, the division should be such as is practicable and in harmony with the facts.* Specific reference may be made here to a few particular supplies. They will illustrate the whole. Thus, for Blossburg and furnace coal and coke used at shops for various accounts, an estimate should be made of the amount thus



Carriage in Nancy.

used per hour by each furnace, forge or steam hammer and the expenditure debited on such basis to the work in progress; when coal is used by a particular person it should, if possible, be pro-

* Reference is not made here to expenditures to be divided between two or more divisions of a road, but to disbursements that affect two or more operating or construction accounts, which require to be apportioned among all the accounts that have derived benefit therefrom.

rated among the accounts upon which he is engaged upon the basis of the time occupied by him.*

In attempting to apportion common expenses to particular engines, cars and other accounts, the most equitable basis, in the absence of definite instruction, should be used.

The foregoing will suffice in this place. The subject is so extended that it is impossible to do more than generalize. Expenditures are so variable that they can not be named in detail. Provision should be made based on the peculiar exigencies of the case. Only general principles can be laid down for the guidance of those who have charge of matters of this kind. Good sense, fairness and practicability must govern.

GENERAL DISTRIBUTION OF MATERIAL BOOK.†—This is a history which the storekeeper returns to the accounting officer of the material received and disbursed by him during the month.

It is an account in detail written up on the ground by the person who receives, cares for and disburses the material.

It is at once simple, comprehensive and inexpensive.

It contains all the details, under specific heads, of material received and shipped away; also details, under classified heads, of material expended, including that used in the manufacture of articles; also accounts with those to whom material is sold or traded. Finally, all the accounts are summarized and recapitulated at the close, so that they may be scanned at a glance, and the aggregates posted upon the general books at the headquarters of a company. ‡

The questions attending the economical and proper use of material are of the greatest importance, and in order that they may be understood and intelligently studied, accounts are so classified as to afford an accurate and intelligent digest of disbursements in the aggregate and in detail. The distribution of material book is intended to facilitate this; it is written up from day to day as each expenditure occurs.

It is intended to embrace a faithful record of material received, sold, shipped, manufactured and disbursed.

It is required to be sent to the accounting officer by each storekeeper at the time specified after the close of the month. A distribution book is also returned by the purchasing agent, embracing all material purchased by him and material invoiced by

* A debit and credit account should be kept at shops with coal and coke in order the more accurately to determine the disposition thereof.

† See Form No. 31, Appendix E. The word "distribution" will be understood to mean the charging of an outlay to the thing upon which it was expended. Thus, a distribution book is a book in which charges are made against various things according to the facts.

‡ The accounts on this return are written up on loose blanks by storekeepers. At the close of the month these blanks are arranged in the order prescribed, and are then bound together by a simple device, thus constituting a book. An impression is taken of each sheet by the storekeeper before binding the sheets together.

him to storekeepers; another return is rendered, being a summarization of vouchers in favor of individuals, and so on.

In order that the method of writing up the distribution of material book shall be uniform, and that clearness shall be observed and the utmost economy exercised consistent therewith, accounts should be opened in it in the order hereafter designated. They are intended to come in their natural order, and it is designed that the history of each should be so clear and minute as to enable the officials of a company to understand fully each account without referring back to the person writing the book; this will not be difficult if care is displayed.

The accompanying rules and regulations, it is to be observed, are not intended to be exhaustive, but like others contained in this book, are designed rather to stimulate the ingenuity and skill of those interested than satisfy them with their completeness.

So far as rules are laid down they should be observed, but they are intended to be supplemented by the minute appliances and devices that occur in the experience of each storekeeper, and that help to make his work simple, clear and cheap.

In reference to details, the date of the receipt, shipment or use of material is in every case to be inserted in the body of the account.

Under the head of "material received" the date of each invoice is to be given; also the name of the firm or storehouse from which the material was received.

In entering invoices the amount thereof should be given in the first money column; only the aggregate amount of all invoices should be carried into the second money column.

Accounts should be opened in the order named.

"Material received from purchasing agent."*—Under this head should be entered in detail all invoices of material purchased, charged to the storekeeper rendering the book.

"Material received from storehouses."—Under this head should be entered all invoices of material received from the storehouses of a company, an account being opened with each storehouse from which material has been received.

"Material forwarded to storehouses."—Under this head should be entered all invoices of material forwarded to storehouses of a company, an account being opened with each storehouse to which material has been forwarded.

Precautions will be adopted to make the account of material reported forwarded to any given storehouse agree exactly with the amount of material received by such storehouse. To insure this the storekeeper who forwards the material should notify the receiving storekeeper on the evening of the twenty-fifth day of the month, of the amount of material invoiced and charged to him. If this is done abundance of time will be given for re-ex-

*Or the official who makes purchases.

aming and correcting the books before they are sent to headquarters in the event it is found that the accounts of the forwarding and receiving storekeepers do not agree.

"Vouchers chargeable to storekeepers"—All vouchers that emanate from superintendents, civil engineers, storekeepers and others who keep a distribution of material book, they should enter upon such book under this head. The amount of the vouchers thus entered are a debit to the material account of the storekeeper returning the distribution of material book and the total amount of same should be carried to the final recapitulation under the head of "Material—Vouchers" in red ink. All vouchers entered as above should be apportioned on the distribution book to the accounts to which they belong.* All vouchers entered on the distribution book should be stamped by the storekeeper. This stamp† is an evidence to the auditing officer that the storekeeper has entered the voucher, and is his authority for charging the same to him under the head of "Material—Vouchers," thus offsetting the credit given that account through the distribution book.

Following the foregoing, the accounts upon which material has been disbursed should be arranged in the distribution of material book in their order.‡

Under the operating or construction account to which a disbursement is chargeable, a sub-account should be opened for each bridge, culvert, viaduct, building, dock, wharf, ferry boat, locomotive, stock yard or dining car embodied in it.

"Various persons accounts."—A separate account should be opened under this head with each individual, firm or corporation against whom a charge has been incurred. The amounts thus entered should be deducted from the accounts entitled to credit therefor. The amount charged to various persons account should, in conclusion, be carried to the final recapitulation under the head of "Material—Various persons" as a debit, in black ink. Each bill entered should be stamped by the storekeeper; this stamp is an authorization to the auditing officer to credit the storekeeper under the head of "Material—Various persons."

* Thus, if to pay for a cow killed, the amount would be entered under the head of "Vouchers chargeable to storekeepers;" also under the head of "Damage to property and cattle."

†

ENTERED IN July, 18 Storekeeper Western Div.
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11. Operating expense accounts in their order. 2. Rebuilding accounts, the different classes of structures of this kind being entered in the order in which they are named in the list of operating expenses. 3. Construction accounts in their order. 4. Material manufactured by a company. 5. Coal. 6. Wood. 7. Various persons accounts. 8. Miscellaneous accounts. 9. Recapitulation of material received and forwarded. 10. Final recapitulation.

In order to distinguish credit entries at a glance, they should be made in red ink; if deductible from any account they should be made from the total thereof, only the balance being carried forward into the recapitulation.

In case a credit exceeds the debit the credit should be carried into the recapitulation in red ink and deducted therefrom.

The amount entered as the total footings of the recapitulation will be the difference between the debits and the credits, and constitutes a net credit or debit, as the case may be, to the material account of the storekeeper returning the distribution book.



Carriage in Persia.

OIL, WASTE AND TALLOW.—Material distributed to foremen to be used in lubricating cars, locomotives and machinery, should, as a rule, be charged to the proper expense account at the time it is issued, as it is impossible to keep track of it thereafter.

In order to facilitate the apportionment of oil, waste and tallow to the several locomotives using the same, accounts will be kept with that view.

Orders for oil, waste and tallow should be entered daily on what is known as a "Daily record of oil, waste and tallow delivered to locomotives."*

For convenience in accounting, the numbers of engines should be entered on this form in consecutive order.

*See Form No. 32, Appendix E.

In the case of oil, waste and tallow delivered to locomotives the actual amount used by each engine is charged to it.

This is not practicable in the case of waste delivered to wipers; in order to determine this it is assumed that the amount consumed by each locomotive bears the same proportion to the total cost of waste used that the number of times each engine is wiped bears to the total number of times all locomotives are wiped.* In order to obtain this information, a return should be made to the storekeeper of the number of engines wiped daily.

At the end of the month the waste used by wipers should be apportioned to the several engines on the basis mentioned. The record should then be footed and the totals carried to a monthly statement which is a recapitulation of the daily record of oil, waste and tallow delivered to locomotives.† The footings of this last named statement should be carried to the distribution of material book and there treated as other material.

Oil and waste used in repairing locomotives is charged directly to such repairs.

After the storekeeper is through with the daily record and monthly statement of oil, waste and tallow delivered to locomotives, they are used in compiling the locomotive report.

STATIONERY AND PRINTING AND STATION SUPPLIES.—The multitudinous number of items embraced under these heads, many of which amount only to the fractional part of a cent (when charged in detail, as the consumption occurs), together with the great expense that would attend any attempt to charge each item as consumed, renders it advisable to adopt a different method of accounting from that in force for other material.

The cheapest and simplest method that suggests itself is to charge disbursements of this kind as they are audited for payment directly to the item of expense that they affect, and at the end of the year charge or credit such account as the inventory (for this class of material) shows the balance to be over or under the amount on hand at the commencement of the year. This course should accordingly be followed except in the case of stationery forwarded to shops, which should be invoiced the same as other material to the storekeeper thereof and taken up by him on his books and distributed the same as other material.

The cost of oil for lights at stations, also miscellaneous supplies sent them, should be charged to the account upon which they are to be expended at the time the material is forwarded by the storekeeper.

The petty supplies taken out of store for maintenance and operation of telegraph should also be charged to the account

* This is, of course, a mere supposition.

† See Form No 33, Appendix E.

upon which expended in the month in which such supplies are withdrawn from store.*

ARTICLES MANUFACTURED BY A COMPANY.—An account is required to be opened upon the record book at storehouses with articles manufactured at the shop connected therewith.

An account should be opened with each article or group of articles; it should be charged with all labor, material and expense incurred so that the actual cost may be known.

In order that the company may not be deceived in regard to its ability to manufacture cheaply, the utmost care should be taken to see that every species of material or scrap that enters into the cost of a thing, every expense incurred on account of it, including transportation, handling, etc., also expenses for superintendence, wages of storekeepers, timekeepers, laborers, etc., are properly computed and charged.

If machinery and tools used in the manufacture of articles are bought for such purpose, and are not used for any other purpose, then the wear and tear of such machinery and tools should be added to the cost of the article manufactured; when, however, the manufacture of an article is incidental merely (to economize time and the use of machinery), the wear and tear of the latter will be charged as in other cases.

As directed, a separate account should be opened with each article or lot manufactured. At the end of the month these amounts should be entered in detail upon the distribution of material book under the general head of "articles manufactured by the company." The storekeeper thus making return should not be credited by the accounting officer with the amount, as he is in the case of other expenditures; the effect would be to add the amount, whatever it might be, to the debit balance of the storekeeper. He should therefore take up the articles manufactured into his stock when completed, the same as articles purchased, and when using or shipping the same be particular to see that the full cost is charged, as in other cases.

The number of accounts that will arise in connection with the manufacture of material can not be told. More or less work of this nature will be unavoidable, as in the case of material purchased by a company and requiring to be adapted to its wants before being used, such as fitting wheels to axles, etc. In the latter case the expenses incurred in adapting the article to the use to which it is to be put should be charged as a part of the cost thereof.

The following details should be observed in accounting for material manufactured by a company:

Requests for the manufacture of articles should be made by or through the storekeeper.

*There is no objection to treating stationery, lights at stations and petty station supplies the same as other material, *i. e.*, charge it to operating expenses, only when actually consumed, except the cost of accounting such method would involve.

The request should be made in quadruplex form.

Two copies should be sent to the head of the shop; one of these he should retain, the other he should approve and deliver to the foreman who has charge of the work. The other two copies should be used by the material clerk and in the storekeeper's office, respectively.

A lot number should be assigned to each article or group of articles manufactured.

When the article is manufactured, the head of the shop should notify the storekeeper that it is at his disposal. Any surplus material that may have been charged to the account should be entered in detail on this notice.

The order to manufacture should have the lot number inserted.

All expenditures should be charged to this number; this will save much clerical work.

When work is completed, the order given to the foreman to perform the same should be returned.

The date of the return of this order should be stamped thereon.

A proper charge should be made in every case for wages of storekeepers, timekeepers, fuel, etc., as already explained.

A debit and credit account should be opened with articles in course of manufacture and an inventory taken thereof each month, and the account adjusted thereto.

Contrary to the rule requiring articles in course of manufacture to be embraced on the distribution of material book under the head of "articles manufactured by the company," an exception should be made in the case of equipment; a separate account should be opened with each locomotive, car or group of cars constructed or rebuilt; also with each building or structure that is being constructed or rebuilt. If the account is an operating expense it should be transferred at the close of the month to the general account covered by it, as already directed elsewhere; if it represents a construction item, it should be so designated.

The class of material to be grouped under the general head of "articles manufactured by the company" on the distribution of material book is intended to embrace portable articles, pieces of machinery, castings and implements for use about shops, stations, trains, etc., in contradistinction to locomotives, cars, buildings, bridges and kindred structures.

TRACK MATERIAL.—(MATERIAL AND LABOR.)—The conditions under which roadway and track material is stored and disbursed differ so greatly from other disbursements that different forms are required. In accounting for material at storehouses the returns are made by practiced accountants, while in the disbursement of track labor and material the returns are made by track foremen. The meager facilities that the latter possess render it necessary to simplify the methods employed as much as possible and reduce the labor connected therewith to the lowest possible point.

Each track foreman is required to make return of the labor he employs and the material he receives and disburses.

It is designed that these returns should be sent to some central office on each line or division (say, the superintendent's) to be there examined and aggregated.

The person who thus groups these accounts is termed the storekeeper.

He is charged with all material that he makes return of, whether for track or for bridges and buildings, and receives credit for all that he disburses.

He is expected to make the same returns as other storekeepers.



Carriage in Alexandria.

He also uses the same form of distribution book for labor and material that is used by storekeepers at shops.

The books used by track foremen, from which the storekeeper compiles his returns, are very simple; the labor book, as explained elsewhere, contemplates a careful classification, and is so arranged as to reduce the clerical work to the minimum and yet afford all the information that is necessary to a full and complete understanding of track work.

The distribution of material book used by track foremen is also very simple.* The articles are printed in the book so that all the foreman has to do is to insert the quantity received, used

* See Appendix D.

and on hand opposite the name. The name of the account to which material is chargeable is also provided for, so that it does not need to be written in; all that it is necessary for him to do is to enter the amount of material consumed, under the proper head.

In the event, however, articles are expended upon objects outside of the track department, it is necessary to formally insert the name of the account.

The distribution of material book used by track foremen, like the distribution book for track labor, contains all the directions necessary to be observed; it provides specifically for material received, material expended on repairs of roadway and track and for rails and ties; also for construction of sidings, for material shipped away, and for material and tools on hand at the end of the month. It is complete and embraces all the accounts with which foremen are likely to have anything to do.

In order to sum up the account of track material in the hands of section foremen, it is necessary that the storekeeper in charge should keep a record book, in which he should enter the material received upon the division and the number of the section to which forwarded. The purpose of this book is the same as the record book kept at the storehouse; at the close of the month it should be compared with the details of material received by the various section foremen and in this way verified. From it the storekeeper should be able to secure the prices needed. In further explanation of this book it may be said that its purpose is to enable the official in charge to keep himself advised of all material he receives and to whom it is shipped, the quantities of each kind of material on hand and where located, and the quantities that are used from month to month, and upon what used. He thus possesses all the information necessary to enable him to exercise a wise supervision over these disbursements, and to curtail them so far as accurate knowledge of accounts permits.

Material shipped to a division for use in the track should be invoiced to the storekeeper of such division. Any expense incurred in repairing track tools for a division should also be invoiced to the storekeeper thereof. Nothing should be charged to track expenses except through the storekeepers in charge thereof.

FUEL.—The necessity of exercising the utmost intelligence and watchfulness in the care of the general supplies of a road to prevent their waste or misappropriation, suggests itself with redoubled force in connection with fuel.

The universal use of this article makes its proper protection exceedingly difficult. The theft of fuel from a particular station or train may not be great, but the aggregate on the road thus filched is enormous unless the most painstaking and intelligent effort is made at all times to prevent it and to punish those who practice it.

The duties of the storekeeper in this direction are arduous and at all times unsatisfactory because of the difficulty of enforcing necessary safeguards without incurring expense out of proportion, frequently, to the object attained.

These difficulties attending the care of fuel suggest the necessity of isolating it as far as possible and of preventing access to it of all except those who use it for the company; this is rendered less difficult than formerly on account of the appliances that have been introduced for storing and handling supplies of this nature, but until fuel (while in process of transportation and in store) can be placed under lock and key, the danger of its being stolen will be constant, and will need to be met with watchfulness on the part of those who have it in charge.

Fuel is the most difficult of all material to care for, and the magnitude of the sum involved (about fourteen per cent. of the expenses of a company) demands that the accounting connected therewith should be characterized by such intelligent and far-reaching methods as will secure the most satisfactory results.

The deterioration in quality of both wood and coal is continuous from the time it comes into the possession of a company until used. The extent of this deterioration depends largely on the manner in which it is stored; if exposed to the influence of the weather, deterioration will be marked and rapid. This fact should impress upon those who have charge of fuel the importance of keeping the supply on hand as small as is consistent with safety and of exercising the greatest care possible in storing.

Not only should care be exercised to prevent misappropriation of fuel and its waste by improper care or unnecessary exposure, but every practicable device consistent with good business usage should be at all times enforced to secure the economical use thereof.

In furtherance of this purpose, careful comparisons should be made of the fuel used on different locomotives for the same month and for the same line and for different lines. Comparisons should also be made of the consumption of the same locomotive for different months. Similar comparisons should be made of fuel used at stations, in cars, and elsewhere; wherever, in fact, conditions are similar or the zeal of employes is likely to be increased thereby.

The following specific rules and regulations suggest themselves in connection with fuel. They do not cover the ground in detail, and are intended to be supplemented by those in charge with such further rules and regulations as the circumstances in each case require.

Two accounts should be kept by the company for fuel: one for coal and one for wood; charges should be made in accordance therewith.

Fuel stored at roundhouses and shops for use on locomotives and cars should be kept in the fuel account and, so far as the accounting is concerned, should be treated in the same manner as

coal stored for like purposes at stations along the line; fuel at shops, however, for stationary engines, heating purposes, blacksmiths, tinsmiths, boilermakers and for similar purposes, should be taken up on the stock book and distribution of material book, and treated the same as material, and so embodied in the returns.

Fuel should be charged with the first cost, the cost of transportation to the point of delivery on the line of a company (when there is any charge on such account), the cost of loading, unloading into store, arranging, inspecting and watching; the cost of sawing and piling wood; and, finally, the expense incurred in preventing and putting out fires.

Fuel brought forward from a preceding year, and appearing in the inventory for such year, should be charged, when expended, like other material, at the price at which it appears in such inventory.

The cost of unloading fuel into chutes (for transfer to the engine tender) should, in the absence of instructions, be charged directly to fuel for locomotives.

The following rules in reference to coal accounts are necessary:



Woman Pulling Coal to Mouth of Pit, England, A. D. 1800.

Parties from whom coal is purchased should render the official who purchases daily invoices of deliveries, showing date, car number, actual weight, where delivered, and the cost for each car of coal.

These invoices or copies thereof should be sent daily by the purchasing agent to the general storekeeper or official who keeps the fuel account, to be by him compared with the statements of receipts rendered by agents: afterward they should be entered in the fuel received book, signed and returned to the purchasing agent.

A statement should be required at the end of every month from all who furnish coal; it should give the particulars embraced in the daily reports, and should include all coal delivered or shipped during the month; also shipments brought forward from the preceding month, not accounted for in such month. The bill for the coal should accompany this report.

Coal not actually received on the evening of the last day of the month should be carried forward into the succeeding month's bill.

In way billing fuel, the quantity in tons or cords should in all cases be inserted so as to afford everyone interested the necessary data for making returns thereof and otherwise keeping the accounts correctly.

For the purpose of keeping the officer in charge of fuel advised of the supply on hand, etc., agents at stations where contractors make their delivery should report daily the disposition made of the coal, *i. e.*, the points to which shipped, quantity, etc.

On the last day of each month agents who receive coal directly from contractors should make an itemized return* of all coal received during the month. It should specify the date of receipt, name of contractor delivering, number of car, and amount of advanced charges, if any. If the coal is weighed by the agent (and it should be where there are track scales) the weight as ascertained by him should be inserted; if not weighed by him, the weight as advised should be reported. The return should also specify the name of the station to which each car was forwarded.

Agents at stations where coal is kept in store for future use or present distribution should make a detailed return* each month of all coal received by them. It should specify the date of receipt, number of car, weight of coal and where from.

The monthly accounts returned by contractors should be verified by careful comparison with the monthly returns made by agents. The correctness of these returns should in turn be confirmed by the monthly returns from other agents of coal received by them, by the amount of coal consumed at the point of delivery, and, finally, by the balance on hand at the point of delivery less the amount brought forward from the previous account.

The following rules and regulations should be observed in regard to wood in the absence of instructions to the contrary:

Cord wood delivered to a company should be piled in conformity with its official specifications.

After inspection, the number and length of the rank (pile) should be plainly marked with paint upon each end of the tier, by the inspector.

The ends of several sticks in the rank (say three or four to each cord) should also be plainly marked with paint with the number of the rank.

Ranks should be numbered consecutively, commencing with No. 1 for each station, and so on to the next station.

At the time of inspection the inspector should note accurately in his record book: First, the name and address of the person delivering the wood; second, the exact location of the wood, *i. e.*, the place, which side of the track, and how far from the track; third, the number of the rank; fourth, the length, height and width of the rank, also the dockage, if any; fifth, the number of cords of wood in the rank; sixth, the kind of wood, as hard or soft, specifying it by name in each instance.

Fuel inspectors should make a return† to the purchasing agent of wood measured by them; a duplicate of this should be sent to the general storekeeper, or official who keeps the fuel

* See Form No. 34, Appendix E.

† See Form No. 35, Appendix E.

accounts, to be used by him in verifying invoices for wood purchased, and in compiling the accounts. The fact that payment for wood is based upon these returns should ensure the utmost care upon the part of inspectors.

The specifications under which wood is purchased should be critically complied with.

If a rank is not of full height, or not cut the full length, or not compactly piled as required by specifications, inspectors should take cognizance of such discrepancies, returning only the actual amount.

If the size, manufacture or quality of the wood is not fully up to the requirements, or if piled with intention to defraud the company, the owner should be compelled to assort the wood and repile it.

Agents at stations where wood is inspected should be made accountable for it after inspection. They should, therefore, be on hand at the time of inspection to verify it, generally, as to quantity, etc.

An account should be opened by the general storekeeper with each rank, in the form and manner described above for the inspector's report.

A fuel record book should be kept in which the reports of inspectors should be minutely transcribed before being placed on file. In this way clearness and continuity of statement are assured.

When a rank or part of a rank is transferred, a report* of the removal should forthwith be made to the general storekeeper by the person in charge. This report should specify the date of its removal, the number of the rank, or if only moved in part, what particular part was taken. It should also show the number of cords and the point to which shipped; these should agree with the way billing.

The number of cords and the place of delivery should also be shown upon the monthly fuel return.†

Agents should embody in their fuel accounts all fuel received at their stations, reporting the same in the manner provided when used, shipped, or, if wood, when sawed.

To be able to render a correct account of wood sawed, it is of the utmost importance that a faithful account should be kept of the quantity of unsawed wood located at the different points on the line of a road.

Agents are, therefore, required to make a special report each month, of the quantity of wood sawed at their several stations.

When the wood that is sawed is taken from the ranks, as originally inspected, the number of each rank and the amount sawed should be reported; when the whole rank is sawed in the same month the compensation of the wood Sawyer should be based on the original measurement of the inspector. When the

* See Form No. 36, Appendix E.

† See Form No. 37, Appendix E.

wood is not arranged in ranks (as inspected) but is piled indiscriminately (as unloaded by the wood train gang) agents should make an approximate report of the quantity sawed. When the sawing is completed, if the whole amount on hand has been sawed, the amount that has been reported sawed should be deducted from the total amount on hand at the station; the balance will be the amount that should be embraced in the final report for wood sawed.



Carriage in Russia.

The actual amount of wood sawed should always be reported when the same can be ascertained.

Estimates should be made only for such quantities as can not be definitely known until the completion of the work.

Seasonable notice should be given whenever wood located between stations is to be sawed, so that an agent or inspector may be on the ground to make a report of the quantity sawed, etc.

A voucher should be made by the general storekeeper (to be verified by the purchasing agent) in favor of wood sawyers for

wood sawed by them; but the same should conform to the amount as shown by the record kept in the office of the former. Errors and inconsistencies should in every case be located and corrected before vouchers are passed for payment.

Where wood is located on the line at a point remote from stations it should be charged to the station most convenient to it, and the agent at that point should take it into his accounts and make returns for it when it is disbursed or moved away.

FUEL RETURNS.—Peculiar circumstances arise in connection with the accounting for fuel not noticeable in connection with other material. The latter is stored at a few central points under the charge of storekeepers who attend to its receipt, care and disbursement, and who make return of the same as described elsewhere. Their facilities for performing the work are easy, convenient and simple. The keeping of the fuel accounts, on the other hand, is performed by men, in most instances, who are occupied largely with other duties. The result is that the same thoroughness and accuracy is not observed in the one case as in the other. It is also a fact, moreover, that fuel can not be measured with the same accuracy as other material; this renders it still more difficult to secure satisfactory accounting.

The blank forms for reporting fuel are adapted to the particular circumstances under which such accounts are rendered, especial effort being directed to their simplification; to make the work as light as possible and at the same time afford an accurate digest of fuel received and disbursed. It is not necessary to enter into any description here of the particular accounts that are to be opened of fuel disbursed on the general fuel report. They should harmonize with the list of operating and construction and other necessary accounts; in other words, the returns for fuel disbursed should be apportioned under proper headings, so that the recipient of these returns may from them charge the accounts upon which the fuel was expended, commencing with the operating accounts in their order and following on to the end.

It is designed that the general fuel report* should give the source from which fuel is received and the quantities thereof. This will require to be compared afterward by those who audit the fuel accounts, with the amount reported as forwarded to such place. In the event they do not agree (and in many instances they will not, because of the use of fuel en route and for other reasons) the occasion of the difference should be investigated and adjustments made in accordance with the circumstances of each case. On the credit or disbursement side of the general fuel report a statement of the amount of fuel disbursed is required to be entered. In order to do this with accuracy, the amount taken should be ascertained; this will involve the careful auditing of tickets and receipts taken from engineers and others for fuel

* See Form No. 37, Appendix E.

delivered them; the fuel taken for use on trains and elsewhere should in like manner be ascertained from the receipts or other evidences of delivery. Each account upon which fuel is consumed should be stated. Afterward the amount shipped away, points to which shipped, quantity, etc., should be given.

The general fuel report is intended to afford a history of the fuel received and expended each month. The principle of the report is the same as that of the distribution of material book, except that it is simpler and of different form, the aggregate amount disbursed of each kind being given instead of each item.

As directed elsewhere, fuel in store at shops for use on stationary engines, for lighting, heating, blacksmithing, tin-smithing, boilermaking and kindred purposes, is to be charged directly to material proper (*i. e.*, to the storekeeper in whose charge it may happen to be), and is to be taken up on his distribution of material book. It is treated thereafter as material.

Fuel held in store at roundhouses and shops for general use on locomotives, cars and other purposes in connection with the operation of a road, apart from shops and storehouses, is to be embodied in the general report* for fuel.

A precise subdivision of accounts of fuel, as between fuel and material, is not a matter of special importance, so that due account of receipts and disbursements is rendered.

In order to facilitate the keeping of an accurate account of fuel consumed by locomotives, and to simplify the work as much as possible, tickets of different denominations are supplied to enginemen.† In order to facilitate the care of tickets, each engine should be supplied with a box to hold the same.

When fuel is delivered to enginemen it should be in quantities represented by these tickets or multiples thereof, and it is the duty of engineers to return to the person thus delivering fuel a ticket for the amount. The number of the locomotive should be printed upon the ticket, so that it may be identified. These tickets may be used over and over again from month to month, but under no circumstances is fuel to be taken by an engineer without leaving a ticket or receipt therefor at the time of the delivery.

It is the duty of the person delivering fuel to see that the ticket or receipt received corresponds with the quantity delivered. Any attempt to procure fuel without the delivery of a ticket or receipt should be forthwith reported to the proper officer.

In order that there may be no excuse for non delivery of tickets (in return for fuel delivered), it is made the duty of the storekeeper where the engine is housed to see that each engine is kept supplied with necessary tickets and that the tickets of different locomotives are not mixed.

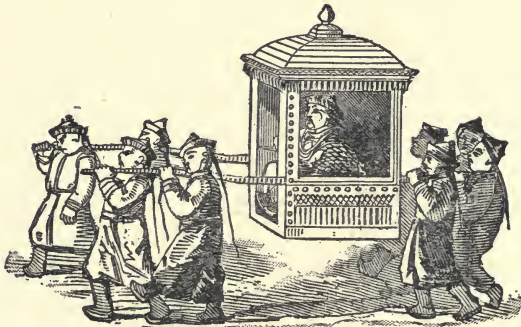
For fuel disbursed for other purposes, a receipt should be taken in the absence of tickets.

* See Form No. 37, Appendix E.

† See Form No. 38, Appendix E.

As fast as tickets are collected for fuel delivered they should be entered on the daily record book of fuel delivered to locomotives. This record should show the amount of fuel issued to each locomotive each day. After the tickets are recorded, they should be locked up in a box to be provided for that purpose.*

At the end of the month, the daily record book of fuel delivered to locomotives should be footed and the total quantity for each locomotive and for the aggregate ascertained. The aggregate amount of fuel delivered to locomotives, also the amount of fuel delivered for other purposes, should be entered on the general fuel report, which, when complete, should be forwarded, with the fuel receipts and tickets for fuel delivered for other purposes, to the official in charge of fuel accounts. The daily record book of fuel delivered to locomotives, also the collateral tickets, should be



Carriage in Hong Kong.

forwarded, in a box provided for the purpose, to the storekeeper designated to summarize the locomotive fuel disbursements of the division; this box should be securely locked.

Upon receipt of the book and the tickets and receipts, it is the duty of the storekeeper to promptly audit the account. He should then enter the quantities of fuel charged during the month to each locomotive at the several fuel stations on a form provided for that purpose, known as a monthly recapitulation of fuel furnished locomotives. This he should forward to the official in charge of fuel accounts. He should then return the box and book to the sender.

* Instead of furnishing engines with fuel tickets as described, it may be found better and simpler to furnish blank orders to the engineer to be filled up by him when he receives fuel. The order should provide for name of fuel station, date, engine number, quantity and signature of engineer. The engineer should keep a record of all receipts given by him.

As soon as the foregoing returns have been received and verified by the official in charge of fuel accounts, he should cause a summary to be made of fuel consumed, specifying the quantity of each kind, price thereof and amount, entering the accounts to be charged therewith in their order; this statement he should forward, after the close of the month on the day specified, to the accounting officer for use in writing up the general books. This summary is required also for use in compiling the locomotive reports and for other statistical purposes. The total amount of this summary should agree with the aggregate amount shown on the general fuel returns.

Any errors, inaccuracies or omissions found in the returns of fuel should be reported at once by the person making the discovery to the one in error.

It may be made the duty of the general storekeeper to receive and audit the fuel accounts.

STOCKYARDS.

The more diversified a company's affairs become, the greater the necessity for adopting devices to meet particular exigences, preserving, however, the same general principles of accountability. The methods of handling freight receipts are such as are adapted to that particular branch of the service; the same is true in regard to passenger, express and mail business. Miscellaneous earnings require especial provision for different kinds of receipts, such as extra baggage, car service, etc. Another class of business to be provided for is that which arises at stockyards operated by a company. The measures necessary to be taken in connection with receipts thus arising are very simple.

The purchase of supplies needed at such stockyards requires especial provision. The most simple method of treating them is that devised for the common supplies of a company at shops. The foreman of the yard (or person immediately responsible) should be charged with all supplies and should be credited with all disbursements.

Each stockyard foreman should keep a record book* in which he should enter the particulars of stock fed at his yard and the charges connected therewith. This record should show date, consignor, consignee, origin and destination of stock, way bill number, date, car number, number and kind of stock, charges collected or to be entered on way bill, and particulars of the seal record.

All supplies purchased by or sent to the foreman of the yards should be treated in the accounts the same as those handled at storehouses; thus the foreman will be charged with feed purchased by or shipped to him; also with all incidental expenses incurred in connection with the stockyard, including the pay roll thereof.

* See Form No. 39, Appendix E.

In view of the fact that the payment of cash for feed at stockyards is necessary in many cases, the foreman of the yard or person authorized to make purchases will (unless otherwise ordered) buy upon this basis, viz: he will deliver to the seller an acknowledgment for the goods.* This acknowledgment will recite name of seller, articles bought, price, date purchased and amount due the vendor. The foreman should personally vouch for its correctness; this voucher the seller should present to the station agent, who should pay the amount on presentation and take a receipt in the place provided on the face of the acknowledgment.

This receipt the agent should carry as cash on hand until a voucher is made in his favor to reimburse him; this voucher should be made in form as follows: On the first day of the month the foreman or official making the purchases should make a voucher in favor of the agent who paid the bills covering the amounts paid by him during the preceding month; he should note in the body of this voucher, beneath the items, "Paid as per receipts held by the above agent;" a similar notation should be made on the back of the voucher, beneath the filing. The voucher should state the date of each purchase, from whom purchased, article, quantity, price paid and amount. This voucher should be forwarded without delay to the proper officer for his certification.

When finally approved for payment the voucher should be sent to the agent; he should attach to it the receipts in his possession and remit the whole as cash. In this way he will get credit for feed bills paid by him.

As vouchers in favor of agents, described above, for supplies paid for by them include only the material paid for up to the close of the month, each foreman should (for the information of all concerned) make a special entry in his report of supplies received and expenses incurred for "Supplies bought but not included in agent's voucher." This account should embrace a detailed statement of all purchases made for which an order has been given on the agent, but which has not been presented at the close of the month. This information will be required in adjusting the foreman's inventory with the balance charged against him on the company's books.

In reference to incidental expenses at stockyards, the same urgency does not exist for paying cash that there does for feed. Payment should therefore be made as in the case of other debts incurred by a company. A voucher should be made in favor of the person to whom the amount is due. This voucher † the foreman should certify to; after it is spread upon the books and re-

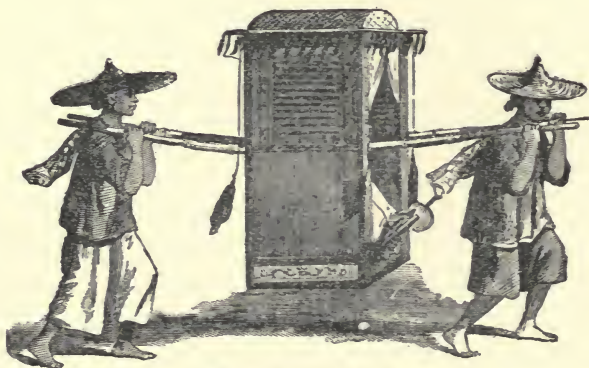
* See Form No. 40, Appendix E.

† If not made by the foreman of the yard it must be sent to him to enter and stamp, as it should be charged to his account.

turns it should be forwarded to the proper officer for his certification, to be paid in due course.*

The foreman of each yard should be required to make a "return of supplies received and expenses incurred" † (through the office of the superintendent) on the first day of each month; it should include all expenses of the yard, viz.: feed purchased, bedding, tools, veterinary services, shoeing, incidental expenses and pay roll. It should specify the date, name of payee, description of the expense, quantity (if for feed), price and amount. The amount of this return should be charged to the foreman of the yard.

The return is the same, in one respect, as the distribution of material book made by storekeepers.



Carriage in Hong Kong.

The return for supplies received and expenses incurred should be accompanied by an inventory of supplies on hand at the end of the month.

* While the foregoing method of treating material used at stockyards has been found to work well in practice, it may be varied, if thought desirable, thus: Instead of the foreman of the stockyard purchasing supplies, as provided, he may be required to make requisition, through the division superintendent, upon the purchasing agent, the superintendent certifying to the requisition and sending it to the general manager for his approval, the latter, in turn, forwarding it to the purchasing agent. If, in case of emergency, it becomes necessary for the foreman to buy feed, he should make a requisition covering the same, noting on the face thereof the fact that the material has already been bought; this requisition should be forwarded, with the bill for the goods, through the customary channel. Or, if thought more desirable, the plan outlined in the foregoing paragraph may be varied by having the stockyard foreman forward his requisitions to the general storekeeper the same as other storekeepers, to be treated in the same way.

† See Form No. 41, Appendix E.

A general time book should be kept by each foreman of the force he employs; it should be closed and sent forward to the proper officer on the first day of the month. Before sending it, however, the foreman should enter the amount on his "report of supplies received and expenses incurred."

The amount should be charged against the yard.

Material required in repairs, such as lumber, nails, hinges, etc., should, so far as possible, be ordered of storekeepers at a company's shops; tools requiring repairs should also be sent to the storekeeper, accompanied by an order to that effect.

All repairs at stockyards should be performed by a company's force, as in other cases, so far as practicable, and all material needed should be furnished from a company's supplies, so far as possible.

An invoice should be sent foremen for all supplies shipped them or charge made against them.

STOCKYARD COLLECTIONS—All charges due a company for feed, services or expenses should be collected at the time or provision made on the way bill for collecting elsewhere.*

Each stockyard should be credited at headquarters of a company with all collections made on its account for feed, care and other purposes.

A record book† should be kept by each foreman in which collections made by him should be entered, giving full particulars in each case.

Each foreman should make a "report of stockyard charges;"‡ it should include all charges of every name and nature (without reference to who makes the collection), including those for feeding, sale of pelts and carcasses, and receipts from other sources. It should be sent (through the office of the superintendent) on the first day of the month; it should show date of charge, whom the charge was against, what for, car number, quantity (if for feed), price and amount.

All collections at a yard should be turned over to the station agent on the day on which they are collected; or if this is not convenient other arrangements made.¶

* A way bill should be made for all stockyard charges. The amount should be entered thereon in the "miscellaneous unpaid" column, noting on the face of the way bill why the charge is made; all charges collected at the billing point should be entered in the "miscellaneous prepaid" column of the way bill. A separate way bill should be made for charges accruing at stockyards or on account of stock en route; the way bill should read from the station where the charge accrues. When a way bill of this kind is made, the agent should note on the original way bill for the stock, "For balance of charge see way bill No.; from; dated, 18..."

† See Form No. 42, Appendix E.

‡ See Form No. 43, Appendix E.

¶ Amounts received or collected by agents on account of stock or yards should be entered by them on their cash book and remitted with their other collections for the day.

INVENTORIES.

A yearly inventory of supplies is required to be made. It should be taken as of the last day of the fiscal year. Preparation should be made for it in advance, so that it may be taken with celerity and accuracy. Nothing should be omitted. The articles should be arranged in alphabetical order and should embrace each and every article not in use at the time it is taken.

The inventory affords the basis of a new departure, in this that the amount charged on the general books to the respective storekeepers is made to harmonize with it.*

An important purpose intended to be accomplished by the inventory is to bring the question of stores on hand under the immediate eye, and to the particular attention, of every storekeeper.

If he has material in excess of his needs, or possesses articles for which he has no use, suitable disposition of the same should be made forthwith.

Storekeepers should not, however, wait until the end of the year to do this. They are expected to keep down the amount of material on hand to the actual requirements of business and to notify the general storekeeper forthwith in the event they have any articles on hand they do not need.

It is considered an especial merit in a storekeeper if he performs this work efficiently and an especial demerit if he does not.

The duty of keeping down the supply of material on hand to the actual needs of the service and the prompt disposal of all articles for which the company has no further need, is dependent upon the skill and faithfulness with which storekeepers perform their duties in connection therewith; they are expected to act promptly in such matters, and no excuse, it is apparent, can compensate the company for neglect or lack of interest in this regard.

The inventory, if accurate and reliable, affords a fair index of the thoroughness that has been exercised by each storekeeper in caring for and disbursing material.

If the amount of the inventory differs greatly from the amount charged to a storekeeper on the general books, it indicates a lack of method somewhere, either in caring for material or in charging it when disbursed. He is culpable in either event; he should exercise such method in his business as may be necessary to prevent any great deficiency or surplus.

It is not possible that the inventory should exactly balance with the amount charged to the storekeeper; changes in prices and petty differences that are unavoidable in disbursing many

*Any deficiency or surplus is charged or credited at headquarters, as the case requires, among the expense accounts to which material has been debited during the year on the basis of the amount that has been charged to each.

kinds of material will prevent this, but as changes and differences are as likely to be one way as another the books should vary but little in consequence.

Material or supplies that have been charged to an account and that are in course of being used, or that are awaiting use, should not be inventoried.

The inventory should be based on prices current at the time it is taken. When the prices are not known they should be obtained from the general storekeeper; the latter will obtain prices from the purchasing agent.



Carriage in China.

Inventories should be signed by storekeepers and sent forward after the close of the fiscal year, on the date designated.

Material in transit at the time of taking the inventory, accompanied by invoices bearing prior date, should be embraced in the inventory of the receiving storekeeper.

But as all material invoiced after the 25th of the month between storekeepers is embraced as of the subsequent month, such material for the last month of the fiscal year should be embodied in the inventory of the storekeeper who forwards it, as it

is not charged to the receiving storekeeper upon the general books of the company until the next year.

Material invoiced after having been inventoried should be forwarded as of subsequent date.

Material embraced in the inventory, when disbursed, should be charged at the price inventoried.

Material or scrap charged on the books against a particular storekeeper should not be taken up in the inventory of any other storekeeper. In the event the storekeeper who should make return of it is likely to omit it from his inventory, the storekeeper cognizant of the fact should notify him of it.

In taking an inventory the work should commence at an initial point and be followed up in due order, taking all classes of material as they come.

The description of each article or class of articles entered in the inventory should be full and comprehensive.

Any exceptional circumstance in connection with an article or class of material, such as that it is in bad order, not needed, or has ceased to be usable, should be noted conspicuously on the inventory.

In case it is impossible to ascertain the actual weight or quantity of any kind of material or scrap, a careful estimate of the same may be made; the fact that the weight or quantity is estimated should be noted on the inventory.

The form for making monthly requisitions is adapted for taking the inventory of material at storehouses. The name, quantity or weight, rate and value of each article or class of articles should be given in every instance.

New and usable articles should be named first in all inventories; following these the scrap (including what is sometimes termed old material) should be specified, giving the quantity or weight and value of each kind in detail, in alphabetical order.

INVENTORING SHOP SUPPLIES.—Five days before the close of the fiscal year, if necessary, clerks and foremen at storehouses should be assigned sections of the storehouse of which, with requisite assistance, they are expected to make an inventory. Each should be provided with scales (if needed) and a hand book, wherein the particulars of material on hand, as it is counted, may be jotted down. At the close of the day, and before going home (as the inventory progresses) the entries on this book should be so arranged that they can be drawn therefrom onto the inventory blanks.

Material in course of manufacture, scattered about the shops, yards and elsewhere, should be inventoried under that head.

Storekeepers should obtain from the heads of their respective shops such assistance as they may require to enable them to take the inventory promptly and accurately.

As fast as inventoried each article or class of material should be marked distinctively to show that it has been taken into account. This will prevent its being counted twice and will

lessen the embarrassment attending the disbursement of material during the time the inventory is being taken.

TRACK INVENTORY.—An inventory is required to be taken of track material in the middle of each fiscal year as well as at the end thereof. Inventories should be taken for rails and ties separately from other track material.*

The track inventory should not include any track material or tools actually in use. It should embrace all other material, including scrap.

Old tools and other property not in use having a marketable value should be embraced under the head of scrap.

The track inventory should include all ties, iron, lumber, posts and other material belonging to a company on the line of the various divisions charged to the storekeeper making the inventory, no matter whether such material is to be used on the division where stored or is to be shipped elsewhere.

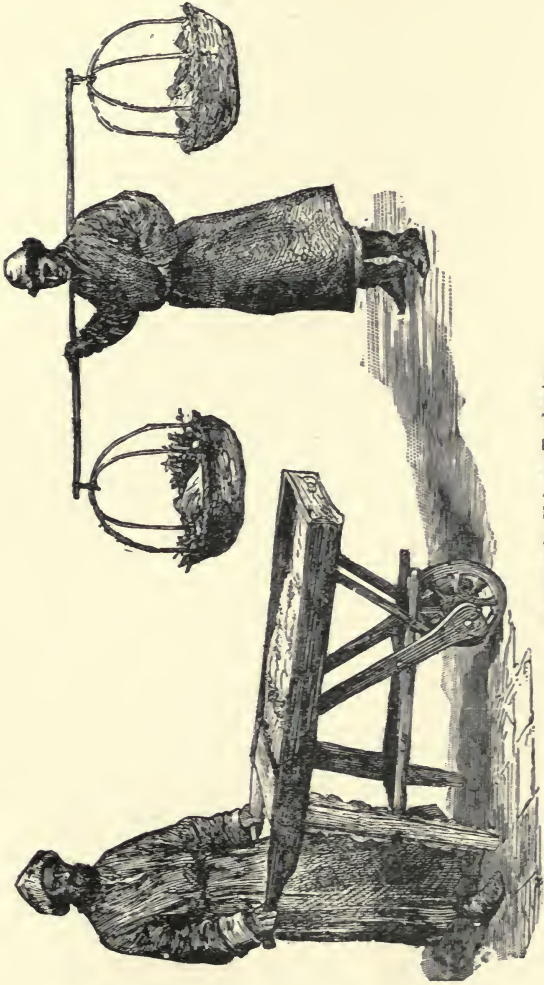
Track material at rail mills or en route thereto should be included in the inventory of the storekeeper in whose charge such material may be.

Articles should be enumerated separately in the track inventory, giving the quantity or weight, rate and value of each.

The inventory of track material is not only intended to embrace that scattered along the line chargeable to the storekeeper thereof, but it should embrace all material in his charge, no matter where located. Track material at shops in charge of storekeepers thereat should only be inventoried at the close of the year and should be embraced in the regular inventory for such storehouse.

Upon the completion of the half yearly and yearly track inventories, a balance sheet should be made by the storekeeper in charge. This balance sheet should embrace the receipts and expenditures since the date of the last inventory, including the amount brought forward, and should give the balance. In it the storekeeper should charge himself with the gross amount of the last inventory, also with such material as he may have received since, including scrap that has accumulated. Upon the other side of the account he should take credit for material that has been used, shipped away or sold. The difference between these represents the balance to his debit. If the balance harmonizes with the inventory that has just been taken, no further action is required; but if it differs in any way, the storekeeper should increase or diminish the amount of track material used in the month just closed by the amount of such difference; in adding to or deducting from the charge for rails, ties or miscellaneous track material, so as to make the accounts thus harmonize with the balance on hand, the difference should be added to or deducted from the account particularly affected, namely, rails, ties or miscellaneous articles.

* One purpose in taking a separate inventory for rails and ties is that any surplus or deficiency in connection with either of these accounts may be credited or charged to them respectively.



Carriage in Chinese Turkestan.

Only the aggregate quantity of each kind of material, for the whole territory under the storekeeper, need be embraced in the inventory. The price should be given for each kind.

Each storekeeper should balance the articles expended and on hand with those he has received; thus, the number of axes on hand, as per inventory, should be the balance remaining after charging the number brought over from the previous inventory, with all additions since that time, less the number used, shipped away and sold. Other articles should be treated in the same way.

STATIONERY INVENTORY.—A separate inventory should be taken for stationery, so that any surplus or deficit that may arise in connection with this kind of material may be credited or charged to the specific accounts affected.

DINING CAR SUPPLIES INVENTORY.—A separate inventory should also be taken for dining car supplies, so that any surplus or deficit that may arise in connection with this kind of material may in like manner be credited or charged to the specific accounts affected.

An inventory should be taken of the supplies on each dining car as often as once a month.

An inventory should, moreover, be taken of the linen in each dining car at the end of each trip; first of the unsoiled articles; afterward of those that have been used. The latter should be turned over to the storekeeper or person delegated and will serve at once as an inventory and a record against the laundry.

BRASSES AND TOOLS INVENTORY.—An inventory is required to be taken of all brasses in the hands of workmen at the close of the month; also when those having them in charge leave the service of the company.

The foregoing rule is also intended to be enforced in connection with tools and implements in the hands of employes charged against them specifically.

Brasses in the hands of employes awaiting use, also tools similarly situated, should be embraced in the yearly inventory.

