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VOL. VII—No. 7

NEW YORK, SEPTEMBER 1, 1889.

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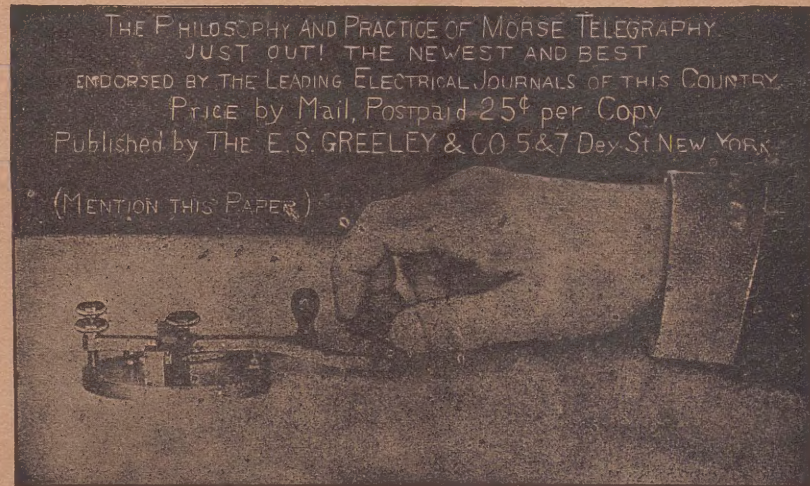
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The truth (referring to the true position of the telegrapher's hand in the act of "sending") exposed by a lightning wink of the instantaneous camera, and permanently fixed for our deliberate inspection by the science of photography, dawns upon the craft intellect accompanied with something of the amazement that startled the artistic world when the elaborate anatomical studies by Rosa Bonheur of the horse in the act of running were delivered over to universal ridicule by the subtleties of the same agent, instantaneous photography.—*The Electrical Review*, March 24, 1888.

The following diagram from the *Philosophy and Practice of Morse Telegraphy* gives an intimation of its scope.

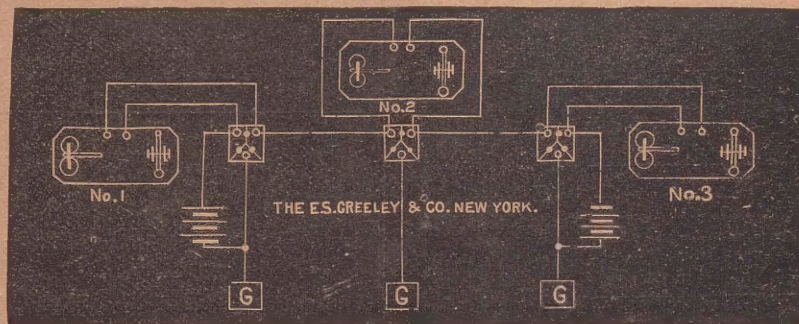


DIAGRAM No. 19.

Diagram No. 19, showing three Home Instruments or other short line combination sets, connected up on a grounded circuit with Excelsior Lightning Arresters at three distinct offices. The Switch Pin in this case, while instruments are in use, must be kept in the "dead hole," which is the hole in the center of the middle plate.

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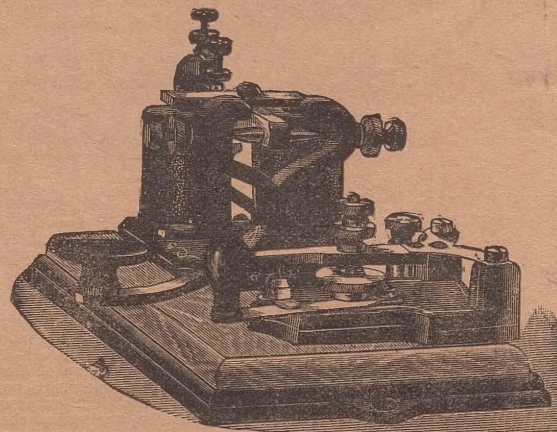
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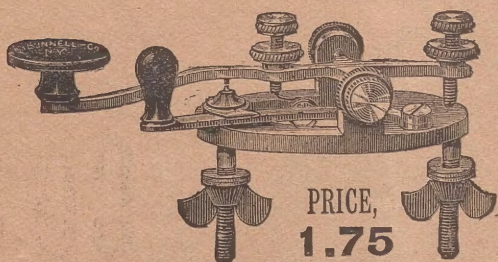
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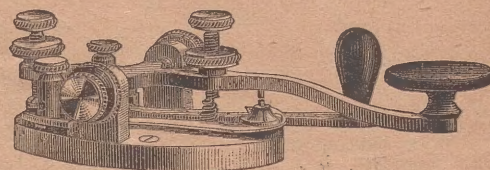
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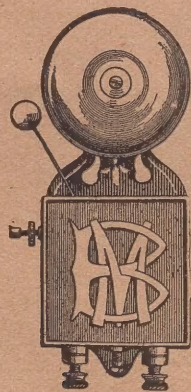
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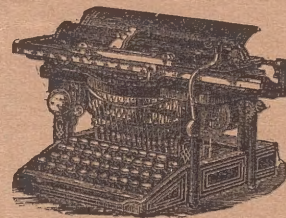
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NEW YORK, SEPTEMBER 1, 1889.

ALL FRANCE IS HIS.

Mr. Thomas A. Edison, the greatest of all inventors, is receiving his true recognition as such, in Paris. His fellow-countrymen are proud of these ovations tendered by the scientists and civil authorities of Europe. Mr. Edison is a fit representative of American brains and energy.

A special decoration from the King of Italy was presented to Mr. Edison and Queen Victoria sent him a congratulatory message by means of the phonograph. Mr. Edison decorated himself when he invented multiplex telegraphy, the "ticker," the electric light, the carbon telephone, the electric motor, the phonograph and divers other important inventions. A soiree will be given at which the elite of the Paris scientific world will assemble to honor him. After "doing" Paris it is said that Mr. Edison will visit England, Italy and other countries where the scientists eagerly await the opportunity to heap further honors on the American inventor.

His trip abroad is for rest and recreation, which he is certainly entitled to. In the last twenty years he has known few holidays and little rest. His business interests are so great that it seems almost impossible for him to leave them for a long period. He will, however, visit the eastern countries if he can possibly spare the time.

Nothing connected with the Paris Exhibition of importance has escaped Mr. Edison's observation, and by the time the world's fair in 1892, in New York, is at hand, the "Wizard" will have completely dwarfed the Eiffel Tower with his achievements.

Of Mr. Edison, *Figaro* says: "Never can a sufficient tribute of honor be paid to him who by telephone transports speech from pole to pole; who by phonograph repeats to our ears and hearts blessed words of dear dead ones, giving them to us with the charm of their intonation. He has merited well of all countries."

There is now a "dynamodermic Institute of Paris," where the professors offer to smooth out wrinkles by "Electrolysis." The electricity revivifies the skin and makes it young again.

Boston dentists use electricity in extracting teeth.

The practical utilization of electric power as a universal motor for train cars of every description will have, in all probability, been made in time for the World's fair in 1892, and it is just possible that the millions of visitors who will view the work of American brain and brawn, will be transported to and from the show entirely by the mysterious agency which is developing new uses and seeking new channels day by day. If the past be taken as a criterion for the future in electrical progress, steam will be no longer a factor as a force. The railways of the future, and possibly within the brief interval between now and 1892, will be operated by the strange power that has taken its place at the very head of all forces known to man. Locomotives may be supplanted by the noiseless power. Instead of the throttle we shall have the tiny push-button. Instead of the hissing steam valves, a silent engine that will consume no fuel and fly with a swiftness that shall rival the flight of the bird.

The approaching maritime conference which will be held in New York city in the near future has developed a most enthusiastic interest among the community of seafaring men, and the circulars lately issued by the Hydrographic Office, inviting the co-operation of all interested, have resulted in an immense number of replies and suggestions, containing more or less valuable and original matter. The subjects particularly dwelt upon are very naturally the very vital ones of fog signals, ocean lanes, speed and helm signals. The Morse characters are suggested to indicate the speed and direction of vessels, the characters to be sounded by bell on sailing craft and by whistles on steamers. It seems probable that measures will be taken for the universal adoption of a code of Morse signals.

There is reason to believe in the carrying out of the project now before the Dominion Government for laying a new cable in the Atlantic. If laid, it will be the shortest ocean cable line between Europe and America, or, in other words, will be less than two thousand miles in length. The project is strongly supported by the press in all the provinces of the new Dominion, and it is favored by several of the leaders of the Dominion Government. The cable can be laid at a cost of \$1,700,000, and there appears to be no difficulty in procuring the capital required.

The Long Distance Telephone Company has completed an arrangement with the Chicago Telephone Company whereby the former's metallic circuit is to be used by the subscribers of the latter company to points with which the former has connection.

Ten men, with drills operated by electricity, can take out as much ore and tunnel as far as 100 men with picks, shovels and blasting material, besides which the buildings can be lighted and a great saving on insurance and oil made thereby.

Discussions on the economic size of line wire bring out the fact that the diameter of the wire depends on the price of copper, cost of power, and quantity of current, and is entirely independent of the length of the circuit.

The Danish Government is moving actively in the question of electrical communication with light vessels, and has in many cases established electrical connection with isolated lighthouses and life-saving stations.

"I can't understand all this fuss about using electricity for executions," remarked Judge Lynch, of Kansas, reflectively. "Out in our section we have used the telegraph pole for years."—*Life*.

An operator in Charleston, S. C., recently talked through a telephone to his brother in Omaha, Neb., 1500 miles distant, with remarkable success.

THE ANNUAL CONVENTION OF EDISON ELECTRIC LIGHT COMPANIES.

The association of Edison Illuminating Companies assembled in annual session at Niagara Falls, August 13th, John I. Beggs, of New York, presiding.

The following members presented their credentials and were admitted to the floor of the open session:

Edison General Electric Co., J. H. Herrick, Vice President; Edison Electric Light Co., E. H. Johnson, President; J. H. McClement, Comptroller; W. J. Jenks and Charles Wirt, Technical Department; United Edison Manufacturing Co., H. Ward Leonard, Gen. Mgr.; Edison Machine Works, Samuel Insull, Gen. Mgr.; Montgomery Waddell, Philip Seubel, James F. Kelly, New York Agency; Edison Lamp Co., John W. Howell, F. Jackson, Charles A. Gundaker; Edison Laboratory, A. E. Kennelly, Wilson S. Howell; John I. Beggs, V. P., and Gen. Mgr. Edison Electric Illuminating Co., of New York; A. L. Smith, Prest. Edison Electric Light Co., of Appleton, Wis.; A. F. Walker, Supt. Edison Electric Light Co., Grand Rapids, Mich.; Maurice Hooper, Supt. Edison Electric Light Co., West Chester, Pa.; W. M. Brock, Gen. Mgr. E. E. Ill. Co., Paterson, N. J.; S. R. Mumford, Director and Treas. E. E. L. Co., Detroit, Mich.; Hoyt Post, Director and Atty., and C. P. Gilbert, Sec. and Mgr., also of the Detroit Co.; W. T. M. Mottram, State Agt., Dallas, Texas; A. F. Dow, Treas. E. E. Ill. Co., Fall River, Mass.; Thos. P. Merritt, Prest. E. E. Ill. Co., Reading, Pa.; C. L. Edgar, Gen. Supt. E. E. Ill. Co., Boston, Mass.; Leigh Carroll, Prest. and Gen. Mgr. E. E. Ill. Co., Birmingham, Ala.; Geo. H. Finn, Sec. and Treas. E. E. L. and P. Co., St. Paul, Minn.; E. L. Bemiss, Gen. Mgr. E. E. Ill. Co., New Orleans, La.; E. R. Weeks, Gen. Mgr. E. E. L. and P. Co., Kansas City, Mo.; Lewis Lusk, Prest. and Treas. E. E. L. Co., Antigo, Wis.; John R. Markle, Prest. Markle Engineering Co., Detroit, Mich.; Geo. W. Palmer, Jr., Mgr. McKeesport Light Co., McKeesport Pa.; J. Edwin Giles, Supt. E. E. Ill. Co., Hazleton, Pa.; W. F. Wollin, Supt. E. E. Ill. Co., York, Pa.; C. J. Field, Gen. Mgr. E. E. Ill. Co., Brooklyn, N. Y.; Chris. Wustenfeld, Mgr. E. E. L. Co., Elgin, Ill.; J. B. Skehan, Treas. E. E. Ill. Co., N. Y. City; H. L. Brewster, Treas. E. E. Ill. Co., Rochester, N. Y.; J. L. Jamieson, Sec. and Treas. E. L. and P. Co., Mt. Holly, N. J.; L. Stieringer, Edison General Electric Co., New York; W. D. McQuesten, Contractor, New York.

The following were elected as officers for the ensuing year:

President, John I. Beggs, of New York; vice-president, C. P. Gilbert, of Detroit; secretary, W. J. Jenks, of New York; treasurer, Wilson S. Howell, of New Brunswick, N. J.; executive committee, A. L. Smith, Appleton, Wis.; C. L. Edgar, Boston, Mass.; Thos. P. Merritt, Reading, Pa.; E. R. Weeks, Kansas City, Mo.; C. J. Field, Brooklyn, N. Y.; John I. Beggs, New York, *ex officio*.

This is the fourth successive annual election of Mr. Beggs as president.

Mr. E. H. Johnson spoke as follows:

"I think it is perhaps wise just at this moment to make a statement as to why Mr. Herrick is here.

"You are all aware, of course, of the fact that up to the present time the officers of the Edison Electric Light Company have had to create the interests you represent without money of their own, and in fact have gone into the field simply on the merit of what they had to present. They have created this industry in a very wide field as the geographical distribution of your stations plainly indicates—in fact, have established the Edison business on a permanent basis. But it has been recognized during all that time that had the Edison Electric Light Company been organized on a different plan, in fact been organized with capital of its own to be used for the purpose of establish-

ing these industries much greater progress would have been made and we should to-day have five or six hundred representatives here instead of this number. That fact, together with the other equally important one that the company had made all the money that it did secure from the sale of machines and patent appliances, decided the management to consolidate the many interests, thereby enabling them to show that a dividend could be earned, and also to enable them to conduct the business of construction and operation with capital of their own.

"About a year ago we started in for the purpose of bringing about that revolution in the Edison business which is now fully accomplished. The Edison Company is to-day in the position that some of its competitors have been for some time past—namely, standing ready to go into the field to compete for business upon a commercial basis with the sinews of war behind it.

"In the reorganization of the Edison business most of the competent executive officers, engineers and technical men of all descriptions, have been retained. Other men have come in who represent new capital, instilling new blood into the enterprise, and altogether the company is now in a position to deal with the questions of competition created by parties who have appropriated and are using (pending the decisions of the courts) methods of which the genius of Mr. Edison has made us proprietors."

Mr. J. H. Herrick, vice-president of the Edison General Electric Company and president of the United Edison Manufacturing Company, delivered a short address.

Quite a number of papers were submitted to the convention, among them "The Heating of Conductors by Electric Currents," by Prof. A. E. Kennelly; "The Maximum Efficiency of Incandescent Lamps for Central Station Work," by Leigh Carroll, of Birmingham, Ala.; "Prominent Perplexities with Station Management," by Wilson S. Howell; "Fuel Gas," by John R. Markle, of Detroit.

Six sessions of the convention were held.

The executive committee recommended that the session of 1890 be held at Sault Ste. Marie, in Northern Michigan. After some debate it was decided that the vicinity of Minneapolis or St. Paul was preferable, and the exact location was left to the executive committee, who will notify the association in due time.

NATIONAL TELEPHONE EXCHANGE ASSOCIATION.

The 11th meeting of The National Telephone Exchange Association will convene at the West Hotel, Minneapolis, Minn., on September 10th, at 11 a. m. It will probably continue in session during Tuesday and Wednesday, while Thursday will be devoted to sundry entertainments planned by The Northwestern Telephone Exchange Company.

The usual number of papers will be read and discussed.

General Barney announces that the special vestibule train for Minneapolis is now an assured fact.

This train is guaranteed to be the finest ever run out of New York, and will be composed of entirely new cars, with all the latest improvements, lighted by electric lights throughout. The fare will be \$38.50, which includes sleeping berth.

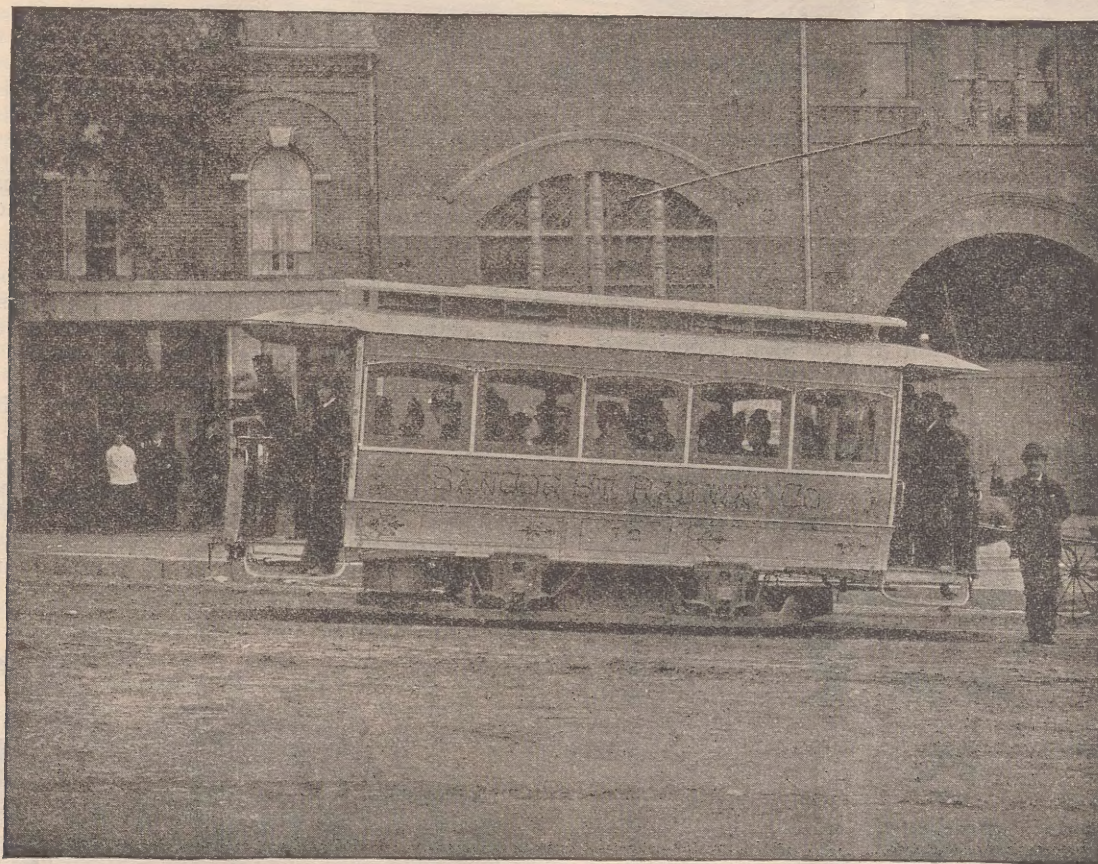
The formal opening of the first long-distance telephone connection in the West took place August 17, when people in Milwaukee and Chicago, a distance of ninety miles, talked with each other. Boston and Buffalo are now connected with the same telephonic system, and the projectors intend to connect Chicago with Buffalo, so that a Bostonian will be able to talk with a Chicagoan though twelve hundred miles distant.

THOMSON-HOUSTON ELECTRIC RAILWAY AT BANGOR, ME.

The accompanying cut illustrates the new electric railway which has been put in at Bangor, Maine. The cut shows the car on Main street hill, opposite the Opera House, a grade of 7 per cent. The road at Bangor is three miles in length, single track with three turnouts, and contains many sharp curves and grades, the most severe of which is a curve of 35 feet radius which occurs on a grade of 7 per cent. There is one stretch of the road, about three-quarters of a mile in length, which has five curves and an average gradient of 5 per cent. No difficulty, however, is experienced here, and the cars climb these grades with a scarcely perceptible diminution of speed. The nature of the overhead work necessitated by these can readily be seen.

in many parts of the city and it is probable that before long the equipment will be greatly increased.

At the London central electrical exhibition recently a highly interesting experiment was made with a current of 10,000 volts potential. One hundred 100-volt lamps, arranged in series, were fully incandesced, affording an ocular demonstration of the presence of the 10,000 volts. A pair of copper wires, with ends facing one another at a distance of half an inch, were then placed in the circuit, and all lamps were extinguished. The primary current being now turned on, the ends of the wires were immediately seen to glow with a brush discharge, which steadily increased in brilliancy until, in about four or five seconds, the circuit was broken by the rupture of the safety fuse. The lights at the point did not attain any great degree of brilliancy and bore no resemblance to an arc.



THOMSON-HOUSTON ELECTRIC RAILWAY, BANGOR, ME.

There are four 16-foot cars, made by the Newburyport, Car Manufacturing Co., which are handsomely finished and equipped with two 15 horse-power Thomson-Houston motors.

Three cars are in operation from 6 a. m. until 11.30 p. m., the fourth being held in reserve for special occasions.

The power plant consists of one 80 horse-power Thomson-Houston generator, with the necessary station fittings, which is driven by a 13x14 Armington & Sims engine running at a speed of 250 revolutions per minute. This is the only tramway which has ever been constructed in Bangor, and it has from the very start given the utmost satisfaction, but one schedule trip having been missed since the day of starting, May 21st. The travel has been very heavy, averaging 1,600 passengers per day, and one day 3,000 were carried by three cars. The success of the road has been such that extensions have been asked for

An electric fire-engine, which can be tapped for service whenever wanted, is the latest invention. The advantages claimed are that it can be started at full speed; that it is much lighter than a steam fire-engine of equal power; that it costs one-third less; that it is noiseless in its operation; makes no smoke or ashes; that it is safer and more economical.

A perpetual electric clock, to be operated from the general office of the Western Union Telegraph Company, will be placed in the Commercial Bank, at Albany.

The electric cars are said to make better time after sundown and before sunrise than during the day.

Brooklyn, N. Y., is to have a new Edison central station of 50,000 lights capacity.

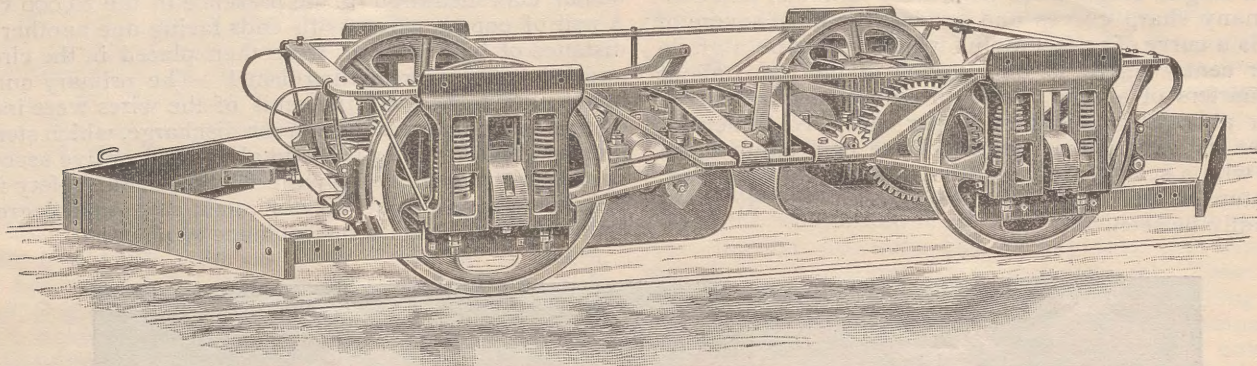
The Thomson electric process of welding applied to steel rails is giving the utmost satisfaction.

JAMES P. McQUAIDE.

James P. McQuaide was born June 24th, 1861, at Indiana, Pa. His parents removed to Philadelphia shortly afterwards, where he received his education. He is the oldest son of the late Major James G. McQuaide, who was one of Pennsylvania's most prominent citizens and one of

Mr. McQuaide is a member of the Electric, Staten Island Athletic and the Yonkers clubs and resides a portion of each year at each club. He is a great admirer of large dogs and owns some very fine English mastiffs.

Mr. McQuaide's policy as an underground man has always been not to press the question, but to wait until his customers were ready for conduits and then try to sell



THOMSON-HOUSTON SYSTEM.—DOUBLE MOTOR TRUCK.

the most skillful political organizers of his time.

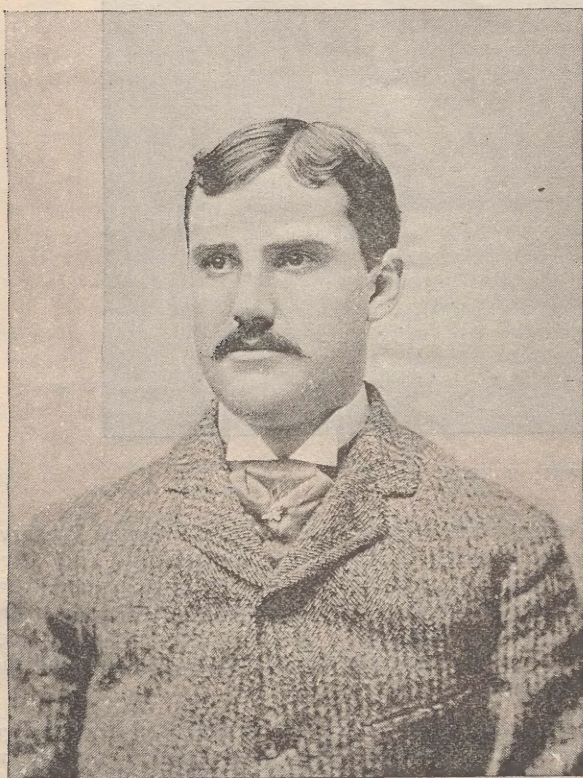
James P. McQuaide, whose picture we produce, is secretary and treasurer of the National Conduit Manufacturing Co., secretary of the New York Safety Electric Light and Power Co., and secretary and treasurer of the New York Pipe Manufacturing Co. He was for seven years connected with the great iron firm of Alan, Wood & Co., of Philadelphia. He organized the two companies of

them. This is why his companies have opposed underground schemes and have never endeavored to secure a franchise in any city.

The death of Prof. Elias Loomis, L.L.D., occurred at New Haven, Conn., on Thursday, the 15th inst. At the time of his death he was Munson Professor of Natural Philosophy and Astronomy at Yale University, a position which he had honorably held since 1860.

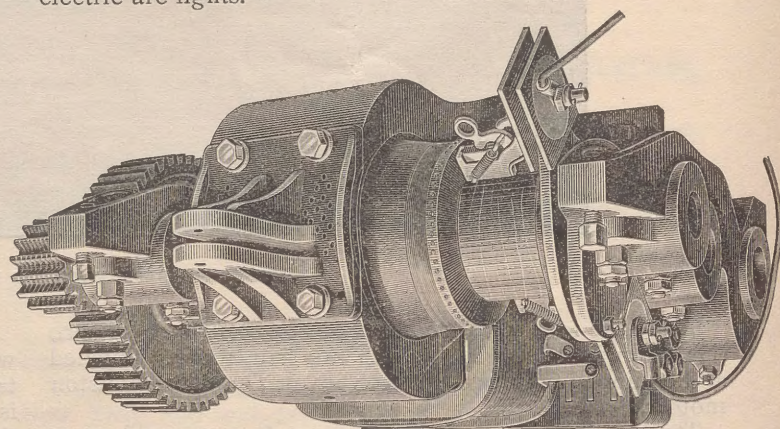
Mr. Oscar Mott, traffic manager of the Direct Cable Co., London, Eng., is at present in New York.