CLOSING STOREHOUSES.—An inventory is required to be taken whenever a storehouse or construction or other supply depot is closed.

STOCKYARDS INVENTORY.—A separate inventory should be made for supplies at stockyards, so that this particular branch of the business may be credited with any surplus or debited with any deficiency that arises in connection with it.

FUEL INVENTORY.—Separate inventories are required for coal and wood respectively.*

* Fuel at shops and roundhouses for use of stationery engines, heating offices thereat, shop buildings and storehouses, and for use of blacksmiths, tinsmiths, boiler-makers and kindred purposes, is intended to be embraced in the inventory of material. The inventory of fuel is intended to embrace all other fuel. All the inventories of a company are finally consolidated at the general office under the three heads into which the material accounts are divided, namely, "material," "wood" and "coal."

It is the duty of the general storekeeper or official by whom the details of fuel received, on hand and disbursed are kept, to take charge of the inventory and to furnish those in charge of depots of supply with prices to be used, instructions, blanks, etc. The inventory should be taken as in other cases, and should give in detail each class of fuel, its price, and the total value thereof. It should be forwarded promptly after the close of the fiscal year on the date required.

In consequence of the great shrinkage in fuel, and the special risks that attend its care, an inventory should be taken of it (as in the case of track material) in the middle of the fiscal year and at the end of the year. As a rule fuel inventories should be taken by the agent in charge where the fuel is located. When the supply is great, however, the division superintendent should delegate a representative whose business it is to personally examine into the facts of the case and see that the inventory is correctly made; he should also certify, with the agent, to its correctness.

The same rule should be observed in regard to the inventory for fuel that is required in other instances, namely, that the description shall be accurate and such as to enable those in charge to determine the quantity, kind, condition, location and value.

If fuel is in bad order, or not relatively up to standard, a separate item should be made of it in the inventory.

As soon as the inventories have been received of fuel on hand, they should be recapitulated by divisions, showing the amount on hand at each fuel station: afterward the amount on hand upon the whole road. The latter should be certified to by the accounting officer. After the value of fuel on hand has been thus ascertained, the amount standing to the debit of fuel on the general books should be made to harmonize therewith by charging the deficiency or crediting the surplus (as the case requires) to the accounts to which fuel has been charged during the year, on the basis that the relation of the amount charged to each bears to the whole amount charged.*

* For method of handling material and keeping account thereof, proposed by the standing committee on disbursements of the Association of American Railway Accounting Officers under date of May, 1892, see Appendix A hereto. The method it proposes agrees substantially with the foregoing, which I introduced first in 1869.

CHAPTER V.

LABOR—PRACTICES GOVERNING THOSE WHO EMPLOY
LABOR OR WHO KEEP THE TIME OF, OR ACCOUNT
FOR, THE LABOR OF EMPLOYES.

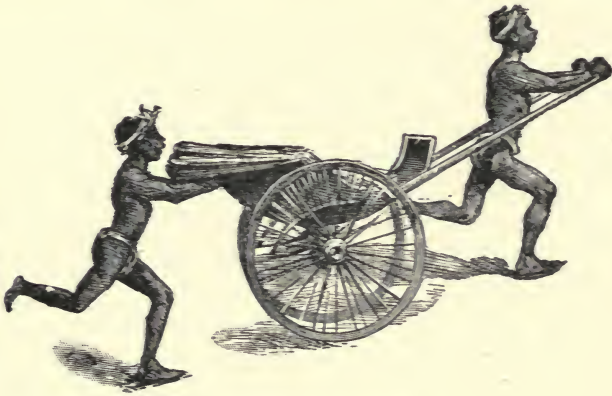
Before we take up specific regulations necessary in handling the labor of a great corporation it will be well to inquire briefly into the theory of the subject. By such a course we will be able to understand the subject better and better fit ourselves to judge of it in detail.*

The amount that a railroad expends for labor is so great that the rendering of accurate returns in connection therewith, including the making of true and faithful pay rolls, is a matter of the utmost importance.

Wherever men are engaged, whether at shops, roundhouses, yards, warehouses, storehouses, depots of supply, upon the track, at stations, upon trains, or at any other place, intelligent provision must be made for keeping accurate account of the time they work, whether the work is done by the hour, day, month or piece. Otherwise it can not but follow that injustice will result, either to the employe or to the company.

* The reader is here referred to what is said at the commencement of the chapter on material in this book. Its perusal will enable him to understand matters affecting Labor better.

It must be remembered, moreover, in this connection, that any neglect to keep the time of men clearly and accurately involves something far beyond the amount a company may lose through particular errors or omissions. It means the demoralization of the force; it means dissatisfaction with a company if an employe loses through negligent methods; it means the build-



Carriage in Yokohama.

ing up of an improper spirit if he gains something that does not belong to him.

In order to keep the time of men accurately, the clerical labor connected therewith should be performed by a person on the ground, who notes the time worked from day to day as it occurs. Afterward these details are consolidated and the wages computed. Whoever keeps the time is, generally speaking, the most fit person to make

the pay roll. Practices, however, will not be uniform in this regard.

Those who have charge of labor accounts, including those who keep the time of employes, by performing their duty faithfully, may protect a company's interest in various ways: first, by preventing the introduction or growth of irregular or improper practices; second, by affording the management accurate information of the extent and purpose of expenditures for labor, and the measure of economy that has characterized such expenditures.

The number of employes and the diversity of work in which they are engaged, and the extent of territory over which they are scattered, render the duty of keeping their time a work of extreme difficulty, requiring the exercise of skill, fidelity and patience. The same causes render it difficult to obtain an authentic distribution of labor, *i. e.*, an account of the thing upon which the labor is expended.

To attain these important and necessary objects, various devices, blanks, books and accounts are provided: first, for taking the time; second, for computing the same in dollars and cents, and third, for rendering an accurate and classified return thereof.

Methods for keeping the time of employes should be especially designed to secure them justice; to insure their being paid all they earn; to prevent their losing, either purposely or otherwise, a moment that they have worked. At the

same time methods should be such as to protect the company against laxity or unfair advantage. In order to secure this double purpose it is essential that the time men work should be kept with the utmost punctuality; that timekeepers should know exactly their duties and should perform them intelligently and without hinderance from anyone. In this way a company will know every person who works for it, how long they work, the rate they receive, the amount due them, and upon what they work. While the employe will receive the utmost farthing that is his due.

The securing of these objects requires watchfulness, fidelity, experience and accuracy.

In reference to time worked, the employe, being personally on the ground, looks out for himself. The company, on the other hand, is compelled to look to the timekeeper and the officials in charge to protect its interests. Their responsibilities, therefore, call for indefatigable watchfulness and the exercise of skill and integrity of purpose.

Those who have charge of the time of employes should make prompt and full returns thereof. At the same time they must be upheld in the exercise of the prerogatives of their office. The office must not be made an appendage to something greater or entirely foreign to it. Its occupant must be especially skilled in his duty, and must be able to go ahead untrammelled in the performance of it; everyone should co-operate with him

therein in every proper and reasonable way. Any attempt to evade or obstruct his work can not be too severely censured. But while this respect and co-operation must be extended to him by officials and others, it is the duty of those responsible for the Employment of labor to see, by inspection and otherwise, that every timekeeper



Carriage in Japan; Crossing a River.

performs his work promptly, accurately and faithfully; that he enforces every proper safeguard necessary to insure the keeping of the time correctly, and the rendering of true returns therefor; that he is scrupulous to see that the instructions of a company are complied with; that the rate of wages allowed by him is such as has been agreed upon; that the time allowed is

in accordance with the facts so far as correct methods of accounting can secure this; that while observing the instructions and interests of a company, he is careful not to take advantage of his office to do injustice to any employe, either personally or otherwise. In this last named respect the timekeeper should keep constantly in mind that the interests of the employe and the company are identical, that one can not be harmed without injury to the other, and that there is not, and can not be, any real antagonism between them.

In order so far as possible to insure accuracy and concurrence of knowledge, pay accounts should be certified to by all who are personally conversant with the facts they recount. And it should be remembered, in this connection, that the certification of two or more disinterested persons, conversant with the facts, is a higher evidence of the correctness of a pay roll than the certification of any number of people who have only a general knowledge of the matter they subscribe to. It is impossible that the higher officials of a company, especially those having general supervision of its affairs, should know the particulars of the pay roll from month to month. But the foremen and timekeepers know these details; the latter the name of each man and the number of hours he has worked; the former whether the men whose names as entered really worked for the company or not, the rate they should receive and, generally, how long they

worked. The foreman, therefore, as well as the timekeeper, should certify to the correctness of the returns for the forces under him. Their doing so will reduce to the minimum the likelihood of improper practices or errors.

The principle to be observed in rendering accounts of labor is the same as that observed in other financial transactions of a corporation. Each account should be certified to by at least two independent persons in order to establish its validity. Thus, the certification of an agent or foreman will substantiate the return of a timekeeper. This rule of verification should be carried to its utmost limit. After the local officials have certified to the returns, the returns should pass on to the higher official in general charge of the work. He may not know all the details, but he is familiar with the general circumstances of the case, and whether the time returned has been authorized; also the objects upon which it has been expended. His certification, therefore, will be specific assurance that the returns are authorized, and are generally faithful and accurate. From this official the returns will pass on in due sequence to the next higher official, and so forward until they reach the officer whose duty it is to approve for payment.

The immediate duty of keeping the time and wages of employes and the distribution thereof should be entrusted to persons especially delegated to perform the duty. Where the amount of work at any particular point justifies it, a time-



Carriage in India.

keeper should be designated, whose especial duty it should be to look after this branch of the service.

At shops and storehouses this official may also be entrusted with the duty of receiving, inspecting, caring for and distributing material. This aggregation of work will permit of greater economy than would otherwise be possible. For convenience I designate him a "storekeeper." When, therefore, reference is made herein to a time-keeper, it will be understood to mean the employe in question.

In many cases the clerical work is so great that it necessitates the employment of clerks to take the time of employes and otherwise assist. When this is so, their certification to the accounts should also be attached, as well as that of the storekeeper in charge; but they should be subordinate to and act under the direction of the latter.

At stations, the duty of keeping account of the time and rendering returns therefor is generally entrusted to the agent.

For employes engaged on the line, erecting bridges, buildings and fences, repairing the track, or otherwise employed, the foreman in charge should render account of the time and certify thereto.

Conductors keep account of the time of train forces and render returns thereof.

At isolated points or places of the road, the official or person immediately in charge is necessarily held responsible for accurate returns of

time worked and wages due therefor; returns are rendered by him.

The duty of keeping the account of time worked and rendering returns thereof should in every case devolve on an official on the ground, conversant with the facts. It should be his duty to enforce the rules and regulations governing such matters. In the event they are inadequate in any respect he should supplement them by needed regulations.*

In some cases the pay roll is made at the headquarters of a company; in others by local officials who keep the time and are conversant with its details. The latter plan is for some reasons to be commended, as it affords those who are responsible for the employment of labor opportunity to retain the accounts in their offices longer than they otherwise would for examination, at a time when the information is of the greatest value to a company.

The possession of the pay roll by local officials also enables them to certify to its correctness upon its face, thus giving it an additional stamp of authenticity.

Not only is it well to require the pay roll to be made by local officials, but it should pass, in due sequence, on its way to the paymaster, through the hands of all who are in any way concerned in it.

Not only this, but the details (distribution) of each man's time should also pass through the

* Of which due notice should be sent the proper officer.

hands of the local officials. These details are shown in the time book; this book should accompany or follow the pay roll. In this way every person having anything to do with the roll, or who is in any way responsible for it, will be afforded the benefit of all the information it contains promptly, accurately and concisely. This



Lone Carrier of Transcaspia.

information is of the greatest value to officers, and greatly heightens their usefulness.

All returns connected with the disbursement of labor should, so far as practicable, pass from the person who compiles them through the offices of the various officials responsible for the employment of labor to the officer designated to finally receive and store them at headquarters. In this way the expense of an embryo accounting

department in each official's office is avoided, as they may severally make such record of the returns passing through their hands as is needed for use and reference. In the event they wish the details of an account at any time, it is to be found in the office where the returns were first compiled or in the department where finally lodged.

In the absence, therefore, of instructions to the contrary, the pay roll should, in every case, be made in the office where the time book is kept; or, in the event the pay roll is made by consolidating two or more time books, then in the office where such consolidation occurs.

Still other benefits are secured by requiring the pay roll to be made where the labor occurs, by those who keep the time, viz.: it insures the work being done by competent persons, familiar with the facts and having all the sources of information at hand for use or reference; it affords, as already suggested, the officials immediately responsible for the work more time to inspect the accounts than would otherwise be possible; moreover, the roll being made at the initial point, follows, in due sequence, the route of procedure and responsibility on its way to the paymaster. Thus every safeguard possible is made use of to secure clerical accuracy, while affording the officials interested in the labor accounts the best opportunity possible to inspect them.*

* Many roads make their rolls at headquarters. The practice has many things to commend it. Who shall say definitely it is not the best?

Each shop roll should be made by the time-keeper thereof, and should include all subsidiary forces that come within his cognizance. The pay roll for the station force, track force, bridge and building force, and other distinct departments of labor, or isolated gangs, should be made by the official immediately responsible therefor, to whom the time books are sent by those who compile them.

This division of labor, while in all respects the most economical that can be devised, affords operating officers an opportunity to acquaint themselves with the labor accounts of their several departments. But their examinations should be carried forward with celerity, so as not to delay auditing the accounts or the payment of the roll. No one into whose hands a roll passes should retain possession of it beyond a specified time—say six hours.*

* In reference to the plan of making the pay roll where the time is kept: There can be no objection, it is apparent, to making it at the general office, except the more limited facility such practice affords operating officers to familiarize themselves with its details and the additional expense that such concentration of work in one office, at a particular time in the month, would possibly involve. By apportioning the duty among many offices, the work is not believed to be felt materially, and may be pursued leisurely and with due reference to the mechanical and critical skill required in its performance. Moreover, the roll itself, passing afterward under the eye and receiving the certification of those familiar with it, must receive more general and careful scrutiny than would be possible under circumstances less favorable. However, as I have already intimated, the practice of making the pay roll at the general office has many things to commend it, and no one can perhaps say definitely that it is not the best plan.

In keeping account of the time and wages of men and the distribution thereof, it is apparent that the forms and devices used must adapt themselves to the peculiar circumstances of the case, to the number of men, the place where em-



Carriage in the Desert.

ployed, the kind of work, and the facilities for keeping accounts. The elaborate devices that are necessary at a great shop or other spot where an army of men is employed are not necessary where only a small force is engaged. In one

case a timekeeper is required to keep the accounts; in the other the keeping of the time is a mere incident. The forms used must also be adapted to the nature of the work; thus, at shops and elsewhere where machinists and carpenters are engaged, the multiplicity of things upon which they work requires the use of more comprehensive forms to distribute the labor under proper heads than at stations, yards, warehouses and water tanks, where the wages are in the main charged wholly to a particular account. In providing a form its particular use has, therefore, always to be considered. This is especially noticeable in connection with the time books used by track and building gangs; the facilities they enjoy for performing clerical work are very meager at best; the blanks they use, therefore, must be such as are easily handled and easily understood. Matters of this nature require always to be remembered and observed, as any neglect to do so will occasion unnecessary outlay, and will greatly harass those who have the work to perform, and prevent its being conducted with efficiency.

Such is, briefly, a hurried outline of labor accounts. Let us now take up the subject in detail.

HOW THE TIME OF EMPLOYEES SHOULD BE TAKEN.—Various methods of taking and recording time suggest themselves. Those that are suitable, convenient and economical in one instance are cumbersome, inappropriate and expensive in another. Where a few men are engaged, the system of recording their time may be very simple and in some respects personal. Where a large number of men is employed nothing should be trusted to memory; the system should be thorough and impersonal and such as to secure accuracy and fullness under all cir-

cumstances. Various methods have been suggested and are in vogue for keeping the time of men at shops and other places where large numbers are engaged in a body. Of all the methods recommended to me, that which I have found in all respects the most satisfactory is what may be termed the "Check" system, *i. e.*, each man is given a check when he goes to work, the possession of which is evidence that he went to work at the proper time, and so on. The system is as follows:

Time is taken when the men go to work in the morning and again after dinner. It should also be taken in the middle of the forenoon and again in the middle of the afternoon; this middle period is called "quarter" time.

When the time of a large number of men is to be taken, a check room should be arranged for use by the timekeeper.

The clerk whose duty it is to take the time should be in his place ten minutes before the commencement of work.

Each man should, in the morning, and after dinner, pass before the window of the check room.

Each man should be designated by a number.

When he passes before the window he should be given a metal check corresponding to his number.

Separate checks should be prepared, those for the forenoon being marked "A. M." and those for the afternoon "P. M."

Checks should be given only to those to whom they belong, and only when the person presents himself before the timekeeper at the check room.

Checks should not be given to one person to deliver to another.

No checks should be distributed after the time for commencing work, as indicated by the blowing of the whistle or otherwise.

In order to facilitate the distribution of checks, and for other purposes, a check board should be prepared for use by the timekeeper. This check board should be divided into squares, each square being numbered, commencing with No. 1; on these squares should be hung metal checks, corresponding with them in number; the number of checks hanging on the board should correspond with the number of men employed.*

When a man goes to work in the morning he should be given the check corresponding to his number. The number of checks not called for will thus represent the number of men that have not gone to work. A list of these should be made.†

This list should be given to the person whose duty it is to take quarter time, so that he may know how many men did not report for duty.

In taking quarter time the clerk should not take the same route from day to day, but commence at different points, *i. e.*, at

* Check boards, with checks, should be supplied upon application, stating the number of checks required and the shape of the board that will be most convenient.

† The sheet upon which this list is made is called an "absent sheet." See Form No. 5, Appendix E.

one place in the forenoon, at another in the afternoon, and so on; this will have the effect of varying the hour at which the time of particular men will be taken.

As the clerk visits each man he should take up the check given him at the commencement of work.

Those who have no checks should only be allowed such time as may be returned for them by the foreman or official in charge.*



Carriage in Palmyra.

Only those who actually deliver checks or slips, who appear in person before the timekeeper, and are at work and designate the character of such work, should be allowed time.

When the timekeeper takes quarter time he should note upon the blotter† the kind of work each man is engaged upon. This

* Such time should be reported by the official in question on a blank which is called a "late slip." See Form No. 6, Appendix E.

† See Form No. 13, Appendix E.

information is required for use in distributing the labor. He should be particular to designate in clear and precise terms the name of the account or thing upon which each man is at work.

In the event an employe should absent himself between the time of commencing work and the taking of quarter time, or between quarter time and the time for quitting, the official in charge should notify the timekeeper of the particulars on the late sheet, so that the necessary deduction may be made.

In order to prevent confusion or possible loss, arrangement should be made for locking the check rooms and for preventing access to them by unauthorized persons.

As many check rooms should be prepared as the exigencies of the service require.

In the event a check is lost, the person who loses it should pay the cost of replacement.

The foregoing method of taking time is particularly adapted to shops, large stations, and other places where a great number of men is employed, and should be so applied.

It is simple, expeditious and thorough, insuring absolute accuracy in the account of time worked and reducing to a minimum the inconvenience and expense that attends the keeping of such account.*

At small shops, stations and other places where only a few men are employed, a simpler plan should be followed for taking time.

But the rules embodied in the foregoing in reference to special reports by foremen, and other matters germane to the keeping of the time of employes correctly, should be carefully observed everywhere.

Instead of using checks and check boards at places where only a few men are employed, the timekeeper should provide himself with a time book or blank† in which the names of each employe is written. At the proper time (as already indicated) he should station himself at a convenient place for the men to pass before him, before commencing work. All employes should so report.

As the men appear in the morning, he should make a check mark on the blank in the date column on the line opposite their names.

* The key to the check system, it is apparent, rests upon the delivery by the employe of the check when quarter time is taken. It is only then that record is made on the blotter and the employe credited with his time; the possession of the check is evidence that he was present when work commenced. The delivery of the check (and the fact that he is present and at work when quarter time is taken) is the evidence upon which the timekeeper bases his record. In the event a check should be secured improperly, it would be of no use, and its value, even if full credit for it were secured, would be infinitesimal only; but as the checks are kept securely locked and are delivered only to the owners (a record being kept of those not called for), improper possession of them is rendered impossible.

† See Form No. 1, Appendix E.

At quarter time, if the men are present, he should make a counter check.

This should be repeated again in the afternoon.

These marks and counter marks will thus denote who are present, and will afford the basis for computing the time worked.*

By reference to the time book embodied in the appendix, its particular adaptability to the purpose for which it is intended will be seen.

Provision must be made everywhere for keeping accurate account of over work and of work performed at night, Sundays, holidays, and at other times when the timekeeper is absent. The person who performs these duties should act under the instructions of the timekeeper and the latter should designate who shall perform the work, whether the foreman or someone else; whoever does the work should render an accurate return of the time, giving the name of the person, number of hours worked, upon what engaged, and such other particulars as the timekeeper may require.†

For the purpose of verifying the time books, a record of the working hours an employe is absent should be kept. This will be called an "Absent time" record. It should be written up daily from the "Late slips" and "Absent sheets." At the end of the month the hours each employe is absent should be footed and deducted from the total number of working hours in the month; to this should be added any overtime the employe has made. The time thus arrived at should agree with the amount allowed the employe.

So far as possible, the time book returned by a station agent should embody the whole force employed at the station, including agent, clerk, baggageman, foreman, laborer, yardman and switchman; also men engaged in fuel sheds and at water stations.

Time books should be returned for forces entered on different rolls; in other words, men who appear on different pay rolls should not be grouped together on the same time book.

A special form of time book designed to meet the purposes of track foremen in keeping the time of gangs employed by them should be used in such connection.‡

A special form is also required for keeping the time of carpenters at work on the line.||

It is intended that the time of trackmen and carpenters engaged along the line shall be entered daily at the close of work. This rule should be rigidly carried out. Its observance will in-

* In the event anyone is absent at an intermediate period, provision should be made for having the fact reported to the timekeeper, late and absent sheets being used for this purpose.

† It is called "Report of overtime." See Form No. 7, Appendix E.

‡ See Form No. 2, Appendix E.

|| See Form No. 3, Appendix E.



Carriage in Palestine.

sure accuracy in the time allowed and in the distribution thereof under the various headings.

The basis for compiling the wages of engineers and firemen is not the same in all cases, but changes from time to time as the exigencies of the service necessitate. Whatever the instructions may be at the time, they should be carried out by the storekeeper under the authority of the master mechanic or foreman in charge.

Special forms for keeping the time of engineers and firemen are also needed. The basis upon which their wages are computed necessitates this.

The time book for engineers and firemen* should show the particulars of the service of each engineer and fireman, and at the same time afford the statistical information required in compiling statements needed by the locomotive department.

The time of engineers and firemen is written up mainly from reports† returned by engineers at the end of each trip. These reports give the terminal points, number of engine, train number, date, name of engineer and fireman, and other particulars required by the timekeeper.

At the close of the month the figures thus compiled are further verified by comparison with the monthly returns of the engineer.‡ This shows the points run from and to each day, also the distances and other particulars. This form should be used by engineers engaged in switching and other miscellaneous work, making such changes in the blank as the nature of the service requires.

In order to verify the accuracy of the engineers' returns and for other purposes, the train dispatcher should send to the timekeeper each day a statement§ of trains run, giving particulars and names of the engine crew.

A register should be kept at each roundhouse of the arrival and departure of locomotives.|| It should state the time of arrival and departure and the names of the engineer and fireman in charge. The pages of this book should be used alternately for arrivals and departures. This register will be useful in verifying the returns, and should be carefully consulted by timekeepers before making the pay roll or certifying to the time books.

In order to facilitate the keeping of the time of trainmen, conductors should forward to the superintendents of their respective divisions a daily statement of the time made by their crews, respectively, and the number of miles run.¶

This return should be compared by the superintendent with the record of trains operated, after which it should be retrans-

* See Form No. 4, Appendix E.

† "Trip-reports." See Form No. 8, Appendix E.

‡ See Form No. 9, Appendix E.

§ See Form No. 10, Appendix E.

|| See Form No. 11, Appendix E.

¶ See Form No. 12, Appendix E.

scribed on a general time book; or in the event wages are not based on the number of hours worked, but upon the number of miles run or other conditions, such time book may be modified or changed if necessary to meet the conditions attending the case. The pay roll should be made from the last named record.

At the end of the month conductors should forward a detailed statement of service for such month, using for this purpose the general time book of the company. Superintendents should compare the record kept by them with this supplementary return.

Conductors of construction and working trains should keep a general time book, and forward same to the superintendent, properly certified, on the first day of each month; or if more convenient, they may use a track time book. A general time book should, however, be used, if not inconvenient, as it furnishes greater facilities for keeping accurate account of time worked.

METHOD OF COMPUTING WAGES.—The basis for computing wages varies according to the particular arrangements under which the service is performed. Wages are paid by the hour, day, week or month. In some instances it is based on piece work or specific performance, as in the case of engineers, whose pay is largely based on miles run.

In computing wages, the agreement or understanding under which the labor is performed should be scrupulously observed.

In the absence of any understanding, agreement or direction, the customary number of hours should be considered a day's work, and wages should be allowed only for actual time worked.

In determining the amount due employes who are paid by the month, or fractional parts of a month, wages should be computed on the basis of the total number of days they are required to work; thus, if an employe works on Sundays or holidays, the amount of his wages should be divided by the total number of days in the month he is required to work, in order to ascertain the rate per day. If he does not work on Sundays or holidays, the amount of wages he receives per month should be divided by the number of days he is actually required to work, in order to ascertain the rate per day.

Fines, if any, for failure to be on hand for work, or for any other reason, should be fixed by the official in charge.

In order to save labor and secure greater accuracy, wages should not be computed from day to day, but in the aggregate for the whole or part of the month worked. Thus, if paid by the hour, the aggregate number of hours should be ascertained and the gross amount of wages due therefor inserted in the columns provided for such information.

TIME BOOKS.—By reference to the various forms used in keeping time their simplicity will appear; also their cheapness; also

the great economy of labor required to keep them, compared with older and more elaborate forms of bookkeeping. It may be said, indeed, without exaggeration, that these time books are as simple as it is possible to make them and are arranged with all the skill now known to secure results at the least cost, with the least labor, with the least time, and with the greatest certainty.

A careful study of the time books embodied in the appendix to this volume will illustrate, better than any description, their several purposes. They are intended not only to afford accurate information in reference to the time each man works, but contain a history thereof.



Carriage in Sandahar.

While the duty of keeping the time of men should be entrusted to storekeepers at shops, and persons in charge at other places, such trust does not preclude operating officials immediately in charge from making such frequent examinations as may be necessary to enable them to know, with reasonable certainty, that the names as entered on the pay roll are *bona fide*, and that the amounts paid are such as have been agreed upon. In order to make this effective, such officials should require the foremen in charge of the various gangs to carefully scrutinize the pay rolls before certifying to the correctness of the same. An especial and particular value attaches to the certificate of the

foreman, for the reason that he knows each man personally, and has knowledge of the time he has worked. The value of this information can not be overestimated in auditing accounts, and timekeepers and officials of a company should avail themselves of it to the fullest extent.

There is nothing of a confidential nature about the pay accounts so far as those officers of the company are concerned who have charge of labor; officials in charge and foremen should, therefore, have access to them at all times, and it is their duty to carefully and minutely examine the same.

In reference to the details, the work of entering the names in the time book should, so far as practicable, be performed before the commencement of the month. The names of the officials in charge should be entered first; afterward those of the office force. Following these, the names of the other employes should be entered in alphabetical order. If the force be divided into gangs, each gang should be entered by itself, following the name of its foreman. Names should be classified uniformly, according to the occupation, grouping each gang of trackmen, machinists, carpenters, station employes and trainmen by itself, all being marshalled under their respective foremen.

The time books should be written up from day to day. The prompt payment of the force is dependent upon the prompt rendering of these books. Thus, on the last day of the month time should be taken as early as possible in the afternoon, and the time at once posted into the time books. As soon as all the returns of time worked for that day have been received and entered, the time books should be closed and the cross extensions made, and the total footings and extensions entered and balanced with the detailed amounts. The time book is then ready for use in making the pay roll.

In writing up the time book and in making the pay roll, the time and rate should be entered in the columns provided strictly in accordance with the agreement or understanding under which the employe was hired. If he is employed by the month, day or hour, his time should be entered in the "time" column, and his rate per month, day or hour should be entered in the "rate" column, thus:

NAME	OCCUPATION	TIME	RATE	AMOUNT
Smith, John	Watchman	1 month	\$50 00	\$50 00
Doe, John	Laborer	28 days	1 00	28 00
Roe, Richard	Coal Heaver	260 hours	15	39 00

At shops and other places where a pay roll is made, the time book should be held until the roll is completed; it should, in fact,

be sent forward with the roll, if possible, or, if not then, as soon after as the distribution of labor is completed.*

At stations and elsewhere where no pay roll is made, the time book should be sent forward on the morning of the first day of the month, so that those who make the pay roll and the distribution of labor may not be delayed.

The correctness of each time book should be formally certified to by the timekeeper (*i. e.*, the person who makes it) as follows: "I hereby certify that this time book is correct."

This certificate should be signed not only by the person who actually takes the time, but by the official who is immediately in charge; thus, at shops it should be signed by the general timekeeper and by the timekeeper subordinate to him; at stations, by the agent as well as the timekeeper. In fact, all who are personally conversant with the particulars of the time book should be required to sign the certificate as to its accuracy.

If the time book is kept by the foreman he should sign the certificate; if it is kept by some one else the foreman should sign a certificate similar to the above, immediately following the record of the force under him.

When, however, the pay roll is made at the place where the time book is kept, only those who are immediately responsible for keeping the time correctly and rendering accurate return thereof need certify to the time book. In such cases the certificate of the foreman and officials should be made to appear on the face of the pay roll.

At the larger shops it may be desirable, for convenience in making the distribution and to expedite work in other directions, to provide a time book for each of the various departments or shops and for outlying points. These time books should be numbered consecutively and otherwise designate the department or shop they refer to.†

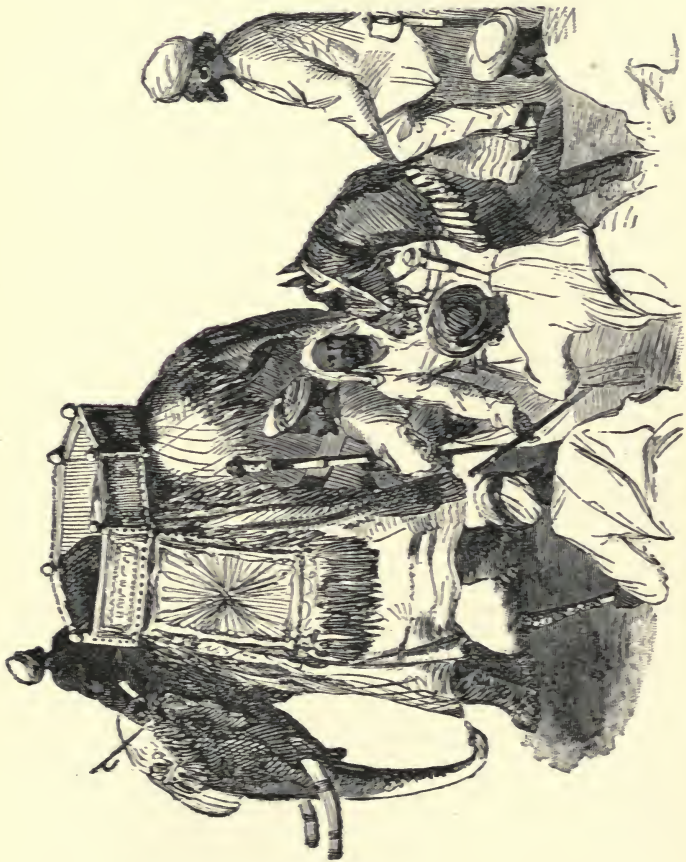
Special forms of time books, in addition to those described, should be provided when greater economy or efficiency can be secured thereby.

GENERAL TIME BOOK.‡—The general time book is made up of loose leaves which are designed to be bound together in book form at the end of the month, after an impression copy of the same has

* A particular purpose had in view in having this book follow the same channel as the pay roll is, as stated elsewhere, to afford opportunity to those who are responsible for the employment of labor to obtain full information in regard to its disposition. Thus, although they may not keep the time, or know anything about the details thereof during the month, the time book will afford this information to the fullest extent, so that no one will be unadvised of the particulars of work for which he is responsible.

† When more than one time book is thus used, the information they contain should be posted into the distribution book in such a manner that they can be added separately therein, and the totals drawn off for verification; the total of each time book should agree with the footing of that portion of the pay roll covered by it. The total footings of all the time books should agree with the total footings of all the pay rolls.

‡ See Form No. 1, Appendix E.



Carriage in Lahore.

been taken in the office where the time is kept. Where only one or two leaves are required for keeping the time of men at a particular point, they need not be bound in book form. At all other places they should.

The general time book is designed for general use. Track forces, bridge and building gangs and engineers and firemen have special time books provided for keeping the time and distributing the same, as described elsewhere herein.

At places where the check system (see "manner of taking time") is not in use, the spaces in this form for noting the presence of employes at quarter time should be used.

The number of hours worked each day should be copied from the blotter onto the time book.

At the end of the month the total columns should be filled in accordance with the headings.

It is from this book that the pay roll is made.

The occupation of the person should be inserted opposite his name in the column headed "how employed."*

Under the head of "remarks" should be noted opposite the employe's name any deductions to be made from his wages; when a time ticket is issued "time given" should be written in this column.

If an employe is likely to be engaged upon numerous classes of work during the month, sufficient space should be left below his name to describe the same; these details are copied from the blotter; the work should be done daily. At the end of the month the gross sum thus distributed should be posted into the "general distribution of labor book" under the proper headings.†

TRACK TIME (AND DISTRIBUTION) BOOK.‡—This book is especially designed to meet the difficulties that attend record-

* Thus, "machinist," "carpenter," "blacksmith," "assistant blacksmith," etc., designating generally his duties.

† The general time book, it will thus be seen, not only embraces a correct record of the time worked, but contains the details necessary for an accurate classification of the same for entry in the general distribution of labor book. There are two reasons for entering these last named details on this book. In the first place, one line ~~or~~ space on this form is sufficient to keep accurate account for a month of the work performed by an employe on any particular object. Thus, if he is engaged on engine No. 10, the number of the engine is entered in the column headed "how employed;" the hours the employe works on this engine each day are inserted in the column opposite; at the end of the month the total number of hours thus worked is entered; this total is afterward entered in the general distribution of labor book and the amount extended. If these details were entered from the blotter directly on the distribution of labor book, it would necessitate a separate entry being made on the latter for the work performed each day by the employe in question on engine No. 10, thus magnifying work and multiplying details. Another important object in specifying the distribution of labor on the time book is that it serves to verify the latter in many ways, and as the pay rolls are written up from this book the necessity of this verification is apparent.

‡ See Form No. 2, Appendix E. The word "distribution" will be understood to mean the charging of an outlay to the thing upon which it is expended. Thus a distribution book is a book in which charges are made against various things according to the facts.

ing the time and classifying the work of trackmen. It affords an intelligent history of the different kinds of work performed and the extent thereof, such as general repairs of track, laying ties, laying rails, ditching, freshet repairs, ballasting, clearing track, repairing fences, watching track and bridges, repairing bridges, construction, etc. It is especially designed to relieve the foreman in charge of clerical work that he has not the time nor the facilities for performing, while it affords him all the information required to classify the labor accurately and fully.

The foreman is required to furnish essentials; all else may be done at headquarters. Thus, the foreman should enter the total number of hours worked by an employe and should note in the column provided the kind of work he was engaged upon. This he is required to do at the close of each day. From this data the clerk at headquarters may fill out the amounts. The time book provides columns for the various classes of work upon which the men are engaged; the number of hours worked on each are carried into these columns; they may be footed at the end of the month by the foreman in charge, when he is able to do so, or the work may be performed in the office where the pay roll is made.

Whatever the wages of the employe may be, the amounts charged to the various accounts upon which work is expended should agree with such wages. The agreement in a measure verifies the accuracy of the whole.

A miscellaneous column is provided in which should be entered deductions on account of board bills, name and address of the person or persons to whom such deductions are due, etc. When a time ticket is issued, "time given" should be written in this column. It is also intended to be used to explain the character of any unusual work that may have been done; also for giving information necessary to a correct distribution of the time.

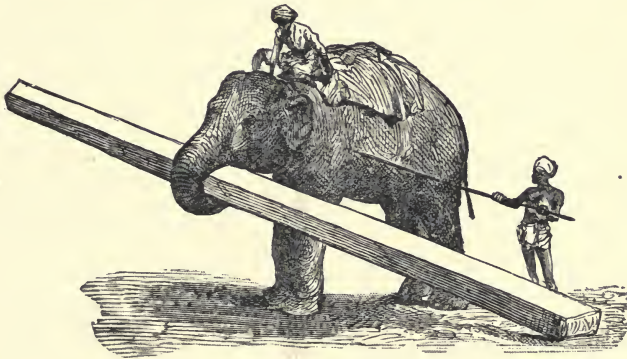
The book should be signed by the track foreman and forwarded promptly by the roadmaster, superintendent or other official, as may be directed, on the morning of the first day of each month.

No unnecessary delay should occur in sending the book forward as directed, as such delay prevents the completion of the pay roll and will, perhaps, prevent the payment of the roll at the proper time. Those whose duty it is to compile the accounts and make up the monthly statement are also embarrassed.

To facilitate work, the timekeeper for each division of a road should make a consolidated time book for his division. The distribution of labor book used at shops, described elsewhere, should be used for this purpose. In it should be entered a classified statement of the cost of labor for each subdivision so that the cost for the various lines may be studied separately. It should show also the aggregate number of hours worked on

such subdivision. From the data thus furnished, the average number of men per mile of track may be ascertained.*

BRIDGE AND BUILDING TIME (AND DISTRIBUTION) BOOK.†— This book is especially designed to facilitate the keeping of time (and distribution thereof), by the foreman in charge of gangs of carpenters and others, engaged in repairs and renewals and in miscellaneous construction work along a line, connected with bridges, buildings, fences, etc. Columns are provided in the blank for the various classes of work upon which the men are likely to be engaged, so that all that is necessary is to enter the number of hours therein. Care should be taken, however, in every case, to locate the work accurately. Much of the information required at headquarters in making up statements of the cost of particular buildings or structures is ascertained from this



Carriage in Burmah.

* In order to be able to compare the cost of track labor for different portions of a road effectively, each division should be divided into sections of from twenty-five to fifty miles and a statement made of the cost per mile for each of these sections. It should show the number of men per mile of track. The total for each division should agree exactly with the aggregate footings of the track, gravel pit, work train, and other pay rolls embracing track accounts. The system of accounts in connection with track labor contemplated herein provides for a careful classification of the work of trackmen and working trains, under the following heads: General repairs of roadway and track, laying ties, laying rails, ditching, freshet repairs, track watchmen necessitated by repairs, ballasting, clearing track of snow and cutting weeds and grass, repairs of fences road crossings and signs, flagmen at crossings, bridge and track watchmen, bridge watchmen necessitated by repairs, repairing bridges and culverts, repairing cattle guards, reloading cars, getting cars on track etc., station labor, repairing telegraph, unloading coal, watching piling and hauling wood including time of wood trainmen, construction of sidings, etc. It is designed to show the cost on each of these accounts for each subdivision of road.

† See Form No. 3, Appendix E.

book. It is therefore of the utmost importance that it should be correctly kept, and that the designation of the structures upon which the expense is incurred should be so clear that it will not be necessary in any case to refer back to the bridge and building department for information. The book is very simple and easily kept, and furnishes the maximum amount of information with the least possible labor to the person who keeps it. Its requirements should, therefore, be carefully complied with.

This book provides for inserting from day to day the number of hours worked by each person; also for distributing the labor to the account upon which expended. These duties should be performed at the close of each day. The total time worked on the various accounts should be noted at the bottom. These added together agree with the gross time worked, and serve in a measure to verify the latter.

Under the head of "remarks" should be entered deductions on account of board bills, the name and address of the person or persons to whom such deductions are due, etc. When a time ticket is issued, "time given" should be written in this column. It is also intended to be used to explain the character of any unusual work, also for giving information necessary to a correct distribution of the time.

This book should be signed by the foreman and forwarded to the shop timekeeper, superintendent of bridges and buildings, or other person designated, on the first day of each month.

The pay roll is made directly from this book by the person designated to perform such duty. No delay, therefore, should attend its transmission.

TIME BOOK FOR ENGINEERS AND FIREMEN.*—This book is especially adapted for keeping the time of engineers and firemen. It is also intended to afford statistical information needed in compiling the locomotive report, and for other purposes.

It is made up of loose leaves, which are designed to be bound together in book form after an impression copy of the same has been taken in the office where the time is kept.

Care should be taken by those who write it up to give all the information that the form requires, the various classes of information being inserted in the places or columns provided therefor. Care should also be taken not to omit any deductions to be made from employes' wages. When a time ticket is issued, "time given" should be noted in the proper column. The "remarks" column is intended to be used to explain the character of any unusual work that may have been done, such as construction, care being taken in every instance to give location, etc.

This book is designed to be kept at the principal shops for each division by the timekeeper in charge.

At the end of the month all the subsidiary books kept on a division should be forwarded to the principal shop of such division.

* See Form No. 4, Appendix E.

ion, where the pay roll is made, or where the time and wages of engineers and firemen are consolidated preparatory to making the roll.

This preliminary work is rendered necessary by the fact that an employe's time, in many instances, appears on two or more books; this time should be consolidated at the central shop, so that the name will appear but once on the roll. In order to effect this consolidation properly and otherwise prevent duplications and omissions, it will be necessary, in the generality of cases, to consolidate the information embraced in all the time books in one particular book; or, in other words, to make one time book for the whole division. When possible, the time books written up at subordinate shops should be incorporated with that written up at the principal shop, without retranscribing.

In order to accelerate the work of consolidating the time at the central shop, tissue copies of time books should be sent to each shop on the 15th of each month, by timekeepers or subordinate shops, so that the information may be copied in advance on the consolidated book.*

To facilitate the keeping of this book, and for other purposes, each engineer should be required to return a daily trip report † exhibiting the particulars of his service. At the end of each month he should supplement this with a return showing consecutively the work he has performed. ‡ Supplementary to these the timekeeper should be supplied by the train dispatcher with a statement || of trains run. These various returns will afford, with the assistance of the engine house register, the data required in writing up the book.

When engineers or firemen work in the shop or elsewhere off their engines, the fact that they are so employed should be entered in the miscellaneous column of the engineers' and firemen's time book, provided they have made any running time during such month. *Per contra*, when shop men have made running time, such time should be entered on shop time book, provided they have worked in the shop during the month. [NOTE.—The object of this rule is to prevent the names of the employes referred to appearing on more than one pay roll. In order to accomplish this, the wages of engineers and firemen for shop work will be entered on the engineers' and firemen's pay roll for the amount due them for running time, provided they have made any running time during the month. If they have, the wages will be entered on the shop pay roll. Contrariwise, the wages of shop men who have running time will be entered on the shop

*In some cases the pay roll is made at the principal shop of a division; in others it is made elsewhere. But the rule in regard to consolidating the wages of engineers and firemen on a particular time book, for a whole division, it is well to observe in all cases.

† See Form No. 8, Appendix E.

‡ See Form No. 9, Appendix E.

|| See Form No. 10, Appendix E.



Carriage in Jeypoor.

pay roll, provided they have shop time during the month: if they have not, the wages will be entered on the engineers' and firemen's pay roll.]

The distribution of work performed by engineers and firemen when off their locomotives should, for convenience of accounting, be kept by the timekeeper upon a separate book. At the end of the month this book should be sent to the office where the pay roll is made.

The time allowed locomotive dispatchers (if kept on the engineers' and firemen's time book) should be entered in the "miscellaneous" column, their wages being inserted in one of the blank lines provided, so that it may not be confused with the running time of engineers.

LABOR BLOTTER.*—This form occupies an important place in the keeping of the accounts of labor. It is a common day book; a memorandum, rather than a record. It is designed for convenient use about shops. In it should be inserted the name of each employe. It should be used in taking quarter time in the middle of the forenoon and again in the middle of the afternoon. It is also used to designate the hours worked by each employe, and the account or accounts to which such work is chargeable.

Afterward this information is entered on the general time book.

The inconvenience of distributing labor under several heads on the general time book renders the use of the blotter at shops especially convenient. When, however, the total time of a group of employes is chargeable to a particular thing, the blotter may be dispensed with, as the distribution may be designated opposite the names of the employes on the general time book. The blotter is especially convenient where labor is chargeable to a variety of accounts, or where the number of hours worked from day to day by employes varies; also in those cases where the book used in taking quarter time becomes much soiled by use.

CLASSIFICATION OF LABOR—DISTRIBUTION BOOKS.—In order to understand accurately the questions attending the employment of labor, its extent and purpose must be known. This, when the labor is diversified, requires that it should be systematically classified, the subdivisions being so minute as to afford an accurate and intelligent digest of the whole.

The subdivision should not only specify the nature of the work, but its location and cost, being altogether so explicit in regard to details that it only remains to study the same in order to understand the full scope and purpose of each expenditure.

It is largely for this purpose that operating expenses are carefully subdivided; that disbursements for construction are minutely classified; that accounts are opened with each article or group of articles manufactured, and for other purposes. The

*See Form No. 13, Appendix E.

classification should permit of the details of cost being accurately known, so that by analysis and comparison the relative economy exercised may be judged.

So far as the exigencies of accounts will permit, without undue expense, it is designed that everything that enters into the cost of a thing shall be charged thereto. Thus, the cost of handling material, the outlay for the construction or repair of a building, platform, yard, fence, bridge, culvert, engine or car should so far as practicable be charged thereto. When, however, the expense of accounting is greatly increased by too minute a subdivision of expenses, and the value of the information thus obtained is not commensurate with the outlay, it should not be attempted: the design should be to make the method of accounting subordinate in every case to the value of the same; never in any instance to incur expense that is not justified by the use made of it.

So far as agreed upon, the subdivisions of expenditures should be scrupulously observed, in order that returns may not be misleading as regards cost of particular things, or otherwise lose their value for purposes of comparison.

In addition to the expenditures of a company for operating, construction, manufacturing and similar outlay, more or less work is performed for others for which a company is entitled to receive pay. Accounts are required to be kept of all such labor so that it may be brought to the notice of the accounting and financial officers of a company, that the same may be duly and clearly recorded and the amount collected.

In order that all these things may be successfully accomplished without confusion or failure, it is of the greatest importance that those who have the keeping of time of employes (and the distribution of material and expenses as well) should be familiar with the various classifications of a company, and the machinery by which they are carried into effect; also the general and specific objects that such classifications and accounts are designed to accomplish. This requires that they should not only study the mechanical appliances, but the theory and principles that the printed forms are intended to carry out. This study will enable them to perform their work more intelligently and will sharpen their appreciation of its needs, so that better knowledge of the conduct of accounts and greater efficiency therein will grow out of it.

In order to classify the expenses systematically and preserve a clear and permanent record of the same, distribution books are provided.* In these, accounts are to be opened for each expenditure having a separate identity in the classified list, such accounts being entered in their due order and sequence, care being

* These distribution books are written up by the person who keeps the time or in the office of the official to whom the time books are sent, as specifically directed in each case; they may be used at the general office as journal vouchers, the totals only being entered on the general books.

taken in every case to use the designation prescribed by the rules governing the same.

In writing up the accounts, the record throughout should be so clear an exposition of the subject that it may be fully understood and analyzed without correspondence or further reference to the person returning it. Thus, the items of each account should be given, including names of employes, how engaged, rates and amounts for each separately; also the total cost or aggregate of all the items. In giving the name of an account, especial care should be taken to make it so explicit and clear that it may be easily identified wherever referred to, so that the details of cost affecting any account may be collected from the various books in which it is mentioned.

In classifying expenditures for labor (and for material expenditures as well) it will be understood that the work should not be performed at random in any instance, but according to preconceived rules and regulations; if the disposition of an expense is not known or not clearly indicated by an analogous ac-



Carriage in Servia.

count, information should be asked of the accounting officer; this will not only insure uniformity, but will also enable a company to supply omissions or correct inaccuracies in its classification.

In further explanation it may be said that in no case should the distribution of the labor of an employe or class of employes be governed by general duties, but should be specific in each instance; thus, the wages of engineers, when engaged in shops, should not be charged to the account known as "engineers and firemen," but to the thing upon which they are engaged in the shops, the same as machinists and carpenters. This rule also applies to every branch of the service, care being taken to classify the work according to the particular thing done and not according to the general duties that the employe performs. This is necessary in order to enable a management to understand clearly the cost, relatively and otherwise, of each thing for which money is expended.

THE GENERAL DISTRIBUTION OF LABOR BOOK.*—The distribution of labor is designed to be kept on loose sheets;

* See Form No. 14, Appendix E.

it is quite as convenient in this way as it is to keep it in a book; at the end of the month an impression copy is taken of each of the sheets by the timekeeper. In this way he is put in possession of a perfect record at little cost. Afterward the sheets are bound in book form. They then constitute the "distribution of labor book."

A separate account should be opened in this book with each account upon which labor has been expended. It will thus show not only the source of the expenditure, but the details thereof, and the aggregates as embraced in the recapitulation. It is posted from the time books.

As explained elsewhere, it is found desirable, in some cases, to provide printed forms for distributing labor so as to reduce the clerical work to the minimum. This is so in regard to track labor and for men engaged in repairs and renewals of bridges, buildings, fences, crossings, platforms and yards; the number of men engaged does not justify the employment of a timekeeper. The classification of such labor is comparatively simple and may be condensed to a greater extent than is possible in case of machinists and carpenters engaged about a shop; the great number of the latter and the widely diversified work upon which they are engaged require, comparatively, elaborate bookkeeping. The general distribution of labor book is designed to meet such cases. It is also convenient for use in consolidating the special forms of distribution books and time books used in connection with the track, buildings and bridges, and other departments. It possesses, like a journal or ledger, adaptability other forms do not.

The general distribution of labor book is designed for use in writing up the general books of a company. It should, therefore, be forwarded to the accounting officer. Those who compile it should not keep it in their possession longer than is necessary; the utmost celerity should be exercised. It should be sent forward from small shops and where the work is slight on the third of the month; at larger shops and for divisions as early as the tenth.

It should be remembered, in this connection, that the value of statistics of this kind is largely dependent upon their early compilation. The earlier the details are known, the more valuable they are to a management. This requires that everyone who has anything to do with the distribution of labor or the examination of the accounts should act promptly and expeditiously.

A general distribution of labor book should be returned by each shop. Such a book should also be returned by those having charge of the general accounts of the several divisions. Thus, the time books of the track forces should be consolidated and copied into a general distribution of labor book; the same rule should be enforced in regard to the time and distribution books for bridge and building department, engineering department,

etc. The distribution of station labor and train forces on each division should also be consolidated in one general distribution of labor book.

As a rule, all the track time books for a division are sent to some central office for examination and for use in making the pay roll; the same practice is generally observed in regard to time books used by gangs at work upon bridges, buildings, fences, platforms, etc.; it is also observed in regard to the engineering forces scattered over a road; to the station and train forces of a division, and so on. The official to whom these books are sent should consolidate the information they afford in one general distribution of labor book.

The distribution of the time of engineers, firemen and dispatchers should be inserted in the general distribution of labor book for the shop at which the pay roll of engineers, firemen and dispatchers is made.

Labor should be charged to the account upon which it is expended in the month it is expended.

Accounts should be opened on the distribution of labor book in the order prescribed by the accounting officer; * a recapitulation of the whole should be given at the end.

In opening accounts, sufficient space should be left to accommodate all the items for each account for one month.

A separate distribution of labor book need not be rendered for each pay roll. Several pay rolls may be grouped in one book, but the aggregate amount of pay rolls thus entered should agree with the total amount of the distribution book.

The distribution of labor book should in every case specify the name of the time book or books from which it is compiled, so that it may be compared with the same in detail.

Under headings embracing such items, a sub-account should be opened for each bridge, culvert, viaduct, building, dock, wharf, ferry boat, locomotive, stock yard and dining car for which expense is incurred. †

A separate account should be opened with each individual, firm or corporation against whom a charge is incurred. It is the duty of the person returning a book embracing accounts of this kind to attend personally to the proper recording and rendering of bills against such persons.

The wages of employes engaged in the manufacture of material should be charged to the cost of the material upon which they are at work.

Much of the information contained in the distribution of labor book may be written up in advance of the closing of the accounts for the month. Thus, the headings may be inserted, and the

* For list of accounts see Appendix B.

† The several charges under the respective heads as noticed, should be summarized and the total of each carried to the final recapitulation at the end of the book. For directions as to the manner of making these recapitulations see Appendix C.



Carriage on the Upper Nile.

name or number of employe, kind of service, folio of time book, and rate. These details may be gathered from the distribution book for the preceding month and from the time book of the current month. If inserted in this way in advance, work will be greatly facilitated, and it will be possible to complete the distribution of labor book earlier than would be possible if the whole had to be written up after the close of the month.

DEDUCTIONS FROM THE PAY OF EMPLOYEES—GARNISHMENTS.—

It frequently becomes necessary to make deductions from the pay of employes to cover amounts, such as garnishments, amounts for board, accident insurance premiums, payments on account of watches, uniforms, commutation tickets, fines, deductions, and other things, where the interests of the employe are especially benefited by this intervention of a company on his behalf, or the law enforces it, as in the case of garnishments.

However, the full amount due the employe should be entered on the pay roll. The amount to be deducted should be noted opposite his name. Great care should be exercised at all times not to neglect to make this notation. It should be noted in the column for deductions on the pay roll and in the miscellaneous column in the time book.

When practicable, entries of this kind on the time book should be made in red ink, so as to make them as conspicuous as possible; in any event the entry should be made prominent, so that it will not be overlooked when making the pay roll or when giving a time ticket or letter of advice.

Deductions from the pay of employes should be made in the current month, unless special provision is made to the contrary.

No one should promise, or bind a company by making promises on its behalf, that it will collect debts due by employes. When desirable, a company should assist in undertakings of this kind, but it can not bind itself to make good an amount if through any neglect on the part of its employes the debt is not collected. However, in the event of loss through failure to note on a pay roll or time ticket that a deduction should be made, or in the event of failure to deduct the same from the wages of the payee afterward, the person to blame should be held responsible.

No one should be authorized to make deductions from the pay of employes on account of sums due by them, even when requested to do so by the employe (except in the case of amounts due the company or for garnishment), unless instructed to that effect by the proper officer, as it is not desired that the company shall intervene in such matters except in cases of particular emergency where the convenience of the employe and the interests of the company are alike advanced thereby.

In every case where a company undertakes to make collections, an immediate record thereof should be made in the office where the time of the employe is kept, also where the pay roll is made,

When a great many deductions are to be made, a blotter should be kept on which the particulars should be entered as they occur. Afterward an alphabetical list of the same should be compiled for use and reference in making the pay roll. The aggregate amount of this list should agree with the total footings of the blotter.

A summary of the amounts due to particular persons or corporations on account of deductions should be inserted on the first page of the pay roll, so that the amounts and the names of persons to whom due may be seen at a glance.

GARNISHMENTS.—In reference to garnishments against the pay of employes or for other sums due by a company, immediate notice should be sent by the legal department, or official conversant with the facts, to those whose duty it is to issue certificates of indebtedness, such as time tickets or vouchers, of all suits of this nature. Notice should also be sent the treasurer and paymaster.

Upon receipt of notices of this kind, a reply should forthwith be returned to the sender notifying him of the amount due the employe, whether the employe is married or not, and other necessary particulars.

When the pay of an employe is garnished, the total amount of wages unpaid on the roll at the time should be withheld until the settlement of the suit. In the event the payee has given orders against his pay, or a portion of it is set aside for any other purpose, such claims should not be paid until formal notice of the withdrawal of the suit or its settlement has been given by the proper official.

No time ticket or voucher should be made in favor of a person who is garnished, or, if made, should be cancelled by noting the word "Garnished" across its face. A company after being garnished can not pay the sum covered thereby except after adjudication by the court or abandonment of the suit, without its becoming responsible for the debt.

At the end of the month a statement should be made by the paymaster of wages garnished, giving the name of the person, his occupation, place of residence, and gross wages. In the absence of instructions to the contrary, this statement, together with the gross wages thus garnished, should be turned over to the treasurer, who should thereafter give the matter attention. The utmost care must be taken not to pay wages that have been garnished, except under due process. A time ticket should never be issued without first carefully searching to ascertain whether the person's wages have been garnished. Nor should the paymaster ever pay anyone without knowing whether their pay has been garnished or not.

PAY ROLLS.*—THEIR PAYMENT.—The pay roll is the most important voucher that a company has. It is made up of innumer-

* See Form No. 15, Appendix E.

able petty items and embraces the result of a vast network of accounting and preliminary clerical work. The utmost care is required to be exercised in its compilation, first in keeping the time of employes, afterward in determining the wages due them, and finally in making the roll.

As the pay roll frequently embraces many time books, it becomes necessary to designate in every instance the person who is to make it.

The pay roll is intended to show in detail each man's service, his name, what he does, where employed, the time he has worked, the rate he receives, the gross amount of wages he has earned, the amount (if any) to be deducted from his wages, to whom the deduction is payable, the balance due the employe, and finally the receipt or evidence of payment by the company.*



Carriage in Mandalay.

Wages should be entered on the pay roll for the month in which the service occurs.

The amount of each roll should agree with the footings of the time books from which it is copied, and these in their turn should agree with the distribution of labor sheet or book. Each serves as a check upon the other, and in a measure proves the accuracy of the whole.

The natural divisions of the service should be observed in making the pay rolls. Only such employes should be grouped

*Many companies divide their pay rolls into two classes, namely, those who work and those who do not,—“active” and “disabled.” The disabled embraces those that are pensioned (if any), those who have been injured in the service, are sick, or are carried on the pay roll for any other special reason. The plan is an excellent one. Every company should have a disability roll. It shows at a glance the extent of its expenditures in this direction; the division, moreover, facilitates accounting.

together on a roll as the local officials who are required to certify to the correctness of the same are personally able to vouch for. This will necessitate a separate roll for each division for roadway and track; for engineers and firemen; for each shop; for bridge and building gangs; for the station force; for trainmen; for extra or special gangs of men; also for the general office and for employes of particular departments stationed off the line.

The rolls for small shops on a division may be bound together in one book to lessen clerical work. In such cases, provision should be made for inserting the approval of the general officers on the last sheet in such book instead of upon each roll.

When the pay rolls of several shops are bulked together in the above manner, a recapitulation should be attached to the last sheet showing the amount of each pay roll and the amount of the whole.

When the accounts of a small shop or roundhouse are kept under the supervision of some central shop on a division and there are only a few names to be entered on the roll, such names may be incorporated on the pay roll at the central shop.

Pay rolls should be made on or before the fifth of the succeeding month. They should not be delayed in any office through which they pass. If the official in charge is unable to certify to them immediately, owing to absence or other cause, his assistant or clerk should act for him without delay. The date upon which each certificate is attached should be entered opposite the signature of the person certifying. Rolls should not be detained in any office to exceed six hours. Any dilatoriness in completing or forwarding the rolls retards the work of others, and may result in delaying payment and other serious injury to the service. Promptness should, therefore, be the rule in all cases.

In order to anticipate, so far as possible, the labor of making the pay roll, it may be commenced before the close of the month at shops and other points where a large number of men is employed. But only the names and the rates paid may be entered in advance. This will serve to divide the work and lessen the amount at that particular period of the month when the rush is greatest.*

The name of each and every employe should appear upon the pay roll, and no employe's name should appear upon more than one roll (except in case of transfer of employment to another department of labor, or from one division to another, during the month) or in more than one place upon any roll.

When an employe is transferred from one department to another, his name should appear upon the pay roll for each department for the amount due him.

* In the event the roll is made at some central shop a memorandum of the names and rates paid may be sent by subsidiary shops the latter part of the month to the person who makes the pay roll, so as to anticipate the labor as much as possible. This rule should be especially observed in regard to the engineers and firemen, where the pay roll of such forces is made at some central point.

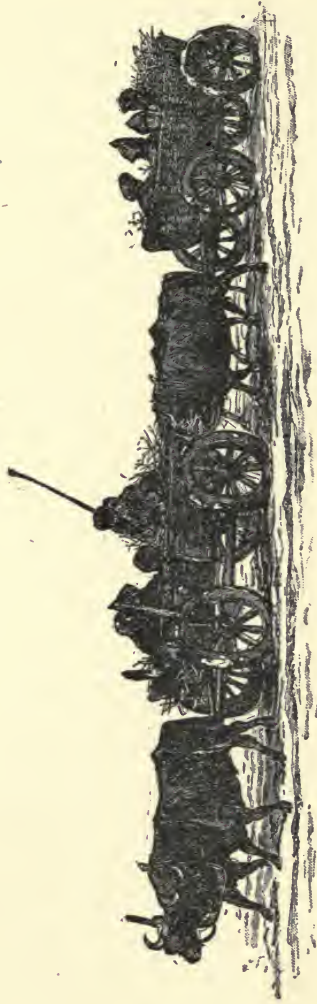
When employes run in common over two or more divisions, the whole pay should be returned on the roll of one of the divisions, the portion belonging to the other division being charged in the distribution of labor book under the proper operating or construction account to such divisions. This rule embraces employes at the junction of two or more divisions; employes running over two or more divisions, and others similarly engaged. A statement of the amounts thus charged should be rendered monthly to the debtor division by the official making the charge.

When an employe works in common for two or more departments on a division, the whole amount of his pay should be entered on the roll of one of the departments interested. The storekeeper of the department returning the time should ascertain the distribution for the other department and should include it in his distribution of labor book.

The following rule should govern in reference to transfers within the same department of service on a division: When the place of employment is changed during the month, say from one station to another, or from service under one conductor to another, or from one track section to another, the name of the person thus transferred should be entered on the roll at each place or under each head where engaged. But the amount due for services should only be extended opposite the last place where employed; at this place a recapitulation should be made on the roll giving his name, the various places where he worked, separately, occupation, time, rate and wages; following and opposite this recapitulation the total sum due him should be carried into the "amount" column. At each of the places (under each of the heads) where engaged during the month, the name should be given, also occupation, time and rate; opposite this should be noted "transferred to page number . . .," giving page and amount of wages transferred. The observance of this rule will keep the record of service intact and at the same time prevent a name appearing on a roll more than once for payment. The rule applies only to transfers in the department of labor covered by a particular pay roll. If an employe in the train service of a division should be transferred to its track service, the name and wages due for the respective kinds of work should appear on the roll for each, and so on. An exception to this rule is made in the case of engineers and firemen having shop time or *vice versa* as provided herein.

Amounts to be deducted from the pay of employes should be entered opposite their names in the column "paid on account" on the pay roll, giving the name of the payee in each case, also the reason for the deduction.

On the first page of the pay roll should be shown the aggregate amount due each payee for deductions from employes. This statement should be headed "deductions from the pay of employes." It should be footed and the total should agree with the



Carriage in Philippopolis.

gross amount of the column for deductions from the pay of employes. The receipt of the payee for such sums should be taken by the paymaster at time of payment, as in other cases.

In the event a time ticket has been issued, the words "time given" should be noted in the column headed "received payment" opposite the name of the employe. The person who makes the roll is responsible for the insertion of notations of this nature on the roll.

In the event the pay of an employe is garnished, the fact should be noted in the same way opposite the name of the employe on the pay roll by the official to whom the notice is sent. When the garnishment is released or the suit settled, the date and particulars thereof should also be noted on the pay roll.

If an employe dies, the pay roll should be marked, opposite his name, "deceased."

All gratuities allowed (*i. e.*, amounts for which no work has been performed) should be noted on the pay roll in red ink, so that the extent of such allowance may be seen at a glance. In order to facilitate this, such entries should also, so far as practicable, be made in red ink on the time books.*

The sheets of each pay roll should be numbered consecutively in the upper right hand corner, commencing with number one.

In making the pay roll, the name of the official or officials in charge should be given first, then the clerical force, if any; afterward the names of the employes should be arranged in alphabetical order, and following the name of the foreman of each gang.

In entering the names on the pay roll, the surname should be given first; afterward the Christian name in full; the initials also, if any, thus: "Howard, Peter C." This rule should be carefully observed, as in the multiplicity of names that appear it is unavoidable that the same name and initial will frequently occur, the only manner in which they can be distinguished being by the Christian name. In some cases this also is the same; when this is so, a distinguishing number should be inserted opposite each, so as to distinguish between them.

In order to facilitate payment and for other reasons, the employes on each pay roll should be numbered; the number may be entered at the left of the name.

In making the engineers' and firemen's pay roll, the number of miles run should (in order to facilitate comparison) be entered. A special column should be provided for this purpose on the roll. A memorandum should also be made opposite each name of shop time. Also the amount of any bonus or extra time allowed. In this way a *résumé* of the whole may be quickly grasped.

* In entering gratuities on the pay roll, they should be noted in short, with the balance due, thus:

Regular	\$69.80
Gratuity.....	4.70—\$74.50

In order to prevent the names of employes appearing on more than one pay roll, the wages of engineers and firemen for shop work should be entered on the engineers' and firemen's pay roll for the amount due them for running time, provided they have made any running time during the month;* if they have not, the wages should be entered on the shop pay roll. Contrariwise, the wages of shop men who have running time should be entered on the shop pay roll, providing they have shop time during the month; if they have not, the wages should be entered on the engineers' and firemen's pay roll.

The names of locomotive dispatchers may, if more convenient, be placed upon the engineers' and firemen's pay roll.

As soon as a roll has been completed, the official whose duty it is to render the distribution of labor book therefor, should notify the treasurer of the total amount; he should also send a comparative statement of the pay roll to the division superintendent interested, so that the latter may have early advice of the extent of the expenditure incurred.

Each pay roll should be bound with a good substantial paper cover, in the office where it is made, the name and amount of the roll being legibly written thereon. Covers for pay rolls should be kept in stock by the stationer so that they may be uniform and suitable.

Pay rolls should not be folded, but should be sent forward under strong tin covers provided by the stationer.

In making the pay roll and in certifying thereto no intermediate or blank lines should be left.

The certificates of the correctness and authenticity of the pay roll should be made on the last sheet, and should be signed by all those who are conversant with the facts or in any way responsible for the labor.

At shops the roll should be certified as follows:

First, by the foreman. If there are two or more foremen each should certify immediately after the names of the gang under him. Second, by the clerk or clerks who take the time. In the event there is more than one clerk, their certifications should follow immediately after the last of the names of the employes of which they keep the time, respectively. Third, by the storekeeper, or head timekeeper, who is responsible for the general correctness of the account. Fourth, by the official in charge of the shop or shops. In the event there are two or more officials, their certifications should follow immediately after the last name of their respective forces. Fifth, by the master mechanic or superior official immediately responsible for the labor as a whole. Sixth, by the division superintendent, general superintendent.

* Thus: Running time.....\$60.70
Shop time..... 4.70—\$65.40

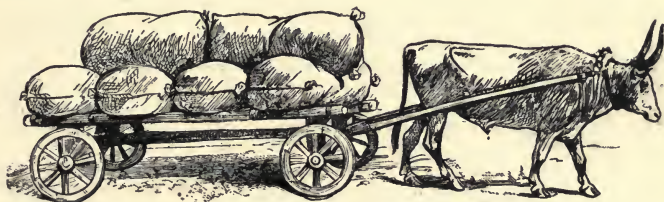
Note "switching" opposite, if engaged in such service, etc.

general manager, and finally by the official who approves for payment.*

When a pay roll reaches the paymaster, he should cause the extensions and footings to be carefully re-examined, and when he has made such examination and corrected all errors, should append his certificate to that effect.

In cases where employes located at different points are grouped in one pay roll, say for station, train, track, yard, and other scattered forces of a division, the rules that require the local officials in charge to certify to the correctness of the pay roll may be dispensed with, as such certification would require that the roll should be sent to them. This would occasion both delay and inconvenience, possibly loss. The certification of such officials should be attached to the time books or sheets from which the roll is made; these accompany or follow the roll and serve to verify it.

The duty of certifying to the pay roll, it should be remembered, is not a mechanical one, but one of vital consequence to



Carriage in Trieste.

a company. It should be done intelligently and with a due understanding of the responsibilities that attach to such certification.

* The general form of certification to be attached to each pay roll is as follows:

I certify that the foregoing men were employed as stated.

....., Foreman.

I hereby certify that this pay roll is correct.

.....	Time Clerk.	189..
.....	Storekeeper.	189..
.....	General Foreman.	189..
.....	Master Mechanic.	189..
.....	Supt. M. P. & M.	189..
.....	Division Supt.	189..
.....	General Supt.	189..

Approved:

.....	General Manager.	189..
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Approved for payment:

.....	Auditor of Expend'rs.	189..
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Extensions and footings examined and all errors corrected:

.....	Paymaster.	189..
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Each one who certifies to a roll is responsible to the extent of his knowledge and discretion. This is especially true in regard to the local officials who make the pay roll or who have personal knowledge of the facts it contains. Thus, the foreman should never in any case certify to the correctness of a roll until he has carefully examined the list of names, also the rates paid and the time each man has worked. The certification of the foreman, it may be said, should have the effect to prevent material inaccuracies, as he knows personally the name of every employe. His certification affords the best evidence possible that the figures of the timekeeper are substantially correct.

The certificate of the time clerk should, manifestly, be correct in every respect, as he is personally conversant with the name of each man, the actual time he has worked and the amount of wages due him. The certificate of the general timekeeper or storekeeper should be equally valuable, because his measures should be such as to enable him to know that the time has been correctly kept and is accurately described on the pay roll. The certificate of the general foreman or official in immediate charge of the shop or place is also of great value as a means of verifying the names given and the rates paid, for the reason that he knows generally each man, and in the event of errors or inaccuracies should be able to discover the fact; this is also true in regard to the certification of the master mechanic or person in charge, the general supervision that he exercises over affairs being such as to assure him that the accounts are substantially accurate or otherwise.

When rigid formulas are not observed in recording the time of employes from day to day, errors are more likely to occur than is supposed. Thus, where no record is made of the time of an employe who works by the month until the end of the month, the names of those who have left the service are liable to be copied from the preceding month's roll inadvertently. On the other hand, employes engaged at isolated points are liable to be omitted entirely from the roll under such circumstances. Moreover, inaccuracies and errors will be of constant occurrence in connection with rates allowed, time worked and other details. These and other considerations render it necessary that a daily record should be kept of the time of each person, no matter whether he works by the hour, day, month or otherwise. Also, that everyone who has personal knowledge of the names that appear on the roll, and of the time they have worked and the rates they receive, should certify to the same, but only after making a thorough and intelligent examination of the roll. If these precautions are observed, it is impossible that errors or inaccuracies should occur without being discovered and corrected.

In reference to the payment of the force, every employe whose name appears upon the pay roll should appear personally before the paymaster for his wages.

Payments may be made by certificates (time tickets) to those who leave the service of a company or are transferred from one division of the road to another, but all others should be paid by the paymaster.

Amounts due to parties for deductions from pay of employes should be paid by a particular official.

Employes should not be allowed to give orders on a company for their pay except for good and sufficient reasons as explained elsewhere. It is impossible to surround such orders with necessary safeguards. Every company provides a particular way for paying its employes, a way especially designed to meet the convenience of employes and its own necessities. This way, whatever it may be, should be lived up to to the letter.*

A particular time is designated by every company for paying its force, according to the labor required in examining the accounts, completing the pay rolls and making other and necessary preparations. It will vary according to the exigencies of the service. Employes are expected, however, to wait for their wages until the company is ready to pay them. However, when a person leaves the service of a company and can not await the usual course of payment without inconvenience or hardship, or is disinclined to do so and there is no reason for withholding his pay, the officer who made the roll should communicate with the paymaster in reference to the matter so that he may proceed to make the payment.

Whenever a gang of men is discharged, the paymaster should be notified in advance so that he can arrange for its payment. It is desirable to avoid the issuing of letters of identification or time tickets under such circumstances, if possible. Risk may be avoided and the men accommodated by the paymaster giving the matter attention.

No one in the service of a company should be allowed to traffic in the wages of employes or to discount their pay. A company should pay all wages due promptly and without rebate, and meet every reasonable and proper requirement in this direction without the intervention of others. It is the experience of railroads that they do this generally and fully.

TIME TICKETS †—ISSUING SAME—PAYMENT OF WAGES.—A time ticket is a certificate of wages; a statement of the amount due the person in whose favor it is made.

The utmost circumspection should be exercised by those who are in any way concerned in issuing these important documents; the same care, in fact, that would be exercised in issuing a check on a bank, or making payment in any other manner.

*In my judgment there is but one safe way and that is to require each employe to appear personally before the paymaster or his deputy. In the absence of instructions to the contrary, it is a safe rule to follow.

† See Form No. 17, Appendix E.



Carriage in Ceylon.

In no case should a time ticket be signed or countersigned until the persons who perform such duty have assured themselves that the ticket is correct in every particular and in accordance with the facts, and that the service has been performed as stated.

For the better protection of a company and the employe, and to obviate any doubt as to the terms and conditions upon which every time ticket is issued, the following form of agreement is printed on the back of the ticket. This agreement the payee is required to sign at the time the ticket is delivered to him:

AGREEMENT UPON PART OF PAYEE.

This time ticket, upon which payment for wages is made, is accepted by me in full payment for services of every name and nature for the..... Railway Company, or companies owned or controlled by it, up to and including the time specified herein.

It is accepted by me subject to the rules and regulations of the company on whose account it is issued. I agree not to negotiate it or attempt to collect it through any bank or collection agency, but to present it in person to the paymaster of the company, or such agent as may be authorized to pay it.

It is also understood and agreed to by me, as witnessed by my signature hereto, that in the event I should lose this ticket, or it should otherwise pass out of my hands, and in consequence the amount called for should be paid to a wrong person, I will not hold the company responsible for the amount.

.....
Signature of Payee, *i. e.*, person to whom this ticket is issued.

Witness.....

Title.....

Another and an important purpose that will be served by the foregoing agreement which the payee signs, is that it will enable him to secure the sum due him with the minimum amount of trouble. It will facilitate his identification in presenting the ticket for payment. It renders it unnecessary for him to hunt up witnesses. The payee must personally sign his name to the agreement. If he can not write, he must make his mark. This must be done at the time the ticket is delivered to him and in the presence of the person issuing it, who must sign as a witness. In those cases where the person issuing the ticket does not personally deliver it to the payee, the agreement must be signed in the presence of, and must be witnessed by, the official who does deliver it. The signatures of those who act as witnesses must be known to the paymaster and agents of the company who may be called upon to pay time tickets.

When a time ticket is delivered to the payee, and before he signs his name, his attention must be called to the agreement printed on the back, so that in signing it he will do so understandingly.

Instances will be of repeated occurrence, however, where it will not be possible or practicable for the employe to appear personally before those who sign and countersign time tickets. This will be so in the case of persons employed at stations and upon

the track and at places scattered along the line away from headquarters. When such employes leave the service a request for a time ticket is sometimes issued and sent to headquarters by the local official. This request should be signed by the person responsible for the labor, countersigned by the person who kept the time, and endorsed by the person to whom granted at the time of delivery to him. Upon requests thus made time tickets are issued.

Requests for time tickets should not be made except in the cases mentioned. It is desirable that time tickets should be issued directly if possible. In the majority of cases it will be practicable when employes remote from headquarters leave the service to send a blank time ticket to the official in charge to be signed and countersigned and sent to headquarters to be approved for payment.

It should be the duty of the stationer, under the advice of proper officials, to furnish blank time tickets to such agents and others as have occasion to use them. They should not be furnished promiscuously, but only to those who have employes under them, who are coming and going and require to be paid when they leave the service; at other places a blank time ticket should be furnished only when occasion to use it requires.

Requisitions on the stationer for blank tickets should be approved by a responsible officer before being honored.

A careful record should be kept by the stationer of the persons to whom blank time tickets are issued.

Time tickets should be numbered consecutively by the printer, and no two tickets should bear the same number.

A time ticket should not be issued except to those who have left the service of a company, or who have been transferred to another division of the road.

In order to minimize the risk a time ticket should not be issued for any sum exceeding \$150.

A time ticket should show the name of the employe, the time worked, rate, occupation, place and amount.

The reason for issuing a time ticket should in every case be stated on the face thereof. Thus, if the payee is no longer in the employ of the company, it should be marked "left the service;" if he has been detailed to another division, it should be marked "transferred to division," and so on.

In order to enforce responsibility, ensure the preservation of the record of each ticket issued and ensure the proper notation thereof being made on the pay roll opposite the employe's name, it should be required that each ticket be signed by the responsible officer in whose department the employe works.

It should be countersigned in every case by the timekeeper or timekeepers.

Tickets issued at shops should be signed by the master mechanic or official in charge, and should be countersigned by the storekeeper.

Tickets issued to employes at stations, upon trains and in connection with the track and bridge and building service should be signed by the official who makes the pay roll for such forces, and should be countersigned by the person or persons who keep account of the time and make return thereof.

It should be the duty of the person who makes the pay roll to see that it is marked "time given" opposite the name of every employe to whom a ticket has been issued. Neglect to do this should entail personal responsibility for any loss the company may suffer in consequence thereof.

A time ticket should not be delivered to the payee until it is both signed and countersigned. If this precaution is disregarded



Carriage in Genoa.

the payee will very likely neglect in many instances to have the ticket perfected and will be put to much delay and inconvenience in consequence, as no ticket can be paid where these formalities are not observed. In the event an emergency should arise rendering it necessary to disregard this rule in respect to signatures, the ticket should be enclosed in an envelope, sealed and addressed to the person who is required to sign it, and the payee specifically directed to go to such person and obtain his signature, otherwise payment will be refused. Such an emergency will sometimes arise, it is proper to say, when the persons who sign are located at different points and the necessary signature can not otherwise be procured without greatly inconveniencing the payee. In all ordinary cases, and where the parties

are located near each other, all the signatures should be attached to the ticket before it is delivered.

In filling up a time ticket ink should be used or other device impossible to be changed or cancelled without detection.

The time ticket should be filled up in exact accordance with the requirements of the blank.

No alterations or erasures should be made on the face of a time ticket. When an error or inaccuracy occurs which necessitates an alteration or erasure, the ticket should be cancelled by being punched and the signatures destroyed. The ticket thus destroyed should be left in the book in its proper place.

A time ticket should never contain the name of more than one person, *i. e.*, a time ticket should be made for each person, except as provided for below.

When a large number of men leaves the service in a body, involving the labor of making a considerable number of tickets, a pay roll blank may be substituted. This form permits the insertion of a large number of names on one sheet. When used in this connection it is a time ticket to all intents and purposes, and should be governed by the same conditions. The names and other particulars should be entered in appropriate places, and a receipt taken of the payee in each instance in the column provided opposite the name. Rolls thus paid should be stamped by the agent or person paying them on the date they are paid.*

In the event it becomes necessary to settle the estate of a deceased employe before the pay roll is returned, a time ticket may be issued for the amount. The fact that the employe is dead should be written across its face. A ticket should then be forwarded to the official of the company having charge of matters of this kind, who will see that it is not paid without a proper release being secured.†

A time ticket should not be issued after the pay roll has gone forward without first advising with the proper officer and receiving a written reply that he has marked the roll "time given." After such reply, and not before, a ticket may be issued.‡

Time tickets should not be given to persons whose pay has been garnished, except by permission of the proper officer.

They should not be issued to anyone whose pay is for any reason withheld.

* It should be remembered in this connection that when a blank pay roll sheet is used for a time ticket, the amount entered in the column "paid on account" is to be withheld by the person paying the ticket. When a pay roll blank is used for a time ticket, an impression copy of it should be taken in the office where it is made.

† Care should be taken in every instance in paying the wages of deceased employes and minors to see that payment is made to the right persons and that a proper release is secured.

‡ In order to expedite work all references to names upon pay rolls should give the number of the employe, his name, and also the name of the roll.

When employes are transferred from one division to another, a time ticket may be given, under the rules, at date of transfer, for the wages due to that time. The wages of employes transferred should be computed (on the division to which they are transferred) only from the date of transfer.

When an employe leaves the service before the pay roll has been sent forward to headquarters, a time ticket may be given him (under the rules) for the amount payable to him at that time.

Before issuing a time ticket, care should be taken to see that the amount of any order which may have been given on account of the company, or in which it is interested, or for which it is responsible, or for which the payee is properly responsible, is first deducted. In such cases, the amount of the deduction should be noted on the time ticket, also on the pay roll.

Every precaution should be adopted to prevent overpayment.

Whenever anyone who handles the funds, stores or other property of a company leaves its service, such portion of their pay should be retained until their accounts can be audited, as may be necessary to protect the company against loss.

When the accounts of such persons have been audited, it should be the duty of the proper officials to see that any balance of pay to their credit is remitted to them as soon thereafter as possible, unless there should be some reason for withholding the amount still further. In the majority of cases the withholding of any portion of the wages of an employe causes him inconvenience, and is sometimes a severe hardship; no unnecessary delay should, therefore, under any circumstances, attend payment.

When an agent leaves the service, or is transferred to another division, a time ticket should be sent to the traveling auditor making the transfer, for all wages due the retiring agent, except twenty-five dollars, which latter amount should be withheld, awaiting the final auditing of his accounts. If the traveling auditor finds the affairs of the agent to be satisfactory, he should deliver the time ticket to him; otherwise he should note across its face, "to be credited in account," and remit it to the treasurer to be credited to the agent, pending the settlement of his accounts.

The whole or a portion of the pay of a conductor who leaves the service should be withheld until his accounts are examined and balanced and the property in his possession turned over to the company. No conductor should be paid by time ticket or otherwise (or at most only for a part) until advice has been received from the proper officer that the property in his possession has been accounted for and his accounts balanced. As soon as the accounts of a conductor have been audited, any balance to his credit should forthwith be sent him.

When a time ticket is issued for a part of the pay of an agent or conductor, as indicated, the roll should be marked "time

ticket issued for \$.....," noting the sum. In reference to the balance of pay due, the roll should be marked: "hold balance subject to settlement of account."

In order further to prevent misunderstanding or loss to a company, it would be well if everyone who handles its funds or securities should be required to sign an agreement permitting the company to withhold their pay or a portion thereof, upon their leaving its service, until their accounts are audited and their indebtedness accurately determined. This will frequently



Carriage in Ceylon.

prevent suit being brought against a company under such circumstances. The form of agreement should be as follows: "It is hereby agreed that in case the employe whose name is attached hereto shall quit the service of the Blank company or be discharged therefrom, the said company shall have the right to withhold any sum which may be due him, until after his accounts have been examined and audited, and in all cases until the regular pay day of the company."

REQUEST FOR A TIME TICKET.*—This form is provided for use of foremen at shops and other places where large num-

* See Form No. 16, Appendix E.

bers of men are employed. It is intended to be given by the foreman to employes entitled to a time ticket. The employe presents it to the person whose duty it is to issue the time ticket. After it has been complied with it should be canceled and the date of the time ticket noted in ink across its face. It should then be filed away conveniently for future reference.

The request is also designed for use in those cases where the officials who sign and countersign the time ticket are located at a distance from each other. It is intended for agents, trackmen, conductors and similar employes who are required to make requisition on a division superintendent or other officer for a time ticket. It is desirable in cases of this kind, however, that the time ticket itself should be used when practicable. When the time ticket is used in such cases it should be filled up in due form and countersigned by the timekeeper and agent, conductor, roadmaster, or other person or persons who keep the time or are immediately responsible therefor. The ticket thus made and countersigned should be forwarded by express or other secure means to the official who is to sign it; when signed by him and the necessary record of its issuance made for entry on the pay roll, it should be returned to the person issuing, by express or other secure means.*

It is the duty of every person who signs a request or who honors a request to assure himself that the service has been performed as stated.

PAYMENT OF TIME TICKETS AND WAGES.—Time tickets issued in accordance with the regulations of a company governing such matters should be payable by agents and other authorized officials after being properly endorsed.

Agents should only pay time tickets issued by authorized officials having jurisdiction over the division upon which their station is located, unless special requisition is made upon them to do so by a responsible official of the company.

The same care should be exercised, so far as possible, in the payment of time tickets that is enforced by banks and other institutions in the payment of checks, drafts, and similar evidences of debt.

The person who pays a ticket should be assured in every instance that it has been issued by authorized officials and that it conforms in all respects to the requirements of a company.

When a time ticket is presented for payment, the person paying the same should require it to be endorsed by the person presenting it. If the endorsement conforms to the signature of the payee written at the time the ticket was delivered to him, it will afford corroborative evidence that the ticket is presented by the proper person. If the payee can not write, he should be required to make his mark, which mark should be witnessed by

* This matter is referred to in connection with Time Tickets.

some disinterested and responsible person before the ticket is paid. [NOTE.—The witnessing of the cross, as provided for above, is not designed to be so much an identification of the payee as it is of the fact that the amount has been paid by the paymaster, or other agent of the company, in good faith.] The endorsement of the payee on the back of the ticket, as provided for, is a sufficient receipt for the payment thereof.

In no case should a time ticket be honored unless presented by the person in whose favor it is made.

As the rules and regulations under which time tickets are issued by a company can not be known except to its officers and employes, it is impossible that such documents should be dealt in by banks and others without great risk. They should, consequently, not be encouraged to traffic in them. This may be prevented effectually by enforcing the rule that no time ticket or evidence of wages due shall be paid except to the original payee. This fact should be printed plainly on the face of each certificate. The certificate would then be invalid in the hands of anyone else.

No one in the service of a company should be permitted to buy or discount the pay of an employe.

Wages of deceased employes should be paid through the general claim agent.

In the cases of deceased agents, cashiers and conductors, payment should not be made until their accounts in the treasurer's office have been finally audited.

When a time ticket is presented to an agent who can not pay the same, the person holding the ticket should be referred to some agent who can pay it, or the matter should be referred to the treasurer or paymaster.

Whenever the receipts of a station are not likely to be sufficient to pay the wages of men leaving the service of a company, payable at such station, the treasurer or paymaster should be notified in advance, so that the necessary funds may be provided to meet the emergency.

The prompt payment of time tickets is especially desired by a company, and all who hold them should be requested to present them without delay for payment, and every reasonable and proper facility should be extended to those who hold them to get their pay.

It is desirable that men who leave the service of a company (on whose account time tickets are issued) should be paid without delay on the division where they worked.

Time tickets issued in the vicinity of the office of the treasurer or paymaster (and in other cases when practicable and convenient) should be presented for payment directly at such offices, by the persons in whose names they are drawn.

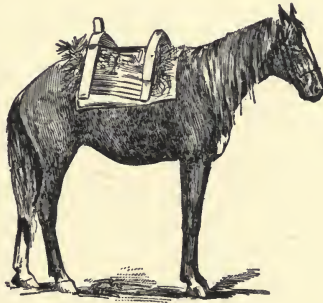
Whenever discharged men are sent to headquarters or elsewhere for their pay, they should be furnished with specific instructions as to where they are to get their pay, of whom, amount, etc,

The person who pays a time ticket can not act as a witness to the endorsement thereon.

When there is a deduction for any reason from the wages of an employe, only the net amount should be paid him. Any amount that may be due for board, or for any other purpose (as per deduction upon time ticket) should, in the absence of instructions to the contrary, be settled directly by the paymaster or treasurer.

After a time ticket has been paid by an agent it should be stamped with the station stamp on its face, also on its back underneath the endorsement of the payee. It should then forthwith be remitted.

In order to avoid loss, agents and others who pay time tickets should keep themselves advised in regard to those who are authorized to issue time tickets, the names that should be attached, and other particulars.



Carriage in Brazil.

In order to further this purpose, superintendents should notify agents, in writing, of the names of persons who are authorized to sign time tickets for their divisions respectively.

In the event an employe whose pay is garnished should be given a time ticket through mistake, it should not be paid; but the person to whom it is presented should write the word "garnished" across its face, and should then take it up and return it to the official who signed it.

Time tickets should be made invalid if not presented for payment within thirty days from their date. The fact should be printed on the face of each blank. The provision should be rigidly enforced. It is especially desirable that tickets should be presented for payment without delay, and especial provision should be made to accomplish such result without inconvenience or expense to the holder.

In no case should wages be paid on the roll when a time ticket has been given without the presentation of such ticket, or unless it has been duly and properly canceled, except in the event of loss of a ticket as provided for below.

In the event a time ticket is lost, notice should be sent forthwith (by the official who signed it) to all agents and officials authorized to pay the same, directing payment to be stopped. As it is extremely difficult and inconvenient to keep a record of documents of this kind, and as the danger is always great that they may be paid inadvertently, the utmost care should be taken to prevent loss. In furtherance of this, tickets in being sent back and forth on a line should, in every case, be forwarded by express, or in some other way equally secure. When a time ticket is lost, the person losing it should be required to file with the treasurer a good and sufficient bond of indemnity before a duplicate should be issued.*

In the event a time ticket is presented that has expired by limitation as provided in a preceding paragraph, notice of the fact should forthwith be sent to the treasurer, giving him the name of the payee, his present address, the kind of service performed for which the ticket was issued, amount due the payee and the names of the persons issuing and countersigning the ticket and the date of issuance thereof. But the ticket should not be paid without a special order to that effect from the treasurer. Such tickets may, however, be paid at the discretion of the treasurer if *bona fide* in their nature.

It should be kept in mind constantly by those who pay time tickets that no one except the person in whose name a time ticket is drawn is authorized to endorse the same, unless he does it as an administrator, legal guardian, or possesses a power of attorney, in which case the authority should be pinned to the ticket. Any endorsement of a ticket by an unauthorized person is fraudulent and renders the person making it liable to prosecution; no credit can be allowed anyone for paying such a ticket.†

LETTER OF ADVICE AND IDENTIFICATION.‡—This letter is a simple notification to the treasurer or paymaster that there is a certain amount due the bearer on the pay roll. It is both a letter of advice and identification. It is intended to be used in notifying the treasurer or paymaster in those cases where the pay roll has left the hands of the person signing the letter; it is intended to serve as a letter of introduction and the holder should be instructed to guard it carefully as its loss may involve the loss of the whole sum, as it is good to bearer. It should never be used in those cases where a time ticket has been issued.

* See Form No. 20, Appendix E.

† This rule should apply also to vouchers, drafts, checks, and other instruments requiring the receipt or endorsement of the payee.

‡ See Form No. 18, Appendix E.

It is of especial value in the case of laborers and others who have left the service and are required to be identified before being paid.

It should recite name and number of employe and name of pay roll.

A letter should never be given to a person whose pay, or any portion thereof, is to be withheld for any reason, unless the amount to be withheld is plainly noted thereon.

A record should be kept of all letters issued.

A letter should not be delivered to the payee until it is both signed and countersigned. The regulations governing time tickets in this connection should be observed.



Carriage in Mexico.

Whenever access to the pay roll can be secured, it should be marked "letter given" before the letter of identification is delivered to payee. In the event this is done, the fact should be duly certified to in the place provided on the face of the letter.

When a letter of identification is issued, the officials signing and countersigning it should require the person to whom it is given to endorse his or her name on the back of said letter. This should be witnessed by some disinterested person known to the officers of a company. Neither the person signing or countersigning the letter should act as a witness. Afterward, when it is presented for payment, the disbursing officer should

require that it be again endorsed by the person presenting it. If the two signatures are the same, it will afford corroborative evidence of the identity of the person. If the payee can not write, he should make his mark, which mark should be witnessed in the usual manner.

Letters, whether endorsed by mark or otherwise, should be presented by payee personally.

ORDER ON THE PAYMASTER.*—This is an order on the paymaster, signed by the employe, directing that the wages of such employe be paid to the bearer or to some particular person. The interests of a company require that the use of this form should be discountenanced.

The safety of every company requires that it should insist upon its employes appearing personally before the treasurer or paymaster for their wages. There may be cases where this is impossible (in the case of sickness), or will entail great hardship or suffering. When this is so the paymaster may, after assuring himself of the facts, deliver to a third party the wages of the employe, upon the receipt of a properly authenticated order. In such cases the pay roll should be marked "order given."

In the exceptional cases where it may be necessary, or the interests of a company render it desirable to facilitate the issuing of an order by an employe for his pay, the officer immediately superior to the said employe should forward it, with a statement of the facts, to the paymaster, who should, after investigation, mark the pay roll "order given."

Orders on the paymaster should not be recognized as negotiable paper. No one in the service of a company should be allowed to traffic in them. The exceptional circumstances under which orders are issued prevent their being recognized as commercial paper.

Orders should be drawn on the blank provided therefor.

The giving of an order is not a matter that a company can control; it can not, consequently, guarantee their payment, nor assume any liability for them whatsoever.

No order should be accepted or countersigned by any officer or agent of a company except the treasurer or paymaster, and then only in the exceptional cases specified above and after the pay roll has been marked, opposite the person's name, "order countersigned."

When it is impossible for an employe to present himself personally before the paymaster for his wages, payment thereof should be made by check or draft drawn to his order. Practices of this kind will be rendered necessary in the case of watchmen who can not appear before the paymaster during working hours without losing their rest; in the case of those who are sick or who are unavoidably absent on furlough or otherwise; of those

* See Form No. 19, Appendix E.

whose place of business is not visited by the paymaster; also of those who are missed by the paymaster when paying the force. The issuing of drafts of this kind to an employe obviates the necessity of his giving an order and is altogether preferable. The practice, therefore, of issuing orders in such cases should be discountenanced. In fact, the issuing of an order or the recognition of one, except in cases of necessity, should be avoided, and the vital regulation requiring that everyone appear personally before the paymaster should be rigidly enforced.

CANCELLATION OF TIME TICKETS.—In order to limit responsibility and for other necessary reasons, time tickets not paid within thirty days of their issuance are, according to the express terms of the instrument, made void. Therefore, when they remain in the hands of agents and others unpaid after the expiration of thirty days, they should be cancelled and forwarded to the paymaster. The form of cancellation should be by noting "cancelled; not called for" across the face of the document. This certification should be dated and signed by the person making it.

Upon its receipt the paymaster should erase the words "time given" from the pay roll and note thereon the date the ticket was cancelled by him, as say "time ticket cancelled May 31st, 18—;" he should furthermore mark across the face of the ticket "cancelled May 31st, 18—," and sign his name thereto.

He should then destroy the signatures to the ticket and forthwith return it to the person who made it. It is the duty of the latter to make a notation on the records to that effect.

Afterward, in the event the person in whose name the ticket was made calls for the same, he should be referred to the paymaster, who will adjust the account.



Carriage in China.

CHAPTER VI.

ACCOUNTS AGAINST PERSONS FOR MATERIAL SOLD, LABOR PERFORMED, ETC.

[NOTE.—They represent accounts against individuals, firms and corporations for material sold, labor performed, expenses incurred, and for other special things, including proceeds from sale of unclaimed and damaged property, carcasses of animals killed, hides, pelts, and similar items. On some roads these accounts are called "Various persons accounts." The name is not material. They embrace all accounts save those for freight charges, tickets, express, mail, car service, and other traffic. They are embodied herein because they are more or less mixed up with the material and labor accounts, and concern more or less the officers and employes who handle material and labor.]

There are in connection with the receipts of railroads certain kinds of collections of a special nature. These collections are not uniform or regular in their recurrence like those connected with the transportation of passengers, freights, mails, express and excess baggage. The regular traffic earnings of a company fall within the domain of particular departments, and particular and fixed methods and forms are provided for handling them. But this is not the case in regard to special collections; in one case the latter will be for old ties, in another for the pelt of a steer killed, in another for the breaking of a station window, for damage to a car, for the sale of old material, a blank book, a strip of right of

way, a tax rebate, a worn out horse, a piece of chamois skin, a barrel of oil, work performed by a company's employes, an expense incurred in behalf of some one, a remittance to the conscience fund, and so on. Each case as it arises is in a measure special in its nature, and new to the person interested. In the majority of instances the person who makes the collection is not one of the regular agents or collectors of a company, and as a rule no ledger account is kept with him by the company. To open such an account would be to fill the books with a multitude of names without securing either clearness or responsibility; there are various ways of avoiding this dilemma. The way is not particular. That suggested here is to require the person who makes the collection to remit to the credit of the chief of the department in which the collection is made; thus, collections made in the land department are remitted to the credit of the official thereof; in the tax department to the chief thereof; in the departments presided over by division superintendents and others, to the chiefs thereof; and so on. All collections made at shops are remitted to the credit of the storekeeper thereof. Afterward a bill is made against each official for the amount of the various collections remitted to his credit. In order to advise such officials, a statement of each collection is sent him by the person making it. These statements, moreover, enable him to note the merits of each case, also whether any collection is omit-

ted or not. It is made the duty of officials to look after these collections in their several departments, also to see that bills are made to cover them.