The Solar Carbon and Manufacturing Company, of Pittsburgh, Pa., was represented at National Electric Light Convention at Niagara Falls, by Mr. H. E. Webb, who had the finest display of carbons on exhibition, which were fully explained to all interested. These carbons are used by the many open and closed circuit batteries as well as electric arc lights.



JAMES P. McQUAIDE.

which he is secretary and treasurer. Mr. McQuaide is a great traveler, doing all the traveling for his companies, and takes great pride in telling that the National Conduit Co.'s cement lined pipe is being laid in nearly all the prominent cities in the United States.



THOMSON-HOUSTON SYSTEM.—RAILWAY MOTOR.

A new invention is a device for stamping times and dates by means of electricity. It is the invention of C. A. Randall, and consists of a stamper and a clock, which, by means of a battery, shifts the time of the stamp every minute.

Experiments have demonstrated the practicability of handling large masses of iron in rolling mills by means of electro-magnets suspended from hydraulic cranes.

It cost \$22,370 to repair a recent break in one of the Atlantic cables on the Green Bank. A ship's anchor caused the trouble.

NOTES.

TELEGRAPH CLUB NOTES.—The portrait gallery now contains the faces of Messrs. Holbrook, Superintendents Merrihew, Dorin and Mr. Bates, President Dr. Norvin Green, Vice-President Van Horne, Cyrus W. Field, Walter P. Phillips, Chas. A. Tinker, Thomas A. Edison, and a life-size bust portrait of Professor Morse, presented with the compliments of Gen. Eckert. Hereafter, the governing committee will meet regularly on the 3d and 18th of each month, except when they occur on Sunday, when the meeting will be held on the following day.

The redemption of billiard table bonds begins this month. They will be taken up by lot, the numbers being drawn from a hat. Messrs. Ed. White, Edwin Dean and John B. Sabine were the lucky men for August. Messrs. Park, Powers and Colquhoun have returned the bonds held by them, as a donation to the club. The pool table has earned \$190 up to date, at two cents per cue per game. It has been worked pretty hard, but it is a good one and can stand lots of "extra."

Short wires from the club-house to the Western Union and Postal offices will soon be in working order, the necessary arrangements having been made for stringing them. Elmer Betts, of the Postal, is the tallest man in the club, even overtopping our friend, R. G. Stephenson. He plays a good game of pool, too, never finding it necessary to use the bridge.

Among other coming events, be prepared for our first annual dinner, which will be a banquet in honor of the greatest of all telegraphers, Thomas A. Edison. Many eminent men are expected to be present and speak. Why don't some of our friends of the elevated railroad come and see us? They can assure themselves of a hearty welcome. The same will apply also to electric light and telephone men. We want them all. Come, boys, and pay us a visit. Membership to-day, 225.

With Morton as a guitarist, Richardson, Meyer and Tomkins as pianists, Bloedin as violinist, Ed. Delaney as banjoist, and numerous other musicians, we ought soon to be able to out-concert or (disconcert) Gilmore.

Boys, you are slow with your books for the library. We don't want to hurry you, but we want the books. Come up.

The following gentlemen have been elected honorary members: Thomas A. Edison, James D. Reid, J. W. Mackay, Andrew Carnegie, Geo. J. Gould, Alonzo B. Cornell, W. J. Dealy, Geo. H. Usher, Erastus Wiman, Walter C. Humstone, Henry Bentley, Geo. G. Ward, Walter P. Phillips and Cyrus W. Field.

DETROIT NOTES.—Mr. J. M. Fair, who resigned here the first of the year to accept a position in the superintendent's office of the California Southern Railroad, at Los Angeles, Cal., has returned to Detroit, a change of management having thrown him out. He will probably re-enter the service of the W. U. here.

Other arrivals are Messrs. Bruce, from Michigan Central despatcher's office, city, and Coleman, from St. Paul. Departures—Mr. Kelleher for Rochester, N. Y. Miss Maude Dane is taking a two months' vacation, and will spend a month in Dakota. Miss Jessie Ellis is taking a month's vacation; Mr. John Reid a month, and Mr. Charlie Elster, assistant night chief, a week, Mr. George Edmunds performing the duties of assistant night chief during Mr. Elster's absence. Mr. Fred. Cruice has just returned from a fortnight's vacation. "Doc." Owen, an old-time telegrapher, but for several years out of the business, is subbing for Miss Ellis during her absence. "Bob." Cuppage has returned from a rather extended vacation, and is looking well, considering. Miss Ella Shannon has been transferred for the season to Plank's Hotel, Mackinac Island. Messrs. John Wickes and Paul Dorman,

for several years on the check force, and two very promising young men, have been assigned an operator's duties—Mr. Wickes on the day force and Mr. Dorman on the split trick. We extend our sympathy to Mr. Larry O'Brien, who lost his mother by death recently. "Sol E. Leather Tip Co." for "Sole Leather Tip Co.," and "Plating Co." for "P. Kling & Co.," are two of the latest that got away.

COLUMBIA, S. C., NOTES.—This is one of the coziest and neatest offices in the South, situated on Richardson or Main street, in the heart of business. Our force consists of Col. W. R. Cathcart, manager, assisted by W. B. Swindell, chief; W. W. Chalkley, press; C. C. Boyd and J. M. Hanley, all around men; Tom and Will Reasoner, clerks. This is headquarters for W. H. Weir and G. F. Carroll, repairers, whose total mileage of wire is 3251, covering South Carolina and Columbia and Greenville divisions of the Richmond & Danville R. R. At Charlotte, Columbia & Augusta R. R., Mr. W. L. Williamson is chief despatcher, Louis Forde, second; J. T. McCants, third, assisted by J. C. McElrone, operator. At the Union Depot, Mr. T. W. Berry holds day and H. S. Merritt, night trick. At the Wilmington, Columbia & Augusta R. R. is Mr. Finch. At the Columbia & Greenville freight depot, W. H. Anderson works the key. Peter S. Harrison does general relief work for the various offices in the city when any of the "boys" desire a day of recreation.

RICHMOND, VA., POSTAL NOTES.—The building at the northwest corner of 13th and Main streets, one of the few buildings in the city used for business purposes, having a brown stone front, is occupied by the Postal Telegraph-Cable Company. The rooms are fitted up in the most approved style. The office of Mr. J. O. Jeffries, manager, is elegantly furnished with antique oak furniture and all the necessary appurtenances. A fifty-two wire needle annunciator,—single wires,—and rattler push buttons, are used for the broker call circuits. Four additional metallic circuits and registers are used for general customers. The operating room is nicely furnished, cheerful, well ventilated, and lighted by two arc lights. A battery of 1800 cells is in the basement of the building. The office of the general superintendent, Mr. Joseph W. Kates, is on the second floor and is nicely furnished. The finest desk in the city ornaments the room, and the other appointments are on the same scale. Mr. Kates was in the Confederate Army, where his services as a telegraph man and master of electricity stood some of the most famous of the southern generals in good stead. Manager Jeffries built the first telephone system in Richmond, and started telephone exchanges in most of the southern cities. He plied his profession in Europe for several years, and is an accomplished and skilled electrician. The work of extending the Postal wires south is progressing rapidly. In a few days we will have reached Petersburg, and in about six weeks offices will be opened in the principal cities of North and South Carolina and Georgia. The force consists of Joseph Marshall, day chief, assisted by M. B. Knerr, lately of The United Press. Wm. H. Paynter is in charge at night. Leonard P. Kates, James G. Tyree, and Chesterfield C. Dowdy look after the receiving and delivery departments. Mr. Tyree has taken charge of the Manchester office. Richard H. Conway, recently from Philadelphia, superintends the construction of the call bell circuits.

R. E. Hotze and W. J. Francis have just returned from Fortress Monroe, where they have been enjoying a two weeks' vacation. Geo. T. Harrison, for the past twenty years with the W. U. at this point, is now located in Manchester with the R. & D. R. R.

The recent arrivals are: J. R. Potts, of Tarboro, and Jno. M. Young, of Concord, N. C.

Mr. George M. Myers was a passenger on the City of Paris, which left Liverpool August 24, and which made the best time on record. Mr. Myers thinks it was caused by so many telegraph people being aboard of the steamer.

THE LONDON WESTERN UNION OFFICE.

BY W. E. PEIRCE, OF WASHINGTON, D. C.

Ever since your first issue I have been an interested reader and, I may add, a subscriber of your worthy journal. I always find some item of news of friends scattered from Maine to California—east, west, north and south—news of old associates who have wearied of life's battle and sent their last "30" and laid aside the pen for a long rest. Then, again, I hear of the happy life's partnership consummated by others, and they all start their new life with a prayer from me for a success in their venture. Then it is pleasant to read of their little ones that come to cheer their firesides. Then, again, we are cheered by the example set us of old telegraphers who have risen from the ranks to positions of honor and wealth, not very far from the top of the ladder. With what regret do we read of the fall of some "old-timer" who should have done better. While hearing from north, south, east and west, still there remains one Western Union office that I have not seen reported or even mentioned; it is one of the IMPORTANT offices, where every operator is a first-class man as shown by their fine record, yet of the great number of magnificent operators in the employ of the W. U. Co. there are probably less than fifty who would be considered competent to work in this office even on their lightest wire; and strange to say there are comparatively few W. U. men who have seen the office in their travels. Even the instruments have a strange look and, judging from all appearances, the staff have very little use for a gymnasium, the great, clumsy keys they use in transmitting being entirely sufficient for all physical and, I may add, probably mental exercise also. I think, under the circumstances, a few words about this office might prove entertaining reading, so I will tell you my story. On my vacation last fall, while wandering through the streets of a certain LARGE city, weary and foot-sore, a stranger there, and perhaps a little home-sick, but still interested in many strange sights, happening to glance at a magnificent large building with some fine stores on the ground floor, my eyes met the sign "The Western Union Telegraph Co." and map of the W. U. lines in the window. I forgot all about the "bloated monopoly," and the smile that came to my face at the familiar sign was a broad one. Drawing a letter from my pocket that I had carried between 3,000 and 4,000 miles, and with the name of one of the most popular officials attached, Mr. W. J. Dealy, I felt sure of a welcome, nor was I mistaken. The letter was addressed "Mr. H. C. Robson, superintendent of the W. U. Tel. Co. London," who will undoubtedly be pleasantly remembered by the old American Union force of New York as one of the jovial English cable operators, and who afterward succeeded Mr. W. J. Dealy as superintendent of the W. U. in London. He only needed to know that I was one of the W. U. employes and a friend of Mr. Dealy's, before doing all in his power to make me enjoy life, and I am much indebted to him for many kind acts shown to me while there. I was not long in finding out that over the wires—from Liverpool, Penzance and other places—that Mr. Dealy is remembered very kindly on the "other side," and from the many kind words spoken led me to believe that he is as popular there as in the United States.

Mr. Robson is a typical Briton, jolly and good-natured always, with enterprise that would do credit to an American, and when he sits in his chair he fills it, and it is a large chair, too. He could not repress a little growl at his cramped office accommodations, and the office did really seem built for a smaller man, yet I doubt if the company can get a more enterprising man or a better location for the office. It is in the Royal Exchange Building and within a stone's-throw of the Bank of England and the "financial centre of the universe." The operating depart-

ment is on the second floor and is rather small. The force, whose record Mr. Robson so proudly shows, is first-class and a fine set of men. The instruments they use would set an American operator "wild." On each wire there is in circuit a key weighing between two and three pounds with a round knob with an indentation on the right side to allow the finger to slip down, and you grasp it firmly, pump-handle fashion. There is about a quarter of an inch play between the contact points, back and front contacts, and you have an idea of the English key the P. O. authorities or the English government compel the W. U. to use. Key-sounder, register, relay and small galvanometer all in circuit. I understand even the short loops for city offices have this number of instruments at each end. The circuits are worked on the open circuit plan. The galvanometer is used to detect a weak current from the far end that may not be strong enough to work the relay. The back contact on key throws relay, sounder and galvanometer into circuit. The register is used for the purpose of tracing any errors that may occur in transmission, as most of the messages are received by sound, and the tape is saved for future reference. The continental alphabet, of course, is in use, which is one great reason why the average first-class W. U. operator would be considered a "plug" there.

I regret, exceedingly, the loss of notes giving the names of the employes, who were all so kind to me, but as I shall be with them again, when this is published, I hope to be able to give their names and a few additional impressions that I may pick up among the Scotch and English telegraphers and, perhaps, a little of the French system also.

The last proposition for rapid transit is an electric car that will run two to four hundred miles an hour, or more if necessary, and the tracks will stand the strain. By this motor people in Chicago would be able to reach New York in five hours. A person could leave Cincinnati in the morning, transact business in New York, dine with friends and be back in good bed-time. Things are progressing rapidly, and our country is a great one.

Edison is much struck by the laziness of the Parisian life. "One sees nothing but elaborate loafing," he remarked. "When do they all work? The glory of the Eiffel Tower is only in the magnitude of the conception and the nerve in executing; the rest is only bridge building. We will do 100 per cent better than the Eiffel."

The enterprise of Mr. Fred H. Whipple has resulted in almost every electrical appliance and device being on exhibition at the St. Louis Exposition, of which he is general manager.

The newspapers of the country are just beginning to realize that electricity is making more rapid strides in advancement than any ten industries combined.

The changing of light vibrations in the photoscope into electric vibrations are said to be similar to that which takes place in the microphone in sound waves.

In Spain the native electric light companies have been so unsuccessful that the whole matter of lighting has been turned over to English companies.

Coal cutting machines, run by electricity, are now so far perfected that they can cut between 200 and 300 tons per day.

Professor Blake is experimenting with the view of perfecting a system of telephonic communication at sea.

It is "Count" Edison now—the titular gift being from King Humbert.

Colt's armory in Hartford, Conn., has been leased by the Graphophone Company.

ELECTRIC BLUNDERS.

CURIOUS MISTAKES MADE BY TELEGRAPH OPERATORS.

"People who have occasion to use the wires frequently are sometimes greatly amused, not to say mystified, by the manner in which messages are mutilated in transmission," said the telegrapher.

"A prominent commission merchant in the city of Toledo, Ohio, a short time ago was thunderstruck upon receiving a telegram from a Chicago elevator company which read as follows :

"Offer you two cars minced cats twenty-nine half."

"A repetition of the dispatch made it read thus :

"Offer you two cars mixed oats," etc.

"A bright young operator employed on a press wire in this city some time ago, while receiving an item describing some ceremony in connection with the recent jubilee in Rome, made an amusing error. As received by him the dispatch stated that Cardinal So-and-So turned toward the congregation, extended his hands and said: 'O rats, father.' The editor fell off his chair when his eye fell on the paragraph. A correction was not necessary however, as he understood the sentence was intended for the Latin phrase, 'Orate Fratres,' or, in English, 'Pray, brethren.'"—*Minneapolis Tribune*.

The S. T. Smith Company, 14 Park Place, has issued a catalogue and price list of its typewriter and caligraph supplies. The catalogue contains samples of the various numbers in its line of typewriter and manuscript cover papers, each sample having on it the sizes in which it is furnished and the prices. In the way of supplies other than papers the assortment of this house is most complete. It has full lines of carbon papers, manifold tissue papers, transfer papers and manifold books, while in the way of ribbons it has Smith's indelible, black copying "purple," black copying green, purple, green, blue and red copying, hectograph, lithograph, black record, purple non-copying and hand stamp ribbons. Then there are other lines, such as leatherette binders and manuscript covers, minutes cover blanks, needles, paper fasteners, copy books, ribbon supports, oil cans, eyelet machines, reporters' note books, type cleaners, typewriter oils, and in fact, everything that one using a typewriter needs. This catalogue is bound in leatherette, such as is used for manuscript covers. The catalogue will be sent free on application.

M. Cutler, treasurer of the Elektron Manufacturing Company, says their factory at Jay and Plymouth sts., Brooklyn, N. Y., is fitted with complete machinery and tools for the construction of their well known "Perret Motor," which we illustrated in our last issue. Through the skilled labor of their artisans the finest grade of workmanship is obtained; the value of which is shown by the fact that no motor ever made by them has been returned for repairs. Mr. Perret, the inventor of the motor, is kept busy with experiments for the improvement of motors and of other electrical devices. The business of the company is in a prosperous condition and the factory is taxed to its utmost capacity to build the motors which are now ordered in larger numbers than ever.

The Julien Electric Traction Company's storage-car on the Fourth Avenue Line, New York, recently replaced by one of the newest patterns, ran 7,000 miles and carried nearly 80,000 passengers without costing an additional dollar for repairs or alterations. There are two new cars being added each week to this line, which are said to be the finest of the kind ever built.

It is proposed in France to substitute death by electricity for the guillotine.

A despatch from London announces the death there recently of George S. Ladd, a well-known San Franciscoan and president of the Pacific Bell Telephone Company. Mr. Ladd amassed a fortune through his connection with electrical enterprises, and was a leading member of the Union Club, and, with his wife, was well known in social circles. He began life in San Francisco as a messenger boy in the employ of the Western Union or the company which it succeeded. Later he became an operator, and then division superintendent. When the telephone first became a practical success he organized the Pacific Bell Telephone Company, and has since controlled the telephone system of the Pacific coast. He was also the founder of the American District Telegraph Company, of San Francisco, and was both founder and president of the Sunset Telephone and Telegraph Company, Pacific Electric Storage Company, the Edison Electric Light Company, and Electrical Development Company, and the Gold and Stock Telegraph Company, which operates the stock tickers distributed about San Francisco.

Professor Lodge says if any one were touching a conductor at the time a lightning discharge occurred through it to the earth he would probably receive a severe shock. Professor Preece holds to the contrary, and says he is prepared in the cause of science to try the experiment in his own person or to sit on a barrel of gunpowder with a conductor passing through it.

Woodbridge & Turner, electrical engineers and contractors of New York, have successfully constructed the electrical equipment of the Chattanooga, Tenn., Electric Street railway, also the Marlborough Street railway, and are now equipping roads at Troy, N. Y., and Wilmington, Del.

Fourteen small cells succeeded recently in driving a boat twenty-five feet long at a satisfactory rate for a distance of fifteen miles, and the cells, without being recharged, were used for lighting their complement of incandescent lamps.

The Canadian minister of agriculture heard arguments July 24 in Edison's patent suit, and granted a rehearing of the case in which judgment was rendered against the American inventor, canceling his patents on incandescent lighting.

In London the builders are resorting to the cheap and unsatisfactory plan of placing electric light conductors into the damp wall plaster of a large number of houses without any protection whatsoever.

It is thought that the introduction of extensive electric lighting plants throughout the United Kingdom will in many ways lead to a still greater development of gas consumption.

Next to sunlight the incandescent light gives the best illumination for reading. All notions of the injurious effects of the electric light on the eyes are erroneous.

Wheatstone concluded that electricity traveled at the rate of 288,000 miles per second, and Maxwell considered it to travel at or about the same speed as light.

The Root Electric Gas Lighting Co., 225 Dearborn street, Chicago, has issued a neat pamphlet, copies of which can be had upon application.

Central Asia will soon boast of having the electric light, Russian engineers being busy with installations at Bokhara by order of the emir.

The graphophone is said to have five hundred parts to it. The more delicate parts must agree with the pattern to one-fifth of one-thousandth of an inch.

Edison is just now trying to perfect a plan for taking your picture by wire.

C. P. R. EASTERN DIVISION NOTES.—Mr. Milligan, Bremer, has been on a visit to Winnipeg. D. L. Taylor, agent at Nepigon (Canada's celebrated trout stream) for past five years, has resigned and left for Tacoma. Before his departure, his numerous friends took advantage of so befitting an occasion, to present him with an address and a most handsomely engraved gold watch and chain and a purse of \$50. J. Peterson, White River, has been promoted to Nepigon agency. J. A. Nicol promoted nights to days at White River, with E. T. Jefferies nights.

CHICAGO NOTES.—Secret orders have always had a peculiar attraction for mankind, especially operators, and now the fraternity in Chicago have taken kindly to one that has exhibited remarkable powers of extension, and have established a National Union Council that bids fair to be a credit to that order and the pride of the profession.

Some of the most substantial men in the business are taking an active part in the establishment of this new beneficiary order and promise to keep the ball rolling until all of the good men and true in the ranks of the telegraphic profession are enrolled on the roster of Morse Council 347, National Union.

The initiatory meeting was held August 3d. The officers of the order were elected and installed and invitation committee appointed, and the council then took a recess until Saturday night, August 17th, to allow others to take advantage of the low initiation fee to charter members.

On Saturday, August 17th, it was found that there were still others who had been unable for one reason or another, to attend, and another recess (permissible under the rules) was taken to September 7th, when the last opportunity will be given to join as a charter member. It will be money in the pockets of all the operators who have been holding back on account of the expense to send in their names and \$5 in time for this meeting. It will be their last chance to get in under the low rate for charter members. It is beyond question that being a member of the National Union (Morse Council), while in Chicago, will be the operator's badge of respectability, and also the means of spending many pleasant evenings at social entertainments, etc.

Should one make a tour of the broker offices in this city, he would find several old-timers whose necessary isolation from the large W. U. and Postal forces make them strangers among the ranks. At Jones Kennett's, we find Messrs. Frame, Bishop, Boyle and McLoraine; at McCormick's, C. O. Andrews and W. G. Perrin, recently from the W. U.; at R. W. Dunham & Co., John D. O'Brien; at Counselman's, Harry Sturtevant; at Schwartz & Dupees, Jos. Larue; at Brewster's, Chas. Salter and W. S. Burrows; at Floyd's, Messrs. Rich, Kendall and Walter Stevely; at Winchester's, Jas. E. Brown; at Shaw's, Mrs. Dutton. Mr. Ben. Stevely can be found at McHigh & Co's, and Wm. Teague at Bartels. At Murphy's, there are a number of our friends who are too modest to permit their names to go in print. There are a number of others employed by private firms, whose names will appear later. One of the new arrivals, who the other day was working on 'Change, was told to relieve the operator on the Cleveland wire, which is located in the old B. & O. office. The new man, probably thinking every office on 'Change belonged to the Western Union, walked into the Postal office and relieved the Cleveland operator there, and had sent a few messages before the Postal chief "got on" to him. The new arrival was unceremoniously fired by the irate Postal chief, and their regular man recalled from their main office, where he had gone in haste. Another new man one day last week got badly tangled up with the Race department. He was holding down a "busted" duplex near that bureau when Mr. Altenberger in stentorian tones proceeded to describe a race. "Now they're off at Monmouth," yelled Mr. A. The new man,

who had never heard of a race description, thought it was Chief Stevely speaking to him and telling him he was off. He, therefore, walked out of the room and was never seen again. A long shelf is being put up in the city line department for the accommodation of additional machinery. A new 50 wire section has recently been added to the main switchboard, making a total of eight boards for 400 main lines. This don't include the city line board, which is filled with 80 wires. Add to this the Exchange, broker and newspaper loops, and we have a total of 800 wires entering the office, all underground. Miss Nellie Tobias, of St. Louis, is visiting friends here. She is not looking as well as when she worked here. We congratulate Mr. C. L. Frost on being the happy father of a ten-pound boy. Messrs. S. L. Welp, Jacobs, Napier and Night-chief Barclay are away on vacations. Emil Friend is running the New York division during Mr. Napier's absence. Wire-chief Clevenberg has been on a week's cruise with a yachting party. Charlie Moxam is in Canada, and Ben. O'Donnell in Sioux City on vacations. Phil. Healey is at his desk after a three weeks' illness. Mr. Fahey has returned from a trip to Saratoga. Among recent arrivals are Messrs. Russell, Rockford; Jackson, Kansas City; Wells, Cincinnati; Maddock, Paris, Ill.; Bagley, St. Paul; and Sullivan, Lincoln.

BOSTON NOTES.—Miss Lizzie A. Bradford is enjoying a vacation in Maine; Miss Mollie Applebaugh is acting as substitute. Miss M. A. Willard has gone to the Profile House, N. H., to relieve Miss Palmer, who is seriously ill. The genial Wm. Leith is a recent arrival, and is assigned to the 3d New York quad. George Merrill is on a vacation; Robt. E. Williams substitute. George B. Kirkpatrick has returned from a two weeks' vacation at Old Orchard Beach, Me., much improved in appearance. Wm. A. Kenna has resigned to accept a position in Concord, N. H., his home. Mr. Geo. Watts, from Providence, has been added to the extra list; Mr. Watts was a member of the night force here some five years ago. One night recently, during a storm, the wires in the cupola caught fire and a small-sized panic ensued among the operators. It was shortly extinguished by the night chiefs, the damage being slight. There was no necessity to test the efficacy of a neat little fire alarm which has been in position some time past, but has never been used. "Uncle Squire Holden" is the way the operator out of town got it. The Boston operator sent it Union Square Hotel. A message reading "John died to-morrow, etc.," recently passed through the office. Mr. W. F. Knowlton, night traffic chief, has gone on a vacation for two weeks, relieved by Mr. Nason. Mr. Churchill, of the Providence quad, is now assistant to Mr. Eldredge at the Error Department, vice Mr. J. A. Herrick. Mr. W. A. Kenna has resigned to accept a position with a broker in Concord, N. H., his home. Mr. J. H. Lawson has returned to his position on the night force. Mr. Al. Patterson has resigned to go to a pool room. Sergeant Tom Clark and Corporal Billy Hutchinson, of the Ninth Regiment, returned from camp looking as though they had been treated at the Woburn tanneries. They report having a delightful time. The Misses Hogan, of the city line department, have our deep sympathy in the loss of a sister, who died of consumption, August 19th. Arrivals—Geo. Watts, Providence; Walter Lynch, Waltham, Mass.; R. H. Williams, city; Jas. Dougherty, New York city; N. F. Clifford, from branch office; Jno. Shields, Providence; Fred. Stimpson, Everett, Mass. Miss Maggie Barnes, of the distributing desk, has returned from her vacation. Miss Mamie Barnes is now enjoying hers. Messrs. Cox and Wolever are "doing" the yacht races at Newport, R. I. Martin O'Donnell bought a plug of tobacco last Tuesday, but on Wednesday morning he "hoisted the flag" again, and ate ours.

C. P. R. WESTERN DIVISION NOTES.—Mrs. Allan, wife of Mr. A. Allan, chief train despatcher, Port Arthur, left a few days ago to visit her old home and relatives near Toronto. Miss Allan, his sister, who has been visiting him for past few weeks, has also departed for Victoria, B. C. Mr. Allan will, if possible, take a short holiday during next month. Mr. Marllatt paid a flying visit to Winnipeg last week. A. H. Rombaugh, Parrywood, spent a week at Port Arthur as a witness in a lawsuit last month. A. Allan, telegraph line inspector, Port Arthur, has been ordered to St. Johns, N. B., to take charge of construction work.

Arrivals—J. Jackson, Campbellton, to Kaministiquia. Departures—F. Sheehan, Savanne. Transfers—W. Crawford, Kaministiquia to Savanne; T. R. Sutherland, Selkirk to Rat Portage; A. Dowker, Rat Portage, on vacation.

TORONTO NOTES.—Some weeks ago the Postmaster-General of Canada issued legal proceedings against a party in Montreal and the G. N. W. Telegraph Company, at Hamilton, for infringement of the Postal Act, by the private delivery of letters. In the Montreal case the Postmaster-General secured a conviction, and now the G. N. W. Telegraph Company have secured a withdrawal of proceedings upon their entering into an undertaking to avoid such an infringement in the future, the latter to pay all accrued costs. The G. N. W. Company have opened an office at Foxboro, Ontario.

PHILADELPHIA WESTERN UNION NOTES.—Two marriages and two births. Arrivals—H. P. Meck, Altoona; R. H. Brooks, Pittsburg; J. H. Hurtt, Jr., Chestertown, Md. Resigned—Jno. Harrison.

On the evening of August 24th Mr. Ed. Cornell notified Chief McLoraine to treat the office to cigars in honor of his new son.

An electrical laboratory is being fitted up in the building of the Polytechnic College of Pennsylvania, Seventeenth street, above Cherry, Philadelphia, provided with tools for the training of students in the construction of modern forms of electrical apparatus.

We are glad to note that Miss May Christie, daughter of the late Joseph Christie, the favorite operator, caricaturist and author, is progressing in the city department.

Miss Clara Clime, of the auditing department, was married on the 22d to Mr. Wm. Kershaw, of this city. They were the recipients of many beautiful and costly presents. A week later, Mr. J. C. Strickland was married to a lady resident of Parkesburgh, Pa. On his return to the office, his friends on the night force made him a beautiful gift. Authoritative announcement has been made that A. J. Drexel, the wealthy banker, will build a free industrial institute in this city, large enough to teach at least 2000 persons, male as well as female, and will be patterned after the Cooper Institute, of New York. The instruction will include art, modern languages, stenography, type-writing, telegraphy, and probably electricity. Mr. Chas. Moore, one of Philadelphia's former fine operators, and now connected with the Chicago cable railway system, has been spending a month's vacation at Cape May with his family. Mr. Frank Megonigle was made the happy father of a boy on the 19th. Miss Etta Williamson, better known as "Little Etta," our favorite check girl, made her first visit to old ocean on August 20th. After remaining at Atlantic City several days, she returned to us as brown as a gypsy. Mr. D. A. Coyle has accepted a broker position. Mr. Frank McNichol, late of Baltimore, joins the night force. J. B. Bowers is doing so well in the commission brokerage business, that he relinquishes his night position on the 1st. Superintendent Gill returned from Paris on the "City of Paris," August 28th.

The messenger boys have had a novel way of getting pure and cold drinking water this summer. On the pave-

ment of the main office, there is a "drop-a-cent-in-the-slot" water cooler, and the boys have discovered that if a cent is dropped in the slot, only a small cupful runs from the spigot, but by dropping a button, two cupfuls is produced. It is useless to say the buttons outnumber the pennies from this class of patrons at least.

SARATOGA NOTES.—During the season the following is the staff at the Western Union: Manager, H. L. Waterbury; chief operator, G. H. Schmidt; operators, A. Park, W. R. Calkin, Mr. Talmadge, F. E. Waring, D. C. Donohue and F. L. Fancher. Messrs. Waterbury, Donohue and Fancher go out to the race track daily. Mr. Henry Becker is at the United States hotel; Mrs. Becker at the Grand Union; Miss Jennings at Congress Hall; Miss McEwan, the Clarendon; Miss Erb, the Windsor; and Miss Potter, the Kensington. George B. Fisher, J. B. Van Deusen, J. H. Bennett and Mr. Flitcroft are with brokers. Mr. George B. Strong is manager of the Postal, assisted by F. N. Andrews. Mr. S. P. Anderson looks after the interests of the Associated Press, and John H. Miller does likewise for The United Press.

TO LET—To two gentlemen, large, handsome back parlor with board. Private family. Terms six dollars per week. Near Prospect Park; twenty minutes to bridge by Elevated Railroad. Address S. A. C., AGE office.

DIED.—We regret to announce the death of James E. Palmer, of Brooklyn, N. Y. Mr. Palmer was born in England nearly thirty-eight years ago. He entered the telegraph profession when quite young and came to this country in the year 1874 in the service of the Direct United States Cable. He was one of the first operators employed by that company and remained with it until 1881, when he resigned and went into the advertising and publishing business. He arranged and brought out a "Traveller's Code and European Guide Book," which is much used at the present time by tourists. He also connected himself with trade journals and published several books for the different branches, which have been widely circulated in all parts of the world. Delegations from the Commercial and Direct Cable Companies attended the funeral. Mr. Palmer belonged to the Mistletoe Lodge, No. 647, Free and Accepted Masons, and was an active member of Ancient Craft Masonry. He was held in high esteem by all those who knew him. He leaves a wife and two children and much sympathy is felt for them.

Under the direction of Mr. McAneeny a concert will be given at Chickering Hall on Thanksgiving night, Nov. 28. Mr. McAneeny guarantees the affair will be fully up to the last one and excel it in one or two particulars. Mr. McAneeny, with some hesitancy, could be persuaded to go ahead with the affair. It is to be hoped, however, he will be amply repaid for his labors, notwithstanding the fact that he only desires to come out even.

The New York Telegraph Club Picnic, which occurred August 28, was an immense success, socially and financially. The telegraph people of this vicinity turned out very largely and all can boast of having spent a delightful evening. The Friendship Club, in their tally-ho, joined the party at the picnic grounds, and furnished excellent entertainment in the shape of singing and dancing.

Mr. James Delaney, of the Commercial Cable Co., in an appropriate uniform, boards each of the incoming steamers in search of business for his company, and it is said that he invariably secures an armful. This happy idea originated with Mr. George G. Ward.

Captain J. R. Dennis has returned to New York after a brief vacation spent in the country.

ELECTRICAL PATENTS GRANTED AUGUST 6TH.

408,231, 408,232. Means for Propelling Vehicles by Secondary Batteries. 408,233. Vehisen Motor. William W. Griscom, Haverford College, assignor to Electric Dynamic Company, Philadelphia, Pa.

408,265. Commutator for Electric Machines. Sidney H. Short, Columbus, Ohio.

408,279. Zinc Electrode for Galvanic Batteries. James B. Williams, Oakland, Cal.

408,295. Electric Meter. Sebastian Z. de Ferranti, Hampstead, County of Middlesex, England.

408,327. Telephone System. John R. Smith, Neosho, Mo.

408,333. Governor for Electric Motors. George H. Whittingham, Baltimore, Md.

408,358. Carbon for Electric Lighting. Carl A. J. H. Schroeder, London, England.

408,465. Method of Magnetically Reducing Friction. Mark W. Dewey, Syracuse, N. Y., assignor to Dewey Corporation, same place.

408,478. Shield and Reflector for Incandescent Lamps. George Gibes, Milwaukee, Wis.

408,503. Trolley Track. James H. Morley, Florence, assignor one-half to George Nightingale, Holyoke, Mass.

408,574. Method of Introducing Molten Insulating Material into Underground Conduits. David Brooks, Jr., Philadelphia, Pa.

408,629. Method of Producing Battery Solutions. W. P. Kookogey, Brooklyn, N. Y.

408,647. Electrical Resistance. F. O. Blackwell, New York, N. Y.

408,666. Secondary Battery. James F. McLaughlin, Philadelphia, Pa.

408,671. Railway Signal. Joseph W. Riggs, St. Paul, assignor to the Riggs Electric Traveling Danger Signal Company, Minneapolis, Minn.

408,676. Electric Call Bell. Thomas J. Smith, Brooklyn, N. Y., assignor to The E. S. Greeley & Co., New York.

408,678. Electric Switch. Walter Thompson, Orange, N. J.

408,740. Filament for Incandescent Electric Lamps. Adolph Oppermann, Chicago, Ill.

408,753. 408,754. Electric Motor for Street Cars. Wilbur S. Salisbury, Chicago, Ill.

408,855. Electric Railway. William M. Schlesinger, Philadelphia, Pa.

408,875. Method of Electric Metal Working. Mark W. Dewey, Syracuse, N. Y., assignor to the Dewey Corporation, same place.

408,887. Arc Lamp. Jas. A. Lighthipe, Philadelphia, Pa.

408,910. Electro-Dynamic Machine. Geo. F. Card, Covington, Ky.

408,948. Electric Arc Lamp. William H. Barker, Lawrence, Kans.

409,015. Electric Welding. Chas. Coffin, Detroit, Mich.

Copies of the specifications and drawings complete of any of the patents issued since 1866, can be had for 25 cents. Give the date and number of patent desired.—THE ELECTRIC AGE Publishing Company, 5 Dey Street, N. Y.

Foreign electricians are giving considerable attention to the question of the element of danger contained in the too close proximity of lightning conductors to gas and water mains.

Graphophone cylinders can be mailed at the rate of two cents per ounce or fraction thereof.

A hotel in Switzerland utilizes electricity for cooking purposes.

An electric weighing machine has been invented.

Messrs. B. Westermann & Co., of 838 Broadway, New York, have been appointed American agents of *Elektrotechnik* of Munchen the leading electrical journal of Germany. The typography, quality of paper used, engravings, the make-up and the general appearance of the paper indicate enterprise and prosperity. It is evident that electricity has an able champion in *Elektrotechnik* in the German Empire. Messrs. Westermann & Co., are prepared to transact any business in the interest of this journal.

The "P. & B." conduit consists of wood prepared and coated with the well-known "P. & B." compound. Large amounts of this compound have been in recent years used in coating and insulating both overhead wire and underground cable, and the compound is acknowledged to be excellent for these uses. It renders all surfaces thoroughly moistless and waterproof, and renders wood practically indestructible; the earth gases and other disintegrating forces, which must be contended against in underground work, have no effect whatever on wood preserved with the P. & B. coating.

The Excelsior Electric Company, of New York, was well represented by Mr. D. Hyman, at the recent convention at Niagara Falls, N. Y., having on exhibition 100-light incandescent Excelsior dynamo, run by a 10-horse power Excelsior Motor, receiving its current from the local Brush station. The lamps were ingeniously arranged representing the words Excelsior Electric Company. A new Heinrich station ampere meter was located in the circuit. They also had a three horse-power motor on exhibition.

The Hatch lock, an invention of A. A. Hatch of Kansas City, has been patented, and a company with \$2,000,000 stock has been formed in Kansas City and New York to place the patent. The invention is an apparatus to be used in telegraphy, by means of which all connections with a telegraph wire can be cut off at all intermediate points between the sender and the receiver.

James W. Queen & Co., 924 Chestnut street, Philadelphia, is making a superior class of testing apparatus which are receiving favorable comment and a steady sale throughout the United States and Canada. Queen & Co. are the American agents of the well-known English testing instruments.

The Solicitor of the Treasury declines to answer the question propounded by an electric light and power company as to whether a duty would be imposed in case electricity, developed in Canada, at Niagara Falls, were sent across the river into the United States.

Mr. Harold P. Brown has issued a pamphlet on electrical distribution of heat, light and power with partial list of deaths from electrical lighting apparatus.

The lightness and durability of white cedar recommend it as an excellent wood for telegraph and telephone poles, a use to which it is largely put.

Within a month, the Postal offices at Birmingham, Ala., and Atlanta, Ga., and intermediate stations, will be opened.

Professor James D. Dana, of Yale College, suggests "telepheme" as an appropriate word for telephone message.

Electricity will make up the next census reports, an ingenious device having been constructed for that purpose.

Professor Barrett, city electrician of Chicago, says that city will soon be the best lighted city in the world.

Mr. A. S. Brown, superintendent of the Mutual Union Telegraph Company, has returned from Europe.

Lightning burned out sixteen circuits at Taunton, Mass., last week.

STANDARD TIME ADVERTISING CO.

The Standard Time Advertising Company, of 8 Dey street, New York, by contract with the Self-Winding Clock Company and the Western Union Telegraph Company,



is prepared to furnish, for use in public places, self-winding and synchronizing clocks similar to the accompanying cut, and being connected upon Western Union Telegraph Company's circuits for receiving daily standard time signals, they are kept absolutely correct. This company makes a specialty of using these clocks for advertising purposes, for which it has an exclusive agreement with the above named companies. Advertisements of an acceptable kind are placed on the glass door in front of the pendulum, without detracting from the appearance or usefulness of the clock. This company also proposes to furnish these clocks throughout the United States in large quantities in places of public resort, such as hotels, railway stations, grocery stores, drug stores, etc., and to arrange with the Western Union Telegraph Co. to furnish the standard time signals free of charge.

A liberal commission is allowed to telegraph people who procure advertising customers for these clocks.

Mr. E. C. Cockey, superintendent of supplies, W. U. Tel. Co., is president of the company. Mr. C. S. Schivler, of 8 Dey street, is the treasurer and general manager, to whom all communications should be addressed.

TEMPERED COPPER.—The Eureka Tempered Copper Company has been organized at North East, Pa., with Hon. W. L. Scott as president. It is claimed that for bearings the metal is not destructible to journals, and bearings made of pure copper retain all the fibrous qualities of that metal, and as this company is enabled to temper it to any degree of hardness required, even for edge tools, if necessary, it can be readily perceived the advantage in store in this line. The mixture of tin or other metals with copper makes a granular metal, or mass of small cubes or grains, forming more or less of a grinding surface. As much power is wasted by friction, this is important in all places where machinery is used. For electric work, it is espe-

cially adapted for dynamos and commutators, for reasons that must be apparent.

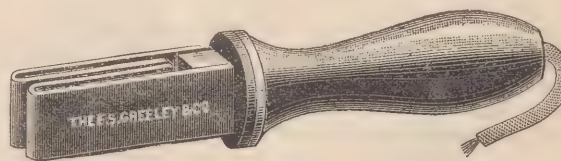
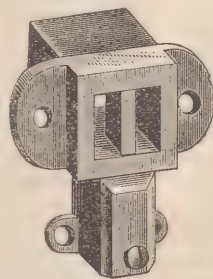
Messrs. Walker & Kepler, agents for the United Edison Manufacturing Company, of Philadelphia, were in town last week. These gentlemen are two of the busiest men in the electrical field. They have contracts for 7000 lamps ahead of them. They recently started a central station at Pottsville, Pa., with \$60,000 capital. They have also just finished putting in plants on the steamers "Sylvan Dell" and "Sylvan Glen," each having about 100 lamps, and both plants working successfully. This makes four steamers of the company's fleet containing Edison plants. Messrs. Walker & Kepler have also closed a contract with the Baltimore Packing Company, for a plant of 250 lamps. The plant of the new Park Theatre will comprise 1000 lamps. A contract has been signed with Cramp & Son, the ship builders, who desire 250 lamps to be used in lighting their ship yard. They also intend to have electric lamps run into the interior of the new cruisers, "Philadelphia" and "Newark," now in course of construction, for the purpose of enabling their men to work night and day.

The Clark Electric Company, No. 192 Broadway, New York, have just issued an excellent pamphlet, in which the merits of this popular system are closely set forth. A description of the main features of the dynamo, the automatic regulator, am meter, lightning arresters and other devices, make up a valuable pamphlet, which those interested should possess.

The Webster process for the treatment of sewage matter by electricity is about being experimented with in the river Medway.

THE VICTOR ARC PLUG AND SOCKET.

The accompanying illustrations represent a form of plug and socket that is very desirable for switching arc light, power and other heavy currents. It is known as the Victor arc plug and socket, and is manufactured by The E. S. Greely & Co. While the device is new and novel it is not so in the sense of being experimental or untried, as a number of the plugs have been in use during the past year under the severest conditions in arc light service, and have given unqualified satisfaction, which has led to their exclusive employment in stations where they have been on trial. The socket, as will be seen, consists of a double chamber of solid cast brass, into, or from, which the plug can be quickly thrust or withdrawn. The plug, consisting of heavy spring metal of appropriate shape, secures broad surface contacts on its four distinct faces, as well as on the edges, which not only guarantees the connection, but holds the plug firmly in position. As no time is lost in fitting the plug to the socket in making changes, but it is quickly snapped into place, the most rapid character of work in switching is the result. The sockets are also made in duplex form when required, so that the second connection may be established before the first is disturbed. The sockets may be neatly mortised into cabinet work



FIGS. 1 & 2.—THE VICTOR PLUG AND SOCKET FOR HEAVY CURRENTS.

and fitted almost flush with the wood surface, and thus make a very attractive as well as convenient switchboard.

NEW YORK WESTERN UNION NOTES.—Mr. C. E. White, assistant night chief at Albany, N. Y., paid this office a visit a few days ago and was right royally entertained by a party of friends during his stay here. Mr. White, who is on his annual vacation, is gaining strength mentally as well as physically by indulging in plenty of healthful outdoor exercise astride of his wheel. He left Albany several days ago eastward bound, via Pittsfield, Mass., and Hudson, N. Y. His description of the scenery in the picturesque Berkshire Hills is very interesting. His health is excellent. He averages about 50 miles per day. The entire trip will consume about three weeks. Tondo Block, Tondo, O., for Toledo *Blade*, Toledo, O., and Tocchaute Produce Co., Tocchaute, Ind., for Terre Haute Produce Co., Terre Haute, are among the latest up to date. Miss Addie Hart, of Cincinnati, one of the best lady operators in the country, paid the office and a host of acquaintances here a visit on August 13th. She was accompanied by Dr. Faulkner, manager of the Hoboken, N. J., office, and wife, whose guest she was while here. The many friends of Mr. Blake will regret to learn that that highly respected gentleman is lying dangerously ill of consumption at his home in Brooklyn. His friend, Dr. Osborne, is doing all he can to show the unfortunate man that though absent he is not forgotten. Hardly a day passes that he is not reminded of the fact by the receipt of delicacies, etc., from sympathizing friends here. While stepping from the ferryboat a few weeks ago John Tierney made a misstep and so badly sprained his ankle that he has been confined to his home for some time. Miss N. F. Harrington, after an absence of several weeks, has returned. In the vernacular of the race track George Allman looks like a "four time winner" since his vacation. During his absence Mr. John R. Powers, of the *Tribune* office, whooped it up on the early morning report wire. Every branch of industry is not without its hero, nor are we without ours. A few days since an operator in the office sent Mr. Brennan, the genial assistant manager, an excuse for his absence which ran something like this: "Have rescued a woman; am utterly prostrated; will report to-morrow." It might be worthy of note that Mr. Brennan had selected for the next man with an excuse a position on the Life Saving Corps. The moral of this is: "Be good." Mr. Barnum has taken in the 7.30 to 5 trick. Mr. Crowell has been transferred to the 11.20 to 8.50 trick. T. W. Greene, who had the courage to inform your correspondent that he would kill the first man who again asked him what trick he was on, has been assigned to the split trick. Everybody at the club respects and honors Tom, the affable chairman of the house committee, and it is no wonder that in listening to grievances he is sometimes "detained," but like Mr. "S. F." Phillips, of the 1 to 8 a. m. force, he is "never late." Miss M. Reiners, the charming little lady who works the Newark duplex, is not, as one of her admirers supposed, ill. She is away on her vacation. Sam Ferris for some years past held the responsible position of chief message clerk, has been promoted to a more remunerative one as operator at Normandie-by-the-Sea. We wish him every success. He is in every way deserving of it. Chief Operators McAneeny and Newton having returned from vacations, Geo. Stainton has gone on his. We wish him a merry time. Clem. Foster, one of the best known operators on the night force, is absent for a month. He is greatly missed. Miss McNally, the popular traffic chief of the Long Islands, is away on her vacation, as are also the Misses J. Powell, N. Rooney, K. Taylor, Minnie Geary, Maggie Geary, Maggie Glover, Minnie Glover, Dauley La Parle and Lehman. The Buffalo quad has been dubbed the "Charley quad," because every man at this end and two of those employed at the other end bear the name of Charles. Charlie Lemaine, Charlie Bortelle, Charlie Learned and Charlie Zeliff are stationed here.

The names of those at Buffalo are expected to be given in the next issue by the correspondent at that point. Mr. Fred. Minton was married to Miss Lillie Ford, of this office, on August 14th. We extend to the happy couple our sincere congratulations, coupled with the wish that their lives may be long, happy and prosperous. Mr. Geo. Hubbard has the sympathy of many friends in this the greatest hour of his bereavement over the death of his wife, which occurred a few days since. Miss Manning, ill for a month, is again at the key in comparatively good health. Harry Ferris, assistant chief message clerk, has been made an operator. He will for the present hold forth at night in the Wheatstone Dept. Miss Annie O'Brien, who was absent on leave, turned over to the care of Miss Watson the office in the Howland House, Long Branch. The latter has returned to duty here. Ed. Gordon has been assigned to the regular day force. Arthur Freyer, brother of Paul Freyer, has resigned on account of ill health and returned to his native land—England. City Traffic Chief Miss Hall, Wire Chief Annie Nolan, and the Misses L. Murphy, M. Harris, K. Leahy, K. Dougherty, Kearns, Watson, Harrington, and Mrs. Randolph have returned from vacations. L. F. Dowling has accepted an extra evening trick. Miss May Finley, who for several days past has been a great sufferer from an ulcerated tooth, is, we are pleased to say, rapidly improving in health. Joe O'Leary succeeds on the day force, William Newman, transferred to the split trick. The first Cincinnati wire by the change will continue in the future as in the past to remain in good hands. If ever that genial, whole-souled General Traffic Chief Ed. F. Cummings had reason to doubt the esteem in which he is held by those subordinate to him in this office, his mind might on that score be forever set at rest did he but know how anxiously his associates have sought information respecting the health of his charming wife who, at this writing, is lying in a precarious condition at their home in this city. It is safe to say there isn't a woman, man or boy whose pulse wouldn't quicken with gladness to learn that this estimable lady had passed the crisis of her disease in safety and was on the high road to recovery. J. H. Lounsbury, of the Washington quad, has been laid up for several days past with rheumatism. It is highly gratifying to know that he is better, and it is hoped he may be spared the pain of another attack.

POSTAL NOTES.—Arrivals: F. N. Withey, L. Weldon, H. Peters, E. L. Hackett, G. Finn, E. Thompson, W. B. Heron. Departures: J. Layman, L. K. Miller, S. J. Wilson, F. Phelan, L. G. Diamond and N. Willis. Returned from vacations: L. F. Lahey, H. Guthman, A. Conway, C. Richardson, R. Halligan, D. F. Mallen, E. Kimpley, F. J. Higgins, F. A. Ganung, F. E. McKiernan, J. H. Gibbons, M. F. Keane, L. Lewis, K. V. Applebaugh, E. Rath, M. McDonnell, T. F. Kehoe, F. J. Hinds, E. Ransom, J. W. Roloson, J. Henneberry, W. Davis, M. Willetts, M. Mulroy and J. McNulty.

NOTICE.

Dedication of the new Central Opera House, 209, 211, 213, 215 and 217 East 67th street, by the New York telegraph operators, on Thursday evening, October 31st. This will be the farewell performance and reception under the direction of M. J. Dixon. With the co-operation of telegraph operator Robertson's comedy, "Caste" will be produced with a strong cast, including Harry DuSouchet, J. C. Vancura, Thomas Ashcroft, J. M. Winds and Miss Florence Miller. Between the second and third acts Mr. Dixon will introduce his character songs.

The above named opera house is a palace of beauty. It is furnished with all the latest improvements and has a seating capacity of 2,000. It also has a splendid dancing floor. Tickets, admitting gentleman and ladies, 50 cents. Private boxes, holding seven, \$3.00

TOM OAKMAN.

BY G. W. RUSSELL.

Tom Oakman was a very sad man. His face bore the stamp of a dejected spirit, and his remarks were of a very lugubrious nature.

Whenever a group of telegraphers were laughingly engaged in the pleasantries of fact or fancy, or indulging in harmless badinage upon each other—in telegraphers' parlance "stiffs"—Tom's approach might be likened to a dark, forbidding cloud upon the clear azure of their happiness. His remarks, at times, were singularly inappropriate and brought forth genial raillery.

On a certain occasion a group of telegraphers were relating some of the "bulls" that had come within their experience, and one of the number told of taking a message dated "Cazenovia, N. Y.," which reached its owner with the unique heading "Casino, via New York." During the merriment over the story Tom gloomily observed; "Boys, that was a terrible flood in China last week. Have they got a complete list of the dead yet?" "No," snapped out one of the party, "and as far as known there are several precincts to hear from about the deluge in Noah's time."

This provoked a hearty laugh at Tom's expense in which I could not join, for I noticed a shadow of pain overspread his face, and something told me that the melancholy attending Tom was not his true nature; that he had at some period been jilted in courtship, that a realization of his state worried him, and that he would gladly embrace any means of ridding himself of the power that lent a funereal gloom to all his actions. It would be strange, indeed, did not Dame Nature, in the distribution of her gifts, endow us with qualities to compensate for misfortune.

Generosity and sympathy were strong features in Tom's character. None responded more readily to the call of the afflicted. In sickness or death Tom was a never failing friend, and his shortcomings were overlooked on this account.

It was on rare occasions that he joked, but I recall one expression of his that he claimed was original with him, namely: "An operator sending should 'never let his right hand know what his left hand doeth' or he will get the timing and the message mixed." He sprang this upon every new arrival and placing both palms upon his paunch laughed vociferously, the listener joining more through the contagious effect of Tom's roars rather than from an admiration of the joke.

But I digress. I say I could not share the merriment of my associates, as I noticed the pained expression on his face, and I determined to do all in my power to dispel his melancholy.

Tom had two overmastering faults that made my work difficult. He shunned female society and had a glaring weakness for terms in which the hyphen played a prominent part. For example: "Normandie-by-the-Sea," "Wilburton-by-the-Ocean," "Irvington-on-the-Hudson," "Norwich-on-the-Thames," and "London-over-the-Pond," possessed a charm for him that was magical. By frequently speaking of these places, reading with avidity everything touching upon them, jumping with alacrity to answer a call upon a wire upon which any of them were connected, he became saturated with this hyphen fluid and indeed breathed an atmosphere of hyphens. Furthermore he believed that he had really visited these places and found great comfort in describing their charming surroundings. I knew, however, that he had never been to any of them, for during many years he had alternated as a "bird of passage" between the West and South, and by a judicious use of localities found an

overcoat a burden. However, the fancy was so harmless that we never questioned him.

"How I yearn," said he, addressing a group of us one day, "to return for a few months to Manchester-by-the-Sea, Mass., or Hastings-on-the-Hudson, N. Y. There is such an air of freedom, such as absence of servitude. The eye and the ear, and indeed all the senses are delighted. The rolling surf, the songs of birds, the distant lowing of kine, and very little work to do, make these places attractive."

"Yes, all that is too true," rejoined one of the group, "but, Tom, in your travels did you learn much about 'Off-the-griddle, P. D.?' " "Or-up-on-the-carpet-before-T. B.?" said another. "Perhaps he can give us a few points about 'On-the-block, N. Y.?' " urged a third. "When I was at Walnut-Ridge-near-the-Water-Tank," began a new speaker. Here the suppressed merriment burst its bounds, and to spare Tom the mortification of the incident, I hurried him away to a billiard parlor, where amid the graceful angles of the ivory spheres he forgot the incident and also forgot to win even one game.