The difficulty that has been experienced in handling such accounts as I refer to is to group them so as to fix the responsibility; to assign to particular officials the duty of looking after them. Thus, if John Smith, a track foreman, collects \$1.30 for the sale of an old gate, it must be made



Carriage in Picardy, Seventeenth Century.

the duty of some one to see that he remits the money and otherwise accounts for it. Who shall do this? The treasurer? Or accounting officer? Neither. Because neither of them has any facilities for knowing that a gate has been sold or that money has been collected for it. Who is the proper person, then? Manifestly the officer of the company who is familiar with the transaction, whose duty it is to know of it. In this particular instance it would be the roadmaster or division superintendent. Such being the

case, it is made the duty of this officer (under the accompanying instructions) to see that the money collected for the gate is remitted to the treasurer, and that at the end of the month this collection, with all others remitted to the credit of the officer, are incorporated in a statement of account against him, also in a bill against him for the gross sum. The various persons accounts of a company are made up largely of occurrences similar to the sale of the gate by Smith. They must be protected the same as the collection of freight and passenger charges are protected.

With this explanation of the theories and practices that attend the operation of various persons accounts, the subjoined rules will be more clearly understood than would otherwise be the case.

No uniform name has been devised for designating the special accounts under consideration; they are termed here "various persons" accounts.

All cash collected on account of various persons should be remitted directly to the treasurer.

It should be the duty of the official who has immediate supervision of the various persons accounts of any department or storehouse to see that an itemized monthly return is made to him of the same by the persons making the collections:

It is not intended, however, that the money shall be remitted through him to the treasurer; it should be remitted directly.

Remittances should not be sent by the hand of an employe, but by express directly to the treasurer or deposited personally at his office.

A cash slip or statement of account should accompany each remittance, giving the name of the person or official to whom (under the rules) it should be credited, what the collection is for, date collected, from whom, etc. It is the duty of the treasurer to send a receipt forthwith to the person to whose credit the amount is placed; in the event this is not done promptly inquiry should be made for it.

No material or property should be sold to, or labor performed for, various persons, except upon the order of an authorized officer.

Whenever practicable, collection should be made at the time the charge is incurred.

In making the collection (and in making the charge as well) care should be taken to add the authorized percentage of profit (if any), also amount (if any) to cover the wear and tear of tools, machinery, etc.; the amount of this extra charge should be credited on the distribution book to premium account.

Heads of departments who direct a collection to be made on account of various persons, or within whose department a collection is made, should have the money remitted to their credit; in this way the collections of each department of a road will be grouped and the number of accounts restricted as already described.

All charges for fuel sold should be embodied in the general fuel report of the person making the disbursement, and the same details given in connection with such charges that are required for other various persons accounts.

Collections for fuel made by those in charge thereof should be remitted to the credit of the officer against whom the charge (in such case) is made in the monthly fuel report. It is the duty of this officer to make an itemized bill against himself monthly for the amount thus remitted to his credit.

In issuing instructions to agents and others in reference to a collection to be made to the credit of some one else, care should be taken to give the name of the person to whom the money is to be credited, and to ask in each instance that the sender shall advise when the remittance is made.

When money is remitted by one person to the credit of another, the person making the remittance should inform the person entitled to credit forthwith by letter, so that he may take up the same in his accounts and may know that the money has been remitted.

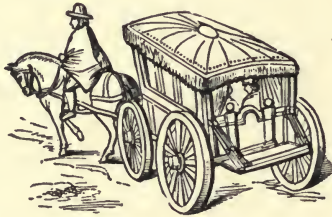
In opening an account with himself on a distribution book, and in making bill against himself for various persons accounts, the storekeeper or official should give each charge, viz: name of person from whom the money was collected, and all other details incident thereto, such as date, place, what for, amount, by whom remitted, etc.; thus, if fifty collections are made in a department or at a particular storehouse during a month, for material, labor, hides, pelts, tallow, carcasses of animals, etc., the persons making the collections should remit them to the credit of the storekeeper or official in charge. Each official should open an account on his distribution book with himself, in which he will specify in detail the accounts collected; it being understood that all charges for material sold or labor performed on account of various persons, taken cognizance of by those who render a distribution book, should be embraced therein.

The regulation requiring that collections made on account of various persons shall be remitted to the credit of department officers or storekeepers should not apply to various persons bills col-

lected by the treasurer. In such cases the charge will be made directly against the individual, firm or corporation and a bill made accordingly. All charges, moreover, that originate with officers who do not render a distribution book should be made in this way unless otherwise directed: in such cases a certified bill will be made in duplicate by the officer conversant with the transaction; these he should forward to the accounting officer.

In order to restrict the number of charges as much as possible, a storekeeper should make only one bill monthly against a person, firm or corporation, unless it is requested or is advisable to make collections oftener.

At the end of each month, or sooner if an account is closed, a bill* should be made in duplicate for each various persons account. This bill should be sent to the purchasing agent or other officer designated to receive it. A summary† of various persons accounts should also be sent this officer on the last day of the



Carriage in England, Seventeenth Century.

month; in the event there are no accounts, a blank summary should be sent him.

Accounts due a company should receive immediate attention from all through whose hands they pass. Bills should be made, verified, entered and approved without delay. Immediate attention should also be given to their collection; delay in collecting bills is to be deplored. It evinces lack of appreciation or proper business methods, and sooner or later occasions loss.

It is made the duty of all who are in any way responsible for various persons accounts to see that so far as possible no bad debt is incurred or loss occasioned through neglect to collect promptly. In furtherance of this, collections should be made at the time if practicable; in other cases prompt notice should be forwarded to the treasurer when any risk is incurred, so that he may act advisedly.

* See Form No. 41, Appendix E.

† See Form No. 45, Appendix E,

In reference to accounts against various persons that spring up in connection with the duties of employes along the line of a road, such as trackmen, bridge and building men, station and train employes, etc., they should be required to render prompt notice to the officer through whom the returns are made, of any debt incurred, so that no unnecessary risk may be run.

Collections for scrap or old material sold by a company should be made by the treasurer under direction of the officer who effects the sale, so that the labors of the latter may not be embarrassed in any way.

In order to facilitate the collection of accounts against various persons, every detail likely to assist in this direction should be given; such as the name of the person who ordered the material or authorized the labor, to whom the material was delivered, etc.

When deductions are made from pay rolls (for account of a company) coming under the head of various persons, a bill should be made by the official conversant with the transaction against the treasurer (whose duty it is to collect) to cover the deduction. The bill should give full explanation of cause of deduction. The amount of this bill should be noted on the first sheet of the pay roll as directed.

Bills against railroads and other carriers should be formally certified as correct by the official directing the same. It is desirable in case a charge is liable to be disputed, that the amount and correctness of the account should be accepted by the company interested before it is formally brought upon the distribution books or into the accounts, and in cases of this kind satisfactory results are more likely to be achieved if the correspondence connected with the claim is carried on by the official immediately conversant with the facts, than if conducted by the treasurer. For this reason, no charge should be made on the distribution books against any carrier (when there is a possibility that such charge will be disputed), until correspondence has been had in regard thereto with the company interested by the operating officer conversant with the facts. But no charge that is right and proper should be waived if the result of the correspondence does not secure its admission by the company interested. The object in withholding doubtful charges is to prevent the books from being encumbered with disputed and uncollectible accounts, not to waive any collectible claim.*

*The following method is suggested for collecting charges for repairs of rolling stock belonging to other companies or individuals: On the first day of each month, or as soon thereafter as possible, a detailed statement should be sent to the proper officer of a company or individual concerned of all labor and material used or expense incurred during the preceding month on account of rolling stock in use belonging to such company or person. This statement should give the number of car, name of owner, items and cost. Whenever there is any doubt as to the justness of a charge of this kind, or as to whether it will be paid or not, correspondence should be opened with the company or individual interested in reference to the charge before making

Bills against railways should be made in triplicate and so marked in red ink across the face. The original and triplicate should be sent as in other cases; the duplicate should be sent by the local official to the company against which the charge is made. In making bills the full name of the road should be inserted.

In order to define as nearly as possible the course of certain various persons accounts the following specific rules should be observed, viz:

Moneys collected by agents, trackmen and others for hides, pelts, tallow, carcasses of animals, road material, old ties, damage to the company's property, and kindred charges occurring on the line, should be embodied in the returns of the division superintendent or other official in charge of the accounts for the road (*i. e.*, the person who authorizes the collection and within whose department the transaction occurs), and the money should be remitted to his credit.

Moneys collected on account of the sale of damaged, over or unclaimed freight should be remitted, with a detailed statement of the same, by the person making the collection, to the credit of the official in charge of claim accounts. If there are charges on the property thus sold, the amount of such charges may be deducted from the proceeds of the same before remitting the money. In making the bill, however, at the close of the month, the gross collection should be shown, less the deduction.

Moneys collected on account of the sale of damaged, over or unclaimed baggage should be remitted, with a detailed statement of the same, by the person making the collection, to the credit of the official in charge of baggage accounts. If there are charges on the property thus sold, the amount of such charges may be deducted from the proceeds of the same before remitting the money. In making the bill, however, at the close of the month, the gross collection should be shown, less the deduction.

Moneys collected in connection with the land department, for lands and town lots, should be remitted to the credit of the land department, with a detailed statement of the same, by the person making the collection.

Moneys collected for rents, sale of old houses and kindred property, should be remitted to the credit of the official in charge.

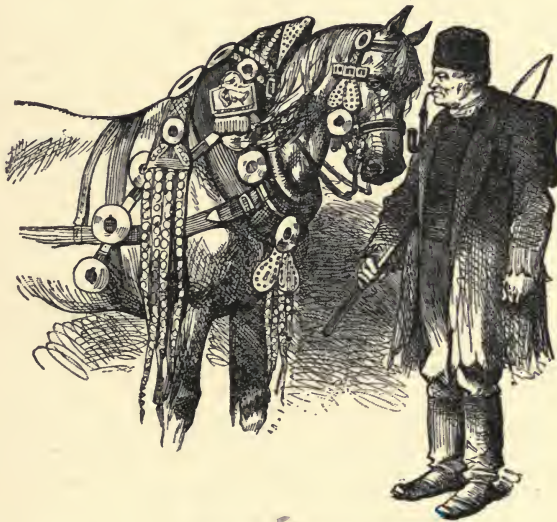
No one, except those regularly authorized, may collect money on account of a company, or receipt therefor.

A formal receipt is required to be given in every case when money is collected for or on account of a company; it should

a bill for or rendering a statement of the expenditure. To further simplify the accounts, all labor and material used or expense incurred on rolling stock belonging to other companies or individuals should be charged in the distribution books the same in all respects as if the rolling stock belonged to the company or individual making the repairs. Returns of repairs of equipment belonging to other companies or individuals should give full particulars, so that the officer or person to whom it is sent may be able to act intelligently.

be given at the time the money is collected; it should be dated and signed, and should state specifically the purpose for which it is given. This rule applies to every officer connected with a company as well as to every employe. Its rigid enforcement is in accordance with good business practice, and serves to protect a company, the person who gives the receipt and the person who receives it.

For all material sold or labor performed for other than carriers, an invoice of the same should be forwarded to the person in debt at the time the charge is incurred; in the case of carriers,



Carriage in Vienna.

statements should be rendered monthly or as may be most conducive to quick and amicable settlements.

In reference to "conscience money" received by a company, when not remitted directly to the treasurer, it should be turned over to him, with all the attendant facts. A various persons bill should be made for each amount remitted.

If the name of the person making the remittance is known, the bill should be made in the name of such person. If not known, it should be made in the name of the person to whom the money is remitted by the sender. This will preserve a perfect record of the transaction, and is preferable to the method of crediting the

cash directly to the account that had originally suffered (when known) from the act of the remitter. Bills for conscience money should be credited to the specific account affected when indicated by the sender; in other cases it should be credited to miscellaneous earnings.

The following details should be observed in entering various persons accounts on the distribution books for material and labor, viz: It may sometimes occur that it is not possible or practicable to make the charge in the month in which the transaction takes place. Indeed, it may not be known at that time to be a various persons transaction. In that case the amount would manifestly be charged to some other account. In cases of this kind the account that was originally charged should be credited when the transaction is finally entered and returned in the monthly statement. It is desirable, however, for obvious reasons, that, whenever possible, the charge against various persons should be made on the books in the month in which it occurs. Charges for labor should be entered on the distribution of labor book; charges for material should be entered on the distribution of material book. Whenever a charge occurs for material that does not stand charged against the storehouse or department making the return, like the sale of old ties, sand taken from pits, hides, pelts, broken windows, or damage to the property of the company, the proper operating expense account, or the account originally charged with the thing for which collection is made, should be credited on the distribution book. Thus, if a division superintendent were to collect money for damage to a passenger station he should enter the amount on his distribution of material book under the head of "various persons," as already directed, and deduct it from the amount charged during the month to "repairs of buildings." In this way the various persons account would be charged and the proper account credited. In the event there should be a credit to an account for which there is no charge, say, for right of way, a special account should be opened on the distribution book for right of way and the amount to the credit of such account duly stated therein.

Whenever it is desired to group in one bill charges against a particular individual or carrier, the officer who authorizes the charges, or under whose authority they occur, may designate who shall make the bill, notifying all others to invoice their charges to him, so that he may sum up the whole in one account. This rule is not imperative. It is intended to meet those cases where a company is carrying on experiments for others in the operation or construction of machinery, or where it is necessary to group together the charges in order that they may pass under the immediate supervision of some official. But it is not intended to alter the rule requiring charges against various persons or railroads to be reported to the accounting officer monthly, so that the same may be charged as they occur on the general books.

If instructions are carefully observed, loss will rarely, if ever, occur in connection with the various persons accounts. It is designed that no material or other property shall be sold, labor performed or expenses or obligations incurred for anyone, except under direction of an authorized officer of a company; that care shall be exercised not to incur bad debts; that accounts shall be collected at the time the indebtedness is incurred, and, finally, that all collections shall be transmitted to the treasurer upon the day on which they are received, or, if this is impossible, then upon the succeeding day.

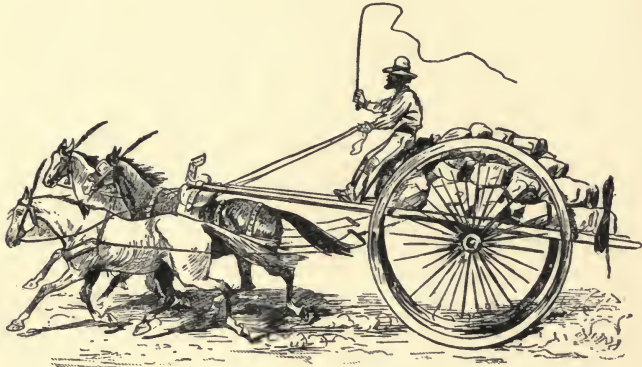
A ledger account should be opened for all charges against various persons. A journal and double entry ledger should be kept by every storekeeper who has such an account. The expense this will engender will be slight compared with the safety it will insure. The object sought is to secure a record that must be formally closed in every instance and that can not be overlooked or forgotten.

A ledger account should therefore be opened when labor is performed, material sold, or expense incurred for an individual, firm or corporation. The parties against whom the account occurs should be formally charged on this ledger. When the work is completed, and the charge has been finally and properly disposed of,* the ledger account should be closed. In making this closing entry or entries at storehouses, particular care should be taken to give the month and folio of the distribution book in which the account is returned to headquarters or otherwise disposed of. This method of treating various persons accounts will prevent the possibility of a charge against anyone being overlooked, a thing likely to occur in case an account ran through two or more months, or if the rendering of it was not coincident with the debit. Generally speaking, accountants everywhere will find it to be a wise precaution to open a double entry ledger account wherever an account against anyone occurs (that might otherwise be lost or overlooked), closing it only when the account is paid or finally disposed of. There is always danger otherwise of charges of this nature being lost. It is the peculiar merit of double entry bookkeeping that it prevents such lapses; it is the only thing that does. Through its operation every account stands till formally closed, and attention is called to it each month when the balance sheet is drawn off, so that if an account is overlooked at one time, it is sure to secure attention at another. No book or system ever devised as a substitute for double entry bookkeeping secures this. Thus, if a car is to be rebuilt that may require several months, or an account is opened that may not be closed for some time, this ledger will pick up the several fragments of the account as they

* In the case of storekeepers this would be when it had been returned to headquarters in the manner prescribed; at headquarters it would be when the account was paid or otherwise formally disposed of.

arise and bring them together in one place, so that when the whole is completed the storekeeper can not avoid reviewing the same to see whether it has been settled or formally disposed of.

When an order is received at a shop or storehouse by which a charge is to be incurred against an individual or corporation, a record of the matter should be made forthwith, so that it may not subsequently be forgotten or omitted. For the purpose of this preliminary record, a common blotter or day book may be used. When the account is formally opened on the ledger, this preliminary entry should be cancelled as an evidence thereof; until so cancelled it should not be overlooked or forgotten.



Carriage in Naples.

All various persons bills are entered at headquarters upon a register.* They are numbered therein. Afterward they are forwarded to the approving officer and so on to the treasurer.

Accounts originating at shops, storehouses or road departments, where a distribution of material book is kept, should be credited, when entered on the register, to the storekeeper under the head of "Material—Various persons." Accounts originating with other officials of a company, who have no occasion to render monthly distribution books of labor and material, should be credited on the register to the operating or other account, whatever it may be.

In speaking of credits in connection with bills (charges) against various persons, it will be understood that in railway accounting there must be a credit for every debit. Thus, if

*See Form No. 4, appendix, volume "General Fiscal Affairs."

there is a debit against an individual for material sold him, a bill is made against him which constitutes a Charge; the amount of the bill is Credited to the account affected. Thus, every bill against various persons implies a corresponding credit; and so every voucher to the credit of anyone (for sums due by a company) implies a corresponding charge against some account.

One reason why various persons bills are credited to the storekeeper in the above manner upon the register at headquarters, instead of to the account directly affected, is because the latter is not always known at the time; also because the storekeeper himself is entitled to credit if the thing disbursed is material or labor, as he stands charged with the gross amount of these. Still another reason is that by this method the credits arising from various persons bills entered by each department are bulked on the distribution book rendered by such department, thus minimizing the clerical work of posting. The credits for various persons bills are in turn credited by storekeepers to the accounts to which they belong. The same is true in a corresponding sense in regard to vouchers. Storekeepers should be advised of any debits or credits affecting them.

The register of various persons bills should not be closed until the tenth day after the end of the month, when the results as entered thereon should be summarized for entry upon the general books. So far as practicable all accounts should be entered in the month in which they belong.

At the end of the month a summary should be made of the various persons register, showing the total amount of bills entered and the things to which it is creditable, giving the name and amount of credit to each account. A similar summary is required to be rendered for the register of audited vouchers.* These summaries may be copied into one journal,† the entries for various persons being a history of amounts due a company; the other a history of amounts due by a company. The two statements being thus brought together, only the balance or difference between them need be posted on the general books.

CANCELLATION OF VARIOUS PERSONS BILLS.—Up to the time the general books are closed for the month a voucher may be cancelled, destroyed or the amount changed. Afterward this will be impossible; the voucher and amount must then stand as entered.

When it is desired to cancel or change a voucher before the books are closed, it should be referred back to the various officials upon whose books it appears so that they may cancel or change the entries thereon.

In the event it is desired to cancel a various persons bill, or an account, or an item in an account, due from an individual, firm or corporation, on the general books of a company (after the

* *I. e.*, bills due by a company.

† See Form No. 5, Appendix, volume "General Fiscal Affairs."

same have been closed for the month in which the account originated), satisfactory reasons therefor should be written on the face of the bill or statement of account, or should be attached thereto. The statement should be signed by the officials certifying to the authenticity of the original account. This statement forms the basis for correcting the account on the general books of a company, and should be filed as a voucher for such change. This does not apply to traffic accounts, which may be corrected at any time by the officials in charge.

In cancelling various persons bills, or items in such bills after the books have been closed, the amount should be charged to the account originally credited.

When various persons bills which have been credited to material are cancelled, an entry should be made on the distribution book of the storekeeper who accounted for same, in the following manner: The amount of the various persons bills cancelled should be deducted from the total amount of "Various persons accounts" for the month, and the operating or other accounts which were first credited should be charged with the amount.

Specific reference should be made in the distribution book to each various persons bill cancelled, and the reason for cancellation given. Notice should be given by the accounting officer monthly of all bills to be cancelled, and no cancellation entries should be made on the distribution books other than for the bills reported by the accounting officer.

CHAPTER VII.

GENERAL REGULATIONS.

Storekeepers should at all times and in all places exercise a watchful and intelligent care over the interests of the company employing them. Any irregularities of an improper character which they may discover, and which they can not rectify, they should forthwith report to their superior officer.*

In accounting for items of expense not specifically provided for, the practices followed in analogous cases should govern. In the event of doubt the matter should be referred to the proper officer.

In writing up the account of disbursements a company is, in the main, dependent upon the information which it gathers from the books and statements received from those who write the material and labor accounts; it is therefore of the utmost importance that storekeepers should at all times be painstaking and vigilant in the discharge of their duties

It is their duty to keep themselves fully advised, by careful observation and intelligent inquiry, in reference to the nature, character and scope of each and every account to which material and labor are charged.

Storekeepers should see that storerooms are kept clean and orderly, that the supplies under their charge are compactly and systematically arranged so that they can be got at conveniently and the amount on hand easily ascertained, that the cost price is plainly marked upon each article or lot of material, and that the material in the yard and outhouses is arranged so that it can be protected and watched over to the best advantage.

All returns, statements and pay rolls required of storekeepers by the officers of a company should be carefully and promptly made, and should be sent forward without delay.

All profits accruing from the sale of material or from labor performed by employes should be credited to the premium account.†

* In order that responsibility may be enforced and that there may be due subordination and harmony of action, it is desirable that the forces occupied in connection with the material and labor accounts at shops and storehouses and depots of supply should be immediately subordinate to the storekeeper.

† The accounting officer will make final disposition of the items thus credited.

In order to distinguish quickly, all credits in the various account books connected with disbursements should be entered in red ink and all debits in black ink.

The names of officials of a company should not be signed by their clerks to certifications, receipts or orders, unless duly authorized; notice of which should be filed wherever such signatures are to be accepted as authentic. The name of the clerk should be signed in full; thus, if a division superintendent's clerk signs for him, the signature of such clerk should be given in full underneath the name of the superintendent. This rule applies to vouchers, various persons bills, pay rolls, time tickets, letters of advice, requisitions, invoices and kindred documents, and should be rigidly observed in order to avoid delay and embarrassment.

In order to expedite work, books should be, so far as practicable, opened before they are needed, *i. e.*, before the accounts



Carriage in Munich.

for the preceding month are closed. This will expedite the work and lessen the labor of the office at the time when it is particularly pressing. Thus, the bulk of the headings likely to appear in the distribution books for labor and material may be inserted in advance.

The papers and records of a company should be kept written up and carefully filed from day to day, so that in the event of accident or sickness to employes, the work can be clearly and intelligently taken up and carried forward by new men.

An impression should in each and every case be taken in the copy books of all letters, telegrams, invoices, requisitions, pay rolls, statements, distribution books, etc.

When a stub or record is attached to any document, it should be written up at the time in every instance, as contemplated, so that an account of the document may be on file in the office where it is issued, for use or reference when required.

No bill or account should be accepted as correct until it has been examined. This examination should be particular, including rates, extensions and footings. In the event of error, correction should be made and the maker of the document notified.

The books, papers and records of a company are required to be kept so long as they may be useful or are needed to protect the interests of a company, or to elucidate the affairs of those who manage its interests. When no longer needed they should be forwarded to the general storehouse. The material thus received should be brought upon the books the same as other old material at its value; a full description of the same, including the name and address of the person from whom received, should be given in every case. Its value should be credited to the account originally charged.

Storekeepers should not absent themselves from their business without the permission of their superior officer. Their duties require their presence continually at their storehouses, and they should not absent themselves therefrom without provision being made for the performance of their duties.

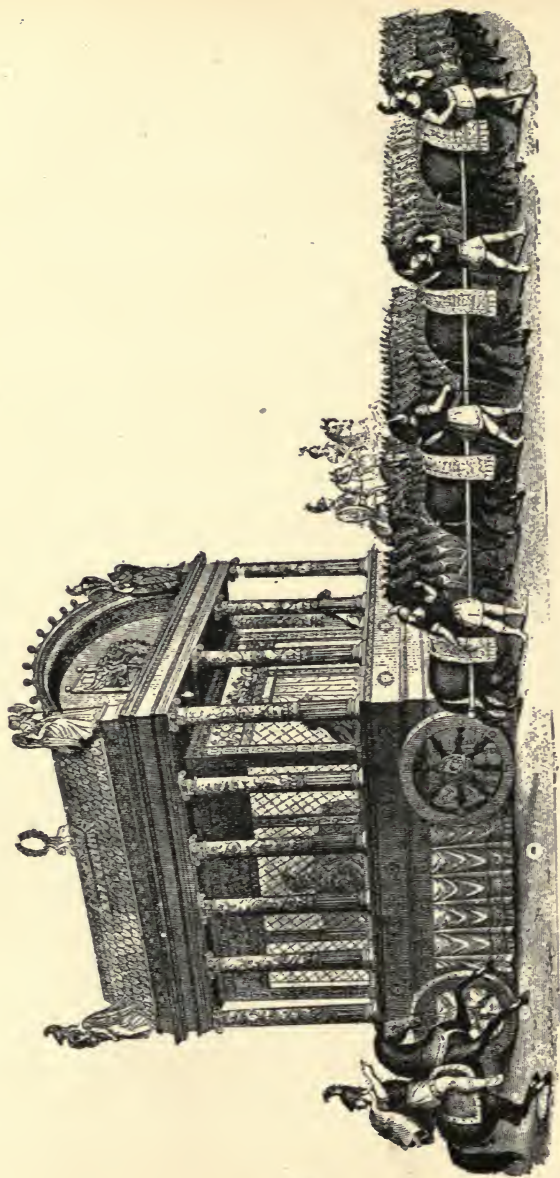
Any request from public authorities or otherwise, for information in regard to matters connected with material, labor or other affairs of a company, should be referred to the head of the department in interest for instructions.

In view of the fact that it is impossible to wholly separate expenditures from matters of a general nature, storekeepers and others interested will find it necessary to study the rules and regulations governing other departments of the service.

In reference to the disbursements and expenses of a company along its line and at shops and storehouses, traveling auditors should see that the rules of a company governing its disbursements are faithfully and fully observed. To enable them to do this intelligently, it is necessary that they should familiarize themselves with the duties of storekeepers and timekeepers.

They should make an examination of the affairs at each shop or storehouse in their territory as often as once every three months, and a report* of such examination should be forwarded to headquarters.

* See Form No. 48, Appendix E.



Carriage in Rome.

CHAPTER VIII.

FISCAL REGULATIONS CONNECTED WITH VOUCHERS AND OTHER PAYMENTS, INCLUDING INTEREST ON BONDS, SINKING FUNDS, ETC.

[NOTE.—As this chapter directly concerns disbursements it finds an appropriate place here. Much of it concerns the station agents of a company, who have little to do with expenditures generally. I have accordingly incorporated the bulk of it in the volume "Fiscal Duties of Agents and Conductors," which is concerned almost wholly with the duties of agents.]

VOUCHERS.—A voucher is a certificate of indebtedness issued by a company, giving the name and residence of the payee, the particulars of the claim, and the amount thereof.

Each voucher should recite the name and address of the payee, and should give a detailed statement of the purpose for which it is made and the date and amount. It should show upon its face, or in the place designated under the filing, the account or accounts to which it is chargeable.

All papers or correspondence that belong to or are in any way necessary to explain the reasonableness or authenticity of a voucher should be attached to it. All the facts in relation to it should be explained either upon its face or in the papers that accompany it.*

A voucher† is required to be made for material purchased; for service performed for a company when not embraced in the pay roll; for amounts due for injuries, damages, property bought or expense incurred on the company's behalf. Vouchers should be made in favor of the person, firm or corporation to whom the company is indebted. In case of amounts due the national or state governments, counties, cities, townships, villages, and the like, vouchers should be made impersonally in favor of the official entitled to receive the money, thus: Treasurer of the United States; Treasurer (or Collector) of Greene County, Iowa, etc.

Vouchers for material should give the items in detail, and the prices for each, the date of purchase being specified. Vouchers

* Many companies make a copy of the original voucher; the copy they use in making the payment; the original they file away with the papers attached. There are many things in favor of this plan. I have, however, always been accustomed to use the original voucher in paying, and that is the plan outlined in my books.

† See Form No. 46, Appendix E.

for labor should contain a statement of the time worked, the place, rate and date. Vouchers for expenses should give each item, date and place so far as possible.

In paying vouchers it is not always convenient or practicable to read the papers attached; consequently transfer orders may be overlooked, unless a notation is made on the back of the voucher calling attention to them. In the event, therefore, that an order is attached, the fact should be noted by the person making the voucher.

Vouchers should, so far as possible, be embraced in the month in which the debt is incurred.

Errors in name or initials of payee, place of residence, description of claim or amount thereof, cause much inconvenience, and are the occasion of expense and delay in the payment of the account. They are also liable at any moment to involve a company in loss if not discovered and corrected in time. Mistakes of this kind are frequently the result of ignorance or inadvertence upon the part of the maker of the voucher, but more often the result of carelessness. It is highly important, therefore, that especial care should be exercised in making vouchers to see that the name of the payee as given is technically correct, and, if necessary, vouchers should be withheld by the maker until satisfactory inquiries in this respect can be made.

Accounts against a company should receive immediate attention from all through whose hands they pass. Vouchers should be made promptly; should be entered on the day received, and should be approved for payment without being held longer than necessary to verify their accuracy. Finally, they should be paid on the day on which they reach the disbursing agent of a company, unless business reasons prevent. The greatest promptness should characterize the making, auditing and paying of bills; delay in such matters evinces lack of attention or proper business methods; it inconveniences and in many cases seriously embarrasses the parties in interest. If for any reason those whose duty it is to certify to or approve vouchers should withhold their signatures, they should forthwith notify the official or agent of the company with whom the voucher originated, so that the embarrassments to the service likely to be occasioned by absence of such knowledge may be avoided.

Each voucher should be given a number. It should be entered at the headquarters of a company.*

* I would suggest a register for this purpose. See Form No. 3, appendix, volume "General Fiscal Affairs." Vouchers should be entered in consecutive order. The register on which they are entered should contain a brief account of each bill, number, name of payee, character of claim, amount, and the thing to which it is chargeable. At the end of the month a statement should be drawn off from this register, showing the total amount of vouchers entered and the things to which they are chargeable, giving the name and amount of each charge. A similar statement is required to be drawn off from the various persons register. These statements may be entered in one book (see Form No. 5, appendix, volume "General Fiscal

Cases will sometimes arise of such urgency as to require money to be paid in advance of the auditing of a voucher to cover the same. When this is done the money thus advanced should be charged to the official of a company who receives and disburses it, but no payment should be made in advance of auditing except under rules and regulations established beforehand by the proper officer.

In the event any portion of the money advanced under the foregoing rule is reconveyed into the treasury it should be credited to the account charged.

For such portion of it as may be disbursed, a voucher should be made by the official making the disbursement in favor of the person or persons to whom it is paid; the receipt of such person or persons should be attached to such voucher.

Vouchers made on account of money advanced should be credited to the person charged with the advance. On the face of all such vouchers the person making the same should note in red ink that it has been paid, giving the name of the person by whom paid, thus: "Paid by Charles Murray, Supt." A similar notation should be made on the back of the voucher, underneath the filing. The notations should be plain and conspicuous, so as to prevent duplicate payment.

In entering on the "journal of audited vouchers" a bill that has already been paid, the fact of its having been paid should be noted on the journal in every case, giving the name of the person by whom paid; this will enable the accounting officer to prevent duplicate payment in the event the fact that the voucher has already been paid should be overlooked by the treasurer.*

PAYING VOUCHERS.—Vouchers are required to be approved by the proper officer before being paid.

In order to systematize the payment of local expenditures connected with the working of the property, including the paying of vouchers, pay rolls, claims and balances of every kind, such payments are made directly from the office of the treasurer or under his direction.

Before paying a voucher or delivering a check, the payee should be called upon, whenever practicable, to state specifically the amount and nature of his claim. His ability to do so will serve in a measure to identify him and is, moreover, corroborative evidence of the correctness of the account. It will, in addition, enable a company, without the knowledge of the payee, to

Affairs"): one, the entries for vouchers, being a history of debts incurred for material and other things; the other, a history of credits. The two statements being thus brought together in one book, only the balance or difference between the debits and credits need be posted on the general books.

*The foregoing refer more particularly to disbursements of cash by officers of a company in settlement of claims and similar matters, and must not be confounded with the rules and regulations governing bills paid by station agents in advance of vouchers being made therefor, given further on.



Carrriage in Russia.

correct any mistake that may have occurred in auditing whereby too much may have been allowed, either through duplication of the account or otherwise.

Vouchers payable at or near an agency are oftentimes sent to the agent to pay in currency. When the amount is large, or beyond the ability of the agent to pay out of the receipts for one day, it is better to send the money with the bill. If, however, an agent should be inadvertently asked to pay a voucher that the proceeds of his station do not render possible without waiting to accumulate cash (and thus discontinue his remittances), he should advise the treasurer of the facts in the case and await his instructions and not hold his collections.*

Vouchers sent agents to pay and not called for or paid within thirty days should be returned to the treasurer, with a statement of the reason why not paid, except when checks or drafts are sent with vouchers, in which case they should be returned within ten days.

When more than one voucher is sent to an agent at one time, they should be paid as fast as the receipts of the station will permit and should be remitted from day to day, as fast as paid, without waiting for the whole lot to be disposed of.

Vouchers should be remitted by the first express after they are paid.

In the event vouchers are sent to the wrong agent to pay, they should be returned forthwith by express.

The signature to the receipt at the bottom of a voucher should be exactly the same in every particular as the name of the person or persons to whom the voucher is payable; unless this is the case, credit can not be allowed the agent for paying the same.

Vouchers should be receipted by the person or persons to whom they are payable, or by some one known by the agent to be authorized to collect the amount and receipt therefor. In paying vouchers to persons holding orders, agents should see that vouchers are receipted by the person or persons to whom the order is payable, attaching the order to the voucher in every case. Agents are held strictly responsible for vouchers paid to unauthorized persons.

It will sometimes be necessary for the treasurer to pay money to an attorney or other agent of a company, to enable such attorney or agent to satisfy some claim decreed by the courts, or otherwise. In such cases the disbursing officer will take the receipt of the attorney or agent for the money thus paid. This, however, is merely preliminary. When the money is finally paid by the attorney or agent to the person or persons to whom it belongs, a receipt therefor should be taken. This receipt should be filed with the one already rendered to the disbursing officer

* One reason for this, and a good one, is that to hold his receipt would be to break the line of remittance, whereas I have always believed that the gross sum collected each day should be remitted daily.

by the attorney or agent. When a receipt from the person or persons to whom the money is finally paid can not be secured, as sometimes occurs when money is paid to the officers of the courts, then all the facts connected with the payment should be recounted and placed on file in lieu of a receipt.

When the payee of a voucher can not write, the agent or cashier of a company can not act as witness if the voucher is paid by him.

Duplicate receipts, if any are attached to a voucher, should be receipted, dated and returned with it.

Agents should not permit papers attached to vouchers to be detached. Such papers are necessary to the completeness of the voucher and should not, therefore, be disturbed. They are, moreover, as a rule, confidential in their nature, and should not be inspected or read by the payee of a voucher, except when attached for his information.

After paying a voucher, the agent should stamp it in a plain, legible manner (on the same date) with the station stamp, directly under the filing on the back of the voucher. This is evidence that it was paid by him.

In the event a voucher or check is lost, a company should require in every instance a good and sufficient bond of indemnity to be filed by the payee before issuing a duplicate. Great care should therefore be taken to protect vouchers and checks.

No unaudited voucher or account should be paid except upon the authority of the treasurer, and not then except in extreme cases, to meet the emergencies of business.

Great trouble and risk are sometimes experienced in the payment of vouchers in consequence of their not being made in favor of the right person or persons. In some instances the initials of the payee are wrong; more often, however, the name is given incorrectly; in case of corporations and firms, names are transposed, or the vouchers are made in the name of individuals. When an error of this kind is discovered, payment should be stopped until the voucher can be corrected. Money should never be paid except to the person or persons named in the instrument.

When it is found that an error has been made in the amount or name of the payee of a voucher or check sent to an agent to pay, such voucher or check (or both) should be returned to the treasurer unpaid, with a statement of the facts in the case, so that the matter may be corrected.

Under no circumstances is it permissible for an agent to change or deface a voucher or check in any way.

If, for any reason, payment is not to be made to the person in whose name a voucher is made, the fact should be noted on the face of the bill, also on the back of the voucher underneath the filing, giving the reason therefor and the name of the person to whom the money is to be paid. This indorsement (except in the case of transfer orders attached) should be signed by the

person or persons certifying the voucher and should be satisfactory in every respect to the treasurer, otherwise payment should be withheld awaiting satisfactory explanation.

In paying vouchers to persons holding orders, the order should be attached to the document in each instance, and the person holding it made to sign in lieu of the principal. But it should not be forgotten that a company is averse to accepting orders save for good and *bona fide* reasons. It prefers to treat directly with the principal.

GAS BILLS.—In order that a company may avail itself of the advantage arising from the custom of illuminating companies of discounting their bills on condition of prompt payment, the following expeditious method of providing for their settlement is suggested:

Bills that accrue at shops, stations and department headquarters should be certified to and forwarded immediately to the division superintendent for approval. He should enter them in his distribution book under the head of "Vouchers chargeable to storekeepers" and charge the proper operating expenses. He should then stamp and forward them without delay to the agent most conveniently located, for payment. After they are paid by the agent they should be stamped on the back with his station stamp on the date paid, and forthwith remitted to the treasurer as cash.

When no discount is allowed for immediate payment, such accounts should be treated the same as other bills. Officials in charge should see that bills are paid promptly and that the company receives the benefit of the discount allowed.

The treasurer may (to avoid a multiplication of bills) bring together into one voucher all bills of the foregoing nature, paid in any one month.

PAYMENT BY AGENTS OF BILLS DUE BY A COMPANY BEFORE THEY ARE AUDITED AND APPROVED.—No agent should be authorized to pay any bill, voucher, certificate of discharge, or other evidence of debt against a company, except under established rules, on accounts duly audited and approved.

In the event, however, it should become necessary in the course of business for an agent to pay money in advance of the approval of the document, it may be done upon the written direction of the treasurer, or, in an emergency, on the written order of a general approving officer of a company.

In such cases the agent should be directed to make the payment and take a receipt therefor, holding the latter, with the order directing the payment, until a voucher can be audited relieving him of the charge.

This voucher should be prepared without delay, in the department in which the claim originated, and should be made in the name of the person to whom the money is paid.



Carriage in Calcutta.

This voucher should pass through the same channel as other vouchers, and be treated, so far as the methods of approving and auditing are concerned, as if unpaid.

On the back of said voucher, however, under the proper filing, the maker should plainly note in red ink, "Paid by Blank agent at Blank station," a similar notation being made on the face of the voucher.

When money is paid in this way the receipt taken by the agent should describe the purpose of the payment.

This receipt should be technically legal in form.

Afterward it should be stamped with the station stamp.

When the approved voucher reaches the agent the receipt should be attached thereto by him; also the order.

The voucher should then be remitted without delay as the rules prescribe.

Whenever a payment is directed to be made otherwise than by order of the treasurer, the latter should be forthwith notified of the fact; but no such order should be issued except in the absence of the treasurer, and to meet an exceptional and imperative necessity.

CANCELLATION OF VOUCHERS.—Up to the time the books are closed and the statement of audited bills entered upon the general books, any error in the amount of a voucher may be corrected or the voucher itself may be cancelled and withdrawn from the register of vouchers by simply cancelling the entry on such register. Afterward no correction is possible; if an error has been made in the amount, the instrument should be formally cancelled and a new voucher made.

When it is desired to cancel a voucher after the books are closed, it should be forwarded to the accounting officer, so that the cancellation may be made on the books in due form.

Vouchers requiring to be cancelled after the books are closed should never be torn up or destroyed, as they are required for filing.

In the event it is necessary to cancel a voucher, the request therefor should be noted on the back underneath the filing with the reason given. This should be signed officially.

In case a new voucher is required, the person making the original bill should, if practicable, be called upon to make the same.

In cancelling vouchers, the amount should be credited to the account originally charged.

When vouchers which have been charged to "material" are cancelled, an entry should be made on the distribution book of the storekeeper who accounted for same, in the following manner: The amount of the vouchers cancelled should be deducted from the total amount of "Vouchers chargeable to storekeeper" for the month, and the operating or other accounts first charged with the vouchers should be credited.

When it is desired to cancel or change a voucher before the books are closed, it should be referred back to the various officials upon whose books it appears so that they may cancel or change the entry thereon.

Specific reference should be made in the distribution book to each voucher or various persons bill cancelled, and the reason for cancellation given. Notice should be given by the accounting officer monthly of all vouchers and bills to be cancelled, and no cancellation entries should be made on the distribution books other than for the vouchers or bills reported by the accounting officer.

TAKING RECEIPTS—HOW ENDORSEMENTS SHOULD BE MADE AND RECEIPTS SIGNED.—Receipts to vouchers, acknowledgments for money, property, or other consideration, and all endorsements on the back of time tickets, orders, drafts and checks, etc., should correspond in every particular with the name of the principal or person or persons in whose favor the instrument is made. For instance, if a document is made in favor of "James Carcliff," a receipt or endorsement can not be accepted signed by "James Carkliff." The practice of the United States Government in the case of vouchers, drafts and checks is founded on correct methods, and should be observed in connection with all such documents. It is as follows:

"The name of the payee, as endorsed, must correspond in spelling with that on the face of the warrant; no guarantee of an endorsement, imperfect in itself, can be accepted. If the name of a payee, as written on the face of a warrant, is spelled incorrectly, the warrant should be returned for correction."

Vouchers may be paid upon the presentation of an order properly drawn by the payee or by the legal and binding representative of such payee. The authority should in every case be securely attached to the voucher.

Documents in favor of corporations should be signed by the duly authorized agent or officer of such corporations, the name and title of the person being given in full in every instance.

Signatures should be witnessed in all cases by some responsible person when the payee is not personally known.

Endorsements by mark can not be witnessed by an agent or cashier, if the acknowledgment is for moneys paid by him.

When a payee can not write he should make his mark in legal form in lieu of a signature. This mark should be witnessed by some responsible person personally knowing the payee.*

Checks, drafts, notes, bills of exchange and kindred documents should in all cases be endorsed by the payee. Orders can not be accepted in such cases.

* In form as follows:

his
Richard X Roe.
mark.

Witness: John Smith, Chicago, Ill.

Those who make payments are held strictly responsible for the *bona fide* character of the receipt or acknowledgment and the payment of the money to the proper person or persons.

Drafts or checks cashed by agents or accepted by them should be endorsed according to the rules and regulations made especially for such cases.

When a check or draft is received by an agent it should be stamped at once on the back, viz: "For deposit on account of"*

Underneath this endorsement the name of the agent of a company should be signed. If the draft or check is stamped immediately upon its receipt its subsequent destruction or miscarriage can not involve a company in loss; stamping it in the manner described also prevents its misuse.

Checks and drafts should be drawn to the order of the collecting agent (as an agent), and before being remitted should be stamped as directed and formally endorsed by him.

In the event it is necessary to accept checks or drafts not drawn in the name of the agent, or made payable to his order, they should still be endorsed by him, so that his responsibility for them may always appear.

Endorsements should, if possible, be made by the agent, and not by his clerk; exception will be made to this rule when the cash is practically or formally in charge of a cashier.

Endorsements should be technically and legally perfect.

All time tickets, vouchers, gas bills, freight bills and similar documents remitted by agents should be stamped by them with the station stamp on the date they are paid.

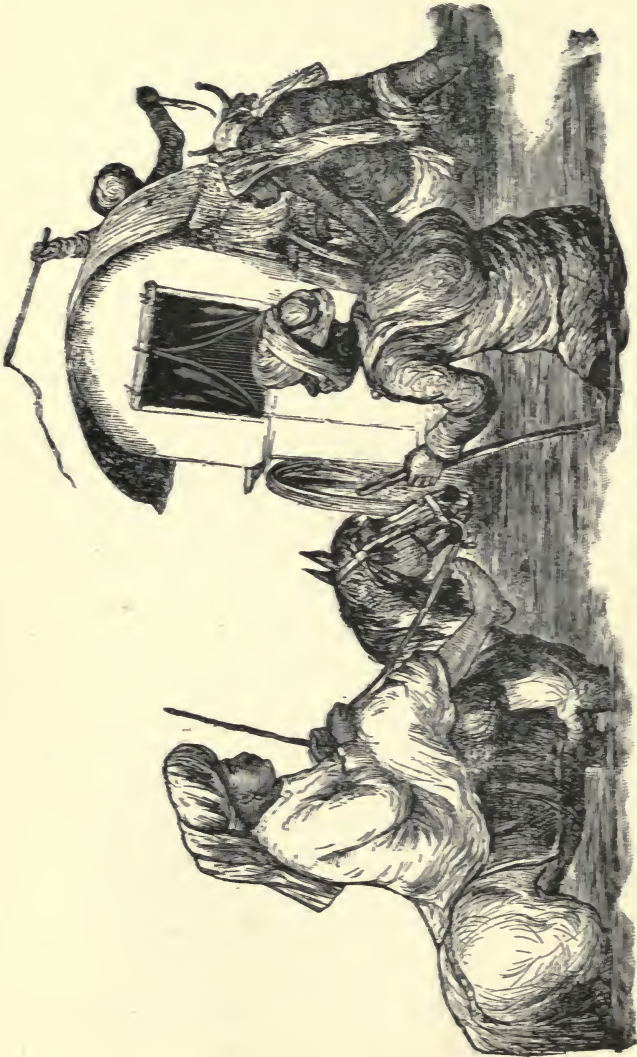
The foregoing rules and regulations apply more particularly to receipts to vouchers and endorsements on checks, drafts, notes, time tickets and kindred documents. They are equally applicable, however, to receipts of consignees for freight and for advances made by a company, and for transactions of every kind wherein the public is concerned. Also to receipts given by agents and others for charges on freight and collections of every description.

Signatures should never be inserted with a stamp. Some distinguishing mark or name should be written with pen and ink.

It should be remembered that the signing by one person for another is not binding unless duly authorized, and whenever a person signs for another, the name of the person signing should be given. If a person having power of attorney signs, he should attach to his signature "Attorney in fact;" if he signs as trustee, administrator, agent or otherwise, the fact should be duly stated beneath his signature. It is the duty of the agent or official who accepts such signature to satisfy himself at the time that the person signing is duly qualified.

It should be kept constantly in mind by all who pay money that while it is easy for them to assure themselves of the credit-

* Then should follow the name of the company.



Carriage in India.

ability of those to whom they pay before the transaction occurs. It is often difficult or impossible afterward. Men are ever willing to substantiate their right to receive money, if required to do so before the transaction. Afterward they are indifferent in many cases, and the burden of proof rests with the payor instead of the payee.

METHOD OF ACCOUNTING FOR INTEREST ON BONDS—
HOW COUPONS SHOULD BE TREATED WHEN PAID;
HOW FILED—METHOD OF ACCOUNTING FOR IN-
TEREST ON REGISTERED BONDS.

The method of accounting for interest payments on registered bonds is very simple compared with the methods devised for recording the payment of interest on coupon bonds.

In the former case the financial officer makes a certified statement of his disbursements for this purpose, and the accounting officer, after satisfying himself as to the authenticity of the same, allows the necessary credit.*

While there are numerous methods of accounting for coupons redeemed, the following may safely be observed:

When a coupon is paid, the officer paying it should cancel it by punching it at least twice; this will prevent the possibility of its reappearance upon the street.

As a rule coupons reach a company through the various local banks and collecting agencies. All the coupons presented by each party or agent should, after cancellation, be enclosed in a separate envelope, and upon the face of this envelope should be written the name of the payee, the date of payment, the names of the mortgages from which the coupons have been detached, the number of coupons presented for each mortgage, the gross amount of such coupons, and, finally, the total amount paid. A history of each transaction will thus be preserved temporarily in its entirety for reference. This information, as may readily

* In many cases he has countersigned the checks with which the interest was paid.

be supposed, will be invaluable afterward in adjusting accounts, verifying payments and satisfying inquiries.

After payment is made all the envelopes containing coupons, together with a detailed statement of the same, should be turned over to the accounting officer for examination and record. Upon their receipt the latter officer should proceed to verify the contents of the different packages and satisfy himself of the correctness of the accompanying statement in which the aggregate payment is given. The foregoing facts being determined, he should file away the various coupons received. A good plan for this is as follows: A record book is provided for the coupons of each class of bonds; the filing upon the back of the book specifies the name of the mortgage; the first page corresponds to bond number one, and so on through the book. The amount of the bond is specified at the head of the page. Each page is divided into as many squares, or blanks, as there are coupons attached to the bond; the blanks also correspond in size to the coupons. Each blank space on the page is numbered, and if the bond has fifty years to run, and the interest upon it is payable semi-annually, there are one hundred blanks provided—two for each year. The coupon maturing first is pasted in blank number one, the second in blank number two and so on. The blanks in the book that are unoccupied represent at a glance the coupons that are outstanding. The aggregate of the outstanding coupons is the amount of the company's liability for unpaid interest on its past due coupons. It is thus not only easy to ascertain precisely the aggregate liability, but it can also be determined readily for the different classes of coupons.