I do not wish to be understood as a ridiculer of these hyphenated names. They are indeed sweet and romantic. They easily present to a sentimental mind the roar of old ocean, the scudding storm clouds, the leaping of the wild waves, the breaking-up of vessels wrecked upon the rock-ribbed coast, with here and there a drowning sailor clinging to a broken spar, wishing in his heart that he had never followed the sea, but had learned the telegraph business years ago in his country home.

Tom was now a regular man on the day force, New York, and worked a wire in the city department, among the bright, happy throng that makes that portion of the great office so attractive. At first, through his diffidence among the fair sex, he was seriously thinking of declining the position. I exerted myself earnestly to prevent this, and was so successful that in a few days he was duly installed among them.

For the first week Tom made no acquaintances there, and to all questions asked he replied with a simple "Yes" or "No, Miss," that acted as an insurmountable barrier to all intimacies.

One day a young lady working near him—and with whom I had for years been friendly—pleadingly said; "Mr. Oakman, will you be kind enough to tell me what the seventh word is, in this message? I am in doubt about it," and the lady handed him the message. Tom solemnly cast his eyes at the doubtful word and said, "Certainly, Miss, the word is 'love'," and while the lady was proffering her thanks, Tom violently seized the key to hide a sudden agitation that possessed him.

A few hours later the lady again asked his assistance; "Can I trouble you again, Mr. Oakman? The eleventh word of this message perplexes me."

"Why that is very plain," said he, "the word is 'matrimony.'"

"Thank you," she replied, softly, "I find some of these messages very hard to read."

"I shall be pleased to assist you at any time," said Tom gallantly, and he vainly tried to think of something else to say to the young lady, whose face spoke a gratitude far stronger than the favor deserved.

During the day, however, Tom said something now and then, and his listener appeared so interested that he was encouraged and related many incidents of his roving life, to all of which she listened with an eager attention.

Just before leaving for the night she again asked his help on another doubtful word, and, Tom, now only too willing to comply, after some hesitation said, "The word is 'happiness.'"

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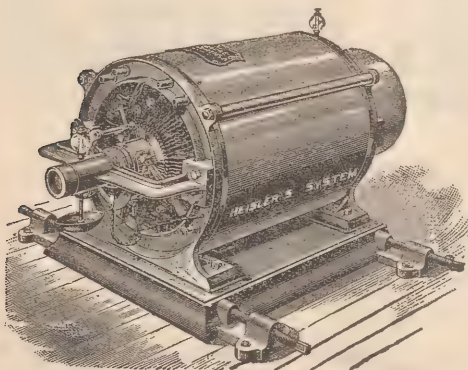
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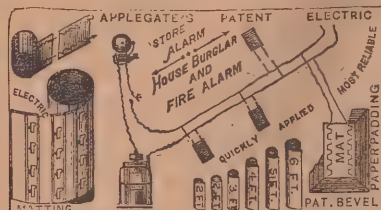
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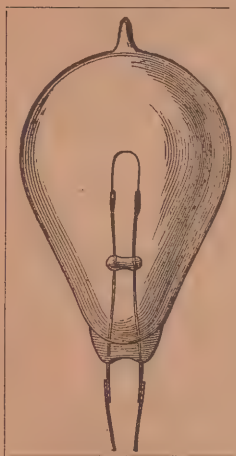
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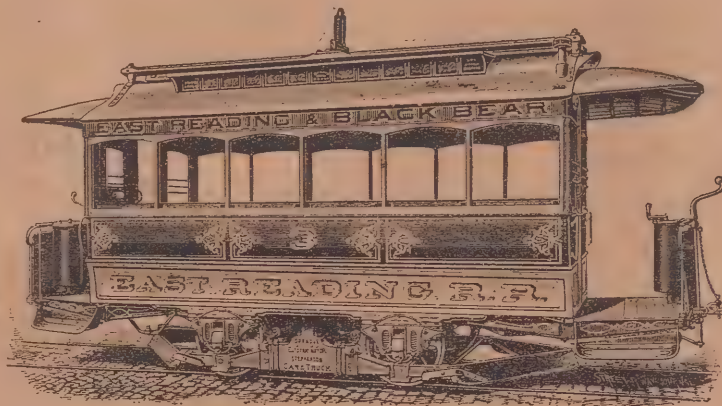
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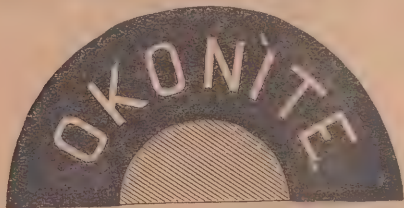
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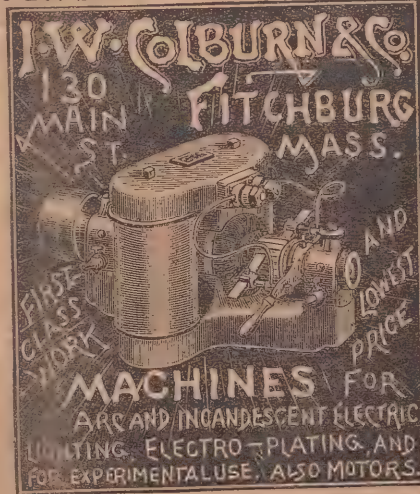
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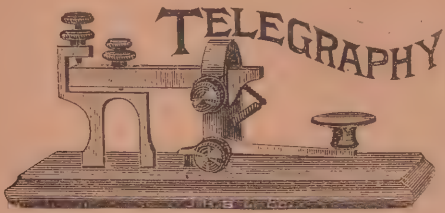
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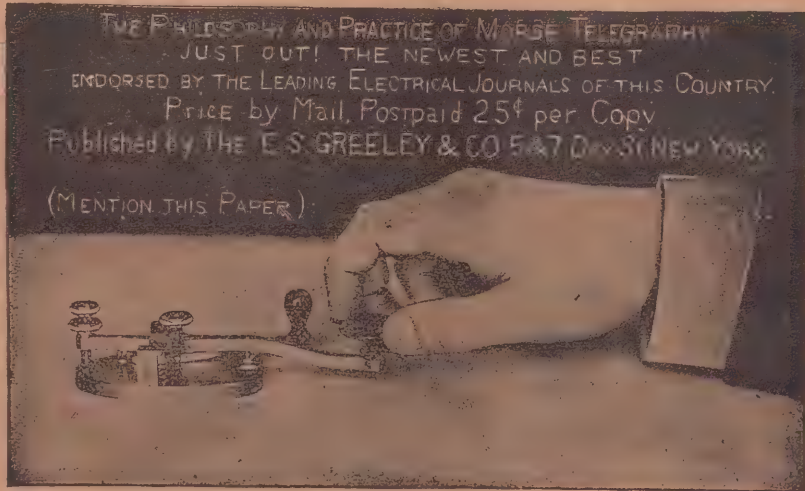
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The truth (referring to the true position of the telegrapher's hand in the act of "sending") exposed by a lightning wink of the instantaneous camera, and permanently fixed for our deliberate inspection by the science of photography, dawns upon the craft intellect accompanied with something of the amazement that startled the artistic world when the elaborate anatomical studies by Rosa Bonheur of the horse in the act of running were delivered over to universal ridicule by the subtleties of the same agent, instantaneous photography.—*The Electrical Review*, March 24, 1888.

The following diagram from the *Philosophy and Practice of Morse Telegraphy* gives an intimation of its scope.

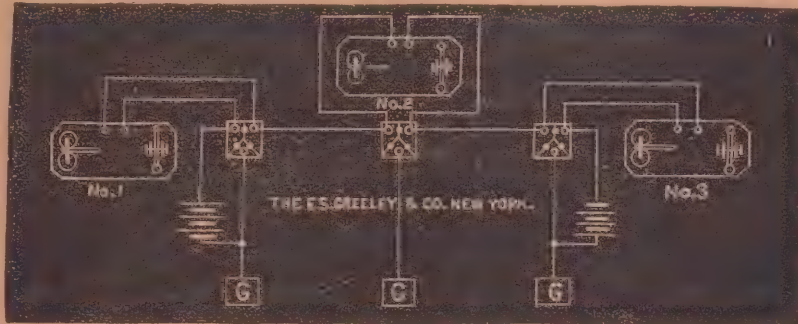


DIAGRAM No. 19.

Diagram No. 19, showing three Home Instruments or other short line combination sets, connected up on a grounded circuit with Excelsior Lightning Arresters at three distinct offices. The Switch Pin in this case, while instruments are in use, must be kept in the "dead hole," which is the hole in the center of the middle plate.

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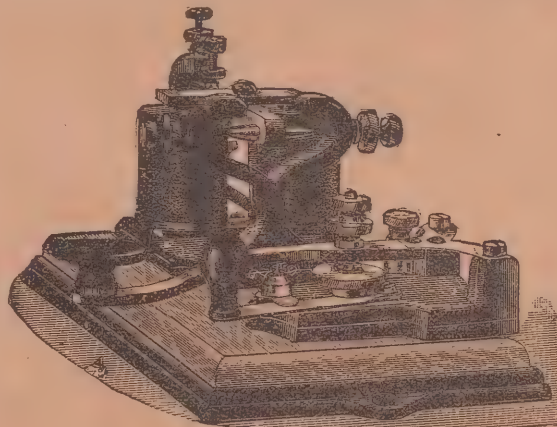
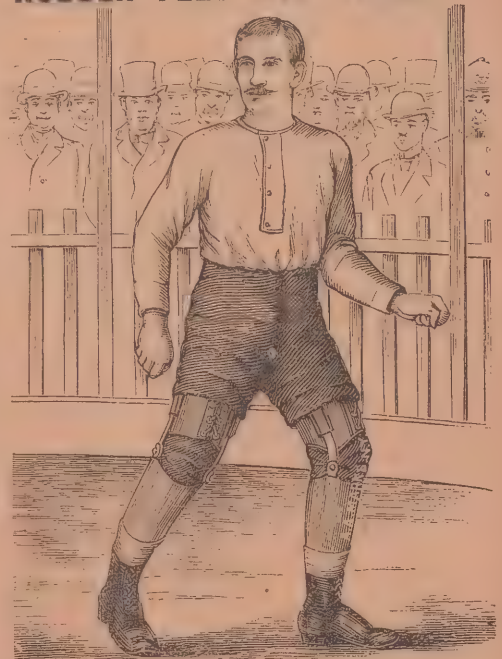
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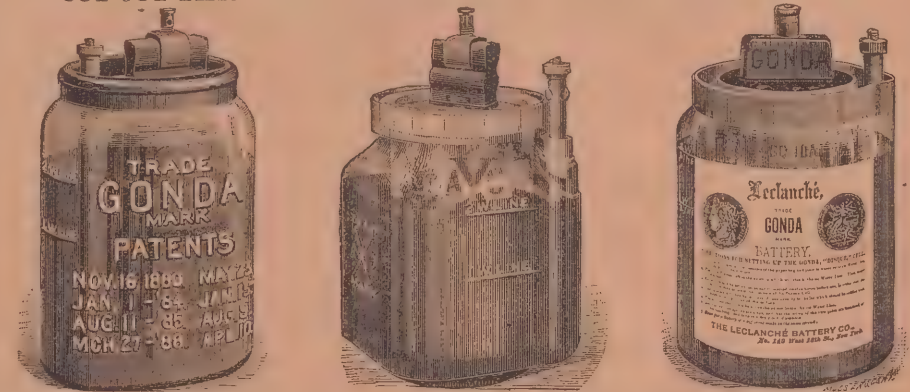
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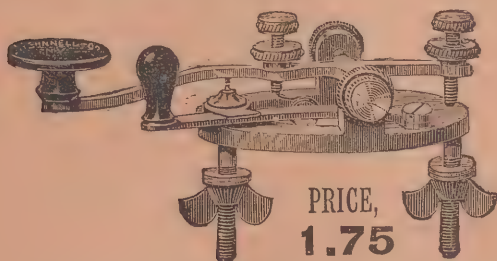
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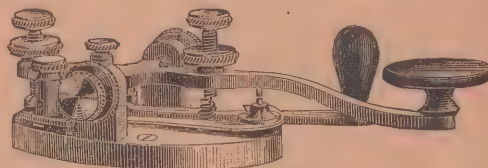
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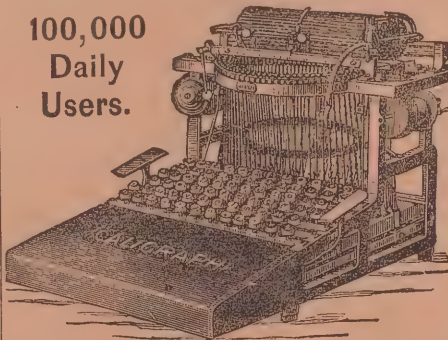
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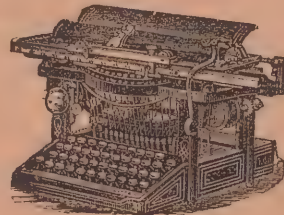
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NEW YORK, SEPTEMBER 16, 1889.

NATIONAL TELEPHONE EXCHANGE ASSOCIATION CONVENTION.

The National Telephone Exchange Association Convention which was held at Minneapolis, beginning September 10th, was largely attended by delegates from all sections of the country. The meeting, of course, was a success.

The papers read were as follows:

"A New Era in Telephoning," by A. S. Hibbard, F. J. Carty, F. A. Pickernell, all of New York.

"Switchboards and Long Distance Lines on Grounded Circuits," by Flemon Drake, of Omaha.

"Telephone Salutations," by R. M. Bailey, of Williamsport, Pa.

"Underground Wires," J. C. Reilly, of Brooklyn.

"Observations," by W. D. Sargent, of Brooklyn.

"Switchboards," by Geo. J. Davidson, of Brooklyn.

General Barney, the popular secretary of the association, was presented with a diamond scarf pin, while en route to Chicago, by his many friends on board the "telephone limited." Gen. Barney, as is his custom, was assiduous in his endeavors to make every person happy and comfortable, and that he was successful goes without saying. The Telephone Exchange Association very wisely re-elected its popular secretary. He is certainly the right man in the right place. The Chicago and Central Union Telephone Companies appointed Messrs. F. G. Beach and C. H. Wilson a committee to provide entertainment for the party while in Chicago. After a sumptuous lunch, which was served in the new rooms of the Chicago Electric Club, the entire party was driven around the city to view the sights of that rapidly growing central metropolis.

The entertainment in Minneapolis and St. Paul was characteristic of Western enterprise. Committees saw that the very most was made of the three days' sojourn in that locality.

From a social as well as business and educational standpoint the telephone convention was an immense success. Detroit, Mich., secured the next convention.

CONVENTION OF OLD-TIME AND MILITARY TELEGRAPHERS.

The United States Military and Old-Time Telegraphers held their annual reunion at Louisville, Ky., Sept. 11th and 12th, and it turned out to be the most successful meeting ever held. The next meeting will take place at Kansas City, Mo., Mr. Day K. Smith of that city being elected president of the Old-Timers' Association. The officers of the United States Military Telegraphers were not changed, W. R. Plum, of Chicago, being re-elected president and Alderman J. E. Pettit, of the same place, secretary. Mr. Wm. J. Dealy, the popular secretary of the Old-Timers was also re-elected. The secretary is compelled to do a great deal of gratuitous hard work in the performance of his duties, but when a large attendance responds to the annual call Mr. Dealy appears to be amply repaid for the too often unappreciated labors of Secretary. The New York delegation consisted of twenty-five members of the profession, all of whom expressed entire satisfaction at the liberal manner in which "Southern Hospitality" was dealt out to all while in Louisville. The citizens generally and the members of the profession, particularly of that city, are a jolly, whole-souled crowd, and their generosity and hearty welcome will be remembered by all for a long time to come.

The delegations from other sections of the country were also amply repaid for their visit to Louisville. The retiring president of the Old-Timers' Association, Mr. Charles E. Taylor, of Frankfort, Ky., has the satisfaction of knowing that his labors in the cause of the association were fully appreciated and heartily applauded. Mr. Charles Smith, the manager of the Louisville Western Union office, also performed his duties as chairman of the Committee of Arrangements in a gratifying manner, and the members at large will long remember the good time had at Louisville 1889 Reunion.

TELEPHONE AND TELEGRAPH FACILITIES IN MEXICO.

MR. EDITOR. *Dear Sir:* In your issue of July 16th, '89, page 1, you say "The New York and New Jersey telephone line through the city limits of Newark, N. J., contains 170 wires. We doubt if this number can be beaten in separately strung wires."

The Mexican Telephone Co. in this city have on Tacuba street one line of poles, 80 feet high, containing 50 8-pin arms, 400 wires, and every pin full, and on the opposite side of the street another line of poles containing 15 8-pin arms, 120 wires, both of which are as fine a piece of wire-running as I have ever seen in any country. I write this that you may see that the telegraph and telephone interests are not so far behind the "States" as some people think. This city is well lighted by electricity. The railroad and telegraph companies are adopting the latest pattern of instruments, etc. The Mexican Central Railroad is sparing no pains or expense to make their system equal to any.

Yours truly,

G. R. STANTON, *Telegraph Inspector.*

The Philadelphia and Reading Railroad Company has recently been experimenting with an electric device to increase the friction of locomotive wheels upon the track and prevent slipping. A low-tension current, generated by a small dynamo, is passed from the front driving-wheel to the track, and from the track again to the back wheel. It is said that the effect of this current is more marked than sand sprinkled on the track, and that experiments have fully proved its value.



HENRY METZGER, PRESIDENT.

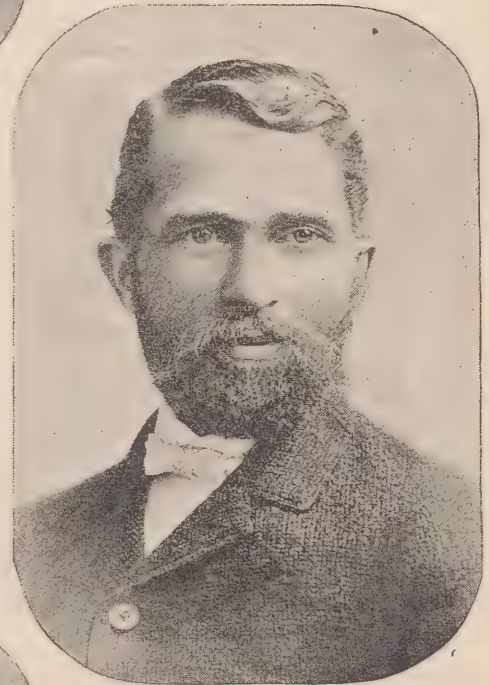


GEN. C. H. BARNEY, SECRETARY.

OFFICERS
OF THE
National
Telephone Exchange
Association.

1888.

1889.



H. L. STORKE, TREASURER.



W. D. SARGENT, VICE-PRESIDENT.

HENRY METZGER.

Henry Metzger, president National Telephone Exchange Association, was born July 20th, 1840. He received a common school education and at the age of seventeen was employed as a clerk in a lumber office.

When twenty-one years of age he went into the business of refining petroleum and was engaged in its production and refining for a number of years.

He became connected with the Central District and Printing Telegraph Company, Pittsburgh, Pa., in 1880, as the general manager, which position he still holds.

He has always been prominent in the councils of the National Telephone Exchange Association, having served one or two terms as a member of its executive committee. He was elected vice-president at the meeting in St. Louis, 1886, elected president at Pittsburgh, in 1887, and last year, in New York, was re-elected to the latter position. He has just returned from a several months' tour of Europe and the exposition.

W. D. SARGENT.

William Dunlap Sargent, the vice-president of the National Telephone Exchange Association, has been identified with the telephone business since 1877, when he became associated with Mr. Thomas E. Cornish, of Philadelphia, for the development of the telephone in that city. He was the first secretary of the Telephone Association and has been an active member since its organization.

Previous to entering the telephone business Mr. Sargent, as general manager, built up and successfully managed the first District Telegraph Company in Philadelphia, prior to which time he had been engaged in the service of the Western Union Telegraph Company and the Pennsylvania Railroad Company, in the capacities of operator, electrician and manager.

Without the advantages of a special or scientific training, Mr. Sargent has been a devoted student in the field of electricity, and in all the work he has had charge of he has shown great ability in the practical application of electrical laws to commercial purposes and in the organization and education of men for the work. He has been for several years and is now general manager of the New York and New Jersey Telephone Co., a position which he has filled with great success. He is also president of the Elektron Mfg. Co. of Brooklyn, N. Y., manufacturers of the Perret Electric Motor, having been one of the first to appreciate the merits of this machine, which has during the past year attracted so much attention and which has fairly won its way to the front rank.

Mr. Sargent is one of those rare men who are distinguished for modesty and sterling integrity, no less than for business ability. These qualities, together with his invariable good nature and genial good fellowship, have made him greatly esteemed by a large circle of acquaintances.

We are pleased to note that his health, which had not been good for some time, has been greatly improved by his recent trip abroad, three months of which was spent in Paris, where he had charge of the interests of the American Bell Telephone Co. at the Universal Exposition.

H. L. STORKE.

H. L. Storke, treasurer of the National Telephone Exchange Association, was born in Auburn, N. Y., and is now about forty-two years of age.

In the earlier part of his life he was associated with his father for a number of years, in Auburn, in the manufacturing of metallic planes. Tiring of this kind of work he connected himself with the Bulletin Publishing Company of that city as editor and one of its directors.

From there he went to New York, where he accepted a position with the Gold and Stock Telegraph Company, in the telephone department, and soon afterwards became its general manager.

After the absorption of the Gold and Stock by the W. U. Company he purchased the Auburn Telephone Company, of Auburn, N. Y. These interests he soon afterwards developed in the adjacent territory covering ten or twelve counties.

He also organized the Empire State Telephone and Telegraph Company, of which he became president.

He was one of the prime movers in organizing most of the telephone companies of New York and other States.

He was secretary and treasurer of the Hudson River Company and treasurer and general manager of the Westchester Company, also vice-president of the Central New York Telephone and Telegraph Company. He was also one of the organizers of the West Coast Telephone Company and is still one of its officers.

Mr. Storke's life has been a busy one, being one of the most active workers in the telephone as well as in numerous other electrical enterprises.

He has been seriously ill for a number of months, but his friends will be glad to hear that he is rapidly recovering and that he resumed his duties Sept. 1st.

Mr. Storke is still a resident of Auburn, N. Y., where he is surrounded by an interesting family of six children.

GEN. C. H. BARNEY.

The Secretary of The National Telephone Exchange Association was born in Providence, R. I., January 10, 1844, and received his education there. Leaving his course uncompleted he enlisted at the outbreak of the conflict of the rebellion at the age of seventeen, in Co. A of the Fifth Rhode Island Volunteers, serving in that and in other regiments and various staff positions until the close of the war. Starting as a private he rose through the several non-commissioned and commissioned grades, finally becoming the adjutant-general of the State of Rhode Island, with the rank of brigadier-general, being at that time the youngest officer holding such a position.

His business career began in the line of fixtures and fittings for gas lighting, in which he afterwards became the treasurer of a corporation engaged in the manufacture of these goods. In 1879 he resigned the position at the suggestion of Gov. Henry Howard, who had just taken hold as president of the Providence Telephone Company. Subsequently he became general manager of the Interstate Telephone Company, which was the beginning of the long-distance system of telephony and built the first long-distance line between Boston and Providence. On this line, which now forms a part of the route of the American Telephone and Telegraph Company, was first practically used the metallic circuit, to day so generally adopted for communication between distant cities.

In 1882 Gen. Barney removed to New York and became the general superintendent of the New Jersey Telephone Company and of the Westchester Telephone Company, which corporation had just acquired control of the suburban territory near New York. Devoting himself assiduously to developing this field, the companies' list of subscribers increased in eight months from 690 to over 1,800, when in the consolidation effected October 1, 1882, Westchester passed into the hands of the Hudson River Telephone Co., and New Jersey became a division of the New York and New Jersey Telephone Company. Gen. Barney remained with the latter, in charge of its New Jersey Division, until the fall of 1886, when he resigned and interested himself in the business of electric lighting at

ANNUAL RE-UNION OF OLD TIMERS AND U. S. MILITARY TELEGRAPHERS.

Between thirty and forty members of the United States Military Telegraph Corps, met for the business session at the Louisville Hotel, Louisville, Ky., at 10.30 o'clock a. m., on the 11th inst. with President Plum in the chair. Secretary Pettit was present but Vice-President Maynard could not get there. The president's address was a long and able one in which he reviewed the history of the services of military telegraph operators and recounted many interesting incidents connected therewith. His address was received with hearty applause.

The applications for membership of Messrs. W. H. Hartman of Lexington, Ky.; R. D. E. Rowe of Pittsburg; E. M. Shape of Milwaukee; W. L. Biggert of Jeffersonville; J. G. Webb of Louisville; A. D. Dougherty of Cold Water, Mich., and R. A. Taylor of Terre Haute, Ind., were referred to the proper committee. The reports of the regular committees were next heard and approved. D. A. Williams of Kansas City presented the report of Mr. Woodring of Kansas, who at the Milwaukee encampment secured from the G. A. R. resolutions indorsing the claims of military telegraphers for Congressional recognition. The president appointed Messrs. W. B. Wilson of Philadelphia, H. W. West of Chicago and D. A. Williams of Kansas City a Committee of Ways and Means to conduct the business before Congress. The morning session then adjourned and nearly all present accepted the kind invitation of Superintendent Porter, of the Kentucky and Indiana Bridge Company, to take a trip over the magnificent cantilever bridge to New Albany. On the return of the party Mr. James D. Reid was found in waiting, having arrived during the absence of the delegates. He was roundly welcomed and considerable emotion was exhibited by some of the onlookers to see the meeting of Mr. Reid and Col. Taylor, who oblivious of their surroundings embraced each other most affectionately. The Old Time Telegraphers Association met in business session at 2.30 with President Taylor and Secretary Dealy in their respective chairs. Vice-President Day K. Smith, of Kansas City was absent. President Taylor's address, which was one of the best heard by the organization, will appear later.

Singularly appropriate at this time, in view of the ninth annual meeting of the United States Military Telegraph Corps at Louisville, Ky., Sept. 11th, 12th and 13th, is the publication in the *Century* magazine for September, of an article by J. Emmet O'Brien, "entitled "Telegraphing in Battle." It is written in a most entertaining style and we cannot help expressing regret that limited space will not allow a more extended review of an article that should be read by every telegrapher.

"Before 1861," says Mr. O'Brien, "the value of the military telegraph had not been demonstrated. Crude experiments had been made, with poorly equipped lines, in the Crimea, in India, and by France, Spain and Italy in different campaigns, while the Germans possessed a distinct military telegraph organization as yet untested; but it was on the very route where Morse's first message, "What hath God wrought!" announced the benefits of his invention to the arts of peace that the telegraph was to begin its first practical use in war." * * *

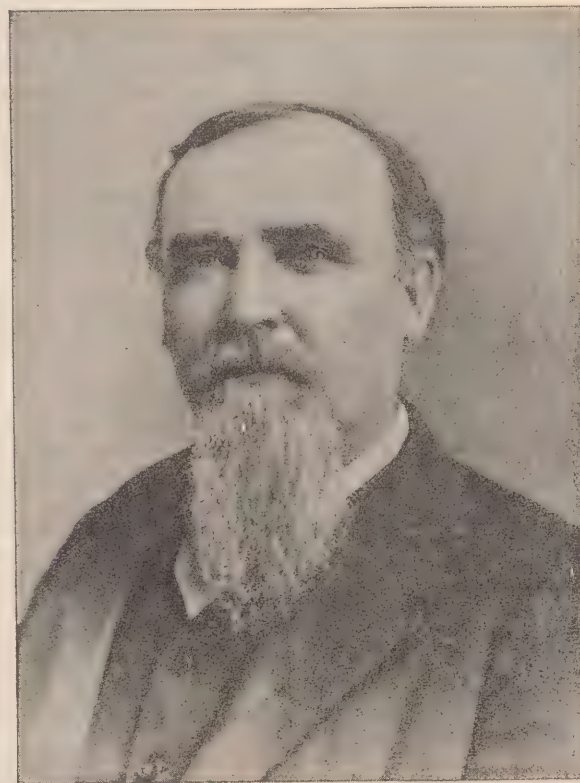
"The names of the four pioneers of the service were David Strouse, D. Homer Bates, Samuel Brown, and Richard O'Brien. Strouse soon succumbed to the hardships of the new service and went home to die; he sleeps by the Juniata. Of the three others, Bates served at the War Department and Brown and O'Brien at the front throughout the war. Thus informally began the career of the corps, which grew to number more than 1,000 experts, which constructed 15,000 miles of line in the field, transmitted millions of important dispatches, regulated the movements of distant armies, as those of Grant, Sherman and Thomas, and, in short, made it possible to move vast forces as a unit over a wide territory."

That the military telegrapher was frequently exposed to great danger is shown in the following paragraph:

"At Great Falls, an outpost on the Maryland side of the Potomac, the pickets were one day withdrawn, and simultaneously the Confederates began to shell the telegraph office. As steps, porch and roof were successively shot away, the operator, Ed. Conway, reported progress to the War Department, adding that his office would 'now close for repairs,' and withdrew with his instrument as the enemy crossed the river.

"With McDowell's advance to Bull Run, in 1861, lines were extended to Alexandria, Fairfax Station and Fairfax Court House. Aided by a line of couriers, the progress of the first battle of Bull Run was reported to the War Department by operators at the front, who were among the last to leave the field.

"They soon became veterans, sharing the dangers and privations of the troops, keeping up communication night and day, and faithfully guarding the important military secrets intrusted for transmission."



CHAS. E. TAYLOR, PRESIDENT OLD TIMERS' ASSOCIATION.

Most vivid is the Newport News operator's terse description of the famous encounter between the Merrimac and Cumberland. "The Merrimac," he telegraphed, "steers straight for the Cumberland." "The Cumberland gives her a broadside." "The Merrimac keels over." "She seems to be sinking." Then, after a pause, he wired "No; she comes on again." "She has struck the Cumberland and poured a broadside into her." "God! the Cumberland is sinking." Another pause and then: "The Cumberland has fired her last broadside." The historic combat between the ironclads the day following was similarly bulletined by the same steady hand from Newport News. "A new era was begun," says the author, "by the appointment of Colonel Anson Stager as General Superintendent of all military telegraphs with Thomas T. Eckert, afterwards Assistant Secretary of War, in immediate charge of the Department of Virginia and North Carolina and later with other competent telegraphers in

charge of the departments of West Virginia, Ohio, the Cumberland, Missouri, Tennessee, the South and the Gulf." In his usual happy style the author describes how "at Cherrystone, Eastville, Cape Charles, and northward the military telegraphers enjoyed a holiday, faring on luscious oysters, shooting wild ducks, lazily riding with a cavalry escort over the line, wherein was just sufficient danger from guerillas to give zest to life; while across the bay at the front the boys were working their instruments under fire in the trenches around Yorktown, keeping McClellan in constant communication with his generals and with Fort Monroe and Washington. * * * Before Yorktown the operator in the clouds telegraphed to headquarters the position of Confederate intrenchments and the effect of our fire, assisting to regulate the range of our guns."

The importance of the telegraph in battle is further illustrated at Williamsburg, Fair Oaks and in the Seven Days' fighting. "At Gaines's Mill, Porter obtained reinforcements at the critical juncture through the promptness of his operator who tapped the wire as our line of battle receded, and transmitted the necessary dispatches under a heavy fire, which killed several of his mounted messengers."



WM. J. DEALY, SECRETARY OLD TIMERS' ASSOCIATION.

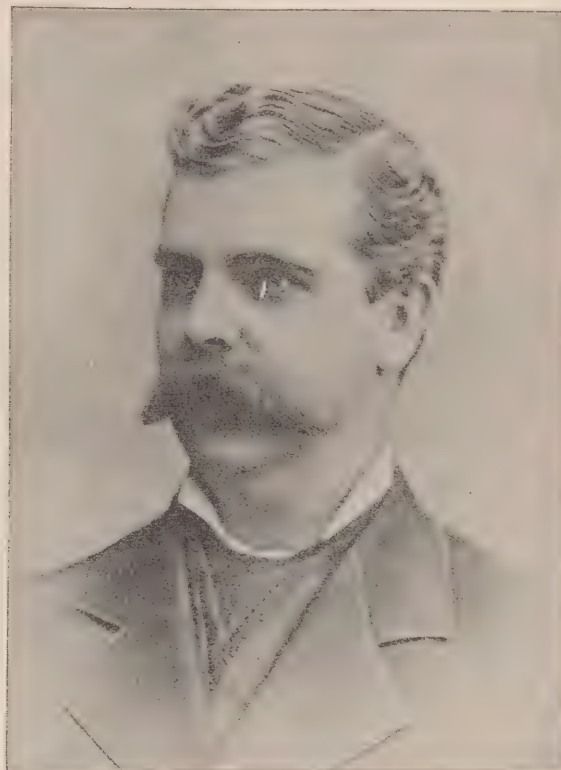
"At Norfolk, in 1862," he says: "the chief operator was offered by a committee twenty thousand dollars in gold, the freedom of the Confederacy, and passage to England by blockade runner if he would anticipate a telegram expected from Mr. Lincoln granting a reprieve to a citizen condemned for shooting a Union officer. The offer was made on the day preceding that fixed for the execution and was indignantly rejected."

"During 1862 nearly four thousand miles of line was built over the wide territory occupied by our forces. Of this nearly half was taken down or abandoned as the necessities of the conflict dictated; over a million important telegrams were transmitted."

In the retreat of Banks from Strasburg both his telegraphers fell into the hands of Jackson. "One of them," it is related, "while detained at Winchester to send important messages after our rear guard had passed, finding himself surrounded, destroyed his dispatches, broke his instruments and surrendered."

In Pope's Virginia Campaign, of three weeks, after the wires had been destroyed the telegraphers plunged into the work of reopening communication. This was attended with great hazard. "The field operators with

Pope, too, finding their usual occupation gone, became independent scouts." * * * The earliest advices of the second battle of Bull Run, like those of the first, were given by the operators, two of them riding direct from the battlefield to the nearest line and telegraphing their own description of it to the President, who personally thanked them by telegraph. In such hazardous work a number were wounded or captured." Later in the war in the attempt to open for Sheridan the line via Manassas Gap road to Fort Royal, a railroad and telegraph party while proceeding by locomotive were ambushed and five of them killed. In the Fredericksburg campaign three of Burnside's operators "were captured at their posts, one of whom escaped by his wits, and the others joined the considerable delegation of the corps, already in captivity, where they suffered the usual horrors of Libby, Belle Isle, and Andersonville, and whence they communicated by many ingenious devices with their friends. A brass button by the hands of an exchanged prisoner would contain a cipher dispatch on tissue paper. A ring carved from



JAMES E. PETTIT, SECRETARY MILITARY TELEGRAPHERS' ASSOCIATION.

bone and marked with a few Morse characters told us of our captured comrades. "A swift glance southward and westward, without regard to chronological order, may indicate the value of telegraph in other fields than the Potomac."

"General Palmer credited the telegraph with having apprised him of the approach of Pickett's force against New Berne in February, 1864, and with enabling him promptly to concentrate his forces to meet the attack."

"Three of his operators died of yellow fever. Plum says: 'On the pay-rolls, which alone indicate that these men were in the service of their country, is written opposite their names, "Discharged." An eternal discharge, indeed.' Yet that epitaph comprises all of rank, reward, or pension ever tendered an operator of the military telegraph, or his family, by the United States."

Speaking of the military telegraph service in South Carolina, the writer says: "It was peculiar in the preponderance of sub-marine cables connecting the sea

CONTINUED FROM PAGE 3.

the organization of the Sawyer-Man Electric Company, of which he is now treasurer.

The General was elected secretary of the Telephone Association at the Providence meeting in September, 1885, and has held the office since that date.

Besides his business and military relations he has been prominently identified with several of the principal secret societies, was a member of the City Council of his native city, and in 1884 was appointed by President Arthur, upon the nomination of the Governor of the State, the Commissioner for New Jersey to the World's Exposition at New Orleans, in which capacity he organized and managed the very large and interesting State exhibit which attracted such favorable notice, and for which he was honored by the thanks of the State government and made a member of the Board of Managers of the Exposition.

FREDERICK E. DEGENHARDT.

Thirteen years of electrical experience in various capac



FREDERICK E. DEGENHARDT.

ities, as superintendent, contracting agent and manager, have been traveled over by our well-known Western friend, Mr. Frederick E. Degenhardt. He first saw the light of day in the city of Chicago in 1856 and a continuous residence in that city no doubt accounts for his tenacity of purpose at all times, in endeavoring to have everything either come to or emanate from that place.

He is prominent in various clubs and societies, and among the hard workers of the Chicago Electric Club in particular, being on its chief committees as chairman.

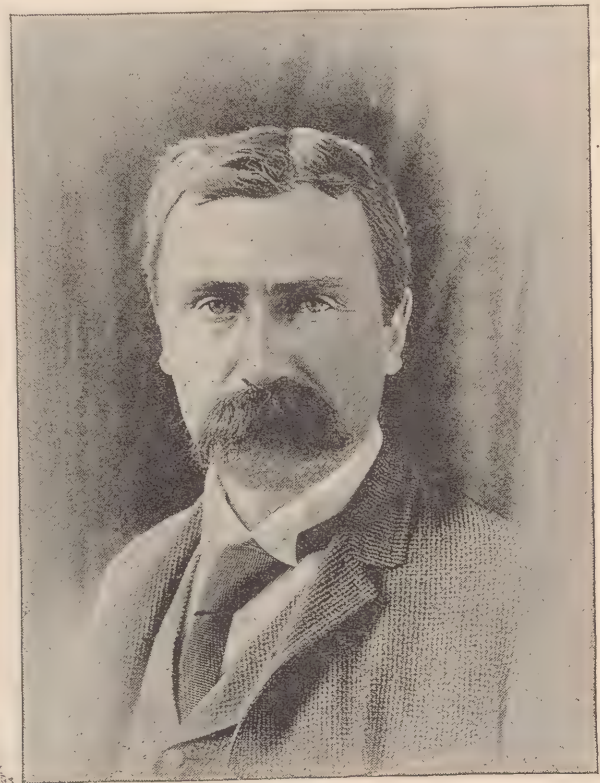
His efforts in the direction of underground work of an electrical character, in the city of his birth, are second only to Prof. Barrett; and his success attained in that direction is best evidenced by the large volume of business handled by him for the Standard Underground Cable Co., which he represents as manager.

We present his picture herewith, and many will recall him as the man who stood up for Chicago at the recent

National Electric Light Association meeting at Niagara Falls, and insisted that New York was not the place for the World's Fair.

WILLIAM A. CHILDS.

William A. Childs was born at Syracuse, N. Y., in 1846, and was a classmate at the University of Michigan of the late Geo. L. Phillips so well known in telephone circles. He commenced life as an office boy in a wholesale dry goods house in New York and same year rose successively to the position of entry clerk and book-keeper. For five years thereafter he engaged in the life insurance business, first as assistant secretary of the Standard Co. and afterwards as superintendent of agencies of the Manhattan Co. In the spring of 1874 he had many acquaintances in the legal profession and was struck with the large amount of daily inter-communication among lawyers. Then it was he conceived the idea of accomplishing such inter-communication electrically and by means of the Exchange system. He abandoned the insurance busi-



WILLIAM A. CHILDS.

ness and in April of that year issued a prospectus and commenced receiving subscriptions from the lawyers for such service. He soon received a sufficient number to indicate success and then organized the Law Telegraph Co. and commenced the manufacture of the apparatus and erection of the wires. In April, 1875, this work, was finished and the Exchange opened with about fifty *bona-fide* paying subscribers and nearly one-half of this original fifty are still in the list. The system was extended in 1876 to merchants and the public generally. The first instrument used was the dial or needle, the next the printer and then the telephone. The telephone was first used in the system in the spring of 1877. The system was always and solely the Exchange system of to-day.

The subject of this sketch is unquestionably, therefore, THE FATHER OF THE EXCHANGE SYSTEM. The company has been prosperous since its organization, having paid over half a million dollars dividends to its stockholders.

CHARLES A. CHEEVER.

The subject of this sketch is well known in telephone and telegraph, as well as in the highest social circles of New York. Possessing a robust health and sturdy manhood, an active and enterprising spirit, supplemented by a liberal education and natural broad and liberal views, his position in the business world has always been a scene of generous activity and great usefulness, and to-day, though scarcely in the meridian of life, we find him leading two of the most important industries of modern times. First, as president of the Okonite Company, the largest manufacturers of insulated telephone and telegraph wires and cables in the United States, and second, as conducting the intricate details of the Phonograph Company who are about introducing that important instrument to the world at large—a field so boundless that the mere contemplation of the magnitude of the administrative and executive ability necessary to guide intelligently its every movement, would cause many veterans in the business world to stand aghast in contemplation of the enormous labor



CHARLES A. CHEEVER.

connected with the undertaking. Mr. Cheever, however, without a thought to personal health, comfort or enjoyment, has taken up the task, and the business already feels the touch of his magic wand.

It is not generally known that Mr. Cheever was the first person to introduce the telephone in the city of New York. This took place at an exhibition of the American Institute, held at the Rink, 63d street and 3d avenue, in 1877, the connecting points being from that building to the *Tribune* office. We remember that there were but few believers in the audience, most of them thinking that the "hello" fellows were secreted on the floor below, or that some legerdemain trick was being practiced on them. Had Mr. Cheever held his faith and grip in the telephone interests he had then in hand, there would have been another Croesus travelling the streets of New York, though he is now by no means without the great wherewithal of this life. He was the pioneer in the introduction of the telephone in this vicinity, having owned at one time the en-

tire field of the States of New York, Pennsylvania, New Jersey and Delaware, which he relinquished in 1877, to the Bell Telephone Co., owing to ill health.

Mr. Cheever is exceedingly popular in club and social circles where he is familiarly called by the title "Commodore," having at one time held that position in New York's famous Rockaway Yacht Club. He still takes an active interest in yachting and is the owner of the "Cru-sader," one of the speediest vessels of the fleet. The Commodore's country residence is at Cedarhurst, L. I., which is situated only a mile from fashionable Wave Crest, where his father, John H. Cheever, Esq., owns immense landed interests; here he indulges in all the luxuries of a free country life and entertains most hospitably a large circle of admiring friends, for the Commodore is "a jolly good fellow." As president of the Okonite Company it is hardly necessary to speak. The rapid strides this concern has made in the electrical field, from a business of about \$9,000 per year to over half a million, and the great value and popularity of its telephone and telegraph wires and cables, now being liberally shipped to every quarter of the globe as well as the high credit of the company and its national reputation for fair and honest dealing, fully testify to the ability and integrity of its honored leader.

THE TELEPHONE LIMITED.

The Special "Telephone Limited" vestibule train for Minneapolis, Minn., will leave Jersey City, at 9 15 a. m. on Sunday, September 8th.

This train is guaranteed to be the finest ever run out of New York, and will be composed of entirely new cars, with all the latest improvements, lighted by electric lights throughout.

The list of passengers booked comprise the following :

Ackerman, P. C.,	New York.	Johnson, Chas. F.,	New York.
Adams, Abner S.,	Lowell, Mass.	Keller, Jasper N.,	Boston.
Adams, Mrs. A. S.	" "	Lockwood, Thos. D.,	" "
Adams, Chas. E.,	" "	Manson, Geo. T.,	New York.
Adams, Mrs. C. E.,	" "	McQuaide, J. P.,	" "
Bailey, R. M.,	Williamsport, Pa.	McQuaide, Miss F. Q.,	" "
Baker, Cyrus O., jr.,	Newark, N. J.	Metzger, Henry,	Pittsburgh, Pa.
Barney, Genl. C. H.,	New York.	Morgan, A. O.,	Boston.
Barney, Mrs. C. H.,	" "	Morgan, Mrs. A. O.,	" "
Brown, Jas. M.,	Washington, D. C.	Pickering, J. W. C.,	Lowell, Mass.
Carty, John J.,	New York.	Pickering, Mrs. J. W. C.,	" "
Clarke, Joel C.,	" "	Pitcher, H. H.,	Brooklyn, N. Y.
Clarke, Mrs. J. C.,	" "	Plush, Dr. S. M.,	Philadelphia.
Davis, Jos. R.,	Harrisburg, Pa.	Price, C. W.,	New York.
Doolittle, Thos. B.,	Boston.	Sargent, Wm. D.,	Brooklyn.
Eastabrook, Wm. N.,	Elmira, N. Y.	Sprague, Levi,	Lowell, Mass.
Eckert, Wm. H.,	New York.	Sprague, Mrs. L.,	" "
Eggleston, Melvin,	" "	Stump, C. E.,	New York.
Farnham, I. H.,	Boston.	Stump, Mrs. C. E.,	" "
Glidden, Chas. J.,	Lowell, Mass.	Stanley, Henry D.,	Bridgeport.
Glidden, Mrs. C. J.,	" "	Taltavall, J. B.,	New York.
Hall, Edward J., jr.,	New York.	Thayer, Henry B.,	" "
Hall, Mrs. E. J., jr.,	" "	Tyler, Morris F.,	New Haven, Ct.
Hall, Geo. G.,	Boston.	Westbrook, W. T.,	Philadelphia.
Ivers, Samuel,	New Bedford, Mass.	Weston, Gov. J. A.,	Manchester, N. H.
Ivers, Miss E. F.,	" "	Weston, Miss Grace H.,	" "

The meldometer of Mr. Joly, recently exhibited at the Dublin British Association meeting, Bath, is a simple instrument for observing the behavior of bodies at high temperatures. It fits the stage of a microscope, and consists of a platinum strip between two clamps. An electric current heats the strip, and material laid on it is soon heated up. The temperature is regulated by a carbon resistance controlled by the operator. Quartz is easily melted by this method, which is also applicable to the examination of sublimates during and after their formation.

The following Directors of the Pacific Postal Telegraph Cable Company were elected in New York recently: John W. Mackay, W. C. Van Horne, George Stephens, Charles R. Hosmer, Richard V. Dey, Albert B. Chandler, Hector De Castro, Edward C. Platt and George G. Ward.

CONTINUED FROM PAGE 5.

islands, and in the exposure of the operators on Morris Island and vicinity to the fire of the Confederate batteries during the long siege of Charleston. On one occasion two of our men were up alternate poles stringing a wire which had just been cut by a shell when another well-aimed shot struck the pole between them and brought poles, wire and men in a tangle to the soft sand. * * *

"In September, 1863, a Union operator named Forster tapped the Charleston and Savannah line near Pocotaligo and sent information to Generals Gilmore and Terry, that enabled them to foil a concerted attack by the enemy. Forster was captured on the third day and died in prison.

"When Rosecrans was defeated at Chickamauga and retreated to Chattanooga, where Grant sent him timely aid; and in the concentration of Sherman and Hooker with Thomas, which culminated in the victory of Chattanooga, the telegraph was of incalculable service.

"About this time Longstreet besieged Burnside at Knoxville and Grant sent Sherman swiftly to the rescue. Plum says: 'After Grant had driven Bragg from Missionary Ridge he received despatches from the advance office at Tazewell, notifying him that Burnside could not hold out longer than December 1. Secretary Stanton telegraphed for Colonel Stager to "come to the key." Stager had retired, but an instrument by his bedside awakened him. Stanton in Washington asked Stager, who was in his bed chamber in Cleveland, O., to forward news to Burnside by the most trusty means. The colonel instantly called up the chief operator in Louisville, Ky., and the latter the operators at four separate points nearest to Burnside. Thus it happened that in the dead of night four telegraphers, each with a cipher message notifying Burnside of the approach of Union troops, started on their perilous journey from four separate points.' Some of them reached Burnside, and he held out until his army was saved. The episode has not been immortalized nor its heroes rewarded.

"Taking up the electric thread with the Army of the Potomac, in 1864, Badeau attests that when Grant crossed the Rapidan in the final campaign he moved synchronously, by telegraph, Sherman in Georgia, Crook in the Valley and Butler on the Peninsula, and received responses from each before night, while all the remaining forces of the Union were placed on the alert by the same agency. * * * General Eckert had at this time perfected a field telegraph system somewhat on the mountain howitzer plan. Reels of insulated cable, strong enough to resist cannon-wheels, were carried on the backs of mules paying out the wire over the field, where it was raised on lances or trees, while compact portable electric batteries were transported in ambulances constructed for the purpose. This system was found efficient on the battlefield and at Spottsylvania Court House, where at one time operators and cable were within the enemy's lines, and in subsequent battles it was thoroughly tested.

"In Butler's advance on the Petersburg and Richmond Railroad, 7th of May, a line was carried along with the column to within sight of that road, and worked until Beauregard struck us at Drewry's Bluff, on the 16th, when General Butler ordered his chief operator to 'bring the line within the intrenchments.' In these trenches, one night, Maynard Huyck was awakened from sleep, not by the familiar voice of his instrument, but by the shriek of a Whitworth bolt, a six-pound steel shell, which passed through the few clothes he had doffed, then ricocheted and exploded beyond. Congratulating himself that he was not in his 'duds' at the moment, the boy turned over and slept through the infernal turmoil of an awakening cannonade until aroused by the gentle tick of the telegraph relay. "During the siege of Petersburg every salient point on the front of the armies of the Potomac and James was covered with the wires radiating from Grant's headquarters at City Point."

That the result of battles sometimes hung on the continuity of a slender wire was shown on March 25th, 1865, when "the cutting of the wire by Gordon removed Meade from control, placed Parke in command, gave him three corps and empowered him to assault, while its repair restored Meade, regulated the assault, enabling Grant to use his whole force as a unit, and secured an advance by our forces, all within the space of a few hours. Thus were forts lost and retaken, and thus were battles won by the aid of the telegraph! Its success in this emergency was due to the field system.

"It may surprise the reader to learn," says Mr. O'Brien in conclusion, "that beyond the commendation of Lincoln, Stanton, Grant, Sherman, Sheridan, and all the higher officers, the military telegraphers—except a few heads of departments, who were commissioned and promoted from captains up to brigadier-generals—have never received any recognition for their great services. Though suffering captivity, wounds, and all of the hardships of the troops, the members of the corps cannot tell their children that they were soldiers, nor hail their brother veterans of the Grand Army of the Republic as comrades. They were merely 'civilians' who faithfully performed dangerous and harassing military duty with boyish enthusiasm, and some of whom have survived to learn that republics are ungrateful, or at least, forgetful. Uncle Sam, who has been more generous to his veterans than any potentate of history, has forgotten them. Their widows and orphans receive no pensions.

"Once a year the survivors of the corps from all parts of the Union meet to renew old acquaintance, cemented by the electric spark over leagues of wire. Many of them never met in the field, but they knew each other well by telegraph, and can still recognize the touch of a comrade's hand on the 'key' a thousand miles away.

"The experience of this country, which demonstrated the value of a military telegraph, induced the immediate organization of such corps in all European armies."

The following gentlemen were then unanimously elected as old timers: Messrs. J. H. Lounsbury, J. F. Cleverdon, George E. Holbrook, New York; W. W. Burhans, Washington; W. A. Harris, New Haven; A. J. Porter, Louisville, and James Faulkner, Hoboken. The president then appointed R. B. Woolsey of Terra Haute, George M. Dugan of Jackson, Tenn., and Harry W. West of Chicago a committee to confer with the Committee of the U. S. Military Telegraph Corps as to the time and place of the next annual meeting. Kansas City was selected as the place and the second week in September 1890 the time. Day K. Smith of Kansas City was elected president, and Barney Hughes of Memphis, vice-president. W. J. Dealy of New York was re-elected secretary and treasurer amid loud applause. The meeting then adjourned to meet at 7.30 o'clock the following evening at Mammoth Cave.

The military meeting adjourned to meet at the same place. The reason for this unexpected adjournment was due to the liberality of the Commercial Club, one of the most remarkably successful organizations of its kind in this country, who desired to show the telegraph boys the sights. Under the immediate direction of Chairman Batman and an able corps of assistants the entire party entered carriages and were escorted over a large portion of the city. At the tobacco manufactory of Mr. Harry Weissinger, where the first stop was made, the guests were treated to liquid refreshments and each allowed to help himself to a sample of tobacco which was displayed at an adjoining table. The next stop was made at Phenix Hill, where cool, fresh lager in abundance was placed on tap for all. From there the line led through the residence portion of the city to headquarters, where all alighted and quickly dispersed to get themselves in readiness for the banquet.

The banquet was an elaborate affair, the dining room being beautifully arranged and decorated. All along the main table, from one end to the other, miniature telegraph poles had been

placed. They were in exact imitation of the cross-arms which support the wires of the country, except that their bodies were wound with ivies and evergreens, representing climbing plants. Four small lines extended from one end to the other, and there were switch-boards and keys at both the head and foot of the table. Rare tropical and hot-house plants and cut flowers in various designs laden the atmosphere with the sweetest of odors, while the blended colors charmed the eye. When the doors were thrown open the strains of "My Old Kentucky Home" greeted the guests. It was rendered on the cornet by Mr. Robert J. Elliott, Jr., accompanied by Mr. E. J. Elliott on the piano, which had been especially placed in the dining-room for the evening.

All were seated, with President W. R. Plum, of the Military Corps, presiding, and James Douglas Reid, of New York, and Judge J. B. Kincaid, on either side. The following were present: J. H. Lounsbury, J. H. Emerick, R. J. Hutchinson, Joseph Knittle, J. J. Calahan, John F. Cleverdon, R. G. Stephenson, of New York; T. J. Batman, Judge Joseph B. Kinkead, Gen. D. C. Buell, Gen. Basil Duke, of Louisville; A. L. Eugene, of Bridgeport, Conn.; W. R. Plum, of Chicago; Col. Charles E. Taylor, of Frankfort, Ky.; James D. Reid, of New York; E. Rosewater, of Omaha; Charles H. Kahlert, A. J. Porter, A. L. Eggleston, Louisville; William B. Wilson and Donald Wilson, of Philadelphia; Barney Hughes, of Memphis; D. A. Williams, of Kansas City; W. H. Johnson, M. J. Burke, Louisville; Edward Delaney, George E. Holbrook, Lant Jones, William L. Ives, New York; Sol. Palmer and Sidney B. Fairchild, of St. Louis; John Brant, Thomas Finnigan, Theodore B. Fullon, New York; K. McKenzie, Jackson, Tenn.; J. Newton Crittenden, Rozel Weissinger, Donald McDonald, J. F. Ludwig, E. O. Hewitt, Louisville; T. P. Scully, New York; W. L. Briggert, Jeffersonville, Ind.; R. A. Taylor, Terre Haute, Ind.; Charles Newton, Frankfort; R. B. Woolsey, Terre Haute, Ind.; C. Smith, J. E. Pettit of Chicago; W. J. Dealy, New York; Geo. M. Dugan, Jackson, Tenn.; Captain Irwin Dugan, Louisville; Mrs. G. M. Dugan, Miss Kate Elliott, Mrs. C. Smith, Mrs. W. R. Plum, Mrs. J. E. Pettit, and Miss Kate Jansen, of Louisville.