The plan is simple, economical and effective. The financial officer delivers up the cancelled coupons before receiving credit for their payment. After his accounts are verified the cancelled coupons are pasted in the book by the accounting officer, in the manner described, and in such form and with such system that reference can be made in an instant to any particular coupon that has been paid.

Under this method of accounting any attempt to foist a spurious coupon upon a company could not possibly remain undetected, no matter how perfectly the counterfeit might be, for the reason that when the time came for filing it away the person performing this duty would find the place allotted to that particular coupon already filled; or, if the spurious coupon were paid before the genuine, then it would occupy the place of the latter in the file. In either case the counterfeit would be quickly detected.

The foregoing method of accounting for paid coupons affords, in the multitude of checks it enforces and suggests, the maximum amount of security attainable at the least possible cost.

There should be no connection between the person who pays the coupon and the person who audits the account of the payor and pastes the coupon in the record. The person who draws off



Carriage in Persia.

the balance sheet of outstanding (overdue) coupons and balances it with the company's books so incidentally verifies the accuracy of the statement that every coupon claimed to have been paid has actually been paid.

SINKING FUNDS—ACCOUNTS TO BE OPENED ON THE BOOKS THEREFOR.

In the first place, specific accounts should be opened on the general books of a company with each particular sinking fund, and to such accounts should be charged or credited, as circumstances require, each particular installment.

In order that the exhibits of a company may show a full and clear record of the sinking funds, the following rules are suggested:

When sinking fund installments are charged against revenue they should be embraced in income account in the month in which they accrue without reference to when they are paid, and such amounts should be carried on the credit side of the balance sheet under the head of "Accruing sinking fund installments." This item will of course disappear when the installments are paid.

The amounts so paid should be shown on the balance sheet as an asset under the head of "Amount deposited with trustee of sinking fund;" and on the opposite of the balance sheet an account should be opened with "Sinking fund installments paid;" the former account representing the amount of cash or bonds, as the case may be, in the hands of the trustee, and the latter the amount of income used for paying such sinking fund installments.

When sinking fund installments are not charged against revenue, the aggregate amount of the sinking fund will appear on the credit side of the balance sheet under the head of "Past due sinking fund installments;" on the opposite side of the balance sheet an account should be opened to be known as "Unpaid sinking fund installments." Both of these items will disappear with the payment of the sinking fund, and the amount so paid will appear upon the debit side of the balance sheet as an asset under the head of "Amount deposited with trustee of sinking fund."

When bonds that are paid into a sinking fund, or bonds of a company owning the sinking fund which are purchased with cash payments to said fund, remain uncanceled, such bonds should appear upon the credit side of the books and in the accounts as "Live bonds in the hands of trustee of sinking fund;" these latter should of course be withdrawn on the books and in the exhibits from bonds outstanding.

When bonds paid into the sinking fund, or bonds of a company owning the sinking fund which were purchased by the trustee with cash payments to such fund, are cancelled, the out-

standing bonds should be reduced upon the books and in the accounts by a corresponding amount, and no cancelled bond, whether in the sinking fund or elsewhere, should be embraced as an asset or liability upon the books or in the accounts.

When it is desired to recapitalize bonds that have been purchased for the sinking fund and cancelled, the process, so far as the accounts are concerned, should be the same as when the securities were first issued, viz.: the amount of the bonds or stocks issued should be credited as outstanding, cash being charged with the proceeds of same.

When bonds paid to satisfy sinking fund requirements, or bonds purchased with cash payments to said sinking fund, remain uncanceled and continue to draw interest, the trustee should be charged with all such interest received under the head of "Trustee of sinking fund account accretions from investment of installments;" and on the opposite side of the balance sheet an account should be opened to be known as "Accretions from investment of sinking fund installments."

When sinking funds are paid in cash or uncanceled bonds, the amount of such cash or bonds appears, as described above, as a debit until the obligation for which the sinking fund is credited is finally retired. When this event transpires, the accounts "Amount deposited with trustee of sinking fund" and "Trustee of sinking fund account accretions from investment of installments" should be credited, and "Live bonds in hands of trustee of sinking fund" charged with that portion of the sinking fund represented by bonds of the issue for the benefit of which the sinking fund was created which the trustee cancels and returns the company. The balance of the sinking fund, if any, represented by bonds of other classes or cash, or both, as the case may be, being returned to the company by the trustee, should be added to its assets, the amount being credited in the same manner as stated above for cancelled bonds returned by the trustee, *i. e.*, to the accounts "Amount deposited with trustee of sinking fund" and "Trustee of sinking fund account accretions from investment of installments."

In the event the payments made to the sinking fund were charged to income, the amount of same, together with all accretions from their investment, should be transferred back to income account from "Sinking fund installments paid" and "Accretions from investment of sinking fund installments," respectively. These entries close the different accounts.

By accounting for sinking funds as described the exhibits of a company will always show at a glance the amount of all funds in the hands of the trustee belonging to the sinking fund; how much of same represents respectively payments made to the fund and accretions to it from investment of such payments; and also what amount of payments, if any, were charged against income.



Carriage in Cairo.

CHAPTER IX.

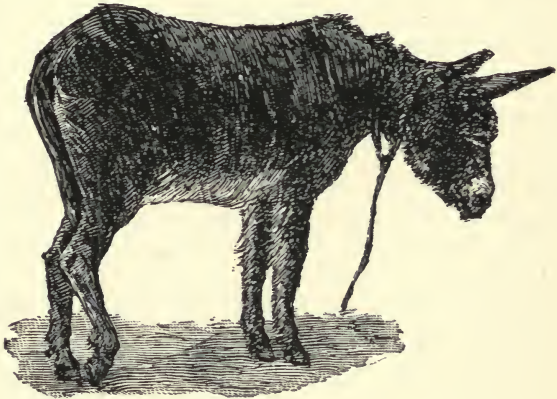
RAILWAY CONSTRUCTION AND CLASSIFICATION.

Construction properly embraces the original or first cost of a property; all disbursements, expenses, costs, commissions, salaries and debts incurred in connection therewith or incident thereto; the accruing interest on the amount invested while the property is in course of construction and before it is opened for business; all disbursements and losses suffered in the sale or disposal of bonds, shares, securities, or assets, the proceeds of which are used in its purchase or development; all expenditures on account of its rights, franchises and appurtenances. These constitute the first cost of a property.*

In the event of the abandonment of any portion of a property, the amount derived from its disposition or sale is a credit to construction.

* There can be no difference of opinion as to what constitutes railway construction; as to what is properly chargeable to construction and what is properly chargeable to operating expenses. The practices of railways, however, differ in such matters, and for good cause. Items that one railway will charge to construction and capitalize another road will charge to operating expenses and pay for out of income. The reasons for these practices are founded upon the necessities of the case and good business judgment. The rules that animate railway managers in such matters are too complex to be discussed here; I have referred to them at considerable length in the volume "Financing, Building and Maintaining."

After a property is opened for business, nothing can properly be charged to construction except additions or betterments. No structure, work or addition should be embraced under the head of construction, except to the extent that it adds to the original, the said structure or work being in the nature of an accession, and not intended to replace something of a similar nature,



Carriage in England.

worn out or destroyed at the same place or in the immediate vicinity; thus, if it is intended to erect a building where no building before existed, all labor, material and money expended thereon is properly chargeable to construction, and so on for new platforms, stockyards, fences, grounds and other outlays. Additions, enlargements, improvements and necessary changes—all improvements, additions, extensions or accretions that add

to the first cost of a property also constitute construction. These embrace the implements and utensils used as well as realty and other property. If, for instance, it should be found necessary to increase the capacity of a coal house by making the building longer, wider or higher, the building would be just so much more valuable, and the cost of enlarging the same would be a proper charge against construction. The same principle holds good in reference to new tools and machinery, new side tracks built, additional yard grounds acquired, new buildings, platforms and fences erected, and so on.

The cost of remedying any defects in consequence of a property not having been constructed in a first class manner in the first place, is a proper charge against construction.

In charging construction with the cost of additions, enlargements or betterments, it should be kept in mind that only that which adds something to what before existed is thus chargeable. It may cost more to repair or renew a structure than the original cost, nevertheless the whole cost thereof should be charged to operating expenses, unless the structure has been improved or enlarged in the process. If in renewing a pile bridge or culvert, the structure is lengthened, the added length is a legitimate charge to construction, although the structure may not be of a more permanent character than the one originally constructed. But in determining what amount shall be charged to construction in such a case, the cost of the thing replaced should be first deducted; thus, if the added length of a bridge is charged to construction, the cost of the roadbed it replaces should be deducted from the charge to construction.

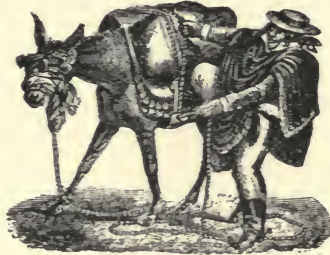
The principle which should be observed in all cases is not to charge to construction more than the added cost that may be incurred in the betterment of a property, or the adjustment of the same to the varying necessities of business, or the correction or remedying of structural changes caused by the vicissitudes of weather or climate.

The cost of removing an old structure, preparatory to the erection of a new one, is a proper charge against construction in the event the removal is precipitated by the necessity of enlarging or improving the structure. If the removal is because of its being worn out, or is in the nature of necessary repairs and

renewals, the expense of removal should be charged to operating expenses, even though an enlarged or improved structure is erected in its place.

The value of the improvements to a property, if in the process of improving no additional expense is incurred, should generally be charged to operating expenses. Thus, if in the manipulation of a property a superior article of metal is used and it does not cost more than that which it replaces, it is not customary to charge anything to construction.*

After a property has been opened for business, the cost of working the same and the wear and tear attending its operation (including all repairs and renewals) are chargeable to operating expenses. But so long as a property is not formally opened for business, or is only used in the handling of construction material, all the expenditures attending its operation are chargeable as a part of the cost.



Carriage in Peru.

CLASSIFICATION OF CONSTRUCTION ACCOUNTS.†

The following classification of construction accounts describes the various sources of expend-

* This rule, while generally observed, will be understood to be nominal only. A company has the same right to the value of its improvements, and to derive advantage therefrom in increased income, than an individual has whose property is heightened in value and earning power by the improvements he makes.

† This classification does not agree exactly with the requirements of the Interstate Commerce Commission in its returns; it, however, embraces more headings than the government exhibit. It is so arranged that the latter may be compiled from it without difficulty. The classification devised by the United States government is an admirable one, and, so far as information is required by the government, perfect. I have subdivided some of its headings, not because they were not clear or perspicuous, but simply to afford local operating officers a more minute itemization. As I have already said, the practices of railways differ in regard to what they charge to construction. The accompanying rules and regulations are based on the theory that everything that is properly chargeable to construction is so charged.

iture that enter into the construction of a railway, and the additions, enlargements and betterments that attend its operation after being opened for business. It may be safely followed.*

BALLASTING—CONSTRUCTION.—This item covers the cost of ballasting, including material and labor, embracing, incidentally, such items as cost of loading and unloading and putting material into track.

BLOCK SIGNALS—CONSTRUCTION.—To this account should be charged the cost of electric appliances and other material for block signals; also the labor performed and expenses incurred in placing same in position.

BOARD OF CONSTRUCTION FORCE—CONSTRUCTION.—This item is intended to cover expenditures on account of the board of men engaged in construction work, not otherwise provided for. It includes expenses on account of boarding cars, camps and houses, and the bedding, groceries, provisions and material and supplies used therein; also the wages of cooks, helpers and others. Collections for board or lodging that are a proper set-off against amounts charged to this account should be credited to it.†

BRIDGES, CULVERTS AND VIADUCTS (EXCLUDING MASONRY)—CONSTRUCTION.—This account embraces the cost of material used, labor performed and expense incurred (except on account of masonry, a separate account for which is provided) in the construction of these structures; it does not include any track material or the cost of laying same.‡

BUILDINGS, FURNITURE AND FIXTURES — CONSTRUCTION.—This account includes material used, labor performed and expense incurred in the construction of buildings.

The furniture and fixtures necessary to equip a building and fit it for the purpose it was erected to serve are chargeable to

* Too great care can not be exercised in the classification of construction accounts to see that charges are entered under their proper headings. It may be that in the construction of particular lines some unusual expenditure may arise not separately provided for herein. In such event, a special account should be opened. An account should be opened as occasion requires with each specific heading. The details of each charge should be given in every instance and the location and identity of the work accurately described.

† For method of accounting for these collections, see rules and regulations in chapter on "Miscellaneous Accounts Against Persons."

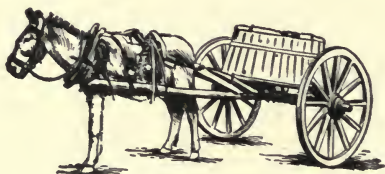
‡ A viaduct will be understood to mean a structure for carrying the track over a canal, river or valley. The different classes of structures covered by this account and the principal articles of material used in their construction are set forth in detail under the analogous operating expense account. The account known as "road crossings and signs" should not be confounded with this.

this account as a part of the cost, except shop machinery and tools.*

CLEARING AND GRUBBING—CONSTRUCTION.—This account includes the cost of preparing the right of way for grading, including the removal of trees, brush, shrubbery, boulders and similar matter.

CONSTRUCTION SUPPLY DEPOTS—CONSTRUCTION.—This account is intended to cover the cost of handling construction supplies after their purchase. It includes the wages of storekeepers, assistants, timekeepers, watchmen and laborers employed in this connection; it embraces the cost of loading, unloading, watching and handling material at depots of supply, the cost of unloading the same on the line, and the cost of temporary side tracks, platforms and storehouses required in the handling of construction material.

The cost of handling material after being unloaded at the point where designed for use is chargeable to the object for which unloaded.



Carriage in Mexico.

CONSTRUCTION TRAINS—CONSTRUCTION.—This account embraces the expenses of construction trains, including wages of engineers, firemen, wipers, dispatchers, conductors, brakemen and other train men; also cost of temporary water stations, fuel sheds and engine houses; charges for use and repairs of equipment, cost of fuel, oil, waste and other supplies used on locomotives and cars employed in construction trains.

DISCOUNT—CONSTRUCTION.—To this account should be charged discounts suffered from the sale of securities, the proceeds of which are used for construction purposes or which have been acquired in connection with construction work; also discount suffered in the disposal of securities issued to take the place of those used in the construction of a property.

Reversely, any premiums derived from the sale of securities, such as those described, should be credited to this account.

* The different classes of buildings and the principal articles used in their construction are set forth in detail under the operating account of "repairs and renewals of buildings and fixtures."

DOCKS AND WHARVES—CONSTRUCTION.—This account includes the cost of docks and wharves, landings and appurtenances thereunto belonging, such as piling, sheet piling, wale timbers, cap timbers, bracing, filling, dredging, planking, paving and the labor and expense incident thereto. It does not, however, include the cost of track appurtenances, rails, ties, spikes, etc., laid on docks and wharves.

ENGINEERING—CONSTRUCTION.—This account includes the salaries and expenses of engineers and their assistants engaged in surveying, locating and attending to the construction of new lines and extensions, including camp expenses, board bills paid by the company, etc.

EXCHANGE—CONSTRUCTION.—This account embraces expenditures for local and foreign exchange and charges appertaining thereto on account of funds used for construction purposes.

FENCES—CONSTRUCTION.—This account includes the cost of track, yard, shop, station, and snow fences.

The cost of planting hedges and fence trees is also chargeable to this account.

GRADING—CONSTRUCTION.—This account includes expenditures for grading the track, yards and station grounds, including wages of excavating gangs, cost of ditching, and opening and widening cuts, etc. It also includes the cost of stone, brush, or other material used to protect the track; also cost of labor performed in riprapping and all expenses incidental to this account.*

INTEREST—CONSTRUCTION.—This account embraces interest accruing on the securities of a company, or on moneys used by it for construction purposes, up to the date the property is opened for business.

INTERLOCKING SWITCHES—CONSTRUCTION.—This account includes the cost of interlocking switches and appurtenances; also labor performed and expense incurred in placing the same in position. An account should be kept with each group, *i. e.*, with the system worked from a particular switch tower.

MASONRY FOR BRIDGES, CULVERTS AND VIADUCTS—CONSTRUCTION.—This account embraces the cost of material used, labor performed or expense incurred on account of masonry for these structures, including foundations and the protection of such foundations.

The principal items of expense coming under this head are as follows, viz: excavation, foundation, piles and timber, sheet piling, pumping, concrete, stone work, sand, lime, cement, labor, etc.

It includes the total expenditure necessary to prepare the masonry work for the structure.

* Where riprapping occurs in connection with the construction or protection of a bridge, culvert, viaduct or wharf, it should be charged accordingly.

MISCELLANEOUS EXPENSES—CONSTRUCTION.—This account includes expenses on account of construction not otherwise provided for herein.

MISCELLANEOUS TRACK MATERIAL—CONSTRUCTION.—This account includes the miscellaneous material used in the track (not including rails and ties) not otherwise provided for herein, embracing angle bars, chairs, frogs, bolts, fish plates, mile posts, nails, nut locks, padlocks, switch stands and frames, switch levers and rods, switch locks and keys, switch lamps and other switch fixtures, spikes, switch houses, staples, torpedoes, tool houses, whistling posts and boards, guard rails for switches, etc.

It also includes the tools of track and gravel train men, hand-cars, dump cars, scrapers ditchers, etc. *

RAILS—CONSTRUCTION.—This account embraces the first cost of iron and steel rails, including cost of inspecting.

(Mem.—Rails laid in sidings are merged in the cost thereof.)



Carriage in Peru.

This account also represents the difference in cost between metals of different degrees of quality or weight, according to the general rules governing construction. Thus, if a heavier quality of metal is inserted in the track in place of lighter metal at an added cost, or if metal of a higher quality is inserted at an added cost, construction may properly be chargeable with the difference.

Reversely, if lighter or poorer metal is inserted in the track, construction should be credited with the difference in cost.

REAL ESTATE—CONSTRUCTION.—This account includes the real property purchased or acquired by a company for other than right of way, including all expenses connected therewith.

Land not immediately connected with a property or essential to it, or the handling of its traffic; off the line of road; occu-

*In the event the cost of side tracks is kept separately from the cost of main tracks, a separate account should be opened for sidings. A similar rule should be followed in regard to other accounts.

ped by general or other offices; land which a company has abandoned, or which it does not need or will not need; property separate from the road and not essential to its operation.

RIGHT OF WAY—CONSTRUCTION.—This account includes real property purchased or acquired for right of way purposes, including legal and other expenses in connection therewith.

The ground upon which the track is laid, including that on either side thereof; also grounds occupied by stations, yards, sidings, shops, roundhouses, water stations, fuel depots, warehouses, elevators, docks, wharves, etc.; land used in connection with the operation of a property or necessary to the handling of its traffic.

ROAD CROSSINGS AND SIGNS—CONSTRUCTION.—This account includes the cost of material used, labor performed and expense incurred in the construction of public and private highway crossings, whether said crossings are made at grade or above the track; also all the special expenditures attending the conveying of a highway under the track, or rendered necessary thereby.

Expenditures on account of cattle guards should also be charged to this account.

It also includes the cost of erecting gates and signs at road crossings, or incidental thereto.

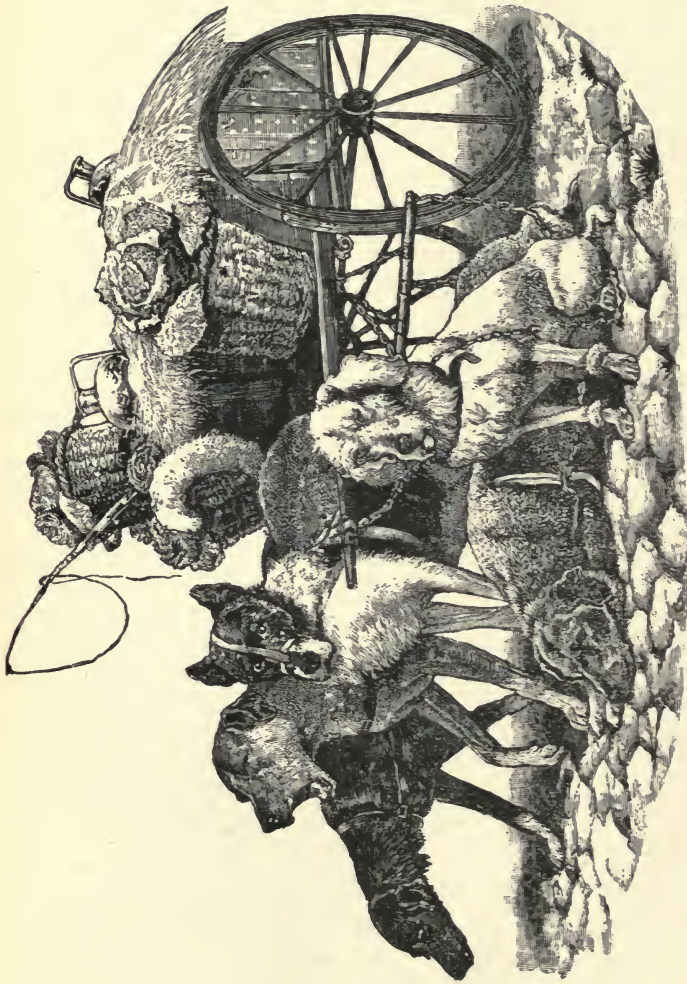
ROLLING STOCK—CONSTRUCTION.—This item includes the cost of locomotives and cars; also the cost of improving the equipment of a company, such as the substitution of Westinghouse brakes and Miller platforms for common brakes and platforms; also the addition of vestibules, air signals and steam heating apparatus to passenger cars, and automatic couplers and air brakes for freight cars, and similar charges, except as otherwise provided for herein.

The value of furniture, fixtures and tools used upon rolling stock should be included as part of its cost—everything, in fact, needed to fit the locomotive or car for actual service.

SHOP MACHINERY AND TOOLS—CONSTRUCTION.—This account embraces shop machinery and shop tools, including tools used in roundhouses.

SIDINGS—CONSTRUCTION.—This includes the cost of ditching, filling, grading, ballasting, track material (including rails and ties), the laying of the latter; also the cost of bridges, culverts, cattle guards, and all expenses connected with the construction of sidings and the yards appertaining thereto, including the connecting of the track with the main line.

STATIONERY, BONDS, SHARES AND OTHER FORMS—CONSTRUCTION.—This account includes the cost of stationery, blanks, books, forms and similar matter necessary to equip a property; also the cost of engraving and printing bonds, indentures, certificates of shares, scrip, checks, notes, and other obligations or evidences of debts used in raising or handling money for construction purposes, or that under the rules is chargeable to construction; also



Carriage in Antwerp.

payments to trustees and others for services in signing, registering, recording, etc., and for all other expenses connected with the things covered by this account.

STOCK YARDS—CONSTRUCTION.—This account includes the cost of stock yards and the buildings, gates, fences, flooring and fixtures that appertain to such yards.

TELEGRAPH—CONSTRUCTION.—This account includes the cost of telegraph and telephone lines and cables, and all appurtenances thereto belonging, including instruments and plants; also any accretions or betterments that may occur, subject to the rules governing construction charges.

TIES—CONSTRUCTION.—This account includes the first cost of road, bridge, switch and other ties, including cost of inspecting same and amounts paid for stripping off the bark, etc.

The same principle in regard to construction charges applies in this as in all other cases. Thus, if metal ties or creosoted ties should be substituted for others of an inferior quality at an increased cost, such increased cost would be a proper charge against construction.

TRACKLAYING—CONSTRUCTION.—This account includes the cost of handling track material after it is unloaded on the ground for use, including the laying of the ties, the placing of rails thereon, spiking, splicing and other work attending tracklaying.

TRANSPORTATION OF MATERIAL—CONSTRUCTION.—This account includes transportation charges on construction material.*

TRANSPORTATION OF MEN—CONSTRUCTION.—This account embraces charges for the transportation of men employed in construction work.†

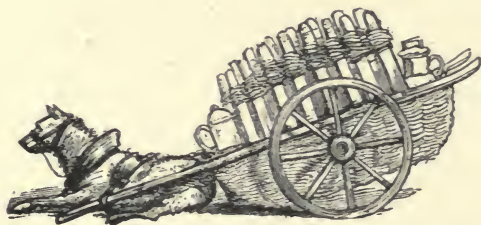
TUNNELS—CONSTRUCTION.—This account embraces the cost of tunnels, including the digging, boring and arching, and the brick, stone, cement and other material used in connection therewith, including draining; but it should not include track material, ballasting, etc.

* It is customary to add all charges paid to other companies by a company buying the material, to the price of the goods. "Transportation of Material" should, therefore, only be debited with the charges from the point where delivered to the company buying the same. The customs of railroads differ in regard to adding local freight charges to cost of construction. Upon some lines transportation is charged on all construction material; on others it is charged only on material used in the construction work of new lines and extensions. The question is fully discussed in another volume ("Economical Purchase, Care and Use of Material"), in which the practices in vogue are fully set forth and the effect thereof stated.

† The customs of railroads differ in regard to charging for transportation of men engaged in construction work. Upon some lines transportation is charged for men engaged on all construction; on others it is charged only for forces employed on the construction work of new lines and extensions. The question is fully discussed in another volume ("Economical Purchase, Care and Use of Material"), in which the practices in vogue are fully set forth and the effect thereof stated.

CONTRA—CONSTRUCTION EARNINGS—What a company earns while its property is in course of construction and before it is formally opened for business, should be credited to construction, if the cost of conducting the traffic has been charged to construction. It is not proper if the expense has not thus been charged.

DETAILS OF ACCOUNTING IN CONNECTION WITH CONSTRUCTION WORK.—When a new line or extension is completed, the construction material that remains unused along such line, or appertaining to it, with the transportation charges that have accrued thereon, should be carefully inventoried by the storekeeper in charge, after which he should invoice the same in detail to the local storekeeper assigned to take charge of it. The amount thus turned over should be credited to the account originally charged



Carriage in Brussels.

Construction accounts should be designated on distribution books and vouchers in the manner best likely to indicate their character and location, as say: "Construction of Blank depot, Blank division," or "Enlarging Blank coalhouse, Blank division," or "Extending platform, Blank station, Blank division," or "Improving depot grounds, Blank station, Blank division," or "Enlarging stock yards, Blank station, Blank division." In every case the designation should be so full and clear that the character of the charge may be accurately understood at headquarters, including location and other details, without further research or inquiry.

A separate account should be opened with each side track constructed.

When sidings are constructed in common with the main line, and the cost of each can not be separately determined, it will be understood to be the average of the whole, after taking into consideration any special charges that may characterize the cost of either.

Upon old lines it would be well to keep a record of the actual number of lineal feet of new sidings laid and taken up each month, so that, at the end of the fiscal year, or whenever desired, an accurate report may be rendered by the person having charge of such accounts, of the total number of lineal feet laid in excess of the number of feet taking up, or vice versa.

An account should be opened with each locomotive or car constructed at a company's shops, as say, "New locomotive, No. 510, in course of construction."*

When a lot of locomotives or cars is in course of construction at the same time, and material and labor are being expended in common upon them, an account should be opened with the lot, as say, "New box cars, Nos. 982, 984, 986, in course of construction."

When a locomotive or car is completed, written notice of the fact should forthwith be sent to the accounting officer, giving the particulars and cost corresponding with the amount charged on the distribution books.

Each construction account that it may be necessary to open should not only be charged with the material, labor and other expense directly expended upon it, but it should also be charged with all expenditures incident to it not otherwise provided for.

A separate account should be opened with each structure in the following cases, viz.: for each building, bridge, culvert, viaduct, dock, wharf, fence, group of interlocking switches, piece of real estate or right of way; for each locomotive, car, siding, telegraph and tunnel.

In order to enable the accounting officer to keep himself advised of construction work in progress, and to distinguish between expenditures that should be charged to operating and those that should be charged to construction, a monthly return† of all new work should be made to him; if a new building is in course of construction, the fact should be stated; if it is being added to, improved, enlarged or rebuilt, the facts should be precisely given. The report should give the estimated cost of the proposed work; if it is to replace another structure the original cost of such structure should be given, or, if not known, the estimated cost thereof, with the name of the person making the estimate. If the work is an enlargement, improvement or addition, the nature of the betterment should be stated and what proportion of the same (if any) should be charged to operating expenses.

* Inasmuch as rolling stock is seldom completed in the month in which the construction work is begun, the accounting officer should charge the expenditures monthly to a suspense account named "Rolling stock in course of construction," giving in detail the charges on each lot. Upon the completion of each lot he should transfer the total expenditures on the same from "Rolling stock in course of construction" to "Rolling stock."

† See Form No. 47, Appendix E.



Carrriage in Ashantee.

The greatest care is required to be exercised at all times to prevent charges being made to construction that belong in operating expenses, or vice versa.*

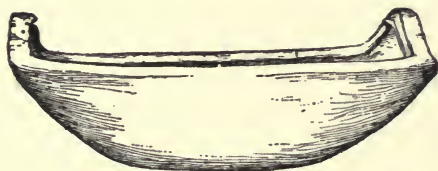
The classification of construction accounts, given in detail in the foregoing, may be recapitulated in brief, as follows:

1. Ballasting.
2. Block Signals.
3. Board of Construction Force.
4. Bridges, Culverts and Viaducts (including Masonry).
5. Buildings, Furniture and Fixtures.
6. Clearing and Grubbing.
7. Construction Earnings. †
8. Construction Supply Depots.
9. Construction Trains.
10. Discount.
11. Docks and Wharves.
12. Engineering.
13. Exchange.
14. Fences.
15. Grading.
16. Interest.
17. Interlocking Switches.
18. Masonry for Bridges, Culverts and Viaducts.
19. Miscellaneous Expenses.
20. Miscellaneous Track Material.
21. Rails.
22. Real Estate.
23. Right of Way.
24. Road Crossings and Signs.

* In order to avoid the confusion and labor that attend the opening of a construction account for petty additions, enlargements or improvements, and for other reasons, no charge is made to construction upon many lines for expenditures for merely nominal sums, all such improvements, additions, extensions and enlargements being charged as an operating account. The petty construction items that are treated in this way are those that are incurred subsequent to the original outlay, upon an old or completed line; thus, if after the lapse of a considerable period some slight addition, improvement, extension or enlargement is made to a building or other belonging of a company, it is charged as an operating expense. In the construction of new lines and extensions, however, charges are made to construction without reference to the amount.

† This is a credit to Construction, *i. e.*, it is the Earnings that accrue during the construction period, the cost attending which is charged to Construction.

25. Rolling Stock.
26. Shop Machinery and Tools.
27. Sidings.
28. Stationery, Bonds, Shares, and Other Forms.
29. Stock Yards.
30. Telegraph.
31. Ties.
32. Tracklaying.
33. Transportation of Material.
34. Transportation of Men.
35. Tunnels.



Carriage Among the Hupa Indians.

CHAPTER X.

OFFICIAL CLASSIFICATION OF OPERATING EXPENSES.

The accompanying classification is the work of railway officers and the various railroad commissions of the United States. It is Official. It took effect July 1st, 1894. It is the outgrowth of twenty years' agitation. The Interstate Commerce Commission pledges itself that, so far as it is concerned, it is final. This is a great point gained. A poor classification is much better than a good one that is all the time being tinkered. Changes not only prevent comparisons but the expense they entail is out of all proportion to the advantages they afford.*

The operating expenses of a road include the cost of working a property and maintaining the same; they embrace the wages of men engaged in conducting the business, including cost of repairs and renewals and all expenses incident to the operation and maintenance of a property. They should be divided under the subjoined heads in the order given.

Charges should be entered in the month in which they occur. When this is impossible, then as soon afterward as the amount can be ascertained.

In the event the classification of an expenditure is not known, it should be charged under an analogous head.

* The particularity that is observed in specifying exactly what belongs under the various accounts or headings that follow is due largely to the railway commissioner from Michigan; the author of this book prepared for him the classification, substantially, as embodied herein. Its official adoption and recognition by him made its adoption general. The great amount of research and labor that attended this exposition is amply repaid by the uniformity of accounts that it insures, as every storekeeper, timekeeper and official connected with the expenditures of railroads knows, by reference to it, exactly where every item of expense should go in the accounts.

The utmost care should be exercised in classifying and apportioning expenses. If improperly done the management is misled and the property suffers; if, on the other hand, it is accurately performed, it affords a reliable basis for intelligent investigation and comparison and the correction of irregularities and extravagances.

The classification of expenses is as follows:

MAINTENANCE OF WAY AND STRUCTURES.

REPAIRS OF ROADWAY—OPERATING.—This account includes all expenditures for account of the roadbed and track (except cost of rails and ties), cost of loading and distributing rails and ties along the track, labor expended in cutting, slotting and drilling (when done by trackmen), laying rails, ties and other track material; sloping cuts, blasting rocks and widening embankments, gathering old rails and scrap material, repairing and keeping tunnels in order, clearing track of snow and ice, cutting and removing weeds, brush and grass from a company's right



Carriage in the Malay Peninsula.

of way, plowing fire guards along track; proportion of salaries and expenses of civil engineers, superintendents of tracks, resident or division engineers, their clerks, draftsmen and other attendants, use and repairs of instruments (when not chargeable to construction), and wages of roadmasters, their clerks, section foremen, track laborers, track watchmen, gravel pit men, work train engine and trainmen, and men employed in operating steam shovels, scrapers and piledrivers, and ditchers while engaged in track renewals and repairs; also cost of fuel, water and other supplies used on work train engines and cars; and cost of oil, tallow and waste used on track (except oil used in switch lamps, which should be charged to "Station Supplies.")

It includes cost of ballast of all kinds; preparing, delivering and putting same into track; also quarry, gravel and sand pit rights and privileges (except cost of land), fixtures, tools and other articles used in connection with the track, rail fastenings, semaphores, switch stands and fixtures, "block" and other systems of road or track signals, interlocking plant, signals and other appliances pertaining thereto; tools and implements of

trackmen and gravel pit men; fuel and light, water, ice and other supplies used in connection with the track, or in section houses, tool houses, watch houses, work trains while engaged in maintenance of roadway, etc., not otherwise provided for: riprapping, piling and piers (except around bridges and buildings), retaining walls, dykes and breakwaters made to protect track, and labor and material used in protecting river banks and keeping track clear in cases of freshets and washouts; cost of boarding men at washouts; snow sheds and snow fences, and also the cost of filling trestles with earthwork (except when properly chargeable to construction).

When a track is taken up, the labor expended therefor should be charged to this account, whether another track is laid to replace it or not.

The following is a list of the more important articles used in connection with repairs of roadway, viz:

Adzes,	Jack levers,	Splices,
Adz handles,	Lanterns and fixtures,	Squares,
Axes,	Levels,	Staples,
Ax handles,	Lining bars,	Stone,
Augers,	Lumber,	Stone drills,
Ballast,	Nails,	Stoves and fixtures,
Bolts,	Nippers,	Straightening machines,
Braces and bits,	Nuts,	Switches, fixtures and ap-
Brooms,	Nut locks,	purtenances,
Brush hooks,	Oil,	Switch ropes (when used
Bumper posts,	Oil cans,	in repairs of roadway),
Cable wire,	Padlocks,	Tamping bars,
Cant hooks,	Picks,	Tapelines,
Chains,	Pike poles,	Timber,
Chairs,	Pinch bars,	Tongs,
Chisels,	Plows,	Tool boxes,
Claw bars,	Punches,	Torpedoes used by track
Crow bars,	Rail braces,	repairers,
Curbing hooks,	Raising bars,	Track gauges,
Dippers,	Ratchet drills,	Track jacks,
Drawing knives,	Riprap,	Velocipedes,
Drills,	Rope,	Vises,
Fish or angle plates,	Saws,	Washers,
Fish or angle plate bolts,	Serap boxes,	Washer irons,
Flags,	Scythes,	Water barrels,
Frogs,	Semaphores,	Water kegs,
Gravel,	Shovels,	Water pails,
Grindstones,	Sledges,	Wheelbarrows,
Hammers,	Spades,	Whetstones,
Hand trucks,	Spikes,	Wire,
Hatchets,	Spike mauls,	Wrenches, etc.
Hoes,	Spot boards,	

RENEWALS OF RAILS—OPERATING.—This account includes the cost of rails, laid in main track or tracks, sidings, spurs, gravel and repair tracks; in tunnels, depots, shop and other yards, shops and other buildings; on turntables, piers, wharves, track scales, inclines, bridges, trestles and culverts; to and from coal chutes, coal pockets, fuel or water stations, etc., less the value of the old rails taken up; also the cost of inspection and transportation. Cost of guard rails should be charged to this account.



Carriage Among the Indians.

RENEWALS OF TIES—OPERATING.—This account includes the cost of cross and switch ties laid in main track or tracks, sidings, spurs, gravel and repair tracks; in tunnels, depots, shop and other yards, shops and other buildings, etc.; on turntables, piers, wharves, track scales, inclines, bridges, trestles and culverts; to and from coal chutes, coal pockets, fuel or water stations, etc.; also the cost of inspection and transportation.

REPAIRS AND RENEWALS OF BRIDGES AND CULVERTS—OPERATING.—This account includes all expenditures for account of repairs and renewals of bridges, trestles and culverts, both substructure and superstructure; expenses of locomotives, work trains, pile drivers, etc., while engaged in making such repairs; cost of repairs and renewals of piers, abutments, retaining walls, drain pipes, riprapping, dykes, etc., necessary to protect or strengthen bridges and culverts against ice, water, etc.; and the cost of cleaning the channel under bridges and culverts.

It includes also the wages of supervisor of bridges, expenses of his office, bridge foremen, bridge watchmen, bridge tenders, etc.; supplies used in operation of bridges, such as brooms, lanterns, oil, oil cans, pails, tallow, waste, water barrels, etc.; and fuel for stationary engines at drawbridges. The cost of removing old bridges preparatory to the construction of new and the cost of temporary or false work used in repairs or renewals of bridges and culverts are chargeable to this account.

The following are the principal classes of structures coming under this account, viz.:

Bridges.—Steel, iron, wood (Howe truss, combination, trestle or pile).

Culverts.—Stone or brick arch; iron; earthenware, iron, or ordinary piping; open culvert.

The following is a list of the more important articles of material used in connection with bridges and culverts, viz.:

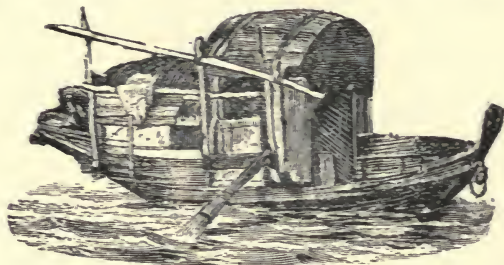
Bolts,	Iron thimbles,	Riprap,
Brick,	Iron rods,	Sand,
Cables (iron and hemp),	Lag screws,	Spikes,
Castings,	Lime,	Stone,
Cement,	Lumber,	Timber,
Dowels,	Nails,	Wood screws,
Iron,	Nuts,	Wrought washers, etc.
Iron braces,	Paints,	
Iron hangers,	Piles,	

REPAIRS AND RENEWALS OF FENCES, ROAD CROSSINGS, SIGNS AND CATTLE GUARDS—OPERATING.—This account includes all expenditures for account of repairs and renewals of right of way fences, street railway and road crossings, overhead bridges, roadways running under track, viaducts (foot and wagon), crossing drains, all signs (except station signs), whistle posts, slow boards, stop boards, mile posts, etc.; crossing gates, cattle guards, hedges, street repairs or sewers for which a company may be assessed or become responsible (excepting crossings within the limits of

station and shop grounds, which are chargeable to "Repairs and renewals of buildings and fixtures"), and tools used by employes in making such repairs and renewals.

REPAIRS AND RENEWALS OF BUILDINGS AND FIXTURES—OPERATING.—This account includes all expenditures for account of repairs and renewals of all *buildings* used in connection with the operation of a road.

It includes wages or proportion of wages of the officer in charge of repairs of buildings, expenses of his office, cost of excavation, foundations, drainage, water, gas and sewer pipes, and stationary fixtures appertaining thereto; heating and lighting plant, apparatus and fixtures; fences around station grounds, stock and fuel yards, shops and other buildings; cisterns and wells for station and other buildings; grading, sewerage, laying out and improving grounds around stations, shops and other buildings, paving yards adjacent to buildings, street paving and



Carriage in Hong Kong Harbor.

repairs for which a company may be assessed, when such repairs are on streets adjacent to stations, shops and other buildings (otherwise such repairs should be charged to "Repairs and renewals of fences, road crossings, signs and cattle guards"); also the expense of removing old buildings, preparatory to the construction of new.

The following is a list of the structures referred to above:

Baggage rooms,	Express buildings,	Oil houses and tanks,
Boarding houses for section men,	Fire engine houses,	Outhouses,
Breakwaters for protection of buildings,	Fuel houses,	Permanent signal station buildings,
Dry houses,	General offices,	Platforms,
Dwelling houses,	Grain cribs,	Rail mills,
Eating houses,	Grain warehouses,	Roundhouses,
Elevators,*	Hand car houses,	Sand houses,
Engine houses,	Ice houses,	Scrap houses,
	Inclines for fuel and other purposes,	Section houses,

* Except elevators, the net earnings of which are excluded from Freight Revenue.

Shops of all kinds, Shop and station grounds and yards (draining, filling, etc.), Sidewalks, Stables,	Stationary engine houses, Station houses (passenger and freight), Stock pens, Storehouses, Switch houses,	Telegraph offices, Turntables, Warehouses, Watchhouses, Water stations,
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The expense of repairs and renewals of *furniture and fixtures* used in buildings included under this head, not otherwise provided for herein, should also be charged to this account. Some of the more important of these items are as follows:

Awnings, Carpets, Chairs, Clocks, Coal boxes, Counters, Cranes (steam, hand and mail), Curtains, Derricks, Desks,	Ice boxes, Lighting fixtures, Looking glasses, Mats, Matting, Office railings, Pigeon hole cases, Racks, Safes, Scales (track, warehouse and platform),	Settees, Shelving and other fixtures, Signs at stations, Stationary engines, Stoves and stove furni- ture, Tables, Ticket cases, etc.
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Expenditures for the following items, when used in repairs or renewals of water stations, should be charged to this account, viz:

Boilers and machinery for pumping engines, cisterns, hydrants, pipe lines, pipes, ponds, pumping engines, pump fixtures, pumps, springs, tanks, towers, tubs, wells, windmills, etc.; also the expenses of protecting pipes and of prospecting for water supply.

Expenditures for the following items when used in repairs or renewals of buildings used for fuel houses or sheds should be charged to this account, viz:

Chutes, coal bins, coal buckets, cranes, derricks, pockets, screens, wood racks, etc.; also dumping, hoisting and other machinery, and the necessary tools in connection therewith.

REPAIRS AND RENEWALS OF DOCKS AND WHARVES—OPERATING.—This account includes all expenditures for account of repairs and renewals of docks, wharves, piers and inclines thereto, jetties, etc., and of repainting the same; also the expense of operating pile drivers, tugs, barges, floats, dredges, mud scows, etc., while engaged in making such repairs, and in dredging to preserve proper depth of water.

REPAIRS AND RENEWALS OF TELEGRAPH—OPERATING.—This account includes all expenditures for account of repairs and renewals of the telegraph and telephone lines owned by a company, or for which it is responsible, including poles, wire, insulators, instruments, battery jars, switch boards and appurtenances, telegraph signs, telegraph tables, climbers, and all other appurtenances in connection therewith forming a part of the plant; also the wages of employes engaged in keeping the line in working condition, the cost of their tools, and proportion of the salary and expenses of superintendent and assistant superintendent of telegraph, clerks, and expenses of their offices.



Carriage in Nikoba.

STATIONERY AND PRINTING—OPERATING.—This account includes all expenditures for stationery, stationery supplies and printing, including books, blank forms, etc., used in connection with "Maintenance of way and structures."

OTHER EXPENSES—OPERATING.—This account includes incidental expenditures only; that is to say, such expenditures in connection with the "Maintenance of way and structures" as are not properly chargeable to any of the foregoing accounts.

MAINTENANCE OF EQUIPMENT.

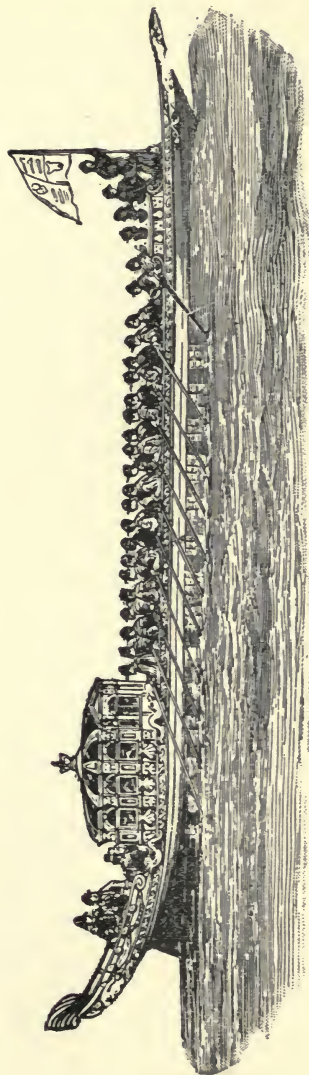
SUPERINTENDENCE—OPERATING.—This account includes the salaries and expenses of the superintendents of motive power and car departments, auditor of motive power and machinery, master mechanics, master car builders, general foremen and their clerks, and attendants; also incidental expenses of their offices, such as fuel, light, etc.

REPAIRS AND RENEWALS OF LOCOMOTIVES—OPERATING.—This account includes all expenditures for account of repairs and renewals of locomotives, tenders, snowplows (when attached to locomotives), and furniture, loose and movable tools and supplies used in connection therewith.

It also includes the cost of locomotives, tenders and appurtenances thereunto belonging, built or purchased to make good the original number charged to construction or equipment, including royalties for patents, steam and other power brakes and brake fixtures, less the value of old material, insurance or repayments from other roads.

The following is a list of the more important articles used in connection with repairs and renewals of locomotives, viz:

Air brakes,	Brasses,	Cylinder casings,
Air brake fixtures,	Brooms,	Cylinder cocks,
Arch pipes,	Cab angle irons,	Cylinder cock rods,
Arm rests,	Cab brackets,	Cylinder heads,
Ash hoes,	Cab curtains,	Cylinder rings,
Ash pans,	Cab cushions,	Dampers,
Ash pan rods,	Cab fronts,	Damper handles,
Bar (buggy),	Cab handles,	Decks,
Bar (pinch),	Cab lamps,	Domes,
Bar (plugging),	Center castings,	Dome casings,
Bar (slash),	Center pins,	Dome covers,
Bells,	Chafe irons,	Drag irons,
Bell bases,	Check castings,	Drag pins,
Bell cords,	Check chambers,	Drawbars,
Bell cord hangers,	Check valves,	Drawbar castings,
Bell yokes,	Clocks,	Driving axles,
Blower cocks,	Coal grates,	Driving boxes,
Blower pipes,	Counter balances,	Driving box brasses,
Blow off cocks,	Coupling bars,	Driving box collars,
Boilers,	Crank pins,	Driving box wedges,
Bumpers,	Cross heads,	Driving wheels,
Bumper blocks,	Cross head pins,	Dry pipes,
Bumper sheets,	Crown bars,	Eccentrics,
Brakes,	Crown bar braces,	Eccentric rods,
Brake shoes,	Crown sheets,	Eccentric straps,
Branch pipes,	Cylinders,	Equalizing levers,



Carriage on the Thames.