Col. Taylor of the Old Time Telegraphers' Association touched the key and silence prevailed as he slowly ticked the request for prayer from James Douglas Reid. That patriarch of the assemblage responded in a vein which almost brought the tears to many eyes. The first course was then set before the guests, and Miss Katie Elliott was requested to sing. She did her wide reputation as a singer of great power and sweetness justice.

A statement had been made by wire that Col. Will S. Hays, author of "Mollie Darling," "Old Log Cabin in the Lane" and a hundred other well-known melodies, was present. A motion was made by wire that he sing, and the "ayes" were the votes of those who favored it. Col. Hays responded and sang "Way Down Yondah in de Corn-field."

The head waiter had a good deal of trouble to keep his sable assistants from breaking into an old-fashioned hoe-down when they heard this. Col. Hays was vociferously applauded, and responded to the encore with the following poem, which, he said, was hurriedly written during the evening for the occasion:

We have met to-night,
Let our hearts be light
And filled with pleasures and joys;
Let us smile and laugh
At the telegraph,
For we are the old-time boys.
We've served our time
From our boyhood's time
And we've come through manhood quick,
But we'll sit at the table
As long as we're able
And list to the tick-a-tick, tick.

We have worried our brains
O'er the running of trains,
And we've wired the news to the press;

Sent messages glad
And words goods and bad,
And forwarded deeds of distress.
And our work we'd pursue
On the telegraph new,
And thought we were doing it quick,
When we played with the wire
And set it on fire
As we heard it go tick-a-tick, tick.

Now invention has come
And improved the thing some,
And it doesn't make noise or much "fuss,"
But it keeps its old name
And it goes on the same
With the "boys" as it used to do us:
But soon other faces
Will fill all our places,
Other fingers the instrument click,
And we'll be laid away
In the cold, silent clay,
Where we won't hear the tick-a-tick, tick.

So as man and as brother
Let's love one another,
Be happy and honest and brave,
Till we each lose a "sit"
Or we all have to quit
And keep our hand still in the grave.
So, with hearts gay and light,
Let's be happy to-night,
And hope that we won't get so sick
As we fill up the glass
And the gay hours pass
That we can't hear the tick-a-tick, tick.

Mr. Robert J. Elliott next played a cornet solo, and was applauded most heartily.

The President said that like Topsy the United States Military Corps was not born, but grew into great proportions from originally five men, and he called upon one of those five men, Hon. William B. Wilson, of Philadelphia, to respond to the toast "The Military Telegrapher." Mr. Wilson gave the main credit of the corps' organization to Col. Thomas A. Scott, of Pennsylvania, and gave a short review of the life of the organization. He spoke of Kentucky, dear to Pennsylvania because it was first inhabited by a Pennsylvanian, Daniel Boone, and the religion of Boone and Pennsylvania were responsible for the good people of Kentucky. Referring to Kentucky, Mr. Wilson said:

"Where the blue grass grows you find the highest development of vegetable life, and based on that is reared a perfect structure in the physical, mental and moral properties of a perfect man. It is for this reason that Kentucky is noted far and wide for her able men and beautiful women, fine horses and pure whiskey—the four great powers that have been important factors in the development and advancement of the Northwest Territory. From it has sprung the intrepidity of a Boone, the eloquence of a Clay, the chivalry of a Breckenridge and the wit of a Prentice, and made Kentucky a garden spot for the gods to envy."

Referring to his companions of the war time key, Mr. Wilson closed by speaking pathetically, as follows:

"The hairs are getting grayer, the wrinkles deeper, the alacrity of step feebler, and sadder still, the ranks are growing thinner. This seems to be the common fate of all classes who band together to perpetuate the glories or achievements of the past, and I see no reason why we should not recognize it as applicable to our societies, and whilst the tears of regret drop over our cheeks for those who have gone to the better land, we should not drive away the smiles of gladness that encircle our eyes as they beam upon the faces of old friends who living cluster around the board of this reunion."

Several letters were read from some of the old-time telegraphers who are in Europe and scattered about the world, and with a final glass and a strong grasping all hands around, the company, led by Miss Elliott, sang "Auld Lang Syne," and the banquet of 1889 was at an end.

NOTES.

WESTERN UNION NOTES.—Despite the strong hopes, wishes and prayers held out for the early restoration to health of Mrs. Cummings, wife of general traffic chief, E. F. Cummings, of the night force, this most estimable lady passed quietly and peacefully away at the home of relatives in Tremont, N. Y., whither she had gone when the premonitory symptoms of her illness became manifest, in the hope that a few days' rest would remove the indisposition from which she was then suffering. The best medical aid that could be procured availed the patient nothing, and at 10.15 o'clock, on the morning of August 29th, surrounded by her devoted husband and immediate relatives, she died. Simultaneously with the announcement of her death friends of her husband went quietly to work taking up subscriptions here for the purpose of having arranged a floral offering as a mark of respect to the memory of the deceased, as well as a silent testimonial of the high esteem in which her bereaved husband is held. The piece selected was that of a beautiful combination of a pillow, anchor and star, each distinct, and yet so artistically blended that it was impossible to say where one ended and the other began. The freshest flowers and only those of the season were used. There were no gaudy combinations of colors, the pillow presenting the only striking contrast, as in it was set the word "SYMPATHY" in immortelles. The funeral, which took place at the church of St. John the Evangelist, corner of 55th street and First avenue, was largely attended. The interment was at Calvary. Mr. Cummings has the sympathy of a multitude of friends in this the hour of his greatest bereavement. To Mr. Charles Prusic, station agent and operator at Tremont, your correspondent in common with other friends of Mr. Cummings' family, takes this opportunity of expressing heartfelt thanks for the many courtesies he so graciously extended to all. His kindness in sending a messenger to guide strangers to the home of the deceased lady at any and all hours of the night was remarked by everybody. Misses Angela Spencer, Fannie Sheridan, May Olwell, Lillie Bell, Grace Broadhead and Marie Fancell have been promoted from check girls to operators. Chief operator Dwight smiles again—this time because it's a little girl. Miss Newman and Miss Morris have returned from broker offices. Mr. Hamilton Fitchett, chief of the Jerseys, is seriously ill at his home in Brooklyn. It is hoped by all that his recovery may be a speedy one. During his absence Mr. E. E. Brannin, day chief of that division, has looked after Mr. Fitchett's interests during the first part of the night, being then relieved by Mr. James J. Buxton; but owing to a weakness in the pedal extremities, caused by pounding the floor too great a number of consecutive hours, Mr. Brannin cheerfully gave way to Mr. Gardiner Irving, the well known chief of the C. N. D. Miss Nora Conklin is subbing at Argyle for two weeks. "Newfik," for Newark, is the latest atrocity on the farm. Miss Fannie Harris, recently returned from vacation, has been transferred from the southern division to the city line. Mr. Blake, whose illness was announced in a previous issue, died of hasty consumption at his home in Brooklyn, Aug. 31. A large number of friends attended the funeral. Miss Alice Whelan, after an absence of several weeks at the Cotton Exchange, has returned here greatly to the delight of her many friends. Miss Mamie Dougherty has been on the sick list. James Foster has been assigned to the Augusta quad. The following ladies have gone on their vacations: Misses J. Lee, T. Lee, B. Herclotz, L. Kircher, H. Haw, M. Clark, M. Spellman, A. Spellman, M. Burke, L. Stacom, Ida Dealing, N. Flynn, N. Swords, M. Gilman, Alberts, Bulger, Schuler, Landy, Opper, Hawk, Jennie Fitch and "Ritie" Gowan. Mr. Millard has returned from Spring Lake, where he has been for the season. His health is excellent. Miss Leddy and Bardash, and the

Misses K. Stephenson, A. Henderson, G. Hays, N. Rooney, J. Powell, J. Frazee, A. Lehman, L. Landy, M. Glover, M. Geary, S. McKenna, H. Ford and Chiefs Donovan and McNally have returned from vacations. A. Cutair is back from Atlantic City. Misses K. Boyle, I. McNally, Rosie Uth, K. Brown and Miss Kingston have been assigned to the split trick. The sympathy of all is extended to Mr. W. O. Van Orden whose beloved mother died a few days ago. On the 3d inst., the Friendship Social Surprise Club held a stag picnic at New Dorp, S. I., which was well attended, a large number of operators being among those who participated in the enjoyment of the occasion. Prominent among those present from here were Conrad Meyer, Hugh Moody, John Powers, Gus Kraanshaer, Sam Ford, George Ford, Geo. E. Holbrook and Al. Lauer. The company would have been incomplete without the genial face and rotund figure of Tommy Hinds of Williamsbridge, who was the life of the crowd. In the fat man's race Gus Kraanshaer took first honors, winning a handsome gold medal. Mr. Geo. Hessler, president of this successful organization, has held office for four years, and if the members ever anticipate running across a more popular one they will have to keep their eyes wide open and do a pile of hustling. The many friends of John J. Murphy, formerly of the night force, but who for last two years has been in Denver and other parts of the north and south-west in search of health, will be pained to hear that from late reports received from Schroom Lake, N. Y., where he is at present stopping, that he is not improving very rapidly. We trust he will soon regain his old form and resume his place.

BAR HARBOR, ME., NOTES.—During President Harrison's stay in Bar Harbor a large amount of press matter was handled in a very efficient manner by Manager H. A. McDonald, assisted by operators Chas. Stevens and J. F. Conners of Portland, and Arthur Pratt and Jack Ormond of Boston, assistant operator B. J. Foley officiating as clerk. The wire facilities were well nigh perfect. Besides wires to Bangor and Boston, there were also direct wires to New York, Philadelphia and Chicago, the latter working remarkably clear and steady. Over fifty thousand words were handled in an unusually smooth and satisfactory manner. The amount of August business for the present year exceeds that of previous years and is holding out very well. The extra operators will all have returned to Boston by October 15th.

BOSTON NOTES.—What with the Presidential visit, yacht racing, tennis tournaments and the various summer offices, this has been a very busy season in New England. Boston office has handled this large volume of business very creditably, notwithstanding having to do so under disadvantages, as scarcely a single week of the season passed by without having two or three of our best men sent to outside offices to help out on emergency cases, but still the business was handled promptly and efficiently. The busy season is now waning, many of the summer offices are already closed, and the usual annual influx of operators from the summer offices is at hand. There does not seem to be many vacancies in or around Boston just at present, and it seems strange how all those summer operators can get employment during the winter; but yet they all manage to obtain positions, and if the past can be taken as a criterion of the future, very few, if any, will be obliged to loaf the coming winter. A large number of the fraternity have succeeded in obtaining vacations this year and with a decidedly good effect. There is food for reflection in the contrast of an operator's appearance as he (or she) starts out on his vacation, pale and tired looking, and the healthful glow and bronzed features with which they return after a few weeks' sojourn in the country or at the seashore. Would it not repay the Western Union to grant their operators an annual vacation

of one or two weeks? Manager Henderson has gone on a fishing trip to New Hampshire; we predict commotion among the funny tribe. Night traffic chief Knowlton has returned from a two weeks' vacation as bronzed as an Indian. James C. O'Leary, of the *Boston Globe*, is on a two weeks' vacation, with pay in advance, at his home, Charlestown, N. H. Willie Hazelboom is rustivating by the South-Shore. Thomas C. Devine selected the banks of the beautiful Hudson for his vacation. Jas. A. Dougher, Miss Mamie Doughier and Miss Cecilia Hickey made a short sojourn at Narragansett Pier. Miss Maud M. Mayo has returned from the Wentworth House, N. H., to the United States Hotel, Boston, with a complexion so ruddy a dairy-maid might envy. Miss Mollie Dunn has arrived in the ladies' department from Narragansett Pier. Messrs. Elliot and Parker are back from Cottage City; office there closed. Mr. F. R. Phillips, of Chicago duplex, nights, and Miss Mollie L. Morse, of the ladies' department, were recently united in wedlock; after a short wedding trip they both returned to their respective positions. We extend to the happy pair our congratulations and best wishes for future happiness and prosperity. Robert E. Tobin, manager of "He" office, took an involuntary dip a few Sundays ago. Being out canoeing, on the Neponset River, his frail craft became unsteady and capsized. Mr. F. T. Viles, city-line inspector, was near at hand and promptly went to the rescue. They both got a good wetting, but were otherwise uninjured, and managed to "paddle their own canoe" homewards.

SAVANNAH, GA., NOTES.—There are numerous changes to record this month. Mr. T. R. Rusk and Mr. M. S. Harris have gone with the Postal in the capacity of managers; the former at Augusta and the latter at Columbia, S. C. These gentlemen are both ex-managers of the Southern. Mr. Rusk is a most able man, possessing admirable judgment, and his selection as manager by the Postal Company indicates that they are securing men of the right stamp. The same can be said of Mr. Harris, who has been a prime favorite with us during his short stay. He will be greatly missed by his many friends. Mr. James Seabrook retires as manager of the Cotton Exchange office to accept the position of private secretary in one of the large cotton firms. Mr. Spaid succeeds him at the Exchange. Mr. Weissinger also abandons the key to enter into the mercantile business at Blackville, S. C. May success attend all of them. Mr. Chambers leaves shortly to accept a position with a railroad at Charlotte, N. C. Among the recent arrivals are: Therrell, and William Webb from North Carolina; Wood, Martin, McCormick and James, from Atlanta; Riley from South Carolina, and P. Reich, from Baltimore, Md. Miss Cleminson, manager Brunswick, has just resumed work after a short illness. Miss Deitsher, manager Thomasville, has just returned from a vacation. The telegraph business is heavy.

C. P. R. NOTES.—J. A. Kammerer, chief train despatcher, Moose-Jaw, organizer "Station Agents Association," was in Port Arthur last week, where a meeting was held Aug. 22, and a lodge organized. There were a good number present, representing the district between Keewatin and Prembroke. Mr. J. H. Longworth, Port Arthur, was elected president, and F. C. Saunders, Ignace, secretary, with the following officers: S. A. King, Kaministiquia; M. H. Bonewell, Dalton; J. H. Elliott, West Fort; B. W. Shaver, Dexter; Mr. Hurley, Savanne; A. B. McCoy, Tache. N. MacDougall, captain Port Arthur cricket team, accompanied the same to Winnipeg last week to play against the Winnipegs and Assiniboians. Chas. Kent, Rennie, and F. H. King, Hawk Lake, are off on vacation, the former going to Detroit, the latter to Mitchell. Whilst waiting boat connection at Port Arthur they made themselves generally useful by helping out in

"X" office. Come again, boys. Transferred: James Thom, Tache to Rennie. Arrivals: R. W. Hyde, Sheakspear, Ont., to Hawk Lake.

NEW ORLEANS NOTES.—*Apropos* of the ever interesting topic of curious errors that occur in the transmission of telegrams. Doc. Feely, who undoubtedly is more of a dry wit than Ben Jonson, casually and very dryly remarked to me, this morning: "In the body of this message *Adam Short*, is rendered, *a dam sport*" It was not quite so bad as that; upon examination I found it was *Adam Sport*. The pun was so timely you know. Has not *a sport* named John L. been *damned* to one year's imprisonment in the weird dungeons of Mississippi and will not another *sport*, Kilrain, be *damned* likewise? But still more *apropos*: are not many telegraphic *sports* also *damned* to lose their hard-earned money either by poker, faro or horse-races, especially the latter? I am sure the profession locally should thankfully appreciate the "iron-clad" order of our chief operator, W. D. West: "*any operator playing horse races or frequenting pool-rooms will be dismissed from this office.*" How much better off, morally, physically, and surely financially, would not the fraternity be, if it could thoroughly realize that it is throwing away its very life-blood by gambling in various ways. That to be a successful—I repeat successful—gambler one must, firstly, devote *all* one's time to it. It is a stern mistress that jealously permits no rivals; secondly, one must have all the elements that go to make up a crook, aye, even a thief. And even then, how many professional gamblers are there not who know not how to pay honestly for to-morrow's meal? These are stern facts but they cannot be refuted. I know many "knights of the key" who regularly, on every payday, have invested their surplus, yes, even more, to play, and not one whose gray hair has witnessed winnings that would balance the losses of past ten years or more; nay, not winnings that would counterbalance the losses of *one* of those years. Any one who has canvassed for facts can certainly corroborate the above. And it is well that our thoughtless, independent members of the profession should get some statistics and be warned. I think it was the humane realization of above facts that prompted Mr. West's bulletin. I will not say, "let every telegraphic manager do likewise." But if the fraternity could be made thoroughly aware of the *inside* facts, and act accordingly, the standard and criterion of the profession would surely be nobler and higher morally, socially and surely financially. The night force of New Orleans consists of E. J. Davis, chief operator; Jas. Anderson, assistant. Our dear Mr. Farmer, well known in the *Queen City*, has just been appointed chief of the ways. We tender him our heartiest "masseltaf." None more genial, good-natured, or equal to the oft-times perplexing problems of the "O. S." division. Others are Alexander, Berry, Borden, Thorpe, Westfield, Berton Hall, late of the day force; Jones, Lindsay, Van Dye, Wilhoite, Maloney, Friedman, Hudnall, Kehoe, Capers, Park, etc. Business has been very brisk here this summer; the prize-fight and subsequent trial, political conventions and race troubles, have made a continual "roast" for the night men. Regular business has kept the wires hot during the day. The "winter-men" will arrive shortly, and we hereby welcome them one and all.

NEW YORK TELEGRAPH CLUB NOTES.—Mr. Geo. H. Usher, manager of the Postal Telegraph Company, and one of the honorary members of the club, has presented the House Committee with a portrait of himself, Messrs. A. C. Terry, William Finn and Frank Kitton, the first presidents of the Buffalo Electrical Society. To Mr. Conrad Meyer thanks are extended for the able manner in which he, assisted by Mr. Lou Kirschbaum, floor manager, Robert McDonald, assistant floor manager, Leslie Miller, committeemen and others, crowned with success our late picnic which financially and otherwise was a success.

THE TELEPHONE CONVENTION.

At 11.45 o'clock, on Sept. 10, the annual convention of the National Telephone Exchange Association was called to order in the large reading room on the first floor of the West Hotel, Minneapolis, Minn., by President Henry Metzger, of Pittsburgh.

The members of the association form a solid looking body. Young men predominate, but there is a liberal sprinkling of the gray beards. There were about 75 gentlemen in the room when the president rapped for order. The first business transacted was the calling of the roll. Secretary Barney found the following companies represented:

Active Members—American Telephone & Telegraph, New York City; Bell Telephone, Buffalo; Bell of Philadelphia; Central District and Printing Telegraph, Pittsburgh; Central Pennsylvania Telephone and Supply, Williamsport, Pa.; Central Union, Chicago; Erie Telephone; City & Suburban Telegraph, Cincinnati; Central New York Telephone and Telegraph, Utica, N. Y.; Delaware & Atlantic, Philadelphia; Empire State Auburn Telephone & Telegraph, New York; Erie Telephone and Telegraph, Lowell, Mass.; Great Southern, New Orleans; Hudson River, New York city; Missouri & Kansas, Kansas City, Mo.; Michigan, Detroit, Mich.; Nebraska, Omaha, Neb.; New York and Pennsylvania, New York City; New England, Boston, Mass.; Ohio Valley, Louisville, Ky.; Pennsylvania, Harrisburg, Pa.; Rocky Mountain Bell, Salt Lake City; Southern Bell, New York City; Southern Massachusetts, New Bedford, Mass.; Southern New England, New Haven, Conn.; Wisconsin, Milwaukee.

Association Members—National Conduit Manufacturing Company, New York City; Standard Electrical Works, Cincinnati, O.; Western Electric Company, Chicago.

Honorary Members—American Bell Telephone, Boston; Bell, Montreal; Bridgeport Brass Co., Bridgeport, Conn.; A. G. Day, New York City; Thomas D. Lockwood, Boston, Mass.; George L. Wiley, New York City.

The report of Secretary C. H. Barney was presented. At the beginning of the year the roll of the association, the secretary said, showed 36 active, 5 associate, and 29 honorary members. The secretary made note of the death during the year of George L. Phillips, the first president of the association. The present membership was given as follows: Active, 34; associate, 6; honorary, 28. The resignation of the Sunset Telephone & Telegraph Company, of San Francisco, is in the hands of the secretary, the resignation being due to consolidation with the Pacific Bell Telephone Company. Clark B. Hotchkiss tendered his resignation as an associate member.

The secretary emphasized his request that the members of the association keep him promptly advised of any and all matters of telephonic interest. The income of the year past was \$2,025.37; the expenses being \$1,980.81, there being a balance of \$44.56 in the treasury.

Judge Atwater was then introduced by the president, and was received with much applause. He delivered an address of welcome on behalf of the city and the board of trade. He said he knew it was the feeling of all citizens that the association should be received with words of hearty welcome. He referred somewhat at length to the business of the association members, stating that no man could do business without the aid of the invention which the association represented. He said the city ought to feel honored when such a body of men appeared in the city of Minneapolis. He dwelt somewhat upon the absolute indispensability of the telephone. He was enthusiastically applauded.

President Metzger responded briefly, showing the appreciation the association had of the city in whose borders it met.

The report of the treasurer was read showing practically

the same data as given in the secretary's report above outlined.

The secretary then read a report of the executive committee, in which the main point of interest not before published was the recommendation that Mr. Barney be continued as secretary for another year at a salary of \$1,200. It was adopted.

An invitation was read from the Northwestern Telephone Exchange Company, of Minneapolis, proffering the association a ride about the city, to Minnehaha and to St. Paul, Thursday, ending with a banquet at the Hotel Ryan in St. Paul. An invitation was also received from the Minnesota Brush Electric Light Company to visit the Company's plant in Minneapolis, which was accepted.

The election of officers was then held for the ensuing year, resulting in the unanimous choice of the following:

President, W. D. Sargent, Brooklyn; vice-president, F. G. Beach, Chicago; treasurer, H. L. Storke, New York; executive committee, C. F. Cutler, New York; Charles H. Wilson, Chicago; H. M. Gifford, Louisville, Ky.; Levi Sprague, Lowell, Mass.

One member of the advisory committee was to be chosen and George M. Stone, Cincinnati, O., was selected.

The death of George L. Phillips, ex-president of the association, was referred to most earnestly by Mr. Tyler, of Connecticut, who offered resolutions on the death of his popular associate, which were adopted.

At the conclusion of the reading of the resolutions, a number of gentlemen spoke in words of the deepest feeling, attesting the great personal loss which was felt by the members of the association in the death of the ex-president. The resolutions were adopted by a rising vote.

It was decided to exclude the representatives of the electrical press, a majority of the members expressing the belief that it would be to the best interests of the association to prohibit the publication of the papers which were to be read during the meetings. This action was again reaffirmed at the following day's session.

In a paper on the subject of long distance telephoning, by Flemon Drake, of Omaha, he showed that the local conditions in the state whence he came were much more favorable to long distance telephoning than are the conditions in the eastern states. There were not so many lines, and hence not so much danger of induction. He advanced an idea that is likely to be generally adopted, which is that when a man rings central the operator makes the requisite connection and then allows the one desiring the interview to call the other party.

Prof. Wabner, of Berlin, who attended the meetings, and who is an expert, said there were 11,000 subscribers in Berlin, and this method of allowing the one desiring an interview to call up the other party was in universal use with the best results.

It was stated that Minneapolis would soon be connected with Chicago and New York by telephone. The line from New York to Buffalo was fully described. J. J. McCarty, of New York, read a paper on the subject also.

The delegates to the 10th annual convention of the National Telephone Exchange arrived in Minneapolis September 10th. The association was formed in Chicago in 1880, and was at that time, as now, composed of delegates from all the telephone companies, of which there were about 200. Since that time the companies have been consolidated to a great extent and there are probably not more than 100 at present.

Most all the delegates arrived in a special train, which left New York with a party of 60, including six ladies. At Chicago they were reinforced by 25 or 30 more members. From Chicago the train journeyed over the Chicago, Kansas City & St. Paul road, after a stop of several hours, during which time the eastern visitors were entertained at lunch by the Chicago Electric Club and taken for a drive around the city. The journey to Minneapolis was a lively

one, an impromptu minstrel show taking place in the smoking car, in which some of the elder and usually staid members of the party figured prominently. The object of the meeting is to promote an interchange of ideas upon important subjects.

The delegates and visitors were highly entertained by not only the Chicago but the Minneapolis electrical people, who saw that nothing was wanting to make the visit to the northwest one long to be remembered.

John Lugenbeel, a gray-haired old man, wants a place to earn a living. Mr. Lugenbeel was discharged by Sixth Auditor McConville four years ago, and has since been out of work. He was a telegraph operator years ago at Willard's, and it was he who transmitted the famous dispatch from the pen of John A. Dix: "If any man attempts to pull down the American flag, shoot him on the spot." It was he, and not General Butler, who first coined the word "contraband," and this occurred while he was a telegraph operator for the government during the war.

The above, from a Washington paper, tells a sad story.

John Lugenbeel was one of Amos Kendall's lieutenants away back in the infancy of telegraphy, and for many years during the existence of the various telegraphic enterprises of Prof. Morse, Stephen Vail, Amos Kendall and other "old timers" whose early efforts contribute so much to the development of the great telegraphic system of to-day. Mr. Lugenbeel occupied various positions in Washington.

Years ago he retired from the telegraphic service and entered the employ of the United States Government in a clerical capacity. He continued to occupy a desk in one of the departments until the advent of the Cleveland administration, when he was thrown out of employment, old, feeble, and almost a century behind his early experience as a telegrapher—not a century in years, but in progress and modern appliances of which he knows nothing.

Some years ago he attained some undesirable prominence in Washington by having a United States Senator for a son-in-law, who did not reflect any great amount of credit upon the old government clerk. His name was Christiancy, of Michigan, whose suit for divorce from the young wife will be remembered. Time brings many changes, but a change of this sort is a trial which is particularly saddening. The recital of the facts is sufficient without making it point a moral, which each reader can apply for himself or herself.

The annual meeting of the Michigan Postal Telegraph Company was held last week. The officers were re-elected. They are Albert Ives, Jr., president; Albert Ives, Sr., treasurer, and Geo. Farnsworth, secretary and general manager.

Heald's Telegraph College, in San Francisco, advertises to do everything under the Sun for any person who will learn telegraphy at their place. They claim a student can become a first-class operator without interfering with his educational studies.

The spirit of Izaak Walton has taken possession of the Central Cable office staff. Two or more fishing parties are organized each week and the interim is used in swapping entertaining fish stories.

R. W. Crews, of the Southern Postal Co., Raleigh, N. C., slipped down a pole in front of the office at that place, July 23, and severely injured himself by being caught on one of the spikes.

Mr. W. L. Stocking, of Meriden, Conn., has been appointed manager of the Postal office at Fall River, Mass.

Mr. F. N. Bassett, assistant general manager of The Nited Press, is enjoying a well-earned vacation.

TOM OAKMAN.

BY G. W. RUSSELL.

Continued from last issue.

When I met Tom that evening he appeared to be an entirely altered man. The sad, far-away expression had gone, a spirit of vivacity seemed to possess him; and digging me several times in the ribs he related the experience of the day, and said that those three words happening so strangely—"Love, Matrimony, Happiness"—seemed to him to have a significance that was only too plain. That evening while receiving from Chicago he introduced the words into four different messages where they did not belong, and only detected the fact by the check.

Look where he would the words seemed graven before him on the walls, on the desks, in halos above the electric lights and the sparks emitted from some distant transmitter seemed to express them.—"Love! Matrimony! Happiness!" Walking to his lonely bachelor apartments he passed a fire engine house and the alarm with its musical click said: "Love, Matrimony, Happiness." The distant pealing of a church bell spoke it, the ticking of his clock expressed it, and waking or dreaming the words controlled him and convinced him that an emphatic change of his course was demanded. He had been reckless of self, heedless of opportunities, improvident of the future. He had drank of the cup of pleasure and knew well the bitterness of its dregs, and as he tossed upon his couch he remembered Burns' allusion to pleasure in his Tam O'Shanter:

"But pleasures are like poppies spread,
You seize the flower, its bloom is shed;
Or like the snow falls in the river,
A moment white, then melts forever;
Or like the borealis race
That flits ere you may point the place;
Or like the rainbows lovely form,
Evanishing amid the storm."

Ah, Tom, you are caught in the toils. No more for you the solemn face, the sad mien. Naught but joy, boundless bliss and never ending delights.

Tom is now a regular and welcome caller at the young lady's home. He is deeply in love and is already engaged, and here we will leave them, gentle reader, hoping that after Tom has begun to realize his happiness, he will forgive me when I confess that the messages containing the words "Love, Matrimony, and Happiness" were bogus, and were fixed up by me for the express purpose of dispelling his gloom.

FIDELITY REWARDED.

LINEMAN JACKSON'S FAMILY PROVIDED FOR BY THE TELEGRAPH COMPANY.

Charles O. Rowe, of Pittsburg and Thomas H. Barnard, of Buffalo, N. Y., officials of the Western Union Telegraph Company, have visited McConnellsburg for the purpose of making provision for the support of the widow and family of the late Hanson A. Jackson, who perished in the Johnstown flood.

Mr. Jackson was employed as lineman, with headquarters at Derry, and was ordered to Johnstown on the day of the fatal disaster. He was removing the wires from the first to the second floor of the telegraph building, when the water struck the building and drowned six out of seven of the employees.

It is learned that the company have agreed to erect a \$1500 house at this place for the family of the deceased and to pay the widow her husband's former salary—\$60 per month.

PHILADELPHIA POSTAL NOTES.—The month of August brought its usual "reliefs" and smiling, happy faces. Miss Lou Koch and Miss Fannie G. Craig have visited their homes at Pottstown, Pa., and Glen-Craig, Canada, respectively. Their appearance on their return gave ample evidence of a highly enjoyable and beneficial vacation. Mr. G. W. Dunn has been away on a short vacation. Miss Sallie W. Killian and Emma Heistand are seeking recreation away from the busy "tick" of the noisy sounder. Mr. Ed. Brylawski has been an absentee for a few days. Ed. Miller, of the Kensington Mills district, has been on sick leave over a month; his life, for several days, has been despaired of, but hopes of his recovery are now entertained. Departures: A. J. Walker and "Curly" Jones. Arrivals: W. G. Harrison, from W. U.

SIoux CITY, IOWA, NOTES.—The first of October will find us snugly quartered in our new office, whither we have been driven for lack of space and room, in our present location, the business of the office having increased to such an enormous extent as to warrant this change of location where room is plenty. The business increase is due chiefly to the untiring energy of our present manager, Mr. J. E. Dayhaff, who has become a favorite among the employés of the office and is a most affable and genial gentleman. The *personnel* of the office is as follows, but several changes are expected when we get settled in our new quarters: B. W. Stoddard is day chief, with J. P. O'Donnell, traffic chief; L. Monnett on Chicago duplex, days, he also has complete control of the "O. K." grocery at night; B. M. O'Donnell, late of Chicago, has charge of the St. Paul quad; G. B. Cleaver, the Mexican, has the Sioux Falls quad under his watchful guidance from 9.30 a. m., until 2 p. m. Miss Vinnie Russell works Yankton, Carroll and the Packing-house ponies, from 7 a. m. until 5.30 p. m. with one hour for dinner. O. E. Metcalf is the talent on day report from 11 a. m. until the circuit closes at about 3.30 p. m., the rest of his time till 5.30 p. m. is spent on way wires. Joe F. Slacks puts in the day by working anywhere in the house as a general utility man and doubles on Chicago duplex. Mike Oheron works split-trick in place of O. M. Black, who is relieving Mr. Krebs at the Silberhorn Packing-house, while the latter is spending a few days at his home in Wisconsin. Miss Kate E. McLeran is the manager of the Pearl street branch in the Wholesale District. S. A. Larson is manager of the Stock Exchange and does a good business. Chas. P. Ash works Mitchell and Egan wires and has charge of the C. N. D. department, which keeps him hustling. Charlie leaves next week for Crow Creek Indian Agency for a two weeks' visit with friends and the Indians. In years gone by, when the old stage coach or the river steamer was the only means of conveyance, Charlie used to work as an operator for the Government at Crow Creek, when the Government wires were strung along the old Missouri. Charlie will enjoy this much needed rest. Mr. H. M. Waters keeps cases on the night force of this office, which consists of Frank Pugh, on Chicago; H. H. Palmer, on night report, at the *Journal* office, for The Associated Press. Mr. Palmer has become quite proficient with the type-writer and makes a splendid copy. Archie E. Rainey works a split trick from 11.30 a. m. till 2 p. m., and from 6.30 p. m. until 12 o'clock midnight. Archie is young in years, but old in experience, having made his way most successfully from messenger, until now he can boast of being able to handle any wire in the house, none whatever excepted. And his copy never has to be carried back to him to be deciphered.

WASHINGTON, D. C., NOTES.—Half a dozen old-time telegraphers from New York city *en route* to the Old-Timers' Convention at Louisville, came to this city last Sunday the 8th and, stopping over until Monday afternoon, made themselves welcome, and old friends whom they met here

glad with their short visit. John Emerick, Dick Hutchinson, T. P. Scully, Callahan, Delaney and Holbrook of New York and Lounsbury of Bridgeport made up the party. There were old-time greetings when they met their friends here after long-time separations, too. Marean, Bender, Robert Smith and John Lombard of the W. U., Wm. Allen of the Postal, and Burhans of The United Press, grasped hands and greeted old friends, some of whom had not met for twenty years. The visitors were hustled around the National Capital on Monday and shown as much of our beautiful city and as many of the public buildings as time would permit. It was Mr. Hutchinson's maiden visit here, and he was so enamored with the town that the boys expect he will endeavor to secure an east-side, up-town Democratic nomination for Congress at home and come down to live here for a couple of winters at least. Scully, who had not been in Washington for nearly twenty years, could hardly believe it the same city that he visited in 1870. They left for Louisville, via Baltimore and Ohio, on Monday evening, promising to bring the Old-Timers' Convention and a bigger reunion to Washington next year.

TORONTO, ONT., G. N. W. NOTES.—The many friends of Mr. Roger J. Mullen, city editor of The United Press, Chicago, but formerly an operator here, are grieved at the sad intelligence of his aged mother's death, which occurred in Chicago recently after a lingering illness. We deeply sympathize with "Rox" and trust he has recovered from the severe shock. But we hope the arrival of a fine baby boy at his residence, a short time ago, will be a comfort to Mr. and Mrs. Mullen. Mr. W. J. Duckworth, one of our popular chiefs, has been appointed as assistant to superintendent A. B. Smith. "Duck" is deserving of his promotion, but he is greatly missed by the operating staff, as he had a smile for everybody though a strict disciplinarian. Mr. Watts was selected as private operator for the Scientists of America, who have just closed their annual meeting at the University College here. Mr. C. E. McManus has returned to duty at the switch again almost recovered from his recent illness. W. B. Chaffey surprised us the other day by dropping in to see us. Billy is located at Pittsburg, Pa., and is over on a short visit. Arrivals: W. J. Lusted, from Stratford, Ont.; G. Blair, from Brampton, Ont.; Miss M. McFarlane, from a branch in Toronto, and Miss Dobson, from Berlin, Ont. Messrs. Doyle, Knox and Eggett have been added to the night force. Departures: R. C. Rattray, for broker office, Montreal, Que., and Ed. Driscoll for G. N. W., Montreal.

WANTED—Address of James Henry Armstrong, two years ago in Houston, Texas. Send to E. H. H., P. O. Box 333, Meridian, Mississippi.

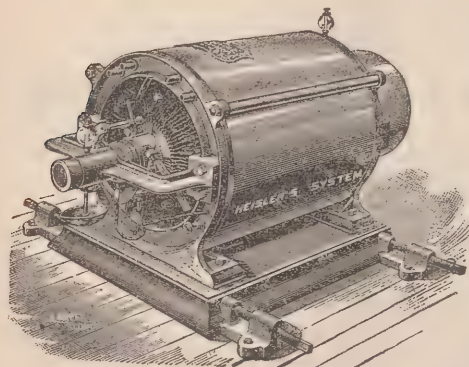
TRANSFERS.—A. W. Bodell, Baltimore to Nashville, Tenn.; Chas. Lee Adams, Charlotte, N. C., to Birmingham, Ala.; T. P. Godfreys, Augusta, to Cheraw, S. C.; L. C. Smith, Augusta, to Mobile, Ala.

MARRIED.—Patterson-Robinson.—At the residence of the bride's father, St. Stephen, Canada, Sept. 4, 1889, by Rev. R. W. W. Eddell, Geo. W. Patterson, of 195 Broadway, New York, and Miss Ada Josephine Robinson of St. Stephen, Canada.

DIED.—E. S. Williams, chief superintendent of telegraph construction for the Canadian Pacific Co., died at St. John, N. B., August 20, after a month's illness, of typhoid fever. He was thirty-eight years old. His remains were embalmed and forwarded to his home at Watford, Ont.

Mr. J. F. Cooper, for a number of years the efficient and popular manager of the W. U. at East Saginaw, Mich., has resigned to act as business manager for the Saginaw *Courier* of that city.

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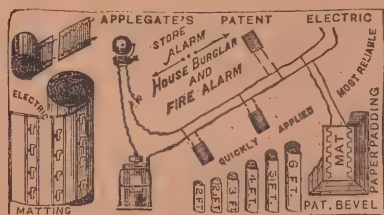
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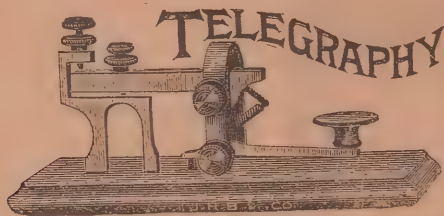
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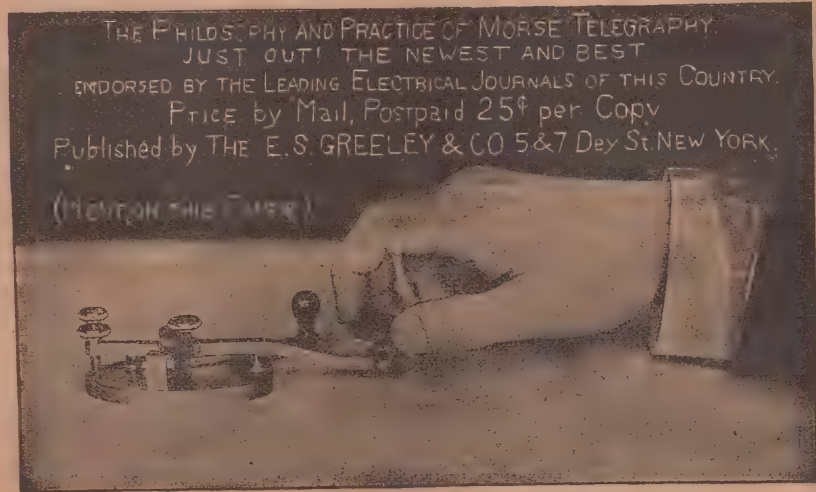
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The truth (referring to the true position of the telegrapher's hand in the act of "sending") exposed by a lightning wink of the instantaneous camera, and permanently fixed for our deliberate inspection by the science of photography, dawns upon the craft intellect accompanied with something of the amazement that startled the artistic world when the elaborate anatomical studies by Rosa Bonheur of the horse in the act of running were delivered over to universal ridicule by the subtleties of the same agent, instantaneous photography.—*The Electrical Review*, March 24, 1888.

The following diagram from the *Philosophy and Practice of Morse Telegraphy* gives an intimation of its scope.

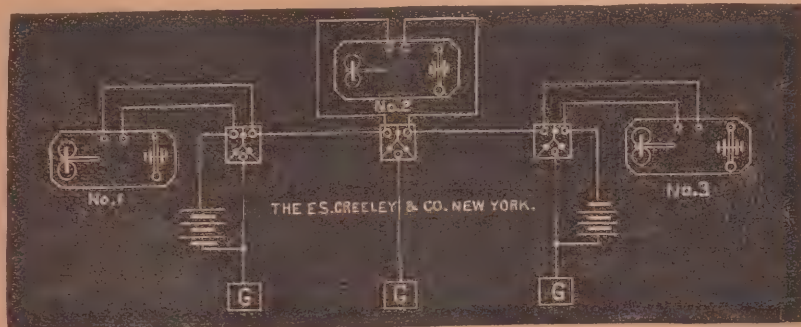


DIAGRAM No. 19.

Diagram No. 19, showing three Home Instruments or other short line combination sets, connected up on a grounded circuit with Excelsior Lightning Arresters at three distinct offices. The Switch Pin in this case, when instruments are in use, must be kept in the "dead hole," which is the hole in the center of the middle plate.

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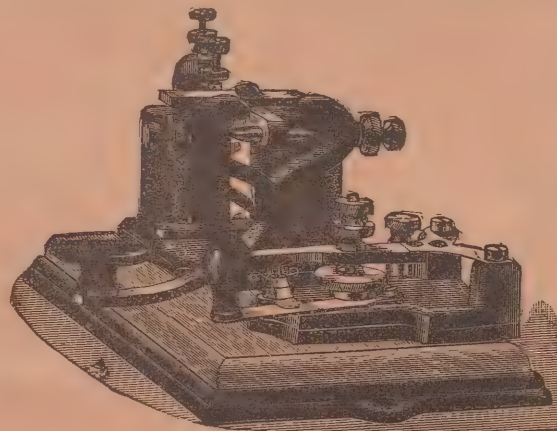
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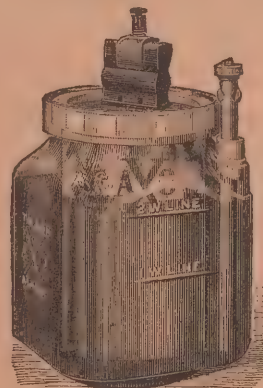
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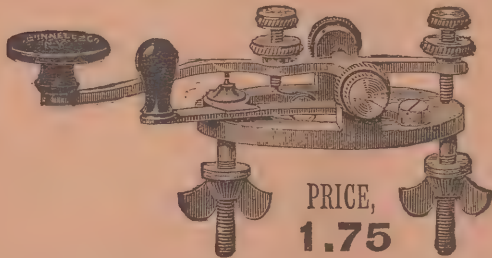
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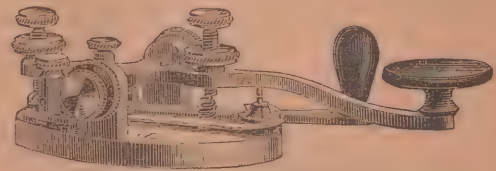
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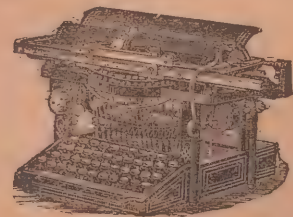
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NEW YORK, OCTOBER 1, 1889.

CURIOUS SOURCES OF POWER.

The curious source of power for some of the dynamos of the lighting plant connected with the Ponce de Leon Hotel, at St. Augustine, Fla., is an artesian well, the water of which drives the dynamo. That installation, however, does not stand alone, being equalled, if not exceeded in its remarkable character by the installation of the Yankton Electric Company, of Yankton, Dakota. The source of power there is a flowing well 600 feet deep. The water comes up through a six inch casing and passes into an old boiler, which acts as a trap to catch the stones which are sometimes thrown up by the well. A pipe leads to a twelve inch Fleniken turbine, with a fall of thirty feet. The turbine, which is controlled automatically by a Pritchard electric governor, drives the dynamo. The pressure in the boiler is seven pounds under full head, and fifty-seven pounds to the square inch when the well is closed.—*Economic Value of Electric Light and Power.*

ANSWERING BY PHONOGRAPH.—Sergeant Dunn, the head of the New York Weather Bureau, has adopted an ingenious method of relieving himself of the wearisome task of answering the constant questions of visitors respecting the weather probabilities. He brings to his aid the phonograph. Every morning he "loads" his phonograph with the weather probabilities for the day, to which he refers all inquirers for their answer.

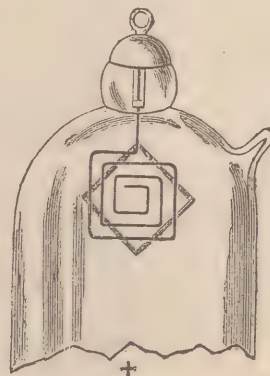
ELECTRICAL DRILLING.—Electricity is used to supply the power in drilling holes in the frame-work of the new cruiser *Maine*, now being built at the Brooklyn Navy Yard. Three-quarter inch plate can be perforated in less than one minute. The electric drill takes the place of the common pawl and ratchet hand drill.

An electrical thermograph has been placed in the New York office of the Signal Service Bureau.

No city can afford to own and operate an electric central station.—*A. R. Footie.*

CURIOUS EFFECTS OF METALLIZATION IN A VACUUM.

In the *Revue Internationale de l'Electricité*, "G. M." writes as follows:—"We have received from M. Gaston Seguy, who is not only a very clever glass blower, but also an intelligent observer, two samples of tubes in which the volatilization of metals in a vacuum by the passing of the electric current has given rise to some curious phenomena, which we are unable to explain satisfactorily. We therefore confine ourselves to submitting to our readers the result of these experiments, hoping that perhaps one of them will be able to indicate on what theory we can base our facts.



"A glass tube 3 centimeters in diameter is closed at the two extremities, and to each end is soldered an electrode of platinum or copper of the form shown in the adjoining figure. Through a nipple on the side of the tube a vacuum equal to that of the Geissler tubes is produced by means of a mercury pump; then the current of a powerful induction coil (3 metres spark at least) is passed through. The metal is then volatilized at the negative pole and is deposited on the sides of the glass, producing a black discoloration for platinum and yellow for copper. The metallization of the sides of the tube is more rapid in proportion as the diameter is smaller. But in any case it produces this curious phenomenon to which we wish to call attention: it does not take place at all on either side on that part of the tube placed directly opposite the plane of the electrode, as we can easily see by placing the tube before a sheet of white paper. The reservation thus obtained exactly reproduces the external form of the electrode; but what is still more curious is, that the angles of this outline do not correspond to the angles of the electrode, but come opposite the straight lines as shown in the accompanying figure. These are phenomena similar to those observed by Crookes, Jamin, and Goltein, and we think that in order to facilitate an explanation of them, it is better not to pass them by in silence, but on the contrary, to note them with all their peculiarities every time we observe them."—*Electrical Review*, London.

Mr. William B. Wilson, of Philadelphia, Pa., one of the best known military telegraphers, has issued a pamphlet entitled "A Glimpse of the United States Military Telegraph Corps." It is an interesting story of the army telegraphers' position during the great conflict. Mr. Wilson very wisely devotes a chapter to the character of Abraham Lincoln, who was always a warm friend of the telegraphers. Being intimately associated with President Lincoln, during the first year of the war, no one among the army telegraphers is better qualified to speak of the kind deeds of the martyred president, who was really always on terms of easy familiarity with the operators at headquarters.

THE OLD-TIMERS AND MILITARY TELE- GRAPHERS.

The excursion from Louisville to the Mammoth Cave, in special cars provided for the occasion by the Louisville and Nashville Railroad, was most heartily enjoyed by sixty members of the party, nearly all of whom entered that immense cavern which has thus far been explored a distance of some one hundred and twenty five miles.

Just before reaching the Bridal Chamber Mr. George Dugan of Jackson, Tenn., suggested that a monument to the memory of all Old-Timers be erected in commemoration of the visit of the two organizations to this famous cave. The idea met with unanimous approval and in a short time a pile of stones was reared to a height of three or four feet, on the cap-stone of which Miss Kate Elliott, of Louisville, fastened this badge which she removed from her breast: "Reunion of the U. S. Military Telegraph Corps and the Old-Time Telegraphers' Association—Louisville and Mammoth Cave—Sept. 11th, 12th and 13th, 1889."

The trip through the cave was a most interesting one and was enjoyed by all. Fat Men's Misery and the Cork-screw both made it exceedingly uncomfortable for Mr. Richard J. Hutchinson, the largest and best natured man in the party, but with his characteristic display of pluck he succeeded in surmounting every obstacle in those tortuous passages and came through unharmed. His appearance in both instances provoked loud laughter and applause. Mr. R. G. Stephenson, after passing through the same ordeal, told your correspondent he would not repeat the experiment for forty cents. By next morning, his limbs having stiffened, the price was increased to twenty dollars. Messrs. Emerick, Pettit, Lounsbury, McCormick, Dugan and other heavy weights experienced little or no inconvenience in the undertaking.

After a walk of about sixteen miles the party returned to the hotel where, after supper, the meeting adjourned at Louisville the previous afternoon was called to order at nine o'clock, in the ball-room. On motion of Mr. Crittenden, President Plum appointed a committee of five, for the period of one year, on Congressional Action. The meeting, in common with the agreement reached by the Old-Time Telegraphers' Association, decided upon Kansas City as the place and the second week in September, 1890, as the time of the next annual meeting. Mr. Ives' motion that Mr. Bourlier's kind offer of tickets to any theatre in the city of Louisville, be received with a vote of thanks, was carried unanimously. Mr. Wilson, of Philadelphia, then moved that the reelection of President Wm. R. Plum be made unanimous, which was agreed to, Secretary Pettit being authorized to cast the vote of the organization. On Mr. Ives' motion the secretary was authorized to cast a vote for W. R. Wilson, of Philadelphia, as vice-president. It was then regularly moved and seconded that the positions of secretary and treasurer for the ensuing year be filled by one and the same person. In accordance therewith the president cast the vote of the organization for Mr. James E. Pettit of Chicago. The meeting then, at 9.45 p. m., adjourned.

At 8 o'clock the following morning, after three hearty cheers and a tiger, proposed by Mr. Wilson, had been given the proprietor of the Mammoth Cave Hotel for the hospitable manner in which he had entertained his guests, the return trip was begun. Mr. and Mrs. Plum, who were *en route* to Nashville, were accorded three rousing cheers and a tiger at the junction where they alighted to take the south bound train.

Reaching Louisville in time for dinner, good-byes were said and, separating in groups, the members, whose good fortune it had been to attend one of the best meetings ever held, departed for their various and respective homes in a most happy frame of mind. Prominent among the gentle-

men to whom your correspondent feels under obligation for the hospitable manner in which he was everywhere received, are Charles E. Taylor of Frankfort; Captain Irwin Dugan, Manager Charles H. Smith and Chief Operators Arnold and Frank Farrell of Louisville; President Plum, Michael J. Burke, W. B. Wilson, and last but not least, A. L. Eggleston, familiarly known as "Old Egg" of the J. M. and I. Road, Louisville, and W. J. Dealy, of New York.

President Taylor's address, which was crowded out of the last issue, was as follows:

Dear Brothers of the Military Telegraph and "Old-Timers.:"

Another year has gone since our last reunion, to mingle like a drop in the shoreless ocean of eternity. Some of our beloved comrades have passed over the river, and are resting under the shades on the other side, while we remain to reburnish the golden links of fraternal regard which bind us together here, and unite us still to those who have gone before us in the mysterious realms of the great beyond.

To discharge that grateful duty we have left our widely separated homes, and for the ninth time assembled ourselves together; and it becomes my dutiful privilege, as your presiding officer, to extend to you the unfeigned welcome of a brother's love, not only to the pleasure of our present meeting, but with the pride of a genuine Kentuckian to this beautiful and prosperous metropolis of my native State.

Here let care be laid aside, and joy be unconfined, as we drink deep, delicious draughts from the brimming, sparkling cup of social happiness. Here we have no sordid purpose to subserve; here we meet for no selfish end, but to mingle with each other once more in the unrestrained freedom of heart-felt friendship, and for the mutual interchange of kindly courtesies and cordial congratulations. Our coming together is the spontaneous outgrowth of a sentiment as honorable to our nature as it is natural to our being—the result of that universal feeling of fraternity which exists among magnanimous men who are engaged in the same honorable vocations, and especially those who have dedicated their lives to the same grand and beneficent enterprise.

We see evidences of this fraternal sentiment everywhere. We see it in our trades unions, in the bankers' conventions, and in all the vast variety of assemblages which annually take place among those who have devoted themselves to the same calling in life; but nowhere does it exhibit itself more conspicuously than in the yearly meetings and permanent organizations of the surviving veterans of the two mighty armies which confronted each other in the grim array of battle during the tremendous but lamentable struggle between the States of this Union a quarter of a century ago.

Notwithstanding the long lapse of years since they were banded together in a common cause, and shared a common danger, there is not one of those old battle-scarred survivors of either army who does not still feel that there is a peculiar and sacred bond of brotherhood binding himself and his former comrades together, whether there is any other tie between them or not; they feel that they are co-partners in a common glory from which the balance of the world is excluded, and has no right to share, and who will say the feeling is not a just and natural one?

But "peace has her victories no less renowned than war," and if the honor of having participated in a great and important enterprise is to be estimated by its results upon the destinies of mankind, who will say that the "Old-Timer" has not far greater reason to congratulate himself and his early co-workers in the development of telegraphy than even the hero of a hundred stricken fields? It is but forty-five years since the genius and perseverance of its immortal inventor demonstrated to the

world, in spite of its incredulity and derision, that the electro-magnetic telegraph was a practical success, yet in that brief, fleeting moment in the history of our race it has done more for the advancement of human civilization than all the wars that ever stained the annals of mankind with fraternal blood since the morning dawn of time. I repeat that no other instrumentality contrived by the ingenuity of man has done more to promote the moral, intellectual or material progress of the human family in all time than this simple agency has done in less than a single half century. Could she, whose gentle hand penned the first trembling, tentative sentiment that shimmered along its solitary wire, behold to-day but a thousandth part of the stupendous results, well might she exclaim in a rapture of pious awe, "What hath God wrought?"