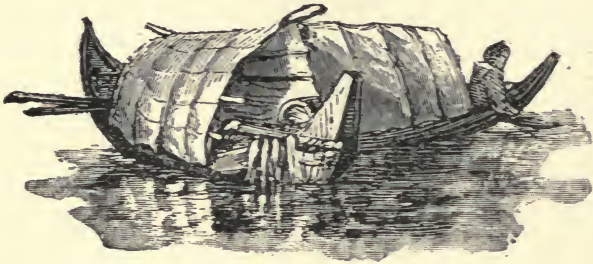
Equalizing springs,	King pins,	Sand box pipes,
Exhaust pipes,	Lamps (steam and water gauge),	Sand box rods,
Expansion clamps,	Lazy cocks,	Seat boxes,
Extension front ends,	Lever,	Sledges,
Feed pipes,	Link blocks,	Slide valves,
Feed pipe cocks,	Link lifters,	Slide valve rods,
Feed pipe hangers,	Lubricators,	Slide valve yokes,
Feed pipe hose,	Oak packing,	Smoke arches,
Feed pipe shaft,	Oil can stands,	Smoke arch braces,
Fire boxes,	Oil cups,	Smoke arch rings,
Fire box doors,	Oil house cups and brasses,	Smokestacks,
Fire box grates,	Oil pipes,	Smokestack bases,
Fire bricks,	Packing hooks,	Smokestack cones,
Fire pumps,	Packing iron,	Springs,
Flagstuffs,	Packing rings,	Spring balances,
Flues,	Pet cocks,	Spring hangers,
Flue sheets,	Pet cock rods,	Spring saddles,
Footboards,	Petticoats,	Stay bolts,
Frames,	Petticoat pipes,	Steam brakes,
Frame braces,	Pilots,	Steam chests,
Front ends,	Pilot braces,	Steam-chest covers,
Front end doors,	Pilot draw castings,	Steam chest hangers,
Front end rings,	Piston follower heads,	Steam gauges,
Front end timber,	Piston heads,	Stop cocks,
Gaskets,	Piston packing pumps,	Stuffing boxes,
Gauge cocks,	Piston rods,	Swing bolsters,
Gibs,	Pokers,	Tee heads,
Glands,	Pump barrels,	Tenders,
Glass gauges,	Pump cages,	Tender brake hangers,
Gongs,	Pump chambers (top and bottom),	Tender brake hanger boxes,
Goose necks,	Pump plungers,	Tender brake shoes,
Grate bars,	Pump valves,	Tender brake wheels,
Grate shakers,	Quadrants,	Tender cocks and rods,
Guide bars,	Quadrant stands,	Tender frames,
Guide blocks,	Reach rods,	Tender wheels and axles,
Guide braces,	Reverse latches,	Throttle levers,
Guide yokes,	Reverse levers,	Throttle pipes,
Hammers (hard and copper),	Rocker arms,	Throttle valves,
Hand hole plates,	Rocker boxes,	Tires,
Hand rails,	Rods (main and connecting),	Tool boxes,
Hand rail pedestals,	Rod keys,	Torches,
Headlights,	Rod straps,	Trucks,
Headlight brackets,	Running boards,	Truck axles,
Headlight fixtures,	Running board braces,	Truck boxes,
Headlight pedestals,	Safety beams and castings,	Truck braces,
Heater cocks,	Safety chains,	Truck cellars,
Heater pipes,	Safety hooks,	Truck jaws,
Hose,	Safety levers,	Truck wheels,
Hose jackets,	Safety valves,	Tumbling shafts,
Hose reels,	Sand boxes,	Water gauge cocks,
Injectors,	Sand box bases,	Wheel guards,
Injector nozzles,	Sand box casings,	Whistles,
Inclines,	Sand box covers,	Wire netting,
Jacket bands,		Wrenches (common, packing, air brake, spanner, rod, set screw, eccentric and injector), etc.
Jacket lagging,		
Jacks,		
Jack screws,		

REPAIRS AND RENEWALS OF PASSENGER CARS — OPERATING.

—This account includes all expenditures for account of repairs and renewals of passenger cars of all classes, including wood-work, axles, brake fixtures, brakes (hand, air and other), brasses, buffet fittings, fixtures and appurtenances, heating and light apparatus, links and pins, oil boxes, springs, trucks, wheels, win-

dows, window fixtures, repainting and other expenditures of a like nature; also proportion of wages of car inspectors and cost of tools used in lubricating and inspecting cars at stations and elsewhere; proportionate cost of tools used by car repairers at repair stations for making light repairs, such as jackscrews, sledges, wrenches and other expenditures of a like nature: also repairs made to cars of other lines for damage, or payments made for their cars wrecked or destroyed on a line; furniture and fixtures of passenger cars built or purchased to make good the original number of cars charged to construction or equipment; and also the cost of passenger cars replacing those worn out or destroyed, less the value of old material, insurance or repayments from other roads.

Passenger cars may be classified as follows, viz:



Carriage in Ticino.

Baggage,	Emigrant,	Postal,
Business,	Mail,	Sleeping,
Chair,	Milk,	Smoking,
Combination (passenger and baggage),	Officers',	Tourist,
Dining,	Parlor (drawing room),	Other passenger train
Express,	Passenger (all classes),	cars.
	Pay,	

The following is a list of the more important articles of passenger car furniture and fixtures, viz:

Bell cord,	Cuspidors,	Matting,
Bell cord hangers,	Drawheads,	Racks,
Carpets,	Ice boxes,	Seats,
Chairs,	Keys,	Stoves,
Check boxes,	Lamps,	Stove furniture,
Coal boxes,	Lamp fillers,	Toilets,
Coal hods,	Lamp fixtures,	Wash basins,
Curtains,	Lamp shears,	Water tanks,
Cushions,	Linoleum,	Window fixtures, etc.

REPAIRS AND RENEWALS OF FREIGHT CARS—OPERATING.—This account includes all expenditures for account of repairs and renewals of freight cars of all classes, including woodwork, axles, brake fixtures, brakes (hand, air and other), brasses,

double decking cars for stock, grain doors, links and pins, oil boxes, springs, trucks, wheels, repainting and renumbering; proportion of wages of car inspectors and cost of tools used in lubricating and inspecting cars at stations and elsewhere; proportion of cost of tools used by car repairers at repair stations for making light repairs, such as jackscrews, sledges and wrenches, and other expenditures of a like nature; repairs to cars of other lines for damages, or payments made for their cars wrecked or destroyed on the line; furniture and fixtures for cabooses; and the cost of freight cars replacing those lost, worn out or destroyed, less the value of old material, insurance or repayments from other roads. It also includes all expenditures for repairs and renewals of loose or movable furniture and fixtures belonging to coo-oose cars.

Freight cars may be classified as follows, viz.:

Box,	Fruit,	Refrigerator,
Caboose,	Furniture,	Stock (including palace),
Coal,	Oil,	Water and tank (when
Dump (commercial, coal	Ore,	used as commercial
or stone),	Platform,	cars).

REPAIRS AND RENEWALS OF WORK CARS—OPERATING.—

This account includes all expenditures for account of repairs and renewals of work or service cars; repairs and renewals of wood-work, repainting, axles, brakes (hand, air and other), and other fixtures, brasses, heating and lighting apparatus, links and pins, oil boxes, springs, trucks, wheels, windows, window fixtures, and other expenditures of a like nature; repairs of commercial cars when assigned to and in service of "Maintenance of way and structures" department, including cost of changes made in such cars to fit them for this service; and the expense of refitting them for commercial service.

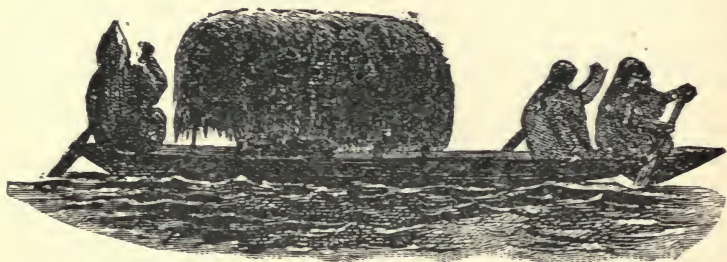
Work and service cars may be classified as follows, viz.:

Boarding,	Iron shovels,	Rail saw,
Bridge,	Painters,	Snowplows (when not at-
Derrick,	Pile driver,	tached to locomotives),
Ditching,	Plow and scraper,	Steam shovels,
Dump,	Push,	Tool,
Gravel,	Other work cars,	Water,
Hand,	Outfit,	Wrecking.

REPAIRS AND RENEWALS OF MARINE EQUIPMENT—OPERATING.—This account should include all material and labor necessary to maintain marine or floating equipment in efficient working order, including repairing (both ordinary and that made necessary by wrecks or accident), hull, deck, cabins, masts, rigging, sails, and other parts of steamships, steamboats, ferryboats, transfer boats, vessels, tugs, barges, car, and other floats, scows, etc.; also for repairing boilers and engines, wood foundations, bearings for machinery, wheels, rudders, shafts, steering gear, ventilators, electric plants, steam and hot water heating fixtures and appurtenances, and royalties paid for use of patents on improved machinery, raising sunken boats, etc.

The following is a list of the principal items of furniture and fixtures used in repair and renewals of marine or floating equipment, viz.:

Axes,	Flue cleaners,	Safes,
Barometers,	Gang planks,	Scales,
Beds and bedding,	Hatchets,	Scrapers,
Block and tackle,	Hooks,	Settees,
Capstan bars,	Life preservers,	Shovels,
Carpets,	Lines,	Splice bars,
Chairs,	Linoleum,	Spyglasses,
Charts,	Logs and log lines,	Stoves and stove furniture,
Clocks,	Matting,	Tables,
Compasses,	Oil cans,	Ticket cases and fixtures,
Copying presses,	Pianos on passenger boats,	Tool boxes,
Counters,	Pokers,	Tools,
Desks,	Racks,	Wrenches, and other analogous articles.
Engine furnishings,	Railings,	
Fire extinguishers,		



Carriage in Peru.

REPAIRS AND RENEWALS OF SHOP MACHINERY AND TOOLS*
 —OPERATING.—This account should include all expenditures for account of renewal, repairs and maintenance of boilers, stationary engines, scaffolds, shafting, belting, and other appliances for running machinery; furnaces, forges, and all machinery in car and locomotive shops, and all tools and fixtures used in connection therewith; and oil, tallow and waste used in lubricating and cleaning tools and machinery.†

* This account may, if thought desirable, be subdivided under the following heads: "Repairs of machinery and tools," "Oil, waste and tallow used on tools and machinery."

† Small hand tools used by mechanics and soon worn out, also wages of persons in charge of same, should be charged to the account mostly benefited by their use; and wages of sweepers, cleaners, roustabouts and other unskilled laborers employed on general work in and about locomotive, machine, boiler, copper, sheet iron, tin, smith, car, carpenter, paint, pattern and other shops, fuel for forges and other analogous items, should be apportioned between the different "Maintenance of equipment" accounts, on basis of relative amount of work done for the account of each.

STATIONERY AND PRINTING—OPERATING.—This account includes all expenditures for stationery, stationery supplies and printing, including books, blank forms, etc., used in connection with "Maintenance of equipment."

OTHER EXPENSES—OPERATING.—This account includes all expenditures for account of gas, torches and lamps used in machinery department, shops and offices, and the oil and material for the same; proportion of labor and material for the proper operation and repair of electric lights used in connection with other departments; cost of fuel used in heating shops, offices and stationary boilers in machinery department (other fuel used in shops being charged into the cost of manufactured material); wages paid watchmen engaged in watching machinery department shops; and all "Maintenance of equipment" expenses which can not be properly classed under any of the foregoing heads.

CONDUCTING TRANSPORTATION.

SUPERINTENDENCE—OPERATING.—This account includes all expenditures for account of salaries and expenses of general superintendents (when engaged exclusively in the operating department), assistant general superintendents, division superintendents, assistant superintendents, superintendents of transportation, masters of transportation, superintendents of car service, car accountants, train masters, traffic managers, assistant traffic managers, general freight agents, assistant general freight agents, general passenger agents, assistant general passenger agents, general ticket agents, assistant general ticket agents, general baggage agents, superintendents of express, or other officers engaged exclusively in the transportation department, their clerks, porters and attendants; also incidental expenses of their offices, such as heating, lighting, ice, water, rent, express charges, etc., provisions and other expenses of special cars when in use by such officers.

ENGINE AND ROUNDHOUSE MEN*—OPERATING.—This account includes wages of all engineers and firemen while engaged in running locomotives (except as otherwise directed herein), also the wages of callers, watchmen and employes engaged in wiping, cleaning, firing up, dumping, boiler washing, cleaning fire boxes, watching and dispatching locomotives, and all other roundhouse employes, such as smokestack inspectors, roundhouse cleaners, clinker pit cleaners, clinker dumpers, operators of turntables, etc.

FUEL FOR LOCOMOTIVES—OPERATING.—This account includes the cost of fuel consumed by locomotives engaged in traffic and switching service, including freight charges on same and the

* This account may, if thought desirable, be subdivided under the following heads: "Engineers and firemen," "Wipers and dispatchers," "Other roundhouse laborers."

wages of fuel agents, their clerks and employes engaged in handling and accounting for the same; also tools, such as wheelbarrows, shovels, picks, brooms, axes, saws, forks, oil cans, stoves and lamps; also coal and wood for heating, oil, tallow, etc., for lighting fuel stations.

WATER SUPPLY FOR LOCOMOTIVES—OPERATING.—This account includes the cost of water furnished locomotives engaged in traffic and switching service, including the cost of labor and material required in operating, heating and lighting water stations; oil, waste and other supplies for operating pumping machinery; tools, etc. (when not chargeable to "Repairs of buildings and fixtures"), and amounts paid to other companies for water furnished to locomotives, water rights and privileges.

OIL, TALLOW AND WASTE FOR LOCOMOTIVES—OPERATING.—This account includes the cost of oil, tallow, waste, wool, grease, rags, etc., used in lighting, cleaning and lubricating locomotives engaged in traffic and switching service.



Carriage in Malay.

OTHER SUPPLIES FOR LOCOMOTIVES—OPERATING.—This account includes the cost of furniture, tools and other movable articles and supplies required to fully equip locomotives engaged in traffic and switching service, such as chisels, files, lampblack, packing material, sand, soap and switch keys; also axes, brooms, brushes, crowbars, flags, frogs, hatchets, jacks, lantern globes, lanterns, links and pins, matches, metal and other polishes, oil cans, picks, scoops, shovels, shunting poles, switch chains, switch ropes, tallow buckets, tin boxes for flags, torpedoes, water buckets, etc.

TRAIN SERVICE*—OPERATING.—This account includes the wages of conductors, train agents, ticket collectors, baggagemen, brakemen, train porters (not on private cars), water carriers and other trainmen.

* This account may, if thought desirable, be subdivided under the following heads: "Passenger conductors," "Passenger baggagemen," "Passenger brakemen," "Freight conductors," "Freight brakemen."

TRAIN SUPPLIES AND EXPENSES*—OPERATING.—This account includes all expenditures for account of heating and lighting cars, including the cost of supplying or pumping gas into cars, and oil and wicking for lanterns of trainmen; uniforms and badges for trainmen when paid by a company, laundry work for cars, icing refrigerator cars, etc.; miscellaneous supplies furnished to cars for the purpose of protection against accidents and fires, and for keeping the cars clean; bedding for stock cars and wages of car cleaners; provisions and supplies for snowbound trains or trains delayed by washouts, trackage paid to other roads during washouts, transfer of passengers on account of defective track or bridges; also oil, tallow, waste, wool, grease, sulphur, sponges, rags, packing hooks and irons, dope buckets and other supplies used in cleaning and lubricating cars.

It also includes all expenditures for miscellaneous supplies furnished trains necessary to fully equip them for service. The following is a list of the more important train supplies, viz.:

Axes,	Hatchets,	Shovels,
Bell cords,	Ice,	Sledges,
Brooms,	Jacks,	Soap,
Brushes,	Jackscrews,	Straw and sawdust,
Bull's-eyes,	Lanterns,	Switch chains,
Candles,	Lantern fixtures,	Switch ropes,
Chains,	Matches,	Tallow buckets,
Cold chisels,	Oil cans,	Torpedoes,
Conductors' punches,	Packing hooks,	Train tool boxes,
Fire buckets,	Pails,	Water buckets,
Flags,	Punches,	Wrenches, etc.
Frogs,	Saws,	
Hammers,	Scoops,	

SWITCHMEN, FLAGMEN AND WATCHMEN†—OPERATING.—This account includes the wages of yardmasters and clerks, yard foremen, yard switchmen, switch tenders, callers, watchmen and detectives, station policemen, signalman, crossing gate keepers, crossing flagmen and track flagmen (when the service is performed in connection with "Conducting transportation").

TELEGRAPH EXPENSES—OPERATING.—This account includes all expenditures for account of operation of telegraph and telephones, such as rent paid for use of telegraph and telephone lines; salaries of train dispatchers, clerks, telegraph operators and messengers; cost of chemicals, copper, zinc and other supplies for charging batteries; fuel, light and other supplies for telegraph offices, and proportion of salaries and expenditures of superintendent and assistant superintendent of telegraph, their clerks and attendants, and miscellaneous supplies and expenses of their offices.

* This account may, if thought desirable, be subdivided under the following heads: "Passenger train supplies," "Freight train supplies," "Oil, waste and tallow used on passenger cars," "Oil, waste and tallow used on freight cars."

† This account may, if thought desirable, be subdivided under the following heads: "Switchmen," "Flagmen," "Watchmen."

When an employe connected with the telegraph service also acts as station agent, clerk or in any other capacity, an apportionment of his wages should be made to these and other accounts on the basis of service rendered.

STATION SERVICE*—OPERATING.—This account includes salaries of freight and ticket agents in charge of stations, assistant agents, depot or station masters, assistant depot or station masters, station passenger agents, station baggage agents, assistant station baggage agents, and other officials occupying analogous positions: wages of cashiers, clerks, collectors, ticket examiners, ticket collectors and ushers, station foremen, baggagemen, station gatemen, employes in package and parcel rooms, men attending electric lights, janitors, porters, warehousemen, freight house foremen, freight callers, tallymen, deliverymen, car sealers, weigh-masters, truckmen and other laborers, teamsters, messengers,



Carriage in Holland.

scalemen, coopers, cleaners, enginemen for stationary engines used for heating and lighting purposes; also employes engaged in carrying and weighing mail, loading, unloading, bedding, feeding and watering stock; labor at stock pens, payments for transferring freight by contract or otherwise, and other analogous expenses.

STATION SUPPLIES—OPERATING.—This account includes all expenditures for account of heating and lighting depots, waiting rooms, freight and passenger offices, and other station buildings; supplies used for station and yard signals, switches, etc., and supplies and implements for handling freight; payments for water, sprinkling about stations, uniforms and badges for employes when paid for by a company; drayage, horses, feeding

*This account may, if thought desirable, be subdivided under the following heads: "Agents," "Clerks at stations," "Laborers at stations."

and shoeing horses, bedding, feed and water for stock at stock pens; premium on bonds of agents and other station employes, when paid by a company, and other analogous items.

The following is a list of the more important articles included under station supplies, viz.:

Axes,	Hammers,	Rubber hose,
Baggage checks,	Hatchets,	Saws,
Baggage crates,	Harness,	Scoops,
Baggage trucks,	Hooks,	Scrubbing brushes,
Brooms,	Hose,	Shovels,
Brushes,	Hose couplings,	Skids,
Bulletin boards,	Ice,	Sledges,
Candles,	Ice chests,	Soap,
Car seals,	Ice tongs,	Spades,
Chairs,	Keys,	Sponges,
Chair cushions,	Lamps,	Sprinkling cans,
Chalk,	Lampblack,	Stools,
Check boxes,	Lamp fittings,	Stove black,
Coal hods,	Lamp supplies,	Switch chains and ropes,
Cold Chisels,	Lanterns,	Switch keys,
Copying presses,	Lantern fittings,	Tacks,
Counter brushes,	Letter boxes,	Tarpaulins,
Counter scales,	Locks,	Ticket stamps,
Cups,	Looking glasses,	Tongs,
Cupboard catches,	Mail bags,	Torpedoes,
Curtains,	Marking brushes,	Towels,
Cuspidors,	Marking pots,	Twine,
Date stamps (office),	Marline,	Wagons,
Dippers,	Mats,	Warehouse trucks,
Dusters,	Matches,	Wash basins,
Electric lights,	Measures,	Waste,
Electric light supplies,	Nails,	Water barrels,
Extinguishers (hand),	Newspapers,	Water bowls,
Files (document),	Oil,	Water cans,
Fire buckets,	Oil cans,	Water coolers,
Flags,	Pails,	Water pails,
Freight trucks,	Platform trucks,	Wheelbarrows,
Gas,	Reflectors,	Wrenches, etc.

SWITCHING CHARGES—BALANCE—OPERATING.—This account represents the net balance paid to other companies for switching cars or locomotives.

CAR MILEAGE—BALANCE* — OPERATING—This account represents the net balance paid to other companies, firms or individuals for use of cars interchanged on a mileage basis.

HIRE OF EQUIPMENT—OPERATING.—This account includes all payments made for use of equipment other than that accounted for under account "Car mileage—Balance."

LOSS AND DAMAGE † — OPERATING.—This account includes charges for loss, damage, delays or destruction of freight, parcels, express matter, baggage and other property entrusted for

* This account may, if thought desirable, be subdivided under the following heads: "Mileage of passenger cars—balance," "Mileage of freight cars—balance."

† This account may, if thought desirable, be subdivided under the following heads: "Damage and loss of freight and baggage," "Damage to property and cattle."

transportation (including live stock received for shipment), and all expenses directly incident thereto; cost of repacking and boxing damaged freight and baggage, feed for delayed stock (except when delayed in wrecks), etc.; wages and expenses of employes engaged either as adjusters or otherwise, and payments for the detection of thieves; charges for damages to or destruction of crops, buildings, lands, fences, vehicles or any property other than that entrusted for transportation, whether occasioned by fire, collision, overflow or otherwise; also expenditures for account of cattle and other live stock killed or injured by locomotives or trains while crossing or trespassing on the right of way, removing and burying the same; also wages and expenses of employes while engaged as witnesses in case of suits.

INJURIES TO PERSONS—OPERATING.—This account includes all charges on account of persons killed or injured, such as gratuities and compensation paid to injured or disabled persons, their guardians, heirs, relatives and attorneys; salaries and expenses of chief



Carriage on the Kwa Kwa River.

surgeons, assistant surgeons, division surgeons, attendants, etc.; fees and expenses of doctors, coroners, undertakers, witnesses and others (except lawyers' fees and court expenses); nursing and hospital attendance, medical and surgical supplies, funeral expenses, railroad fares when sending injured persons home or elsewhere, and expenses of attendant when necessary; payments made for ejection from trains, bills for board, wages and expenses of employes engaged as witnesses or otherwise; also wages and expenses of others occupied in connection with the adjustment of claims coming under this head.

CLEARING WRECKS—OPERATING.—This account includes all expenditures for account of clearing wrecks, cost of labor and material required to replace wrecked equipment upon the track, and the attendant expenses of wrecking trains and wrecking tools used in connection therewith; building temporary track around wrecks, reloading or transferring freight, baggage, mail, etc.; provisions, board, etc., for men clearing up or watching at wrecks,

meals or board for passengers delayed on account of wrecks, feed for stock delayed in wrecks, and other analogous expenses.

OPERATING MARINE EQUIPMENT—OPERATING.—This account includes all expenditures for account of the operation of steamships, steamboats, vessels, ferry boats, transfer boats, tugs, barges, car and other floats, scows, etc. (excepting boats while in use on construction work), such as fuel and supplies therefor, wages of officers, crews and all other employes rendering service on marine or floating equipment; dockage when not loading or discharging cargoes, canal lock and basin dues, rental of boats, labor pumping out boats laid up, cost of transferring cargoes in case of accident, steamboat inspection, license, customs dues, health inspection, clearance dues, payments for towage, lighterage, etc., and any other miscellaneous expenses of a similar nature not properly chargeable to "Repairs and renewals of marine equipment."

The following is a list of the principal items of supplies chargeable to marine or floating equipment, viz.:

Axes,	Ice,	Stores,
Bed linen,	Lamps,	Tablecloths,
Binnacle lamps,	Laundry,	Tableware,
Commissary supplies,	Oil,	Tallow,
Cooking utensils,	Planks,	Trucks,
Flags,	Provisions,	Waste,
Grease,	Rags, etc., for lighting	Water,
Handspikes and other	and lubricating pur-	Wool, etc.
tools,	poses,	
Hose,	Shovels,	

This account includes, also, all expenses for account of miscellaneous service, supplies and expenses in connection with the operation of wharves and docks, such as wages of port captains, port stewards, agents, their clerks and attendants, baggage agents, check clerks, porters, coopers, warehousemen, laborers, watchmen, longshoremen, roustabouts, and other labor at wharves and docks engaged in handling freight, operating steam or other power for handling freight, etc., payments for the use of power (not furnished by a company) in loading and discharging cargoes, and all expenditures incident to lighting and heating in connection with the operation of wharves and docks.

The following is a list of the principal items used in connection with the operation of wharves and docks, viz.:

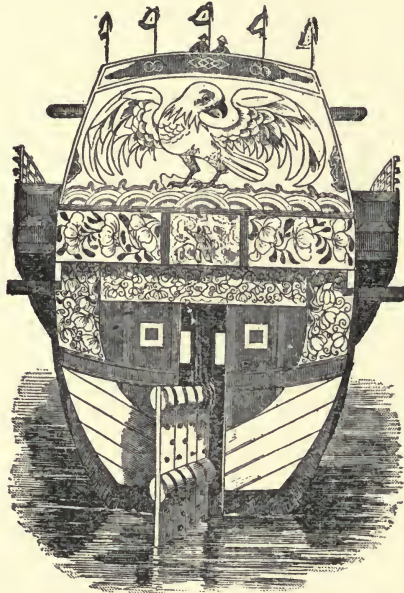
Axes,	Fire apparatus,	Lanterns,
Block and tackle,	Fire buckets,	Marline,
Brooms,	Freight hooks,	Marking brushes,
Brushes,	Gas,	Marking pots,
Bulletin boards,	Hammers,	Matches,
Chalk,	Hatchets,	Measures,
Clocks,	Hose,	Nails,
Coal hods,	Hose couplings,	Oil,
Cold chisels,	Ice,	Oil cans,
Coopers' tools,	Ice chests,	Palls,
Crowbars,	Ice Tongs,	Ropes,
Electric lights,	Lamps,	Salt,

Saws,
Scoops,
Shovels,
Skids,
Sledges,
Soap,
Spades,

Sprinkling cans,
Stools,
Tacks,
Tarpaulins,
Towels,
Trucks,
Twine,

Waste,
Water,
Water barrels,
Water cans,
Water coolers,
Wheelbarrows, etc.

ADVERTISING—OPERATING.—This account includes salaries and expenses of traveling passenger and other advertising agents,



Carriage in China.

bill posting, etc.; cost of printing and publishing passenger time tables for general distribution, printing of advertising matter, advertising in newspapers and periodicals (excepting notice of stockholders' meetings, election of directors, publishing reports in newspapers, and other corporation and financial notices of a general character), bulletin boards, cards, cases, cords, display cases, dodgers, folders, glasses, handbills, maps, pamphlets, photographs, posters; racks and frames, tacks, views, postage and express charges on advertising matter; also premiums and dona-

tions to fairs and stock shows, immigration boards, and other analogous expenditures for attracting traffic.

OUTSIDE AGENCIES*—OPERATING.—This account includes all expenditures for accounts of salaries and expenses of agents engaged exclusively in the procurement of competitive business and employes of their offices, traveling agents and solicitors, when located on or employed off the line of a road; furniture supplies, stationery, rents, office expenses and other disbursements of a similar nature, on account of such agencies; also expenses of fast freight lines, traffic associations and other analogous items.

COMMISSIONS—OPERATING.—This account includes all payments to agents of other companies and outside parties, not employes of a company, in the form of commissions for services appertaining to either freight or passenger business; but should not include commissions paid to a company's own agents in lieu of salary, such being chargeable to "station service" or "outside agencies," as the case may be.

STOCK YARDS AND ELEVATORS—OPERATING.—This account includes wages, supplies and all other expenses incurred in the operation of stock yards or elevators, except stock yards and elevators, the net earnings of which are excluded from freight revenue.†

RENTS FOR TRACKS, YARDS AND TERMINALS—OPERATING.—This account includes rents paid for lease of track, yards and terminals.

Tracks.—Under "tracks" are included all payments to other lines for rent or use of their tracks for running trains, whether by a fixed charge per month or per year, proportion of interest on valuation and expenses incurred in maintaining such track, or on a train mileage basis (not including temporary use of track, such as trackage paid to other roads in case of wrecks, washouts, snow blockades, defective bridges, etc.).

Yards.—Under "yards" are included all payments for use of high and low tracks, delivery tracks, repair tracks and other side tracks at points other than terminals.

Terminals.—Under "terminals" are included all payments for use of facilities at terminal points, including main tracks, side tracks, delivery tracks, repair tracks, freight house facilities, and proportion of payments for handling freight, union depot facilities, etc., at terminal points.

RENTS OF BUILDINGS AND OTHER PROPERTY—OPERATING.—This account includes all payments for rent of buildings and other property when such property is used in connection with

* This account may, if thought desirable, be subdivided under the following heads: "Outside agents" and "Expenses of traffic associations."

† By "stock yards," as used in this account, should be understood stock yards where stock is stored, fed, watered, reshipped or sold, usually at junction or terminal points.



Carriage in Japan.

the operations of a road, such as depot grounds and buildings, union depots, offices, docks, wharves, ferry landings, elevators, stock yards, fuel yards, etc.

STATIONERY AND PRINTING—OPERATING.—This account includes all expenditures for stationery, stationery supplies and printing, including books, blank forms, employes' time tables, tariffs, tickets, way bills and other analogous items, when used in connection with "conducting transportation."

The following is a list of the more important items chargeable to the several accounts of "stationery and printing," viz:

Arm rests,	Ink,	Pins,
Blank paper,	Inkstands,	Postage,
Blank tablets,	Invoice books,	Pounce,
Blank cards,	Legal cap paper,	Printed cards,
Binders,	Letter paper,	Printed tablets,
Blotters,	Manifold paper,	Punches,
Blotting paper,	Mimeographs,	Rubber bands,
Calendars,	Mucilage,	Rubber stamps,
Calligraphs,	Mucilage brushes,	Rulers,
Carbon paper,	Neostyles,	Ruling pens,
Cards,	Notices,	Scrap book,
Cardboard,	Numbering stamps,	Sealing wax,
Circulars,	Oil paper,	Seals,
Classifications,	Orders,	Shears,
Copy (impression) books,	Paper,	Shipping tags,
Copying brushes,	Paper baskets,	Shorthand books,
Cyclostyles,	Paper clips,	Sponges,
Dating stamps,	Paper cutters,	Sponge cups,
Delivery tickets,	Paper fasteners,	Stylographs,
Electric pens,	Paper files,	Tape,
Envelopes,	Paper weights,	Tissue (impression) paper,
Eyelets,	Papyrographs,	Typewriters,
Eyelet punches,	Pencils,	Waste baskets,
Erasers,	Pencil erasers,	Water holders,
Fuel tickets,	Pens,	Wrapping paper, etc.
Hektographs,	Penholders,	
Indexes,	Pen racks,	

OTHER EXPENSES—OPERATING.—This account includes incidental expenditures only; that is to say, such expenditures in connection with "conducting transportation" as are not properly chargeable to any of the foregoing accounts.

GENERAL EXPENSES.

SALARIES OF GENERAL OFFICERS—OPERATING.—This account includes the salaries of general officers. The following is a list of such officers: Chairman of board, president, vice presidents, general counsel or general solicitor, secretary, general manager and assistant general manager, chief engineer, general superintendent (when in full charge of operations of a road), comptroller, assistant comptroller, general auditor, auditors, assistant auditors, freight auditor, passenger auditor, purchasing agent, general storekeeper, stationer, treasurer, assistant treasurer, local treasurer, and land commissioner.

SALARIES OF CLERKS AND ATTENDANTS—OPERATING.—This account includes salaries of paymasters, treasurer's cashiers, tax

agent, traveling auditor, clerks, attendants and other employes in and about general offices; also wages of porters, cooks, etc., for special cars while in use by general officers and by general office employes, etc.

GENERAL OFFICE EXPENSES AND SUPPLIES—OPERATING.—This account includes all expenditures for account of heating and lighting the offices of the general officers; expenses of general officers, their clerks and attendants; also all expenses incident to the care and supply of the general offices, including expenses and supplies of pay car and special cars while in use by general officers and general office employes.



Carriage in Molucca.

INSURANCE—OPERATING.—This account includes all expenditures for account of premiums for insuring property of a company, and property which is entrusted to it; also for insuring passengers and others, and employes, against accident or death.

LAW EXPENSES—OPERATING.—This account includes the salaries and expenses of solicitors, attorneys, their clerks and attendants, and all expenses of their offices, such as law books, printing briefs, legal forms, testimony, reports, etc.; also fees and retainers paid for services of attorneys who are not regular employes of a company, and amounts paid to arbitrators for settlements of disputed questions, cost of suits, special fees, nota-

rial fees, expenses connected with taking depositions, and all legal and court expenses of every kind not otherwise provided for herein.

STATIONERY AND PRINTING (GENERAL OFFICES)—OPERATING.—This account includes the cost of printing annual reports, blank books, blank forms, contracts, leases, bonds, stock certificates, paper, stationery, stationery supplies, etc., used only in general offices and not chargeable to other accounts.

OTHER EXPENSES—OPERATING.—This account includes incidental expenditures only; that is to say, such expenditures in connection with the "General expenses" as are not properly chargeable to any of the foregoing accounts; also cost of publishing notice of stockholders' meetings, of election of directors, annual reports in newspapers, of dividends, and of other corporation and financial notices of a general character; and fees and expenses paid to directors, etc.

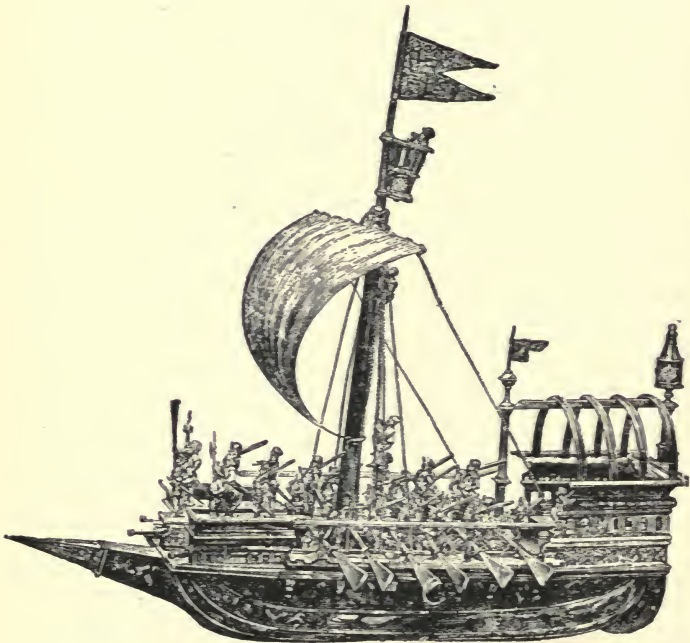
The official classification of operating expenses of the government of the United States and of the several state governments, given in detail in the foregoing, may be recapitulated in brief as follows:

I. MAINTENANCE OF WAY AND STRUCTURES.

1. Repairs of Roadway.
2. Renewals of Rails.
3. Renewals of Ties.
4. Repairs and Renewals of Bridges and Culverts.
5. Repairs and Renewals of Fences, Road Crossings, Signs and Cattle Guards.
6. Repairs and Renewals of Buildings and Fixtures.
7. Repairs and Renewals of Docks and Wharves.
8. Repairs and Renewals of Telegraph.
9. Stationery and Printing.
10. Other Expenses.

II. MAINTENANCE OF EQUIPMENT.

11. Superintendence.
12. Repairs and Renewals of Locomotives.
13. Repairs and Renewals of Passenger Cars.
14. Repairs and Renewals of Freight Cars.
15. Repairs and Renewals of Work Cars.
16. Repairs and Renewals of Marine Equipment.



Medieval Carriage at Malta.

17. Repairs and Renewals of Shop Machinery and Tools.*
18. Stationery and Printing.
19. Other Expenses.

III. CONDUCTING TRANSPORTATION.

20. Superintendence.
21. Engine and Roundhouse Men.†
22. Fuel for Locomotives.
23. Water Supply for Locomotives.
24. Oil, Tallow and Waste for Locomotives.
25. Other Supplies for Locomotives.
26. Train Service.‡
27. Train Supplies and Expenses.§
28. Switchmen, Flagmen and Watchmen.||
29. Telegraph Expenses.
30. Station Service.**
31. Station Supplies.
32. Switching Charges—Balance.
33. Car Mileage—Balance.††
34. Hire of Equipment.
35. Loss and Damage.‡‡
36. Injuries to Persons.
37. Clearing Wrecks.
38. Operating Marine Equipment.
39. Advertising.

* Railroad companies may for their own use subdivide this account as follows: "Repairs of shop machinery and tools," "Oil, waste and tallow used on tools and machinery."

† Railroad companies may for their own use subdivide this account as follows: "Engineers and firemen," "Wipers and dispatchers," "Other roundhouse laborers."

‡ Railroad companies may for their own use subdivide this account as follows: "Passenger conductors," "Passenger baggagemen," "Passenger brakemen," "Freight conductors," "Freight brakemen."

§ Railroad companies may for their own use subdivide this account as follows: "Passenger train supplies," "Freight train supplies," "Oil, waste and tallow used on passenger cars," "Oil, waste and tallow used on freight cars."

|| Railroad companies may for their own use subdivide this account as follows: "Switchmen," "Flagmen," "Watchmen."

** Railroad companies may for their own use subdivide this account as follows: "Agents," "Clerks at stations," "Laborers at stations."

†† Railroad companies may for their own use subdivide this account as follows: "Mileage of passenger cars—Balance," "Mileage of freight cars—Balance."

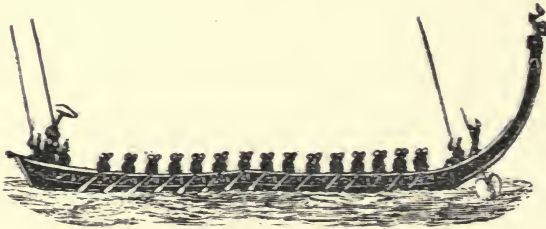
‡‡ Railroad companies may for their own use subdivide this account as follows: "Damage and loss of freight and baggage," "Damage to property and cattle."

- 40. Outside Agencies.*
- 41. Commissions.
- 42. Stock Yards and Elevators.
- 43. Rents for Tracks, Yards and Terminals.
- 44. Rents of Buildings and Other Property.
- 45. Stationery and Printing.
- 46. Other Expenses.

IV. GENERAL EXPENSES.

- 47. Salaries of General Officers.
- 48. Salaries of Clerks and Attendants.
- 49. General Office Expenses and Supplies.
- 50. Insurance.
- 51. Law Expenses.
- 52. Stationery and Printing (General Offices).
- 53. Other Expenses.

* Railroad companies may for their own use subdivide this account as follows: "Outside agents," "Expenses of traffic associations."



Carriage in Burmah.

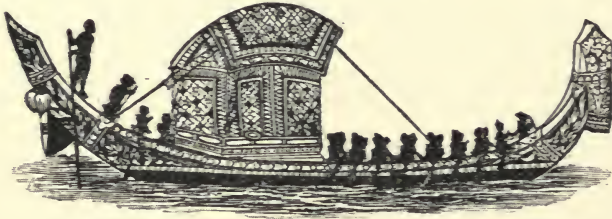
CHAPTER XI.

APPORTIONMENT OF OPERATING EXPENSES TO THE DIVISIONS OF A ROAD.

A classification of railway expenses about which there shall be no question, about which disputes will not arise, is an impossibility. Differences may not be material. But they will occur. When we attempt to apportion expenses between particular parts of a road, we encounter still graver questions, difficulties at once inherent and insurmountable.

The suggestion that the cost of operating parts of a road might be determined separately from the whole had its origin in the practice among railway companies of making an approximate division of this kind, for the purpose of ascertaining the relative economy exercised by local officers in reference to expenses within their control. But no one advised of the situation ever attempted a division of this kind for any other purpose, or indeed for such purpose, unless based on the natural geography of a property. Companies do not, and can not, draw imaginary lines across their roads, and apportion expenses within such lines upon an equitable basis, no matter what the object of the division may be.

Railways attempt a division of their expenses, as stated above, for purely local reasons. To do this they apportion to particular divisions on an arbitrary basis items common to all, after ascertaining that which is actual. They do this to ascertain the relative economy exercised by officers in matters which they individually control. This is the extent to which railway companies attempt to estimate the cost of operating particular parts of their properties. As, however, the question of the practicability of making an



Carriage in Siam.

Accurate division of such expenses is constantly proposed by those not possessing practical knowledge of the subject, it is well here to give some of the reasons why such a division can not be made.

The first obstacle that confronts us in attempting a division of expenses is the impossibility of apportioning the cost of management equitably among the several divisions of a road. The item is both a large and an important one; it covers the guardianship of the property. We will take

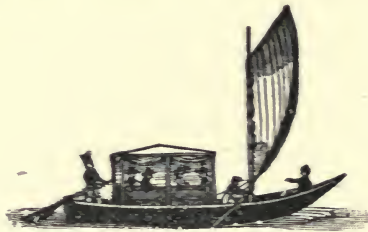
the stationery and other supplies used at headquarters as an illustration. They serve no valuable purpose in themselves—have no earning capacity; add nothing to the original enterprise. The essence of value in a railroad is its transportation facilities, the parts that earn money, its trains, traffic warehouses, buildings, tracks and employes who handle its business. All other expenses are accessory, artificial; contribute nothing to the essential conditions of the enterprise. Yet they must be considered. General office expenses can not be accurately apportioned among the divisions of a road because the benefit conferred is too vague, too indefinite, too fluctuating.

In all attempts to determine the cost of operating particular divisions of a road (for the purpose of fixing local responsibility) expenses of a general character beyond the control of the officers are apportioned to divisions on a basis common to all. Local expenses are charged where they belong. Under these two methods, partly fictitious, partly actual, the responsibility of local officers is in a measure determined. For the purpose for which the information is used, it does very well.

The common expenses of a railroad are not divisible. As soon might we attempt to determine the relative amount of nourishment that we derive in the economy of life from particular kinds of food, or determine the comparative amount of wear and tear that our bodies sustain from various classes of labor, as to attempt to

determine to what particular division many of the expenses of a railroad are chargeable. The sources of information are too much covered up, the tracing of cause and effect too remote, the results too subtle to enable us to determine their force or measure their effect.

Only information in reference to the expenses of a railway property as a whole are worthy of credit. Any attempted separation of cost as between divisions can only be approximately true at best, and to furnish it to the public is, there-



Carriage on the Douro.

fore, to mislead, and in so far as this is the case it is more likely to injure than benefit.

The cost of operating a particular line or section of road is the material, labor and expense disbursed. The most ingenious and patient efforts have been made to devise a system whereby these expenditures might be correctly apportioned, but without success.

To determine the cost of operating particular portions of a road requires information that does not exist; it presupposes information in reference

to things that are in their nature indefinite or so surrounded with qualifications and conditions as to preclude the obtaining of accurate data. In order to ascertain the cost of any particular thing we must determine the proportion of common expenses chargeable to it, and to make the allotment accurate we must apportion these expenses, not upon any agreed or arbitrary basis, but upon the basis of facts. To each particular thing about which we wish to know we must assign the actual outlay incurred on its behalf. This means that we must take cognizance of the expenditure of time in connection with it of every official; must follow his thoughts and measure their cost to the carrier. His expenses must be divided with equal care. We must follow this minute espionage into all the ramifications of the service wherever an outlay is incurred. This must be done not only in regard to the officials of a company, but it must be followed out with equal conscientiousness with all operatives engaged in duties affecting two or more divisions.

The difficulties of the situation are not generally known and are lightly appreciated in the majority of cases by seekers after knowledge of this character. They would too often supply lack of information by arbitrary formulas. These substitutes are more or less absurd according to the intelligence of the compiler and the amount of time and money expended in making the compilation. They never possess any real value. The compiler, as he progresses in his labor, dis-

covers at every step, if he is intelligent, that the bulk of the common expenses of railroads must be apportioned to divisions (if apportioned at all) on arbitrary and, therefore, fictitious grounds. If those who use such information know how it was compiled, they will not attach any value to its conclusions. They know that material and wages are oftentimes charged to an object on the basis that the gross income of such object bears to the gross income of some other object, or on



Carriage in Tyre.

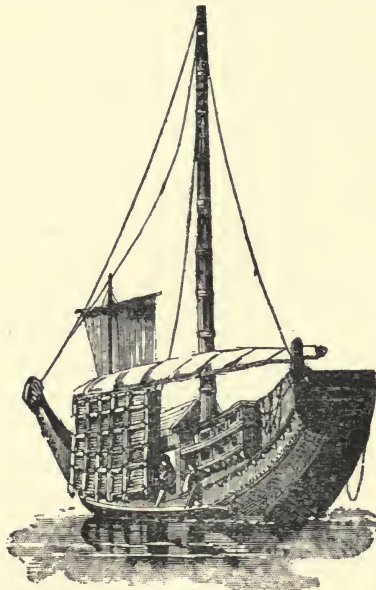
the basis that its physical proportion bears to the physical proportion of something else, without any reference to the real merits of the case.

It is not difficult to apportion an expense where it belongs exclusively to some particular part of a property, but the moment that it becomes common between two or more divisions, that moment the determination of the relative cost belonging to each becomes impossible. Money expended in attempting such division of cost is not only

unworthily bestowed, but is a menace to the company interested and to the community as well. The conclusions reached mislead and for that reason are no more to be encouraged than a watchman of a railroad should be encouraged to display a neutral signal when one that indicated danger should be used instead. To publish such matter is to disseminate false information; to commit not only an indiscretion but, in many cases, a misdemeanor, for the reason that the information may at any time be used by honest men as well as dishonest ones to predicate actions that may ruin those it affects. Thus, upon information not in any respect reliable, not in any way worthy of regard, rates may be based and other fundamental acts performed. It is this particular feature of the case that renders every intelligent and experienced railway manager loth to have information made public that is not irrefutable in its conclusions, and so simple, so frank, so manifest in its purposes, that no one, whether honestly inclined or otherwise, can be misled by it, or make improper use of it.

No one can be more sensible than those filling positions of responsibility, whether under a government or otherwise, that matter embodied in exhibits, whether as information or otherwise, may at any moment be made the basis for determining grave responsibilities or forming the basis of accusations alike unjust and unwarranted. This is especially and markedly so in reference to everything that affects the interests of corpo-

rate properties or that throws light upon their operations. These interests are the subject of the unremitting and jealous regard of the people and the objects of constant and malevolent attack upon the part of the ignorant and the designing. Thus a table professing to furnish information in



Carriage in Japan.

reference to the economic working of a railroad, compiled perhaps to satisfy the passing curiosity of an official, or under the mistaken belief that its conclusions were just and defensible, might be made the means of retarding a prospective industry, or crippling an enterprise in which mil-

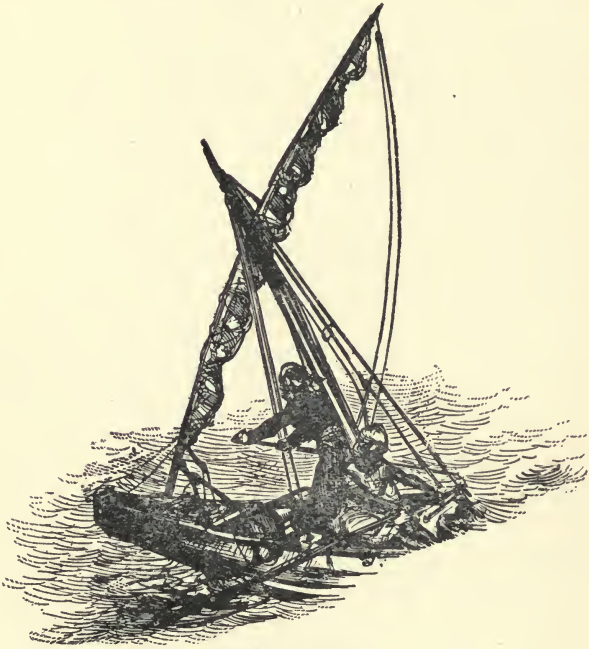
lions of capital was embarked. It is this aspect of the case that makes the owners of railways hesitate to furnish information not absolutely of a reliable character.*

In the operation of railroads the mere convenience of accountants or the necessities of statisticians are not regarded. The only question considered is that of expediency. The adoption of measures such as may enable the property to be handled effectively with the least outlay. This is the true business basis. It results from this economy of outlay that merely ornamental statistics, merely speculative data, are carefully eschewed. No money is used in a merely speculative way or to gratify speculative people.

The impossibility of apportioning expense of maintaining equipment and machinery affords a good illustration of the obstacles that beset an attempt to divide expenses between different divisions of a road. There is no basis for apportioning this expense. The wear and tear of equipment and machinery, and the outlay attending its operation, are directly and in a marked manner dependent upon the use made of it; upon

* When, however, speculative information of this nature is furnished there should be stamped across its face the statement that it is only an approximation, a guess, a shot in the dark. Such information should never be published unless there runs parallel with each line the reiterated statement that its conclusions are professions only; that they have no reality in fact; that while they may, in some instances, approximate the truth, yet those instances are not determinable and the information they profess to give is consequently not trustworthy.

the character of the road over which it passes; the nature of the track, its alignment, grades, ballast, ditches, rails, ties, splices, elevation, the speed of trains, the weight of traffic, climatic changes, and finally the intelligence, faithfulness



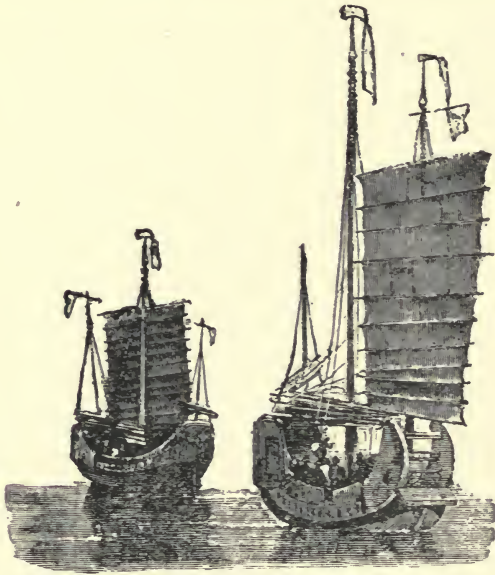
Carriage in Cyprus.

and experience of the men in charge. These are the factors that determine cost, and they never exist in the same ratio upon any two sections of a road, or upon any two roads. Consequently it needs no illustration or subtle argument to

demonstrate that to divide the cost of maintaining equipment operated indiscriminately over two or more sections of a road upon the basis of its carrying capacity, the number of miles run, the mileage of the road itself, or other arbitrary basis is only to delude ourselves. The cost of wear and tear must be charged, to make the statement of value, to divisions, not upon a hypothetical basis, but according to actual damage sustained. But as the track upon no two divisions is relatively the same, nor kept up to the same standard, nor subject to the same conditions, it necessarily follows that the wear and tear of equipment is always different. For the temporary and unimportant purposes which railroad companies make use of so called divisions of expense it is the general practice to divide the cost of maintaining equipment upon the basis of miles run. But such a division, however plausible, is totally inadequate to determine the relative expenses of different divisions of a road. Under its operation, sections or divisions of a line that are operated at a loss from year to year might show a net profit and properties utterly worthless be made to rank in productiveness with those really valuable.

What has been said in regard to the impossibility of dividing the cost of maintenance of equipment (about ten per cent. of the gross expenses), applies also to expenditures for advertising, foreign agents, and similar contingencies, comprising perhaps five per cent. of the expenses.

It is impossible, in the majority of instances, to apportion these expenses to particular lines. They are general in one sense, and yet do not affect different parts of the property alike. It would perhaps satisfy the statistician's purpose to apportion these disbursements arbitrarily over



Carriage in Singapore.

the whole property on the basis of earnings or mileage or relative expenses, yet such a division would be fallacious because the value of a property and its responsibilities are not determinable by what we may say it earns or expends, but by what it does actually earn or expend. We must

be careful not to clothe railroad enterprises with attributes they do not possess. While it may be convenient for us to say that we will apportion the cost of advertising or stationery on the basis of earnings or expenses, yet as a matter of fact we have no right to apportion such outlay except upon the basis of actual outlay; or if we do apportion them otherwise it should be done with a full knowledge of the error committed.

Continuing the inquiry in reference to a separation of expenses between the divisions of a road, upon what basis should the wear and tear of cars used on other lines be apportioned? How are we to determine the extent of this wear and tear? Again, how shall we apportion the use of other companies' cars? On the basis of the traffic earnings of each car? Undoubtedly. But this method of division is impossible because it would cost many times the original outlay. Innumerable cases of a similar nature might be cited.

A large proportion of the telegraph expenses (amounting to some two per cent. of the gross expenses) are of a general nature. A separation of them can never be more than approximately correct for the reason that the machinery of this department involves every division. Any apportionment of cost of operating, to be worthy of regard, must take cognizance from hour to hour of the actual outlay of time and material of each unit of expense. This is manifestly not practicable.

This is equally true in regard to the wages of employes at junctions of different divisions, of the train men who run over two or more divisions, and the expenses of such trains as well. It does not require any extended inquiry to satisfy the inquirer that these expenses can not be apportioned accurately to the divisions to which they belong. Ninety per cent. of the time of these employes will perhaps be occupied in connection with traffic that does not net as much to the company as business discharged upon another



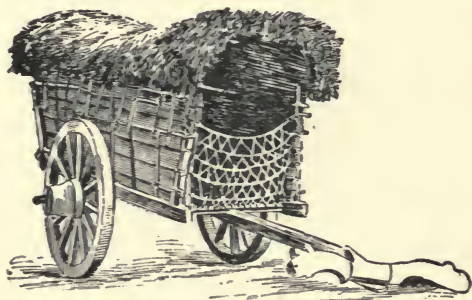
Carriage Time of Charles II.

division during the remainder of their time. The earnings (derived from their labor) would afford a safe basis for apportioning the expense, but this labor is so interwoven that its accurate separation is impossible without infinite labor and outlay. What is said of employes at junctions applies also to the material consumed at these points and upon lines operated in common by two or more divisions. It is true of train men running over two or more sections of a road; the number of miles they run can never be the real

basis of their wages. They are paid for the work they perform and for the number of hours they are occupied, but the primary purpose of their employment is their ability to earn money for their employer, and this is the true basis for determining the apportionment of cost to the different divisions of a road over which they run. It can not be done truly on the basis of *aggregate* earnings. The particular earnings in which they appear as factors is the true basis. Thus, the expenses of trainmen operating over two or more divisions should be charged to such divisions on the basis that the earnings of the train on each division bears to the earnings of the whole train. In order to apportion expenses of this nature much of the clerical work must be performed at the time and on the ground, and no matter how painstaking and exhaustive it may be, the result will only approximate correctness.

Apportionment of many common expenditures must be upon the basis of the purpose they serve from the standpoint of earnings. Manifestly this is not to be ascertained except after the most intelligent and far reaching inquiry. And while it may be determinable in some instances, it can not be in others. To attempt to decide it out of hand or on the basis of something thought to be generally near the mark is to beg the question, is to deceive ourselves and mislead those who make use of the data under the mistaken belief that it affords a correct basis.

Considerable sums of money that every corporation pays annually for losses and damages connected with traffic can not be accurately apportioned. The carrier knows that the property came into his possession, and that when delivered it was in bad order, or that it was not delivered at all. He knows he is responsible for the damage or loss, but is unable to say where the damage or loss occurred. In attempting to apportion the disbursements he must fix it arbitrarily



Carriage in Chile.

upon some division or divide it among several divisions upon a basis that he thinks fair. This disposition of the case is all right if he seeks simply to find a hole in which to hide the expense. But to say seriously that a particular piece of property may be burdened with such an outlay merely to satisfy the necessities of accounts is to attach an exaggerated importance to a thing of no consequence in itself; to create fictitious values or responsibility; to do business

upon a false basis; to make bookkeeping superior to events.

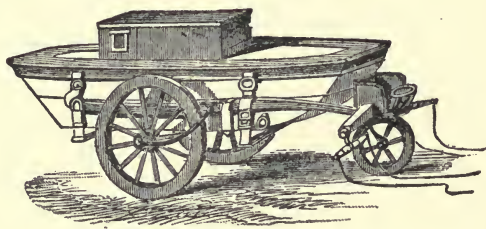
It is possible that, in the evolutions of railway science, means may be found for overcoming some of the obstacles I have pointed out, but until such period all statements professing to exhibit the cost of working particular portions of a property operated in common with other portions are false.

So much may be said in reference to the attempt to apportion expenses between several divisions of a road. I do not attempt to exhaust the subject. A division may be made that will be of value to a company, as already explained, for purposes of determining the relative economy exercised by local officers in matters coming wholly within their control. I have attempted to outline such a division below. It has no other purpose. The object sought is entirely different from one having actual division of cost in view. In the former instance it serves as a help in fixing responsibility for outlays; in the latter, it may mislead as to the value of a property.

Many expenses may be charged with absolute accuracy to a particular line or division. The work of the accountant in such cases is easy. In those cases where the disbursement is not apportionable upon an entirely equitable basis (because of the variableness of the service or the peculiar circumstances that attend the case) we

must determine in advance, for each particular kind of expense, what basis will be used in dividing whenever it becomes necessary to make such a division.

In order to arrive at the information we seek and fix the responsibility sought, all expenditures that particular managers are not responsible for must be charged to divisions on a common basis. This will place managers on an equal footing.



Carriage in India.

In the accompanying rules it is designed that the storekeepers, road accountants and others shall open an account with each division for each class of expense incurred on its behalf. When the amount chargeable to a division is known, it is to be charged under its appropriate head, thus: "Renewals of rails — Central division." When it is not known, the charge will be apportioned at headquarters. In such cases the entry made on the distribution book by the storekeeper or accountant would be "Renewals of rails — Common" or "Renewals of rails — Cen-

tral and Eastern divisions," or such explanation made as may be necessary to enable the accounting officer to understand the matter.

With these explanations I proceed to point out in detail exactly how each expense account should be apportioned to the different divisions, or should be entered in the distribution book for division afterward at headquarters by the proper officials.

MAINTENANCE OF WAY AND STRUCTURES.

REPAIRS OF ROADWAY.—When a track is used in common by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

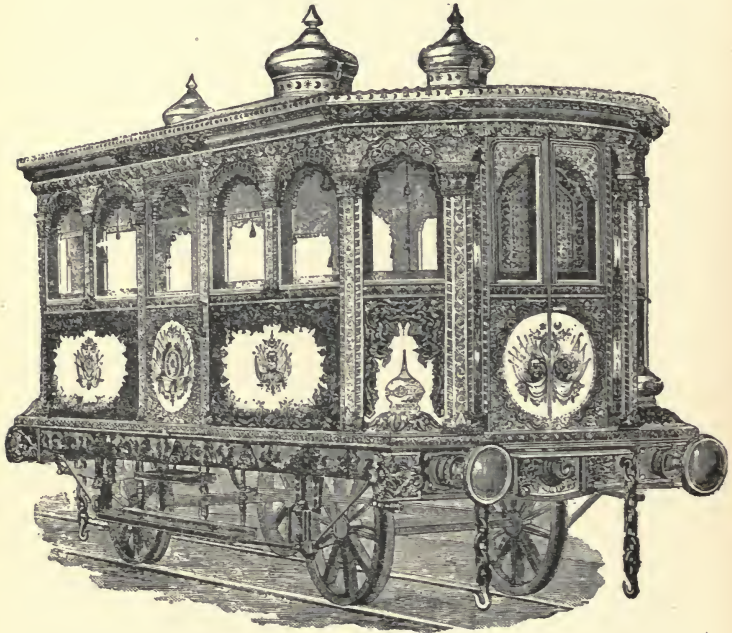
RENEWALS OF RAILS.—When the charge affects two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

RENEWALS OF TIES.—When the charge affects two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

REPAIRS AND RENEWALS OF BRIDGES AND CULVERTS.—When structures are used in common by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

REPAIRS AND RENEWALS OF FENCES, ROAD CROSSINGS, SIGNS AND CATTLE GUARDS.—When fences, road crossings, signs or cattle guards belong in common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

REPAIRS AND RENEWALS OF BUILDINGS AND FIXTURES.—The apportionment to the several divisions of the cost of repairs of general offices, general shop and supply depots should be based on equipment mileage. In reference to cost of repairs of buildings at the junction of two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected.



Railway Carriage in Egypt, A. D. 1858.

In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

REPAIRS AND RENEWALS OF DOCKS AND WHARVES.—When docks and wharves are used by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to

the correctness of apportionment, reference should be made to the accounting officer for his decision.

REPAIRS AND RENEWALS OF TELEGRAPH.—When the expense is common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected, in consultation with the superintendent of telegraph. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When such expenses are common to the whole road, an account should be opened as follows, viz.: "Repairs and renewals of telegraph—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of equipment mileage.

STATIONERY AND PRINTING.—When the expense is common to two or more divisions, but not common to the whole road, a basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When the charge is common to the whole road, an account should be opened, as follows, viz.: "Stationery and printing—Common." Charges of this description should be apportioned between divisions by the accounting officer on the basis of equipment mileage.

OTHER EXPENSES.—The apportionment between divisions of charges on this account should be made as directed for "Stationery and printing."

MAINTENANCE OF EQUIPMENT.

SUPERINTENDENCE.—When the expense is common to two or more divisions, a special basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the official in charge of the department and the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When such expenses are common to the whole road, an account should be opened as follows, viz.: "Superintendence—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of equipment mileage.

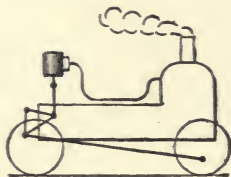
REPAIRS AND RENEWALS OF LOCOMOTIVES.—The apportionment of charges between divisions on this account will be made by the accounting officer on the basis of locomotive mileage.

REPAIRS AND RENEWALS OF PASSENGER CARS.—The apportionment of the charges for "Repairs and renewals of passenger cars," to the several divisions of a road, should be made by the accounting officer on the basis of passenger car mileage.

REPAIRS AND RENEWALS OF FREIGHT CARS.—The apportionment of the charges for "Repairs and renewals of freight cars," to the several divisions of a road, should be made by the accounting officer on the basis of freight car mileage.

REPAIRS AND RENEWALS OF WORK CARS.—When work cars are used in common by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

REPAIRS AND RENEWALS OF MARINE EQUIPMENT.—When marine equipment is used in common by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.



Locomotive "Novelty," A. D. 1829.

REPAIRS AND RENEWALS OF SHOP MACHINERY AND TOOLS.—When shops are used by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When the expense is common to the whole road, an account should be opened as follows, viz.: "Repairs and renewals of shop machinery and tools—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of equipment mileage.

STATIONERY AND PRINTING.—When the expense is common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

When the expense is common to the whole road, an account should be opened as follows, viz.: "Stationery and printing—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of equipment mileage.

OTHER EXPENSES.—The apportionment between divisions of charges on this account should be made as directed for "Stationery and printing."

CONDUCTING TRANSPORTATION.

SUPERINTENDENCE.—When the expense is common to two or more divisions, a special basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the general superintendent and the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When such expenses are common to the whole road, an account should be opened as follows, viz.: "Superintendence—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of gross earnings.

ENGINE AND ROUNDHOUSE MEN.—When enginemen run in common on two or more divisions, their wages should be apportioned to the several divisions of a road on the basis of the number of miles run on each by said enginemen, or as may be agreed upon by the superintendents of the respective divisions. The wages of wipers engaged upon locomotives running over two or more divisions should be apportioned to such divisions upon the basis of the number of miles the locomotives ran on each division. The wages of wipers and dispatchers at terminal stations, common to two or more divisions, should be apportioned according to the number of locomotives belonging to each division that have been wiped during the month. When the wages of other roundhousemen are common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the official in charge of the department and the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

FUEL FOR LOCOMOTIVES.—The wages of employes engaged in supplying locomotives with fuel should be apportioned to the divisions upon which the locomotives supplied actually run. Where fuel is supplied to locomotives of two or more divisions, the expense will be charged to each division on the basis of the quantity of fuel issued to its locomotives during the month.

WATER SUPPLY FOR LOCOMOTIVES—When the expense is common to two or more divisions, the basis of apportionment,

unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

OIL, TALLOW AND WASTE FOR LOCOMOTIVES.—No division of the charges for "Oil, waste and tallow used on locomotives" should be made by storekeepers, the gross charges being apportioned between divisions by the accounting officer on the basis of locomotive mileage.

OTHER SUPPLIES FOR LOCOMOTIVES.—The apportionment of charges between divisions on this account should be made by the accounting officer on the basis of locomotive mileage.

TRAIN SERVICE.—Wages of trainmen should be charged to the divisions upon which they run. When they run in common, upon two or more divisions, the several divisions should be charged on the basis of the number of miles run on each, or as may be agreed upon by the superintendents of the respective divisions.

TRAIN SUPPLIES AND EXPENSES.—No division of the charges for "Train supplies and expenses" should be made by storekeepers, the gross charges being apportioned between divisions by the accounting officer on the basis of car mileage.

SWITCHMEN, FLAGMEN AND WATCHMEN.—When the expense is common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

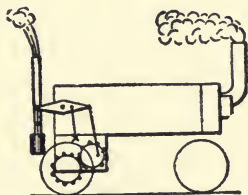
TELEGRAPH EXPENSES.—When the expense is common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected, in consultation with the superintendent of telegraph. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When such expenses are common to the whole road, an account should be opened as follows, viz.: "Telegraph expenses—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of gross earnings.

STATION SERVICE.—When the expense is common to two or more divisions, a special basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his

decision. When such expenses are common to the whole road, an account should be opened as follows, viz.: "Station service—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of gross earnings.

STATION SUPPLIES.—Station supplies should be charged directly to the division upon which the station is located, except in the case of joint stations; in the latter case, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

SWITCHING CHARGES—BALANCE.—The apportionment of charges for "Switching" to the several divisions of a road should be made by the accounting officer on the basis of freight car mileage.



Locomotive "Geo. W. Johnson," A. D. 1830.

CAR MILEAGE—BALANCE.—The apportionment of charges between divisions on this account should be made by the accounting officer on the basis of car mileage.

HIRE OF EQUIPMENT.—The apportionment of charges between divisions on this account should be made by the accounting officer on the basis of car or locomotive mileage as the case may be

LOSS AND DAMAGE.—When the expense is common to two or more divisions, a special basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When such expenses are common to the whole road, an account should be opened as follows, viz.: "Loss and damage—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of earnings.

INJURIES TO PERSONS.—When the expense is common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When the expense is common to the whole road, an account should be opened as follows, viz: "Injuries to persons—Common." Charges of this description should be apportioned to the several divisions of a road by the accounting officer on the basis of locomotive mileage.

CLEARING WRECKS.—When the expense is common to two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

OPERATING MARINE EQUIPMENT.—When ferry boats, tugs, etc., are used in common by two or more divisions, the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

ADVERTISING.—The apportionment of charges for "Advertising" to the several divisions of a road should be made by the accounting officer on the basis of earnings.

OUTSIDE AGENCIES.—The apportionment of charges for "Outside agencies" to the several divisions of a road should be made by the accounting officer on the basis of earnings.

COMMISSIONS.—When the charges affect two or more divisions, they should be apportioned on the basis that the earnings on which commissions were paid were divided.

STOCK YARDS AND ELEVATORS.—These expenditures should be charged directly to the division upon which the structures are located, except in the case of joint structures; in the latter case the basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision.

RENTS FOR TRACKS, YARDS AND TERMINALS.—The apportionment between divisions of charges on this account should be made as directed for "Stationery and printing."

RENTS OF BUILDINGS AND OTHER PROPERTY.—The apportionment between divisions of charges on this account should be made as directed for "Stationery and printing."

STATIONERY AND PRINTING.—When the expense is common to two or more divisions, but not common to the whole road, a basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the superintendents of the divisions affected. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When the charge is common to the whole road, an account should be opened as follows, viz.: “Stationery and printing—Common.” Charges of this description should be apportioned between divisions by the accounting officer on the basis of gross earnings.

OTHER EXPENSES.—The apportionment between divisions of charges on this account should be made as directed for “Stationery and printing.”

GENERAL EXPENSES.

SALARIES OF GENERAL OFFICERS.—The salaries of general officers should be apportioned to the several divisions of a road by the accounting officer on the basis of gross earnings.

SALARIES OF CLERKS AND ATTENDANTS.—The salaries of clerks and attendants should be apportioned to the several divisions of a road by the accounting officer on the basis of gross earnings.

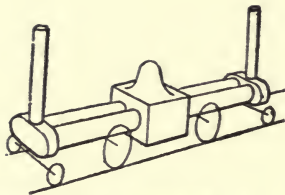
GENERAL OFFICE EXPENSES AND SUPPLIES.—The apportionment of charges to the several divisions of a road should be made by the accounting officer on the basis of gross earnings.

INSURANCE.—An account should be opened with each division of a road for which expense is incurred, when the same is known; when common to two or more divisions, but not common to the whole road, a basis of apportionment, unless otherwise directed by the accounting officer, should be agreed upon by the officials interested. In all cases of disagreement or doubt as to the correctness of apportionment, reference should be made to the accounting officer for his decision. When the charge is common to the whole road, an account should be opened as follows, viz.: “Insurance—Common.” Charges of this description should be apportioned between divisions by the accounting officer on the basis of gross earnings.

LAW EXPENSES.—The apportionment between divisions of charges on this account should be made as directed for “Insurance.”

STATIONERY AND PRINTING (GENERAL OFFICES).—The apportionment of charges to the several divisions of a road, should be made by the accounting officer on the basis of gross earnings.

OTHER EXPENSES.—The apportionment of charges between divisions on this account should be made by the accounting officer on the basis of gross earnings.



Locomotive "South Carolina," A. D. 1832.

CHAPTER XII.

SUMMARY OF RAILWAY DISBURSEMENTS, INCLUDING THE ITEMS CHARGEABLE AGAINST INCOME.

The disbursements of a railway may be classed under two heads—Permanent and Temporary. Permanent expenditures embrace those known as construction; temporary expenditures those we place in the scales against earnings, *i. e.*, expenditures paid for out of earnings. All other disbursements are of a transitory nature merely, *i. e.*, book accounts settled in cash or in kind; they do not come under the head of disbursements in the sense we use the word throughout this book.

A summary of railway disbursements is appropriate in this place and will fitly close the subject. It is as follows:

CONSTRUCTION.—This account is described elsewhere; it properly embraces the original or first cost of property; all disbursements, expenses, costs, commissions, salaries and debts incurred in connection therewith or incident thereto; the accruing interest on the amount invested while a property is in course of construction and before it is opened for business; all disbursements and losses suffered in the sale or disposal of bonds, shares, securities or assets, the proceeds of which are used in its purchase or development; all expenditures on account of its rights, franchises and appurtenances. These constitute what is known as construction account.

OPERATING EXPENSES.—The operating expenses are described elsewhere in detail; they embrace the cost of working a property and maintaining the same, including the cost of repairs and renewals and all expenses incident to its operation and maintenance.

TAXES.—This account is a proper charge against income or revenue. It embraces taxes on real estate, right of way, build-

ings, equipment and other property, real or personal, also taxes on capital stock, earnings, dividends or interest, and for all other purposes whatsoever.

INTEREST ON BONDS.*—This is also a charge against income or revenue. It embraces interest on the funded debt of a company and all premiums paid on gold or currency, or for any other purpose rendered necessary to satisfy the obligation of this account, also amounts paid for exchange used to meet interest payments.†

INTEREST ON FLOATING DEBT, DISCOUNT AND EXCHANGE.—This account is also an offset against income or revenue. It includes interest on floating debt, and discount suffered in sale of current paper or disposal of kindred accounts; also balance of amounts paid for exchange on drafts, checks, notes, bills of exchange, etc., not otherwise provided for.

RENTALS.—This account is also an offset against income or revenue. It includes amount of rentals for leased lines, bridges, ferries, steamboats, rolling stock and other purposes not included in operating expenses.‡

DIVIDENDS ON STOCK.—This account is also an offset against income or revenue. It includes dividends on capital stock or evidences of the latter, or substitutes therefor.§

*The practice in regard to entering interest charges upon the books of companies differs. In some cases the charge is not made until the interest becomes due. Thus if the interest is payable on the 1st of July, the amount of the interest accruing is brought upon the books in July; upon some roads it would be brought upon the books as of the last day of the preceding month; still other roads charge up the interest from month to month as it accrues. This last named plan is a most excellent one; the books thus show always the gross amount that is chargeable against income and the utmost possible liability of the company for interest.

† In those instances where it is necessary to buy exchange to pay interest, as in the case of an American road having its interest payable in Amsterdam, the cost of exchange should be charged to "Interest on bonds."

‡ In the absence of instructions to the contrary, rentals should be charged upon the books from month to month as the rent accrues. Rent of tracks, buildings, yards and terminals are charged as an operating expense, as they appear, under the head of "Outside agents," or "Rents of tracks, buildings, yards or terminals."

§ The amount of a dividend should be brought upon the books in the month in which it is declared and should appear in the returns for such month.

CHAPTER XIII.

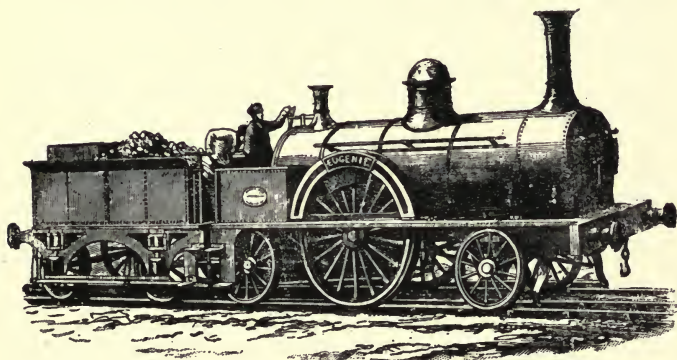
PRACTICES OF ENGLISH RAILWAYS IN ACCOUNTING FOR MATERIAL AND FUEL.

For the purpose of account keeping, stores are classified under three heads, viz.: coal, general stores and permanent way stores. Orders for material required are sent to the tradesmen, signed by the general store superintendent; on the back of the orders are printed the conditions on which the material will be accepted. An account is opened with each tradesman from whom goods are purchased. At the end of the month tradesmen's accounts are checked with the invoices and entered into day books or invoice journals and posted therefrom to the debit of the respective stock accounts on the stock ledger. A list of accounts is then made, certified to by the general stores superintendent and submitted to the general stores committee of the board for approval. The accounts and lists are then sent to the accountant of the company for payment.

Goods received at stores are entered into "goods received books," which are sent to the stores superintendent's office to be compared with the invoices. The stores examiners are not allowed in any case to have access to the invoices, but after the goods have been checked price lists are furnished for the guidance of the superintendent's assistants in pricing out the materials to the consuming departments. Requisitions for stores and stationery for the traffic department are made monthly and countersigned by the general manager. They show the quantity on hand, date and quantity of last supply, and quantity required. The quantities sent out are recorded in detail against each station in order to compare the supplies of one period with another. Requisitions for stores for the locomotive, carriage, and way and works departments are made as the material is needed. They show the quantity and description of each kind of material ordered and the purpose for which it is required.

From the requisitions the stores porters get out the goods and the clerks make out the delivery notes showing the articles, quan-

tity and value, which are copied into an "issue book," but the money portion is torn off before they are sent out. Each consuming department is, however, provided with a price list. The traffic department is charged with the gross monthly purchases for that department, and not for detailed supplies sent to each station; any variations in stock are adjusted half yearly or yearly. The press copies of the delivery notes for material issued to the locomotive, carriage, and way and works departments are checked every week and the amounts entered into an "issue summary book," a separate book being used for each consuming department. From these books the several stock accounts on the stock ledger are credited. From the issue summary books



McConnell's Locomotive, A. D. 1855.

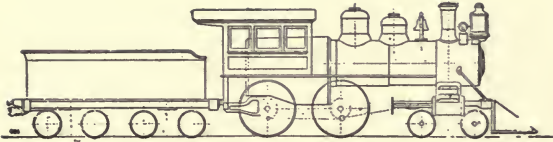
a statement of stores issued is made each week and forwarded to the accountant. This shows the total value of material issued during the week to each consuming department. On receipt of the goods by the consuming departments the goods are checked with the copies of the requisitions by the stores foreman who has charge of the material, and the delivery notes are receipted and returned to the stores department.

Material can not be obtained from the stores foreman without a written order signed by the works manager or foreman of the shop. The order states for what purpose the stores are required. From the requisitions and orders weekly statements are made by each consuming department, showing the quantity and value of

material chargeable to the several expense accounts. These statements are forwarded to the accountant and should agree in total with the weekly statements sent him from the stores department of material issued to each consuming department. The accountant charges the expense accounts with the material used in accordance with the distribution returns furnished him by the several consuming departments.

Coal is sent directly from the colliery to the station where it is to be used. Colliery advices, after being entered by the general stores superintendent, are forwarded to the stations where the coal is sent, to be certified to by the receiving agent. The weights shown are checked and the advices returned to the general stores department. After ascertaining that the amounts are correct, the stores superintendent reports on his statement of issues to the accountant the actual monthly purchase. Coal is weighed out to engines receiving it at stations and the returns thereof are sent to the locomotive superintendent, who sends a statement to the accountant showing the total weight of coal issued each week.

An inventory is taken periodically and compared with the stock ledger, the books being adjusted to the actual by debit or credit entries, as the case may be. The books and inventories of the stores department are checked with the actual stock by the accountant's staff. The administration expenses of the stores department are apportioned to the various consuming departments at the end of each year.



Locomotive, 1894.

CHAPTER XIV.

PRACTICES OF ENGLISH RAILWAYS IN KEEPING THE TIME OF EMPLOYEES.

The time of men employed in the way and works department is kept by the gang foremen. They are provided with two time books (one for each alternate week), in which they enter daily the time worked by themselves and the men under them. At the end of the week each foreman sends his book to the inspector of the circuit in which he is located. The inspector makes up his book therefrom. It shows the time, rate and amount due each man, the works on which they were engaged and the total amount payable at each station in his circuit. He certifies to the correctness of the returns and forwards with the foremen's time books to the district superintendent to be examined, summarized and forwarded to headquarters for the pay bills to be prepared.

The time of men employed at stations is kept by the station clerk or goods agent in charge, who keeps an accurate daily record of the time made by each servant of the company under his control. At the end of the week pay bills are made and sent to headquarters.

The time of engineers and firemen is kept by the locomotive foremen or their clerks, who enter into a day book the number of hours on duty and miles run. The engineers and firemen are required to sign their names in a book and enter the exact time when going on or off duty, stating the due time of train and engine number.

The time of shop men is made up from the workings of their checks. These checks, which bear the men's registered numbers, are deposited in the time office by the workmen on entering and are returned to them on leaving the premises, morning, noon and night. The time is entered up in the check and time books by the clerks. At the end of the week the time worked by each man is transferred to gate time sheets, which

show the rate. These are sent to headquarters. Shop time sheets are filled out by the shop foremen, who enter the time the men are employed on each description of work during the day. These sheets at the end of the week are also sent to headquarters. The time as reported on the shop time sheets is then compared with the gate time sheets and the pay bills are made. After the pay bills have been made at the headquarters of the several departments, they are forwarded with the time books, time sheets and distribution reports, to the accountant.

APPENDIX A.

APPENDIX A.

MATERIAL ACCOUNT—SYSTEM OF ACCOUNTING FOR MATERIAL PURCHASED AND DISBURSED, RECOMMENDED BY THE STANDING COMMITTEE ON DISBURSEMENTS OF THE ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.

"It is believed that the essentials of a correct system will be found in the following general outline:

"The purchasing agent to furnish the storekeeper with all standards and copies of all contracts, agreements and specifications for material to be purchased and to forward him promptly all invoices received. All materials purchased to be placed at once in the custody of the storekeeper, who should inspect the same and certify to the correctness of the invoices as to quantity, quality and price; examine extensions and footings; take up the amounts in his material account; prepare vouchers certifying to the correctness thereof and forward them to the purchasing agent, who will examine prices, certify to their correctness and forward to the manager for approval. After being approved by the manager they should be transmitted to the accounting department, where, if found correct, they should be charged to the storekeeper and approved for payment.

"All material issued by the storekeeper will be upon properly approved requisitions. When material is issued an invoice of the same will be forwarded to the division or department to which it is issued; the division or department, after checking material received against the invoice and finding the same to be correct, will mark the invoice 'correct,' and file until the end of the month; if incorrect in any particular, the question will be taken up at once with the storekeeper for adjustment.

"At the close of each month's business the storekeeper will forward to the divisions and departments a summary of invoices made and charged against them during the month; the amount so charged to be taken up by these divisions and departments in their accounts for the same month. The summaries of invoices forwarded should in all cases be accompanied by legible impression copies of the same, such impression copies to be retained by the divisions or departments against which the invoices are made, the 'originals' to be certified to by the heads of such divisions or departments and sent to the accounting department with their monthly reports or accounts current. The ad-

justment of all differences arising from non receipt of invoices or other causes, and all errors, except errors in footings of summaries, should be made in the succeeding month.

"The same rule will apply throughout between divisions and departments covering material transferred between themselves.

"The storekeepers and heads of divisions or departments will render to the accounting department a monthly report or account current in which shall be shown, under the proper headings, the amount of material (as well as labor) received and disbursed during the month.

"When the annual inventory is completed, the balance of material on hand, as shown by the books of the storekeeper, and those of each division and department should be adjusted to conform thereto, and the discrepancy between these balances and the proper value should be distributed to the expenses of the current year.

"To insure correct accounting for material it is important to have competent foremen to report material used or taken out of track, structures or equipment, as well as competent accountants at storehouses and at division and department headquarters; and where these accountants are not under the immediate direction of the accounting department it is well to have a representative of that department visit the various division headquarters, shops and roadway departments from time to time to see that material is being properly accounted for.

"Prices at which the new material is charged out by the storekeeper to include freight paid to other roads, and may include the salary and expenses of the store department, prorated on the value of materials invoiced each month.

"The prices at which second hand material should be taken up, charged out or invoiced should be fixed from time to time by the purchasing agent.

"Divisions or departments releasing material from the track, structures or equipment of the railway should take the value of the same up at once in their material account, even though the material should be used and charged out again in the same month.

"In the shops of the company labor expended upon material in process of manufacture or upon unfinished equipment should be charged to the material account until the finished article is charged out to 'Repairs,' 'Equipment' or 'Construction.' Provision should be made in the material report blanks for the debit, under proper heads, of all material received and taken from the track, structures or equipment of the road, for credits on account of material transferred to other divisions and departments or sold to individuals and companies, and for credits on account of material used, under the proper general heads, in detail. There should accompany this report a list of vouchers taken into account, and a list of individuals and company bills for which credit has been taken."

APPENDIX B.

APPENDIX B.

GENERAL DISTRIBUTION OF LABOR BOOK.

ORDER IN WHICH ACCOUNTS SHOULD BE OPENED ON THE GENERAL DISTRIBUTION OF LABOR BOOK.

Operating expenses in their order.

Rebuilding accounts in their order.

Construction accounts in their order.

In connection with "Repairs and renewals of bridges and culverts" or "Bridges, culverts and viaducts," a separate account should be opened with each bridge, etc.

In connection with "Repairs and renewals of buildings and fixtures," or "Buildings, furniture and fixtures," a separate account should be opened with each building.

In connection with "Repairs and renewals of docks and wharves" or "Docks and wharves," a separate account should be opened with each dock or wharf.

In connection with "Repairs and renewals of locomotives," a separate account should be opened with each engine.

In connection with "Repairs and renewals of floating equipment," or "Expenses of barges, floats, tugs and ferry boats," a separate account should be opened with each ferry boat, etc.

In connection with "Repairs and renewals of shop machinery and tools," or "Shop machinery and tools," a separate account should be opened with each shop.

Labor charged to material.

Labor invoiced.

Articles manufactured by a company.

Coal account.

Wood account.

Various persons accounts.

Miscellaneous accounts.

Final recapitulation.

APPENDIX C.

APPENDIX C.

RECAPITULATIONS.

For statistical purposes a separate operating or construction account should be opened with each building, bridge, culvert, viaduct, dock, wharf, ferry boat, stock yard, dining car and locomotive for which expense is incurred, but the amount entered in the final recapitulation of expenditures, and carried to the general books, should be the aggregate amount expended under the head of each operating expense or construction account. Therefore, in order to bring together under one heading the amount to be carried to the final recapitulation, and also in order to post readily therefrom to the statistical accounts, a sub-recapitulation of the several operating and construction accounts is required, in the following manner, viz.:

Recapitulation of "Repairs and renewals of buildings and fixtures," or "Buildings, furniture and fixtures."

In making the recapitulation the following should be observed:

1. The recapitulation should specify the building charged in such a manner that its identity can be determined therefrom with certainty.

2. The buildings should be entered in the order of geographical location upon the line.

3. The recapitulation should show the amount charged to each building and the number of the page of the distribution book on which the account may be found.

4. In case credits appear in the recapitulation, the footing to be shown should be the difference between the amount of the debits and the amount of the credits.

5. A separate recapitulation should be made for each division chargeable in "Repairs and renewals of buildings and fixtures," and the total of each should be carried to the account and division chargeable in the final recapitulation of expend-

itures. In "Buildings, furniture and fixtures," no apportionment of charges to divisions should be made.

Recapitulation of "Repairs and renewals of bridges and culverts" or "Bridges, culverts and viaducts."

The recapitulation should commence with the bridge having the lowest number, the others following in numerical order, and in case of "Repairs and renewals of bridges and culverts," closing with the general account. Otherwise the form and purpose of the recapitulation for bridges and culverts are the same as prescribed for buildings.

Recapitulation of "Repairs and Renewals of Locomotives."

The recapitulation should commence with the locomotive having the lowest number, the others following in numerical order, closing with the general account.

In repairs of locomotives, no apportionment of charges to divisions should be made.

The same course will be pursued in the case of docks, wharves, ferry boats and stockyards as is prescribed for buildings.

On the general distribution of labor book the accounts named below should be recapitulated and the total amount of the same carried to the final recapitulation at the close of the book under the head of "Manufactured material." The accounts referred to are:

Labor charged to material,
 Labor invoiced, and
 Articles manufactured by the company.

Final recapitulation of expenditures. (Labor.)

A recapitulation of all the accounts in the general distribution of labor book should be made at the end of the book. In opening the recapitulation the following information should be given, viz.:

1. The names of the operating expense accounts, in order.
2. The pages of the book on which they are to be found, and lastly, the total amount of labor chargeable; for example: "Repairs and renewals of buildings and fixtures, blank division, page 12, \$126.30," and so on with the other accounts.

3. The final footing of the recapitulation should agree exactly with the amount of the pay rolls distributed.

4. A summary of pay rolls, showing the amount of each and the total of all pay rolls distributed, should be shown on the page immediately preceding the final recapitulation.

5. No accounts should be entered in the final recapitulation of expenditures except those designated, or those specially authorized by the accounting officer.

6. Bridge and building rebuilding accounts, also addition, enlargement and improvement accounts, should be merged in the operating expense or construction accounts to which they belong, as the case may require, and the combined amount should be carried to the final recapitulation.

7. But one entry should be made in the final recapitulation of expenditures to any one account.

Following the recapitulation, the distribution book should be signed by the storekeeper or official in charge, the signature being attached to the subjoined certificate, viz.: "I hereby certify that the above recapitulation is a correct record of all labor performed."

Recapitulation of material invoice accounts.

A recapitulation of the invoice accounts should be made on the general distribution of material book at the end of the month, the same to be arranged in the order in which the accounts are directed to be opened, viz.:

1. Total material received by purchase or from other supply stores and shops separately.

2. Total material forwarded to other supply stores and shops separately.

This recapitulation should be entered immediately before the final recapitulation of expenditures, and should not be footed.

Final recapitulation of expenditures. (Material.)

A recapitulation of all the expenditure accounts should be made at the end of the general distribution of material book. The accounts should be entered in their order, commencing with the operating and ending with the construction and miscellaneous accounts. The page on which the details of each account may be found should be given in the column provided. The recapitulation should be footed.

In case credits appear in the recapitulation, the footing to be shown should be the difference between the amount of the credits and the amount of the debits.

As a matter of convenience, and to insure accuracy, credits entered in the recapitulation should be made in red ink.

Except as otherwise provided, the form and purpose of this recapitulation are the same as those provided for labor accounts.

Following the final recapitulation, the distribution book should be certified by the storekeeper or official in charge, the certificate being as follows, viz.: "I hereby certify that I have carefully examined the extensions and footings as entered in this book, and find the same correct."

Shop.

Accounting Officer's Folio

Folio of Distribution Book

RECAPITULATION OF MATERIAL.

Month of _____ 18__

(INVOICE ACCOUNTS.)

	FOLIO.	AMOUNT.
Material Received from -----		
Material Forwarded to -----		

Eyelet.

○

Eyelet.

○

Eyelet.

○

Shop, _____
 Accounting Officer's Folio _____
 Folio of Distribution Book _____

RECAPITULATION OF _____
 (EXPENDITURES.)
 Month of _____ 18 _____

Eyelet. 0	NAME OF ACCOUNT.	FOLIO.	AMOUNT.
Eyelet. 0			
Eyelet. 0			

This blank should be used for recapitulating either Material or Labor.

APPENDIX D.

APPENDIX D.

SECTION FOREMAN'S
DISTRIBUTION OF TRACK MATERIAL,
for month of _____ *18*__

Section No. _____ *Division.* _____

MATERIAL RECEIVED BY SECTION FOREMAN.

From whom Material was Received.	CAR NO. AND INITIAL.	ARTICLES.	NUMBER OR QUANTITY.

MATERIAL USED BY SECTION FOREMAN FOR
 "REPAIRS OF ROADWAY AND TRACK."

(Write the names of articles used when they are not printed.)

ARTICLES.	Number or Quantity.	ARTICLES.	Number or Quantity.
Axes, Chopping, " Hand, Axe Helves, Adzes, Adze Handles, Angle Bars, New, " " Usable,		Lanterns, White, " Red, Lantern Globes, " Tubes,	
Brooms, Bolts, Sq. Nut, Pounds, " Hex. Nut, "		Matches, Boxes,	
Chairs, Switch, Single, " " Double, Crowbars, Clawbars, Cold Chisels,		Nut Locks, Number, Nuts, Pounds,	
Dippers, Drills,		Oil, Car, Gallons, " Kero. " " Signal, " " Cans,	
Fish Plates, No. Flags, White, " Red, Frogs, New, " Repaired,		Posts, Cedar, Number, " Oak, " Picks, Pick Handles,	
Hand Car Brasses, Hammers, Hand Saws,		Striking Hammers, Stone, Yards, Spikes, R. R., Pounds, " Boat, " " Cut, " Shovels, " Sledges, " Sledge Handles, Spike Hammers, Spike Hammer Handles, Spades,	

(Continued on next page.)

MATERIAL USED BY SECTION FOREMAN FOR
 "REPAIRS OF ROADWAY AND TRACK."

(Write the names of articles used when they are not printed.)

ARTICLES.	Number or quantity.	ARTICLES.	Number or quantity.	
Scythes, " Snaths, Scoops, Switches, Switch Stands, " Plates, Torpedoes, Tamping Bars,		TIES ("For Renewal of Ties.") Oak, Cedar, Hemlock, Ash, Culls, Switch, Bridge, Head Blocks,		
Washers, Pounds, Water Kegs, " Pails, Waste, Pounds, Wheelbarrows, Wrenches, Wicking, Whetstones,		RAILS ("For Renewal of Rails.") Steel, lb., Feet. lb., " lb., " lb., " lb., " Iron, lb., " lb., " lb., " lb., " lb., " lb., "	New.	Usable.

MATERIAL USED BY SECTION FOREMAN FOR OTHER PURPOSES.

What material was used for.	Description of articles used.	Quantity used.

MATERIAL SHIPPED AWAY BY SECTION FOREMAN.

TO WHOM SHIPPED	Car No. and initial.	ARTICLES.	Number or quantity.

SECTION FOREMAN'S REPORT OF MATERIAL AND TOOLS ON HAND AT END OF MONTH.

(Write names of articles when they are not printed.)

ARTICLES.	QUANTITY OF		ARTICLES.	QUANTITY OF	
	New material and new tools on hand not in use.	Old material and scrap on hand not in use.		New material and new tools on hand not in use.	Old material and scrap on hand not in use.
Axes, Chopping,			Frogs, Boss,		
" Hand,			" "		
Axe Heives,			Fencing, Lumber, Feet.		
Adzes,			" Barbed Wire lbs.		
Adze Handles,			" " " Fastn'rs		
Angers,			" " " Tight'rs,		
Anger Handles,			Fence Boards,		
Anvils,			Files,		
Angle Bars, New,			Ganges,		
" " Usable,			Grindstones,		
Boring Tools,			Hand Cars,		
Brooms,			Hand Car Wheels,		
Buck Saws,			" " Axles,		
Braces and Bits,			" " Handles,		
Board Rules,			" " Brasses,		
Brands,			" " Chains,		
Brick,			Hammers,		
Bellows,			Hatchets,		
Bridge Wrenches,			Hand Saws,		
Bolts, Sq. Nut,	lbs.		Hinges,		
" Hex. Nuts,	"		Hoes,		
Brush Hooks,			Iron,	lbs.	
Cant Hooks,			Jack Screws,		
Chairs, Single Switch,			Lining Bars,		
" Double " "			Levels,		
" Step,	lbs.		Leveling Rods,		
Chain,			Lanterns, White,		
Crowbars,			" Red,		
Clawbars,			Lantern Globes,		
Cross-cut Saws,			" Tubes,		
Cold Chisels,			Locks, Chest,		
Clamps,			" Padlocks,		
Cement,	Bags,		Lumber, Oak,	Feet,	
Castings,	lbs.		" Pine,	"	
Chisels,			Marking Pots,		
Crossing Signs,			" Brushes,		
" " Posts,			Mile Posts,		
" Plank,			Monkey Wrenches,		
Chalk,			Nails,	lbs.	
Car Links,			Nut Locks,	Number,	
" Pins,					
Dippers,					
Drills,					
Draw Knives,					
Dump Cars,					
Fish Plates,	No.				
Flags, White,					
" Red,					
Frogs, Crossing,					

(Continued on next page.)

SECTION FOREMAN'S REPORT OF MATERIAL AND
TOOLS ON HAND AT END OF MONTH.

(Write the names of articles when they are not printed.)

ARTICLES.		QUANTITY OF		ARTICLES.		QUANTITY OF			
		New material and new tools on hand not in use.	Old material and scrap on hand not in use.			New material and new tools on hand not in use.	Old material and scrap on hand not in use.		
Nuts,	lbs.			Sledge Handles,					
Nippers,				Spike Hammers,					
				" Handles,					
Oil, Car,	Gallons,			Spades,					
" Kero.	"			Scythes,					
" Signal,	"			" Snaths,					
" Cans,	"			Scrapers,					
Pinch Bars,				Scoops,	Dozen.				
Pike Poles,				Screws,					
Paint Brushes,				Tape Lines,					
" lots,				Tongs,					
Pumps,				Timber Trucks,					
Posts, Cedar,	Number,			Torpedoes,					
" Oak,	"			Tamping Bars					
Picks,				Tool Boxes,					
Pick Handles,				Vises,					
Post Augers,				Velocipedes,					
Punches,				Washers,	lbs.				
Piles,	Feet,			Water Kegs,					
Pitchforks,				" Pails,					
Raising Bars,				Waste,	lbs.				
Rail Forks,				Wheelbarrows,					
Rakes,				Wrenches,					
Ratchet Drills,				Wicking,					
Rivets,	lbs.			Wire,					
Rollers,	lbs.			Whetstones,					
Rope,	lbs.								
Screens,				TIES. (on hand not in use.)			New.	Worn Out.	
Straining Hammers,				Oak,					
Shears,				Cedar,					
Squares,				Hemlock,					
stone,	yds.			Ash,					
" Hammers,				Culls,					
Switches, Single,				Switch,					
" Double,				Bridge,					
" Split,				Head Blocks,					
Switch Frames,									
" Rods,				RAILS. (on hand not in use.)			New.	Usable.	Scrap.
" Stands,				Steel,	lb., Feet.				
" Lamps,				" " "	lb., "				
" Plates,				" " "	lb., "				
" Houses,				" " "	lb., "				
" Ropes,				" " "	lb., "				
Spikes, K. R.,	lbs.			Iron,	lb., "				
" Boat,	"			" " "	lb., "				
" Cut,	"			" " "	lb., "				
Shovels,				" " "	lb., "				
Straightening Machines,				" " "	lb., "				
Spot Boards,				" " "	lb., "				
Sledges,				" " "	lb., "				

APPENDIX E.

FORM 1.
(Size 9½ x 14 in.)

GENERAL TIME BOOK of Men Employed at

in Month of 18

Eyelet.

No.	Name.	How Employed.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Detained Hours Worked.	Total Hours Worked.	Rate.	Detained Amount.	Total Wages.	Remarks.
1	Doe, John	Machinist.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	240	.20	3.80	\$48.00	
		Pass. Eng. No. 3.	10	10	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	388	385	7.00	7.00			
		Fr't.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	225	222	5.00	5.00			
		Pass. Cars.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	19	37	3.60	3.60			
		Fr't. Cars.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	222	222	4.40	4.40			
		Pass. Eng. No. 7.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	11	11	2.20	2.20			
		Fr't.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	18	18	2.60	2.60			

Eyelet.

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APPENDIX E.

[NOTE.—Loose sheets of the form and style of the above should be furnished to all who are required to keep the time of men. The object of furnishing the blank in loose sheets instead of in book form is to enable the person who writes it up to take an impression copy before it leaves his hands; thus the clerical work that would otherwise be required in making a written copy is avoided, the impression answering for local uses, while the original copy is forwarded with the pay roll.

It will be noticed that the sheets are eyeleted; these eyelets are to enable the person making the return to collect the sheets together and bind them in book form before they leave his hands. The covers for the books are similarly eyeleted. Tape and covers should be furnished with the blanks.

Where checks are used in taking time, the marks noted above (+) will not, of course, be entered. See rules and regulations governing "manner of taking time."

Where the blotter is used in taking quarter time, the marks will be noted on this sheet only when the employe commences work in the morning and afternoon. The number of hours worked will be entered hereon in such cases.]

Eyelet

FORM 2.
(Size 5½ x 8½ in.)

TRACK TIME (AND DISTRIBUTION) BOOK.

Work performed in the month of 18, by _____

Occupation _____ Rate, \$ _____ per _____

"REPAIRS OF ROADWAY AND TRACK"		Remarks.	GRAND TOTAL \$
Gen'l repairs of track.	Gen'l repairs of track.		
Laying ties.			
Laying rails.			
Ditching.			
Freshet repairs.			
Track watchmen necessitated by repairs.			
Ballasting.			
Clearing track of snow and cutting weeds and grass.			
Repairing fences, road crossings and signs.			
Flagmen at crossings.			
Bridge and track watchmen.			
Repairing bridges, etc.			
Bridges and Culverts.			
Repairing cat-tie guards.			
Reloading cars, getting cars on track, etc.			
"Laborers."			
Station labor.			
"Maintaining Telegraph."			
Telegraph repairing.			
"Construction of sidings."			

DATE. _____ Total time worked.

13
to
on
no
and
7
6
5
4
3
2
1

Total number of hrs. \$
Total amt. of wages, \$

FORM 4.
(Size 10 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in.)
ENGINEERS' AND FIREMEN'S TIME BOOK (FOR RUNNING TIME).

.....*Engineer. Month of*....., 18.....
(Number of miles run must be based on distances as shown by Time Tables.)

Eyelet. ○

Name of Fireman.	Date.	Miscellaneous time.	Running time.	Engine No.	From.	To.	MILES RUN ON			Remarks.
							Pass'ng.	Fre'ht.	Gravel.	
	18									
	17									
	16									
	15									
	14									
	13									
	12									
	11									
	10									
	9									
	8									
	7									
	6									
	5									
	4									
	3									
	2									
	1									
Totals										

Eyelet. ○

Hours allowed for Road service.....at.....cts., \$.....
 " " Switching....."....."
 " " "....."....."
 " " "....."....."
 Total.....hours.
 \$.....

[NOTE.—Loose sheets of the form and style of the above should be furnished to all who are required to make returns of engineers' and firemen's time. The object of furnishing the blank in loose sheets instead of in book form is that would otherwise be required in making a written copy before it leaves his hands; thus, the clerical work the original copy goes to headquarters.

It will be noticed that the sheets are eyeleted; these eyelets are to enable the timekeeper to collect the sheets together and bind them in book form before they leave his hands. The covers for the books are similarly eyeleted. Tape and covers should be furnished with the blanks.
 This form should also be arranged for keeping the time of firemen.
 This record should be written up daily. The pay roll should be made from this record at the close of the month.]

Eyelet. ○

FORM 5.
(Size 4½ x 7½ in.)

ABSENT SHEET.

Shop, _____ 18

The following employes were not present this _____

No.	No.	No.

Checking Clerk.

FORM 6.
(Size 6x2½ in.)

LATE SLIP.

<p>STUB. 18</p> <p>Occupation</p> <p>Commenced work this date, at.....M.</p>	<p>Shop, 18</p> <p>Occupation</p> <p>Commenced work this day at.....M.</p> <p>..... Foreman.</p>
---	--

FORM 7.
(Size 6x3½ in.)

REPORT OF OVERTIME.

Shop. 18 Foreman. Foreman.

NAMES.	OCCUPATION.	TIME WORKED.		EMPLOYED ON.
		FROM	TO	

(NOTE.—Report of time worked by operatives at other than regular hours or in absence of timekeeper, to be certified to storekeeper.)

FORM 8. LOCOMOTIVE ENGINEER'S TRIP REPORT OF TIME WORKED.
 (TO BE SENT TO TIMEKEEPER AT END OF TRIP.)

Month of 18.....

ENGINE NUMBER..... NAME OF ENGINEER..... NAME OF FIREMAN.....

Time Called For.	DEPARTED.		ARRIVED.	HOURS NOT AS PER TIME TABLE.							OTHER WORKERS.		
	TIME.	FROM.		AT.	THU.	FRI.	SAT.	SUN.	MON.	TUE.	WED.	Work Time.	Other Time.
	DAY..... M.....			DAY..... M.....									
	DAY..... M.....			DAY..... M.....									
	DAY..... M.....			DAY..... M.....									

REMARKS.....

NOTE.—When overtime or delayed time is claimed, the Timekeeper will send this report to the Superintendent for verification.

[NOTE.—This is one of two forms, namely:
 Locomotive Engineer's trip report of time worked.
 Locomotive Engineer's daily record of time worked.
 Under the multiplex system, of accounts these forms are written simultaneously. On the back of above forms provision is made for entering particulars of hours work.]

FORM 9.
(Size 8 1/4 x 14 in.)

REPORT OF MILES RUN in the Month of _____ 18

By _____ *Engineer.*

Name of Fireman.	Date.	Engin'rs Time.	Engin'e Number.	From.	To.	MILES RUN ON			Remarks.
						Pass'ngr.	Freight.	Gravel.	
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	and								
	so								
	on								
	to								
	31								
						Total.....			

(NOTE.—This report is filed out by engineers, and should be compared with the time book.)

FORM 11.
(Size 8 $\frac{1}{4}$ x10 $\frac{1}{2}$ in.)

ENGINE-HOUSE REGISTER.

Engine-House, _____ 18__

DEPARTURES. (OR ARRIVALS.)

Number of train.	Number of engine.	Kind of train.	Destination.	Engineer.	Fireman.	Time of departures.

(NOTE.—The page opposite this in the register is the same form as the above, and is used for "Arrivals." This book is useful for reference in keeping the switching time of engineers and firemen.)

FORM 12.
(Size 10 x 3 in.)

CONDUCTOR'S REPORT

OF TIME OF TRAIN CREW FOR DATES NAME

..... Conductor.

NAME OF EMPLOYEE.	TITLE.	NAMES OF STATIONS BETWEEN which he ran.	No. of Train (going East or South, odd numbers)	Date.	No. of miles run.	No. of Train (going East or South, even numbers.)	Date.	No. of miles run.	Rate of Wages.
	Conductor.	----- and -----							
	Brakeman.	-----							
	"	-----							
	"	-----							
	Baggage'n.	-----							

(NOTE.—There must be entered only the numbers of the trains upon which the employe has run.)

FORM 13.
(Size 9½x14 in.)
BLOTTER FOR TAKING QUARTER TIME.

DISTRIBUTION OF TIME OF Men employed at _____ Shop
for week ending _____ 18 _____

NAMES OF EMPLOYEES.	1st,					
	Name of account upon which labor was expended.	2nd,	3rd,	4th,	5th,	6th,
"DOE, JOHN"	5, Locomotive No. 28, 3, Repair's frgt. cars, 2, Repairs pass. cars,	do.	do	do.	do.	do.

(NOTE.—This book is used for taking the time of employes engaged by the day or hour, in shops, storehouses and yards, but not including those engaged in the departments of track, bridges and buildings, for which special forms of time books are provided.)

FORM 14.
(Size 9½x14 in.)

Accounting Officer's Folio _____
Shop, _____
Folio of Distribution Book _____

GENERAL DISTRIBUTION OF MATERIAL BOOK for the Month of _____ 18
Charged to _____

Eyelet. ○					
Eyelet. ○					
Eyelet. ○					

(NOTE.—Loose sheets of the form and style of the above should be furnished to all who are required to make returns of material. The object of furnishing the blank in loose sheets instead of in book form is to enable the person who writes it up to take an impression copy before it leaves his hands; thus the clerical work that would otherwise be required in making a written copy is avoided, the impression answering for local uses, while the original copy goes to headquarters. It will be noticed that the sheets are eyeleted; these eyelets are to enable the person making the return to collect the sheets together and bind them in book form before they leave his hands. The covers for the books are similarly eyeleted. Tape and covers should be furnished with the blanks.)

PAY ROLL.

FORM 15.
(Size 14x8½ in.)

Received from the.....RAILWAY COMPANY, the sums set
opposite our respective names, for Labor for the month of.....189.., and
in full for services of every name or nature for said Company, or Companies owned or controlled
by it, up to the close of the month named.

C	Z	Name.	Occupation.	Time.	Rate.	Amount.	Paid on account.	Amount Due.	Received payment in full.	Witness.

[NOTE.—The Pay Roll for engineers and firemen and trainmen is the same as the above, except that it contains a column for the "number of miles run," inserted after "occupation."]

FORM 16.
(Size 6 $\frac{3}{4}$ x 3 $\frac{3}{4}$ in.)

REQUEST FOR TIME TICKET.

(Not transferable or negotiable or assignable.)

_____ 18_____

To _____ At _____

This is to Certify that.....
 is entitled to a Time Ticket for work performed by him at.....for.....days
 in the month of.....18.....at the rate of.....
 per....., amounting in all to.....Dollars (\$.....)
 less.....Dollars (\$.....)
 to be deducted on account of.....

Kind of work performed.....

This requisition must be presented to the person to whom it is addressed before the time roll is sent in and before the pay roll is made (so that they may be properly marked), otherwise it will not be honored, but should be taken up and destroyed.

.....

FORM 17.

TIME TICKET.

This Certificate is Not Negotiable and is Void unless certified to and countersigned by authorized officials of the Company. When thus authorized and properly endorsed it will be paid (subject to the conditions printed on the back hereof*) by Paymasters and AUTHORIZED Agents of the Company having the necessary funds on hand. It is invalid if not presented and paid within THIRTY days from date hereof. If not delivered to the Payee within thirty days, there should be marked across its face, "CANCELLED—NOT CALLED FOR;" it should then be forwarded forthwith to the Paymaster for cancellation. The amount named herein is subject to any claim against the Payee. This ticket is not good for any sum exceeding \$150.00.

Before paying Tickets, agents and others must carefully study the rules and regulations governing their payment.

No. Station, 189

Certificate of Wages in favor of

for services as at for days in the month

of 189 .. at rate of \$ per amounting in all

to Dollars (\$) 100

From this amount deduct Dollars (\$) 100

on account of

leaving balance due him Dollars (\$) 100

Why this ticket is issued.

Countersigned: { I hereby certify the above to be correct: }

[NOTE—This is one of two forms, namely—Time Ticket—Record of Time Ticket Issued. Under the multiplex system of accounts these forms are written simultaneously.]

*For conditions printed on back of ticket, see next page.

FORM 17—CONTINUED.

[BACK OF TIME TICKET.]

Agreement upon the part of Payee.

This Time Ticket, upon which payment for wages is made, is accepted by me in full payment for services of every name and nature for the _____ Railway Company, or companies owned or controlled by it, up to and including the time specified herein.

It is accepted by me subject to the rules and regulations of the Company governing its issue. I agree not to negotiate it or attempt to collect it through any bank or collection agency, but to present it in person to the paymaster of the company, or such agent as may be authorized to pay it.

It is also understood and agreed to by me, as witnessed by my signature hereto, that in the event I should lose this ticket, or it should otherwise pass out of my hands, and in consequence the amount called for should be paid to a wrong person, I will not hold the Company responsible for the amount.

.....
Signature of Payee, i. e., person to whom this ticket is issued.

Witness:

Title,.....

LETTER OF ADVICE TO PAYMASTER IDENTIFYING EMPLOYEE.

CONDITIONS OF PAYMENT.—This letter is void and of no account unless certified to and countersigned by authorized officials of the Company, and duly endorsed by the person in whose favor it is made. When thus made, the wages it specifies to be due will be paid, if still unpaid (subject to the conditions printed hereon*), by the general cashier or paymaster. It is invalid if not presented and paid within thirty days from the date hereof. The amount named herein is subject to any claim against the payee. This letter is not good for any sum exceeding \$150.00.

TO WHOM THE LETTER IS TO BE PRESENTED.—Before this letter can be honored by the payment of the wages it specifies, it must be compared with the pay roll, and if found correct, and the amount unpaid, the roll must be marked "letter given," and the fact certified hereon in the place provided. If the pay roll is not in the hands of the paymaster, he must refer the bearer to the official of the Company in whose possession it is, who will certify to it. In the event the paymaster or official who certifies to the letter is not in a position to pay it, he will refer the payee to the officer who is.

No..... 189.....
To THE PAYMASTER: This is to Certify that the Bearer,
..... whose signature is endorsed hereon, appears on the
Pay Roll for.....189., No.....Occupation.....
at.....and that there is due him after making all deductions,
.....Dollars. (\$.....100.....)

Why this letter is issued.....
Countersigned: { I hereby certify the above is correct and that no
time ticket has been issued.
.....
.....

[NOTE—This is one of two forms, namely:
Letters of Advice to Paymaster Identifying Employee.
Record of Letter of Advice to Paymaster Identifying Employee.
Under the multiplex system of accounts, these forms are written simultaneously.]
*For conditions of endorsement printed on back of letter, see next page.

I certify that the Pay Roll has been marked "Letter Given."

FORM 18—CONTINUED.

[BACK OF LETTER OF ADVICE.]

Agreement upon the part of Payee.

This letter of advice, upon which payment for wages is made, is accepted by me in full payment for services of every name and nature for the _____ Railway Company, or companies owned or controlled by it, up to and including the time specified herein.

It is accepted by me subject to the rules and regulations of the Company governing its issue. I agree not to negotiate it or attempt to collect it through any bank or collection agency, but to present it in person to the paymaster of the Company, or such agent as may be authorized to pay it.

It is also understood and agreed to by me, as witnessed by my signature hereto, that in the event I should lose this letter, or it should otherwise pass out of my hands, and in consequence the amount called for should be paid to a wrong person, I will not hold the Company responsible for the amount.

Signature of Payee, i. e., person to whom this letter is issued.

Witness : _____

Title : _____

ORDER ON TREASURER—NOT NEGOTIABLE.

The company upon whom this order is drawn will not be responsible for its payment. It is subject to any claim against the maker upon which process of garnishment has been issued and served upon the said railway company. This order must be certified as correct by some well-known and trustworthy person in the employ of the company, who is conversant with the facts and personally acquainted with the signature of the drawer. It will be honored only when drawn for the full amount of the month's pay.

This is to certify that I am personally acquainted with the maker of this order, and am witness to the authenticity of his signature. I know, moreover, that he was employed by the company, as stated.

.....Station,.....18.....

TO THE TREASURER:

Pay to bearer the amount due me for services as.....
at.....on Company's pay roll, for Month of.....18.....

This order will not be paid by the company, unless the amount shall be found due by it to the drawer on the next pay day, and unless said order is presented at the proper time and place for paying the wages of the person issuing it.

I have marked the pay roll, "order given."

} Treasurer.

FORM 20.

(Size 14x8 3/4 in.)

BOND OF INDEMNITY TO BE FILED WITH THE COMPANY IN CASE OF LOST VOUCHERS, TIME TICKETS, CHECKS, DRAFTS AND SIMILAR DOCUMENTS.

KNOW ALL MEN BY THESE PRESENTS, That we, of _____ of _____ Principals, and _____ of _____ as sureties, are held and firmly bound unto the _____ of _____ Railway Company, in the penal sum of _____ Dollars (\$ _____) lawful money of the United States, to be paid to the said _____ Railway Company, its successors and assigns, for which payment well and truly to be made we do bind ourselves, our heirs, executors and administrators, jointly and severally, firmly by these presents. Sealed with our seals, and dated this _____ day of _____ A. D. 18 _____

The conditions of the foregoing obligation are such, that, whereas, on the _____ day of _____ A. D. 18 _____, the said _____ Railway Company, did, by _____ its _____ issue its _____ No. _____ for the sum of _____ Dollars, payable to _____ cents, payable to _____

AND, WHEREAS, it is claimed that said _____ has been lost, stolen or destroyed, and cannot now be produced by said _____ and payment thereof has been stopped,

AND WHEREAS, at the request of said _____ and upon his promise to indemnify and save harmless the said railway company in the premises, and to deliver said _____ when found, to said railway company, to be cancelled, the said railway company has on this _____ day of _____ by _____ its _____ day duplicate _____ for the sum of _____ Dollars and _____ cents, issued a _____ payable to the order of said _____ cents,

Now, therefore, if the above bounden obligors shall well and truly indemnify and save harmless the said _____ Railway Company, its successors and assigns, from and against said original _____ and any and all damages, costs, charges and expenses, and all actions or suits, whether groundless or otherwise, by reason of said original _____ or the loss or destruction thereof, and also deliver or cause to be delivered up the same, when and as soon as the same shall be found, to be cancelled, then this obligation shall be void; otherwise the same shall remain in full force and effect.

Principal will sign here _____ [SEAL.]
Sureties will sign here _____ [SEAL.]
_____ [SEAL.]

FORM 21.
(Size 8½x7 in.)

N. B.—Number of order MUST be given in all cases, and invoice mailed on day of shipment.

INVOICE OF MATERIAL PURCHASED

of ----- at -----
For the following supplies sent to -----
per requisition No. ----- issued by -----
18 ----- Shipped in ----- Car No. -----

ORIGINAL.	
-----------	--

COMBROT

TO STOREKEEPER.—This invoice must be returned, dated and signed, on receipt of material.

Prices examined and found correct.

Received and entered the above ----- 18 ----- }

(NOTE.—Merchants and others from whom goods are purchased should be supplied with this blank. Before receiving for the goods as required above, care must be taken to note, in ink, upon the face of the invoice, any errors or inaccuracies there may be. If the articles called for are of inferior quality, deficient in quantity, or if any attempt is made to deceive the company in reference to them, or if not fully up to the standard required, the facts must be fully and explicitly noted, in ink, upon the face of the invoice.)

FORM 22.
(Size 8½ x 14 in.)

INVOICE OF MATERIAL

Forwarded from _____ for _____
at _____ on account of request number _____ shipped
in _____ car, number _____; chargeable to _____

NOTE.—An invoice is required to accompany or precede all supplies purchased or shipped from any storehouse or other place.

The person to whom the material is consigned must examine it immediately upon its arrival and in the event of error or omission, or in case there is any variation or deficiency either as regards quality or quantity, the subjoined account must be corrected accordingly. As soon as the articles are received, this invoice must be receipted and returned to the office from whence it came.

Date of Shipment.	DESCRIPTION OF ARTICLES.	Quantity.	Price.	Amount.

Received the above this day:

.....18.....

.....Storekeeper.....

.....Storekeeper.....

This is one of three forms, namely:
 Invoice of material transferred.
 Shipping instructions to agent.
 Record of material shipped.

Under the multiplex system of accounts these forms are written simultaneously.

FORM 23.
 (Size 8½x14 in.)
 INSPECTOR'S REPORT OF TIES INSPECTED _____ 18
 at _____ for _____ of _____
 Inspector.

KIND OF TIES AND NUMBER.	LOCATION.		
	Place.	Side of track.	Distance from track.
No. of..... Wood Ties.....			
"..... ".....			
"..... ".....			
"..... ".....			
"..... Call.....			
"..... ".....			

Remarks _____

FORM 24.
(Size 10 $\frac{3}{4}$ x 11 $\frac{1}{2}$ in.)

RAILS ON HAND, on _____ 18 ____ .
BELONGING TO OPERATING DEPARTMENT.

	Number of Lineal feet.	NUMBER OF TONS OF EACH CLASS OF METAL.										Miscellaneous.		
		Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.		Per Yard.	
New Steel Rails,														
Useable "														
Scrap "														
New Iron Rails,														
Useable "														
Scrap "														

BELONGING TO CONSTRUCTION DEPARTMENT.

	Number of Lineal feet.	NUMBER OF TONS OF EACH CLASS OF METAL.										Miscellaneous.		
		Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.	Per Yard.		Per Yard.	
New Steel Rails,														
Useable "														
New Iron Rails,														
Useable "														

(NOTE.—This report must be made monthly by superintendents, and must be sent to the accounting officer on or before the 15th of the succeeding month. It must embrace all rails on hand on the last day of the month, including rails at the various rail mills, or going to and coming from such mills. It must also include, as far as possible, other rails en route to the various divisions on the last day of the month. Rails at the general storehouse, or en route thereto on the last day of the month, will be reported by the general storekeeper. Lineal feet of scrap is not required.)

FORM 25.

(Size 14x8½ in.)

MONTHLY REPORT OF CAR BRASSES from _____ Shop,

For the Month of _____ 18_____

Storekeeper. _____

DEBIT.	Patterns of brasses used on		Total.
	passenger cars.	freight cars.	
Balance on hand last report,			
Received from the general storehouse,			
“ “			
“ “			
Total No. accounted for,			
CREDIT.	Patterns of brasses used on		Total.
	passenger cars.	freight cars.	
Old brasses sent to the general storehouse to be exchanged for new,			
New brasses on hand by actual count last day of month,			
Old brasses on hand by actual count last day of month,			
Total No. accounted for,			

(NOTE.—This blank is used for reporting monthly the number of car brasses of each pattern on hand at the different shops and storehouses.)

FORM 20.

DINING CAR CONDUCTOR'S TRIP REPORT.

Dining Car Conductor's report of supplies *on hand from last trip, furnished from*
storehouse, purchased on line of road,
on hand at end of trip, and quantity and
value of supplies consumed.

Requisition for Supplies

For Car.....
From.....
To.....*and return.*
Date.....
Approved:.....
Superintendent Dining Cars.

Supplies Required.	ARTICLES.	On Hand from Last Trip.	Supplied from Storehouse.	Purchased on Trip.	On Hand at End of Trip.	Consumed on Trip.	
						Quantity.	Value.
	Meats.....(In detail.)						
	Poultry.....						
	Game.....						
	Fish and Oysters.....						
	Fruits.....						
	Vegetables.....						
	Butter, Milk, etc.....						
	Bread, Flour, etc.....						
	Miscellaneous.....						
	Wines and Liquors.....						
	Cigars etc.....						

This blank is so arranged that under the multiplex system of accounts, the requisition and a portion of the report is written simultaneously, thus saving the clerical work of rewriting, and insuring absolute accuracy and conformity between the different documents.

The above blank and the one on following page are bound together, forming a complete report of the business of each trip.

FORM 26—CONTINUED.

DINING CAR CONDUCTOR'S TRIP REPORT—Continued.

DINING CAR CONDUCTOR'S INVENTORY OF EQUIPMENT.

ARTICLES.	On Hand from Last Trip	Supplied at Store House.	On Hand at End of Trip.	BROKEN ON TRIP.	
				Quantity	Value.
Chinaware... (In detail)					
Silverware... "					
Glassware ... "					
Kitchen and Pantry Equipment, (In detail)					
Miscellaneous Equip- ment, (In detail)					

SUMMARY OF TRIP.

SUPPLIES CONSUMED.	VALUE.		
Meats			
Poultry			
Game			
Fish and Oysters			
Fruits			
Vegetables			
Butter, Eggs, Etc.....			
Bread, Flour, Etc.....			
Miscellaneous			
Wines and Liquors			
Cigars, Etc.....			
Breakages			
Total.....			
RECEIPTS.	AMOUNT.		
For Wines and Liquors.....			
" Cigars.....			
..... Meals served at.....			
..... Trainmen served at			
..... Lunches served at.....			
Total.....			

REMARKS.

Conductor.

FORM 27.
(Size 8x10 in.)

MONTHLY RETURN OF SCRAP ON HAND AT _____ Storehouse,

18__

TONS.	SHOP, BRIDGE AND BUILDING SCRAP. WROUGHT IRON.	TONS.	TRACK SCRAP. IRON.
	No. 1 Wrought. Boiler. Tank. Turnings, Axle, " " Groovey. " " Dry. " " Mixed country.		Old Rails, Angle Bars and Plain Splices, Bolts, Nuts, Spikes, &c, Frog Plates.
	Old Axles, " " Pipes, " " Bumpers, Light sheet (steel and iron mixed)		Old Rails, under 3 feet. " " 3 feet to 8 feet. " " 8 feet and over. Frog and Guard Rails, Point Chedings, heavy.
	Old Wheels, No. 1 Cast. Borings.		
	Old Tires, Flat Spring, Heavy Coil (Volts included), Tool. Boiler and Fire Box. " " Shell, Turnings (clean). Old Files.		MISCELLANEOUS, Rail Clippings, mixed iron and steel, " " Spacers, " " " " " " Punchings, " " " " Brass Castings, " " Borings, " " Sheet and Turnings, " " Rubber Springs, " " Rope, " " Haggling, " " Leather.

(NOTE.—This return is made by storekeepers and is sent to the general storehouse. These returns will afterward be forwarded to the manager.)

FORM 29.
(Size 6½x7 in.)

REPORT OF OLD RAIL DELIVERED TO ROLLING MILLS.

SCRAP RAIL FORWARDED FROM STOREHOUSE

for the month of _____ 18__

To _____

Account of _____ Rolling Mills.

Order No. _____ For _____ Tons.

Date.	Car Initial.	Car No.	GROSS.	TARE.	NET.

Storekeeper. _____

FORM 30.
(Size 6x3 in.)

ORDER TO LOAD MATERIAL.

To _____ Shop. _____ 18

You will please load in Car _____ number _____ on account of

requisition No. _____ page No. _____, material as follows:

Storekeeper

FORM 31.
(Size 8½x14 in.)

Accounting Officer's Folio _____
Folio of Distribution Book _____

Shop,

GENERAL DISTRIBUTION OF LABOR BOOK for the Month of _____ 18

Charged to _____

Eyelet.	Name.	Kind of Service.	Folio time book.	Time worked.	RATE.	Detailed amount.	Total amount.
O							
O							
O							

(NOTE.—Loose sheets of the form and style of the above should be furnished to all who are required to make returns of labor. The object of furnishing the blank in loose sheets instead of in book form is to enable the person who writes it up to take an impression copy before it leaves his hands; thus, the clerical work that would otherwise be required in making a written copy is avoided, the impression answering for local uses while the original copy goes to headquarters. It will be noticed that the sheets are eyeletted; these eyelets are to enable the timekeeper to collect the sheets together and bind them in book form before they leave his hands. The covers for the books are similarly eyeletted. Tape and covers should be furnished with the blanks.)

FORM 32.

(Size 10½x16 in.)

DAILY RECORD OF OIL, WASTE AND TALLOW DELIVERED TO LOCOMOTIVES
(AS PER ORDERS ON FILE).

at _____ during month of _____ 18__

No. of Locomotive.	Quantity of Waste used by Wipers.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total		
		{ <ul style="list-style-type: none"> Pints Engine Oil. " Kerosene Oil. " Signal Oil. " Cylinder Oil. " lbs. Tallow. " Waste. }																																	

(NOTE.—Upon this form the orders for oil, waste and tallow should be written up daily.)

FORM 33.
 (Size 8½x14 in.)
 STATEMENT OF OIL, WASTE AND TALLOW DELIVERED TO LOCOMOTIVES.

At _____ During Month of _____ 18__

LOCOMOTIVE NUMBER.	OIL.					TALLOW.		WASTE.	
	Pints Engine.	Pints Kerosene.	Pints Signal.	Pints Cylinder.	Pints	Total Pints.	No. lbs. Tallow.	Total Pounds.	No. lbs. Waste.
1.									
2.									
3.									
4.									
5.									
6.									
and									
no									
on.									

(Note.—This report is a recapitulation of the "Daily record of oil, waste and tallow delivered to locomotives," Form 32.)

FORM 34.
(Size 8½x14 in.)

REPORT OF COAL RECEIVED AT _____ Station,

during the Month of _____ 18__.

Date received.	WHERE FROM	Car initials.	No. of car.	No. of way-bill.	WEIGHT.	Advanced charges.

.....Agent.

(NOTE.—This report is required to be made by agents at stations where coal is received, no matter whether received from contractors or from some other station.)

FORM 35.
(Size 8x10 in.)

STUB.

Wood inspection report.

No. _____ No. _____ 18 _____

REPORT OF WOOD MEASURED BY _____

for _____

No.
 Date, 18 ..
 For whom, ..
 ..
 Location, ..
 Inspector, ..

REMARKS:

No. of rank.	Length.	Height.	Width.	No. cords hard.	No. cords soft.	LOCATION.		Remarks on condition &c.
						PLACE.	Side of track. Dist. from track.	

Hard Woods—Hard Maple, Oak, Hickory, Ironwood, Beech, and Black
 or Red Birch
 Soft Woods—Soft Maple, Elm, Ash, Walnut, Bass, Tamarack, Hem-
 lock and White Birch.

Inspector. _____

AGENT'S REPORT OF WOOD DISBURSED.

REPORT OF Marked Wood removed by wood trains, or by sawyers, from _____ Station,
in Month of _____ 18____

Agent _____

No. of rank.	The No. of piles or parts of same.	No. of cords.	BY WHOM REMOVED.

(NOTE.—This is in addition to the regular monthly fuel report, and is only required when long wood is removed or sawed.)

FORM 37.
 (Size 13³/₄ x 8¹/₂ in.)

GENERAL FUEL REPORT.

From _____ Station, for Month ending _____ 18__

STATION, Dr.	Cords of Sawed Wood.	Cords of Un-sawed Wood.	Pounds of Coal.	STATION, Cr.	Cords of Sawed Wood.	Cords of Un-sawed Wood.	Pounds of Coal.
To amount on hand per last report, " received during the month, " purchased of.....				By amount taken by locomotives, * " taken for stove fuel on trains, " " used at stations and shops, " " used at subsidiary buildings, " used account of water supply, " shipped to.....			
TOTAL, (Number of cords wood sawed to be added } to sawed and deducted from unsawed wood.) }				TOTAL, CR.			
TOTAL, DR.				BALANCE ON HAND.			

* As per receipts enclosed herewith.

ONE CUT. TWO CUTS.

Sawed during the month, _____ Cords.

(NOTE.—This report must be made by agents at all fuel stations.) _____ Agent.

FORM 38.
(Size $3\frac{1}{4} \times 1\frac{1}{2}$ in.)

ENGINE FUEL TICKET.

Form of ticket to be delivered to agents at fuel stations by engineers for all fuel furnished for use on locomotives.

..... <i>R'y Co.</i>	Half Ton.
ENGINE No.	Half Ton of Coal.
480.	Half Ton.

(NOTE.—Tickets should be supplied engines for eighths, quarters and half cords wood, and for coal for half tons and whole tons.)

FORM 40.
(Size 3½x8 in.)

RECEIPT FOR FEED FURNISHED STOCK YARDS.

Approved for Payment.	Foreman.
Received of.....	Station,.....18.....
in full for.....	Agent,
delivered at.....	Stock Yards by.....
.....	Dollars (\$.....)

NOTE.—This receipt, when approved by the foreman of the stock yards and received by the person furnishing the feed, should be retained by the agent, as cash, until he receives a voucher to cover the same.

RECORD OF PAYMENT FOR FEED FURNISHED STOCK YARDS.

Payment made by.....	Station,.....18.....
in full for.....	Agent
delivered at.....	Stock Yards by.....
.....	Dollars (\$.....)

[NOTE.—This record will be retained by the foreman of the stock yards. Give quantities and prices.]

FORM 41.
(Size 8½x14 in.)

MONTHLY REPORT OF SUPPLIES RECEIVED AND EXPENSES INCURRED

in connection with the operations of the Stock Yards at _____
for the month of _____, 18__

DATE.	NAME.	WHAT FOR.	QUANTITY.	PRICE.	AMOUNT.

REPORT OF QUANTITY OF FEED ON HAND ON THE LAST DAY OF THE MONTH.

	DESCRIPTION.	QUANTITY.	PRICE.	VALUE.
	Hay, Corn, Oats,	lba. bu. bu.		
	Total,			

FORM 42.

(Size 8½x13½ in.)

RECORD OF MONEYS COLLECTED at _____
 Stock Yards, Month of _____ 18____

DATE.	From whom collected.	AMOUNT.	How disposed of.	Signature of person receiving the money.

FORM 44.

Department No......
 BILL AGAINST INDIVIDUALS, FIRMS AND CORPORATIONS. ("VARIOUS PERSONS' BILL.")

TO.....RAILWAY CO. DR.

18

	<i>For</i>	
	<i>Auditor's No.</i>	

I hereby certify that the above account is correct.....*Auditor.*
Examined and Entered.....
Certified to.....
Approved.....
Approved.....*Auditor of Expenditures.*

This is one of four forms, namely:
 Various Persons' Bill.
 Duplicate Statement of Account.
 Triplicate Statement of Account.
 Record of Various Persons' Bill.
 Under the multiplex system of accounts, these forms are written simultaneously.

FORM 45.
(Size 11x16 $\frac{1}{4}$ in.)

MONTHLY STATEMENT, VARIOUS PERSONS.

Charges against individual's and corporations for labor performed, material furnished, and on other accounts for the Month _____ 18____, at _____

Date charge was incurred.	NAME AND ADDRESS.	DETAILED DESCRIPTION OF THE CHARGE.	ITEMS.	Grand total.	REMARKS.

Labor and material should be returned in separate amounts.
[NOTE.—This report should be made by storekeepers on the last day of the month, and should give details of all material sold to or work performed for outside parties.]

FORM 46.
(Size 8½x7 in.)

VOUCHER.

To _____ Railway Company, Dr.,

_____ of _____

Requisition No. _____

18 _____

For _____

Charge to _____

Audit No. _____

Examined
and
entered. }

Approved: _____

Received _____ 18 _____, of the _____

Railway Company, the sum of _____

_____ Dollars, (\$ _____)

100 _____

I hereby certify that this account is correct.

FORM 47.
659 Revised.

REPORT OF CONSTRUCTION WORK, including Rebuilding, Improvements and Enlargements, commenced in month of.....18.....
On.....Division.

NOTE—When a bridge, culvert, building, dock, wharf, stock yard or other structure is being rebuilt, improved, or enlarged, or when expenditures are to be made on new work of any description, this report must be carefully filled out as per rules printed on the back of this blank. This report must be forwarded to the accounting officer as soon as the information required can be obtained.

Location and Description of Old Structure.	Cost of Old Structure.	Description of New Structure and Location of New Work.	Estimated Cost of New Structure or Work.	Probable date when new structure or work will be completed.

FORM 48.

REPORT OF TRAVELING AUDITOR—(CONFIDENTIAL.)

1. Shop..... 18..
2. Examination made this day by..... Traveling Auditor.
3. (This report is not only intended as a record of the examination, but it also is intended as a reminder to Traveling Auditors of the salient points to be investigated by them at each storehouse. It must, if practicable, be made before leaving the storehouse. In those cases where, for any reason, answers are unfavorable to the storekeeper, or to the practices indulged in at the storehouse, the replies should be noted in red ink.)

4. Name of Storekeeper and Assistants.	Nature of Duties	Age.	Married or Single	Date of Appointment.	Age in Service of Company.	Salary.

5. Has each employe in storekeeper's office filled out the usual form and agreement, and is it on file in the office of the accounting officer? If not, please have it done forthwith.
6. Is there a telegraph station in storekeeper's office?
7. Does the operator assist the storekeeper?
8. Is there any way to reduce the expense of handling material, or accounting at this shop?
- 8½. Can the storekeeper's force be reduced in any way?
- 8¾. Are salaries paid by him too high?
9. Do the storekeeper and his assistants keep the accounts in a systematic and neat manner?
10. Is the office and storehouse kept clean and orderly?
11. Does the storekeeper rigidly enforce the rules in regard to roll call and quarter time? If not, in what particular does he deviate?
12. What is the custom when men are not on hand at roll call or cannot be found at quarter time?
13. How often is the quarter time book posted to the time book?
14. What is the practice in keeping the time of men employed at night, on holidays, and at other times when the time-keeper is absent?
15. What is the practice in keeping account of over-time?
16. On what basis is over-time allowed?
17. Does the storekeeper keep an account of the working hours that each employe is absent, in order to verify his time books?
18. Are time books and distribution books opened up before the commencement of the month?
19. Are skeleton pay rolls made before the end of the month?
20. Is the name of employe, kind of service, folio of time book and rate, posted to the several accounts on the distribution book as fast as they appear on the time books?

FORM 48—CONTINUED.

21. Is the engineers' and firemen's time book written up from daily trip slips? If so, does the storekeeper compare this with daily reports from train dispatcher, roundhouse register and monthly return of the engineer?
22. Does the storekeeper receive a proper order for material and fuel disbursed by him?
23. Is the material arranged in the storeroom systematically, with a view to convenience in handling, and to facilitate the making of monthly requisitions and yearly inventory?
24. Are stock books properly written up?
25. Does the storekeeper keep a record of all statements required of him, showing date when due, and date sent forward?
26. Does he keep a record of his receipts and disbursements, so as to enable him to form a close estimate as to how his inventory will compare with his book account at the general office? If so, what was his balance last day of.....18 ...?
27. Does storekeeper have a price list and are corrections made in same as prices change?
28. Is the storekeeper economical in the use of stationery, and is his supply kept clean and in good order?
29. Are all facilities taken advantage of in the storage of fuel, to protect it from the weather?
30. What precautions are taken to prevent coal and wood from being stolen or wasted?
31. Is there any possibility of coal or wood being taken by engineers or others without a ticket being given for the amount supplied?
32. What precautions are used to guard against fire?
33. Are all changes in the "Handbook of Expenditures" pasted in their proper place in each copy of same in the office?
34. Does the storekeeper keep a "Circulars Received Book" and is it kept posted up?
35. Are all orders, time tickets and other records of the office, filed away systematically and kept in a safe place convenient for future reference?
36. Is there any accumulation of obsolete material or overstock of any particular article or kind of material at this storehouse?
37. Is scrap carefully picked up and disposed of in the proper manner?
38. Does the storekeeper keep a record book, showing the daily accumulation of scrap and the source thereof, so that at the end of the month the proper accounts may receive credit?
39. Are requisitions on General Storekeeper promptly filled?
40. Is he careful to see that all material received is according to requisition and that it checks with the invoice?
41. Is he careful to examine each article as to quality?
42. Does he promptly notify the forwarding storekeeper in case he discovers errors in quantity, quality or price of material received?
43. Does he carefully inspect lumber received directly from dealers, rejecting such as is not up to specifications, and deducting same from the invoices therefor?
44. Is the material so arranged in the yard and outhouses as to protect same from weather and so that any abstraction therefrom would come to the storekeeper's notice?
45. Are the rules in regard to the return of old tools, brasses, implements, utensils, etc., when new ones are supplied, enforced at this shop?
46. Are invoices distinctly copied in the tissue record book of material received?
47. Is every possible means employed to guard against leakage, evaporation and loss of oils?
48. Does the storekeeper have the custody of the tools used at this shop when not in use?
49. If not, what precautions are taken to prevent them being stolen or lost?
50. Are there any old books or records no longer of use at this shop?
51. What precaution does the storekeeper take in regard to the proper disbursing of supplies at night?

FORM 48—CONTINUED.

52. Is the distribution of material book written up as far as practicable before the close of the month?
53. Does the storekeeper keep a tissue copy of all pay rolls and statements made by him? Are they legible?
54. Does he keep a record book for articles in course of manufacture, showing the exact amount of labor and material expended on each article manufactured?
55. Has he any small shops subordinate to his, the employes of which appear on his roll? If so, give name of such shop or shops.
56. How often does he receive statements of material used at such shops?
57. Is the time of men employed at such shops properly reported and certified to him?
58. How often are the time books of men employed at sub-shops forwarded to him during the month?
59. Does he understand that no material is to be sold or labor performed for any employe or outside party without orders from an authorized officer of the company?
60. Does he understand that in case any material is sold to or labor performed for any employe or outside party, that the cash must be collected at the time when practicable and forwarded to the treasurer by express without delay?
61. Does he understand that in the event of any irregularities being discovered by him, it is his imperative duty to at once advise the accounting officer?
62. Did it come to your knowledge that there are any unauthorized or irregular practices indulged in at this shop? If so, state them in detail.
63. Did it come to your knowledge that there were any differences between the storekeeper and his assistants and the master mechanic or foreman, that would tend to injure the service? If so, state the facts.
64. Is the storekeeper intelligent, energetic, attentive to his duties and alive to the necessity of constant watchfulness?
65. Is his staff composed of honest, faithful and capable men, fitted for the positions they occupy?
66. Are the storekeeper and his assistants well versed in and do they practice the rules contained in the "Handbook of Expenditures"?
67. Did you give the storekeeper full and minute instructions in every case wherein as shown by the foregoing, you found him negligent and in fault?
68. What are the office hours?

GENERAL REPORT.

- 69.
70. *(This report must be concise and to the point.)*
71. (In the foregoing detailed report all facts should be stated exactly as they are. In the general report such facts as may be judged necessary to a full and complete knowledge of the storekeeper's character and record and to a general understanding of the state of affairs at the storehouse; also such observations as may be useful for reference or as a guide to future examinations, should be given.)

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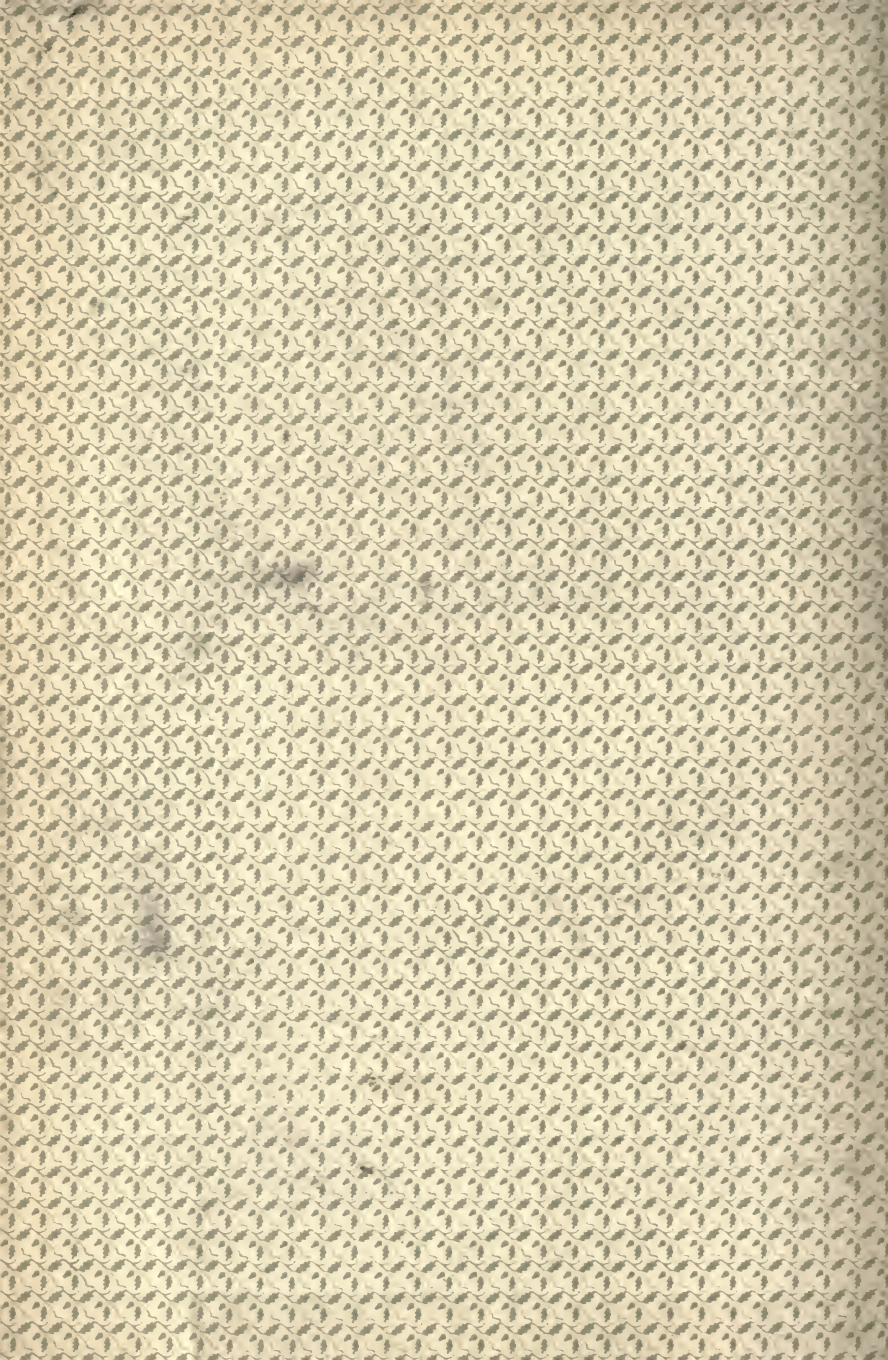
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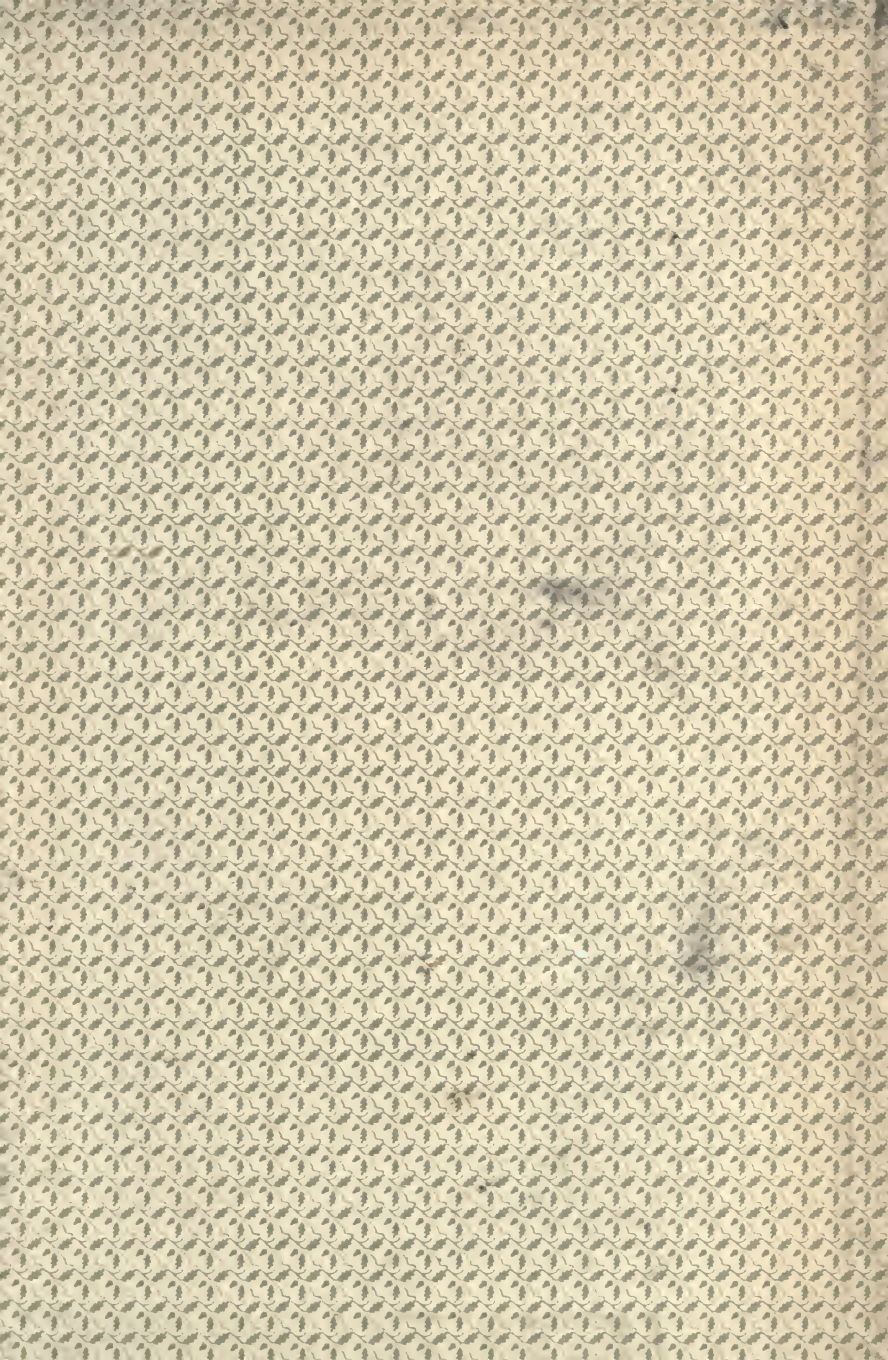
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