Then there was but a single line, but forty miles in length, regarded by the jeering and incredulous multitude as the costly experiment of an idle and infatuated dreamer; to-day they fret the face of the earth with a net-work of wires, which in a continuous strand would encircle the globe over two hundred times. Then they merely extended from the Federal capitol to the nearest city; to-day they reach nearly every village and hamlet inhabited by civilized man. They climb the mountain range, far above the whirling clouds, and stretch from continent to continent along the oozy bottom of the ocean. They reach to the far off islands of the sea and traverse the sands of the silent desert. They thread the eternal forests of the tropics and the icy plains of the frozen zone. They follow the lines of march which were trodden by the conquering hosts of Cæsar, and Cyrus, and Alexander, and cross the plains where Abraham watched his flocks beneath the silent stars. They are everywhere on their tireless mission of beneficence to man.

The key of the operator has, indeed, been the Archimedean lever that has moved the world. It has given an impetus to human energy in all its manifold phases, greater than that of all other agencies combined. It has enlarged the sphere of human intelligence, and multiplied the sources of individual comfort and happiness a thousand fold. It has brought nation in contact with nation and enabled the great powers of earth to talk with each other as friend to friend. It has assisted their diplomatic intercourse, abated their jealousies, strengthened their policy, and frequently averted the calamities of war. It has changed the art of war itself, and reduced to the sharp, decisive contest of a few months, what otherwise would have lengthened into years of carnage and plunder. It has furnished facilities to commerce, that have multiplied industries, stimulated the energy, sharpened the ingenuity, enlarged the intelligence, and elevated the tastes of mankind in all the departments of life, and thus increased the appliances of personal comfort and the means of individual enjoyment, beyond the power of computation. Every variety of manufacture, every product of agriculture, every creation of art, every discovery of science, every offspring of human genius or industry feels directly or indirectly the influence of its silent but all-prevailing impulse. The world, in fact, is centuries on centuries in advance of what it would have been but for that mighty agency of civilization—the operator's key. In this grand but bloodless crusade of progress, this all-conquering march of enlightened energy, pressing on and ever on from one to another of the sublimest victories of peace, "The Old Timer" is the veteran, aye, the pioneer. But for his humble yet zealous and intelligent labors its triumphs could never have been achieved. Have we not then, my brothers, just cause to be proud of the calling to which we have dedicated our lives? Have we not good reason to congratulate ourselves upon the magnitude and beneficence of the great work in which we have so long been co-laborers? Should we not be proud and happy to clasp each other by the hand as brothers here to-day?

True, no braying trumpet nor roaring cannon heralded our triumphs to a grateful and admiring world; true, no storied urn nor sculptured hatchment will tell the tale of our humble labors to future generations; but there is no stain of our fellows' blood upon our hands, no widow's tears have dimmed our pure escutcheon, the wailing cry of no homeless orphan comes through the still, silent shades of the night to disturb the quiet of our grateful pillows. We are the soldiers of peace, the veteran vanguard of the grand army of an enlightened and glorious civilization.

It is true, also, that while our quiet and unobtrusive labors in the great enterprise in which we have so long been co-workers have rendered it possible, perhaps easy, for others to accumulate their millions, many of us here succeeded in gathering but little of this world's goods around us, yet we have cherished with more than miser's care the priceless jewel of self-respect—a gem richer than all "the wealth of Ormus or of Ind." Others have outstripped some of us in the busy, bustling race for earthly fortune, yet we are animated by the proud consciousness that throughout our long and laboring campaign of usefulness our rations have been the fairly-won bread of honest toil. No man can look us in the face and say that the little we have is the wages of wrong doing, or the price of our manhood. We meet, therefore, as men, as equals, as brothers, proud of each other, proud of our calling, and proud of what we have done for our fellowmen. As such, I hail and welcome you to this reunion. Let us strive by the exercise of those gentle amenities and the exchange of those fraternal courtesies, which alone make life worth living, to render it the most delightful in the history of our association, the happiest we shall ever have until, crowned with the imperishable chaplet of duty fully done, we shall meet on celestial shores of eternal rest.

I am aware, however, that there is no light without its corresponding shade, no joy without its correlative grief, no pleasure without its concomitant pain. I feel, therefore, that the abounding of our present meeting must, to a certain extent, be tinged by the mournful memory of our brothers who will never more mingle with us in our fraternal gatherings on this side of the dark waters through which we, too, must pass. It should be so, but let not the recollection of their absent faces mar the rational enjoyment of our joyous reunion; let us, rather, remember that

"Heaven gives us friends to bless the present scene;
Resumes them to prepare us for the next."

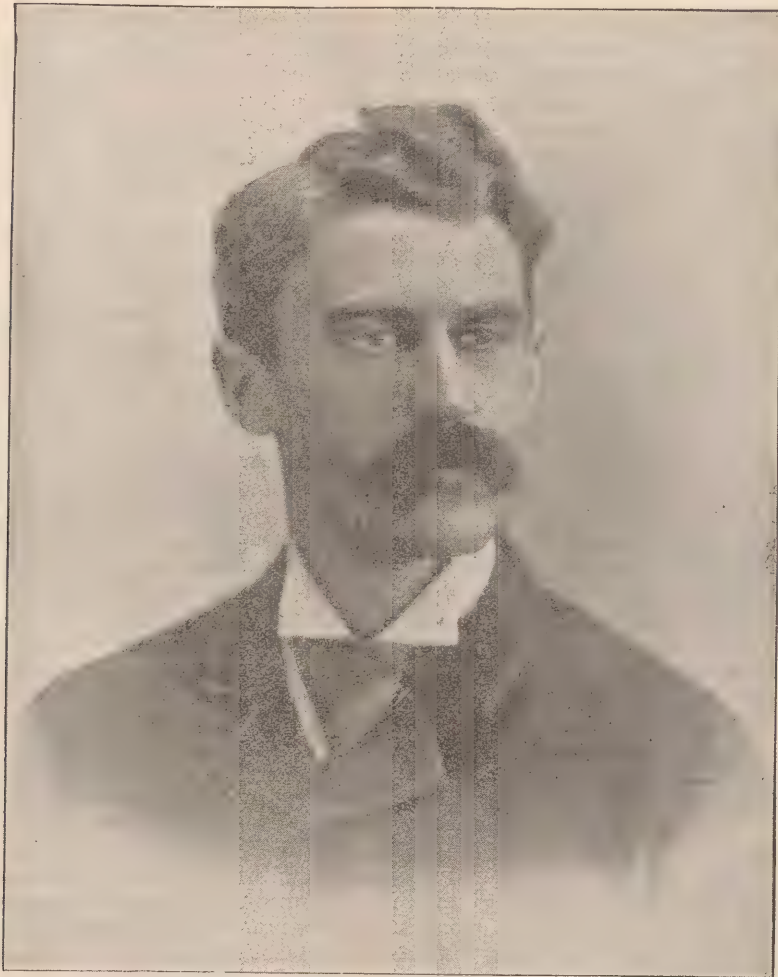
Let us cherish their memories and emulate their virtues with brotherly affection, with the unflinching hope that we shall meet them amid brighter scenes, in happy realms of eternal joy.

Of the many old timers who of late years have died at their posts, with the wounds and scars of long and honorable service upon them, this association has had much to say in perpetuation of their memory at other meetings, and if any veteran has gone beyond the circuit in silence and without recognition, some brother who survives shall yet miss and memorialize him here.

Since our last meeting one, at least, has passed conspicuously from this to the newer sphere.

With ample opportunity to have saved her own life, and to have escaped unscathed from an impending disaster, the veteran "Mother Ogle," who for twenty-seven years had been faithful to her key, preferred to stand by it as long as there was an instant left in which she could flash warning for the safety of the lives of others, and nobly met the martyrdom of which she died at Johnstown. With five feet of water on the floor of her office, and the monstrous wave from South Fork dam raging in the vale of Conemaugh, with death in her very front, she sat speeding her messages to the imperiled people below,

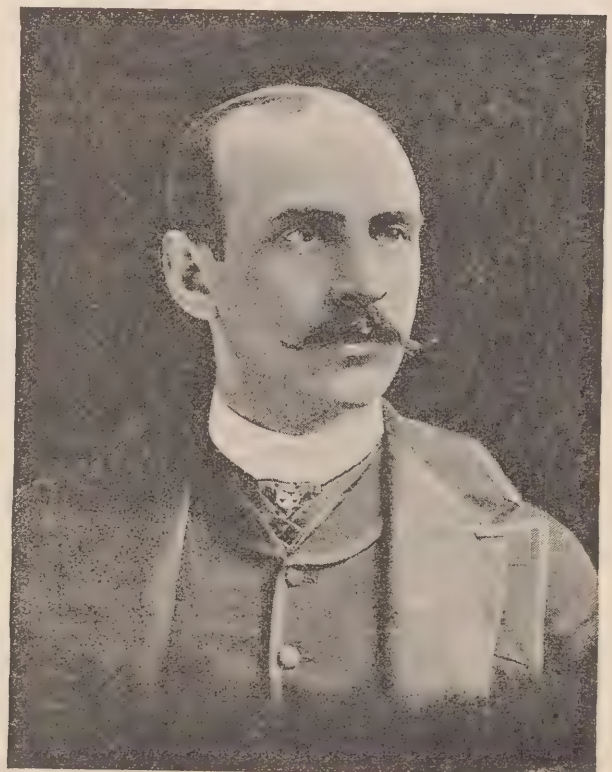
CONTINUED ON PAGE 6.



GEORGE H. USHER, MANAGER POSTAL TEL. CO., NEW YORK.



CHAS. SHIRLEY, ASSISTANT MANAGER.



J. W. ROLOSON, NIGHT MANAGER.

GEORGE H. USHER.

George H. Usher was born at Fort Edward, N. Y., February 15, 1858. He entered the telegraph service at 16 years of age as operator for the Atlantic & Pacific Company at Clifton Park, N. Y.; was transferred to Albany in 1875, and to Buffalo in 1878 for the same company. Mr. Usher was twice elected president of the Buffalo Electrical Society, while a resident of that city. Since 1878 he has been closely identified with the progress and development of the telegraph service in Buffalo as chief operator of the Atlantic & Pacific Company, night manager of the Mutual Union, and more recently as manager and assistant superintendent of the Baltimore & Ohio Telegraph Company. On June 1, 1889, Mr. Usher assumed the management of the New York main office of the Postal Telegraph-Cable Co.

CHARLES SHIRLEY.

Mr. Shirley entered the telegraph service in the year 1872. Attention was particularly called to his ability as a manager during the troublous times of 1884, when he was acting night manager of the Bankers & Merchants Telegraph Company, New York, the lines of that company being "tied up" by an order of the court for a long time. He was appointed night manager of the Postal and B. & M. in 1887, and acting manager of the New York office of the Postal Telegraph Co. in the early part of the present year. Reserved and unassuming, he possesses the force of character necessary to overcome obstacles previously considered insurmountable. His unremitting energy and faithful service have acquired for him an enviable reputation. He is now assistant manager of the main office.

J. W. ROLOSON.

Mr. Roloson was born in Oct. 1859, at Port Jervis, N. Y., where, at the age of 13, he entered the service of the W. U. as messenger. He acquired sufficient knowledge of telegraphy to enable him to take charge of the Atlantic & Pacific office at Monticello, N. Y., the following year. He was afterward employed by division operator Wm. J. Murphy, (now general superintendent of the Erie R. R.) on the Delaware division of the Erie Railroad. After a year or so of railroading Mr. Roloson drifted into the commercial business, entering the W. U. office at 195 Broadway in 1879. He shortly afterward accepted a position with the American Union at 30 Broad street, then with the Continental Co. as manager of their Stock Exchange office, where he first began to gain a reputation for fast sending. He left the Continental Co. to join the Gould Cable Co., working in the cable department of the W. U. over a year.

When the Mutual Union opened its office in the Stock Exchange he was engaged as chief operator, remaining with them until 1883, when he accepted a similar position with the Bankers & Merchants. In 1884 he was appointed manager of the B. & M. and Postal offices in the Stock Exchange and broker district. The following year, 1885, he won the first prize in the great fast sending tournament. He remained with the Postal Co. in the broker district until 1887, when he was transferred to the main office as a chief operator. Upon Mr. Roloson's return from Washington in March last, where he had been sent in charge of a staff of fast New York operators to handle inaugural press matter, he was appointed night manager of the main office, which position he now holds.

THE ESSICK PRINTING TELEGRAPH COMPANY.

Mr. D. J. Ludwig, formerly superintendent of the commercial news department of the Baltimore & Ohio Telegraph Co., has been appointed superintendent of this company. The new instruments, the company is having made, can be worked satisfactorily at a speed of sixty words per minute. This is a decided gain in speed, as thirty words per minute was the limit of the old machines. In addition to simplifying the mechanical part of the instruments the keyboards are made to resemble those of typewriters, so that any typewriter operator may be able to successfully operate an "Essick" printer. Now that simplicity, certainty, scope, accuracy and ease of operation are secured, instruments are rapidly being made for actual business. The Essick printing telegraph prints Roman characters in page form ready for use, and it is thought an unusually bright future awaits the proper development of the system. Certainly innumerable and profitable fields are visible on every hand for a reliable printing telegraph system. Daily exhibitions are made at the company's office at 171 Broadway, New York.

DIED.—William Mackintosh, the well-known line constructor, died in the insane asylum at Providence, R. I., Sept. 10th. He was about sixty years of age. He was for twenty-five years superintendent of construction of the Western Union Telegraph Company at New York. It was he who erected the very tall poles of that company in the various streets in the lower part of the city, many of which have just lately been removed by the city authorities. Mr. Mackintosh was one of the first telegraph officials to realize that the wires would have to be placed under ground, and the plans he submitted years ago on that subject were very similar to those finally adopted here and elsewhere throughout the United States. His failure to realize on his underground and other plans caused him to go insane, and for the past five years he has been an inmate of the above institution.

DIED.—Sutphen J. Bailey, an operator, died at his home in Newark, N. J., September 12, and was buried at Somerville three days later. Mr. Bailey was an ex-signal service man, but for many years he was employed on various railroads in the south and southwest and by the Baltimore and Ohio Telegraph Co. in New York. Consumption was the cause of death.

Among the very many valuable relics, &c., that Mr. S. B. Lambdin has in his studio, is a genuine revolutionary manuscript dated 1775. It came from Gen. Washington's home, Mount Vernon, Va. It has some of the old patriots' autographs on it, and mentions the names of several of the Washington's. It referred to the raising of soldiers to serve in the revolutionary war, and other very interesting matters.

Mr. R. D. Blumenfeld, now editor of the *Evening Telegram*, sailed on the steamer *Arizona* for Europe, a few days ago, for a brief vacation.

DIED.—Thomas Shannon, a lineman, at 195 Broadway, died at his home in Brooklyn, September 25, of typhoid malaria, after a brief illness.

M. Roman, representative of the Westinghouse interests in Paris, is in the United States in the interest of his company.

Mr. D. E. Lerch, a well known telegrapher, has accepted the managership of the Postal at Allentown, Pa.

Miss E. S. Alden, lately of Middletown, Conn., is now with the W. U. Co., Bangor, Me.

Mr. R. G. Rigdon, manager of the Postal office, Scranton, Pa., was in town last week.

CONTINUED FROM PAGE 3.

and when no other moment was left to her gave her brave farewell to the world and the fraternity in the simple utterance:

"This is my last message."

God blessed the world in giving life to this noble woman, and she, by her splendid example, has forever blessed our brotherhood.

For, in her life, she wrote her name
On labor's places high;
And when its final issue came,
She taught us how to die.

I feel, my brothers, that I should attempt some adequate acknowledgment to you for your unvarying courtesy to me at all times, and especially for the distinguished honor I have received at your hands. I would that I could do so, but for that talk I have no fitting words. It lies beyond the domain of human speech. It can only be expressed by the mute eloquence of silence. My poor tongue can only say from my full heart—I thank you.

It only remains for me to add that the ninth reunion of the "Old-Time Telegraphers' Association" is now formally opened for business.

KINDLY REMEMBERED.—One of the most pleasing features of the return trip of the Old Timers occurred at Richmond, Va., where Mr. J. H. Emerick, now general superintendent of the Postal, and one of the party, received from the manager of the Postal Telegraph-Cable Company the following letter which explains itself:

RICHMOND, VA., Sept. 16, 1889.

J. H. EMERICK, Esq.

Dear Sir:—Kindly permit me to present you with a walking stick made from a piece of the original flooring of Libby Prison. It is North Carolina pine and was placed in Libby Prison building in 1845.

I warrant this as genuine, as I personally got the piece of flooring at the prison and took it myself to Messrs. Savage and Holmes, furniture manufacturers, and had it turned and polished.

Yours very truly,

J. O. JEFFRIES.

Mr. Emerick, it will be remembered, was not only one of the ablest telegraphers in the military service but was the first chief operator located at Richmond after the surrender of Lee at Appomattox. For this reason the presentation of so valuable a souvenir was all the more thoughtful on the part of the donor and in view of the historical incidents connected therewith will be appreciated all the more by the recipient.

TESTING AN ELECTRIC MOTOR AT ASHEVILLE.

Quite an interesting test was made recently on one of the Sprague Improved Electric Railway Motors at Asheville, N. C., and an exhibition was made of the power of these motors as well as their high efficiency.

The Asheville Street Railway is now operating four cars of the Sprague electric system and have been running for about eight months. This company recently purchased two of the Sprague Improved Electric Motors for equipment of a new street car which they had decided to add to their system. Although it was intended to equip this car with two motors, as the grades on the road are quite severe, the question was raised as to what the results would be if only one motor was placed on the car and obliged to do the whole work. In order to test this question, on August 6th, the car, which was equipped with only one motor, started over the line, and frequent readings of an ampere meter were taken in order to determine the power used on different portions of the line. At the same time that the ampere meter readings were taken volt meter readings were also taken in order to make certain that the potential was obtained.

In all, three trips were made over about 4,000 feet on that part of the line where the grades were the heaviest. Two of these trips were made with nine passengers on each car in order to test the apparatus, and the third trip was made with forty-three passengers. On this trip the passengers were chosen from bystanders, and the heaviest were selected so that the weight of the car was certainly over 14,000 lbs.

The difference in elevation to a distance of 4,000 feet, was 185 feet. Upon the distance travelled were two reverse curves of short radius; one as low as 50 feet, and two other short radius curves. All curves and reverse curves were on grades of from two per cent. to five per cent.

The length of wheel base was nine feet, so that a large amount of power was required in going around the curve. The curves were all dry and dusty, and took a large amount of power for this reason. In addition to these and other difficulties all the journals of the car had not worn smooth, the car being entirely new so that it would not roll on one grade where the old cars habitually start by gravity, and the car pulled very hard on all the curves.

The time of the run was 6 min. and 31 sec., including a stop of 15 sec., and during the entire run a freedom from sparking was perfect, and when the amount of the capacity of the motor was exceeded, this point was truly remarkable.

The amount of H. P. required to raise the load against the gravity line for the distance attained was at least 12 H. P., and adding the friction in the journals, on the track and elsewhere, the ampere readings showed that the motor, although working at fifty per cent. above normal load, did the work at an extremely high efficiency. At the end of the three trips the motor, although hotter than one would like for every-day work, was by no means excessively hot, and showed no harmful results from the trip.

The Asheville Street Railway Company have expressed themselves as very much pleased with the results of this trial. The car is now being equipped with the second motor.

According to *Petit Parisien* "Linguagraph" is the name of a recent invention which is destined to revolutionize the system of signalling heretofore adopted on European railways. It is a small apparatus consisting of a number of pipes, copper wires and a keyboard. It contains a box in which are placed the phonograms in the order required by the engine driver. On the outside of the apparatus is fixed a sort of trumpet through which the steam passes while the engineer manipulates the keys. When, for instance, the train is about to enter a tunnel the engineer plays on the instrument and in a voice of thunder that can be heard three miles off the ingenious whistle howls the word "Tunnel." On entering a station the machine announces its name. It also calls out the names of such stations as are to be passed without stopping.

An apparatus very necessary in Germany and Holland for warning travellers of an approaching train at road crossings has been constructed by Messrs. Siemens and Halske. By an electric arrangement a bell begins to ring violently at the crossing when the train is 1500 yards therefrom and continues ringing till it has passed.

The Excelsior Electric Company of New York have brought suit against the Baxter Motor Company, of Baltimore, Md., for infringement on their patent of their automatic regulator. The suit is being pushed vigorously.

An Austrian railway official has invented a portable telephone for speaking from a railway train at any point stopping to the nearest station.

Mr. Edison is said to receive no less than 1,200 letters daily since his arrival in Paris,

THE McANEENY CONCERT.

The McAneeny Concert will be repeated at Chickering Hall, Thanksgiving night, November 28, and it is guaranteed to be fully up to the standard of the last one and in one or two particulars it may excel. Mr. Pearsall, as a matter of course, will take part; also Mrs. Johnson, the soprano; Miss Rosa E. Penner, contralto, who will make her first bow to a New York audience; Mr. S. Harry Holland, basso, and a chorus of twenty or thirty picked voices from the Brooklyn Apollo Club, under a competent director. Other strictly first-class talent is also being negotiated for. Tickets are now on sale and can be reserved upon application to Mr. McAneeny, 195 Broadway, New York.

OMAHA'S NEW TELEGRAPH OFFICE.

The magnificent building of the Bank of Omaha has been remodeled and another story added to accommodate the Western Union Telegraph main office. It is undoubtedly one of the finest edifices in the West. Entering the grand marble and granite entrance, elevators are in readiness to take one to the top floor, which is divided into two parts—the operating room and the offices of Superintendent Dickey. The operating room is lighted by 75 incandescent electric lights. At the further end of the room is erected one of Bunnell's latest improved switch boards, opposite which is a new self-winding clock. The cloak rooms are provided with individual boxes, each operator possessing a key. Behind the cloak rooms are the battery rooms, where another elevator runs to the rear entrance of the building, passing five other battery rooms in its descent. Another self-winding clock adorns the beautifully frescoed walls of the receiving department on the ground floor, which contains new and elegantly carved black walnut counters, with polished bronze trimmings, new desks, tables, and tile floor of the latest European design, which, together with French plate-glass windows, make pleasant quarters for the large force of clerks and book-keepers. Mr. J. J. Dickey is the superintendent; C. B. Horton, chief clerk; H. E. Jennison, superintendent of construction; J. Levin, manager; J. B. Twiford, chief operator; Geo. W. Lloyd, night chief; W. E. Wakefield, all night chief; W. J. Rusland and W. A. McElroy, traffic chiefs; Edward Rogan, assistant days; J. Pritchard, assistant nights. The personnel of the office will appear in the next issue. It may be well to add that now that Mr. A. M. Butler has accepted the agency of the AGE, you may expect large returns from this locality in the shape of subscriptions.

Here's richness: just overheard St. Louis sending to *Sun*, N. Y., baseball gossip.

St. L.—(After sending a few words) "Min. pls. Can't read the copy."

Returns:

St. L.—"Do you know name of the manager of the Bostons?"

Sx.—"Manager Hart, I think."

St. L.—"This aint Hart. It looks like t-r-i-u-m-v-i-r-s. Is there such a man on the Bostons?"

Sx.—"Don't know him. The word is all right. G. A. triumvirs."

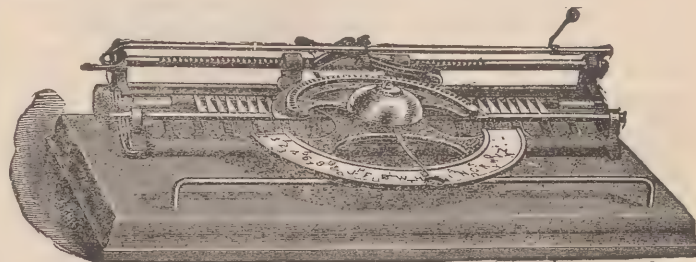
Mr. George W. Hickey, for many years with the G. N. W. Tel. Co., at Watertown, N. Y., has been appointed manager of the same company's office at Plattsburg, N. Y.

Mr. Frank Hennig is again supporting the tragedian Thos. W. Keene, as one of the leading men. Mr. Hennig is a well known operator.

NOTICE.

Dedication of the new Palace of Beauty, the Central Opera House, 205 to 217 East 67th street, by the New York Telegraph Operators, on Thursday evening, October 31, by an elaborate programme, including Robertson's society comedy "Caste," introducing the prominent amateur actress, Miss Ella Griffith Greene, supported by Messrs. Harry DuSouchet, J. M. Winders, J. C. Vancura and others. Extra attractions, Lillian Thorpe, recitations; Thomas Ballantyne, mimicsms; Arthur Hurd, tenor soloist, and M. J. Dixon, character songs. Tickets, admitting gentleman and ladies, 50 cents; private boxes, holding seven persons, \$3.00; secured from Ed. Blakey, J. C. Vancura and M. J. Dixon, 195 Broadway.

THIS TYPEWRITER FOR TEN NEW YEARLY SUBSCRIBERS.



The World Typewriter will be given to any person who will secure ten new yearly subscribers to this journal. This is the greatest premium offer ever made by any paper and the offer no doubt will result in our friends everywhere putting forth their best efforts to earn a machine, which will prove of much assistance to them at all times. We guarantee that the commission on the ten new subscribers by securing this typewriter is \$10, or within one-third of the entire amount collected. In allowing this unusually large commission, of course, we expect new subscribers, and in fact this liberal offer is solely based upon this idea.

The World Typewriter was placed upon the market a little more than two years ago. Although then in a somewhat imperfect state compared with the World of to-day, its success from the start was remarkable, and it has steadily gained in favor. The World of to-day is the result of practical ideas, experiments, and improvements upon the original acceptable machine. The World is offered as the best machine for letter writing. It is practicable, durable, simple, and speedy, and will do as good work as any typewriter upon the market. It is intended as a legitimate companion to the telegraph and other office or professional desk, the stenographer's table, and for any other place where the pen or pencil is used. During the two years that the World has been before the public nearly fifty thousand have been sold. The compactness of the machine gives it advantages not possessed by large and weighty typewriters. It is but 12 inches long, 6 inches wide, and 2½ inches high, and weighs but 3½ pounds; consequently it can be easily placed in a convenient position on the desk or in the drawer, not necessitating an extra table and change of position whenever a letter has to be written.

Address, THE ELECTRIC AGE Publishing Co., 5 Dey street, New York.

Mr. Frank C. Mason, the well known Brooklyn electrician, has been promoted to rank as a captain of the Brooklyn police force. He is superintendent of the police telegraphs of the City of Churches.

PHILADELPHIA POSTAL NOTES.—Misses Sallie W. Killian and Emma Heistand have returned to us from their month's vacation looking bright and happy. They are gladly welcomed back and the day force again has its original appearance. Business has taken a decided boom, and there is an abundance of extra to be had. Messrs. J. McCloskey and E. K. Davis of the night force are regularly seen on day duty in consequence of the rush, and calls on other members of the night force are by no means unusual. Mr. Harry M. Hughes, our genial night-chief, and T. P. Stevens, also of the night force, have gone on a gunning trip in the vicinity of the former's home at Coatesville, Pa. Mr. Hughes has a very jolly companion in "Stevey," and whether their murderous onslaught on fur and feathers be successful or not, there surely will be no lack of hilarity to enliven their trip. Mr. Harry E. Bailey, of Norristown, is now manager at the office No. 131 South Second street, *vice* H. I. Tally. Mr. Ed. Stair, of the Sugar District is at his home, down with typhoid fever. The last report of his condition was favorable, and we wish him a speedy restoration to health. Mr. Leo Miller, of the Main office, was called to the Sugar District to stay during Mr. Stair's absence. The American District Telegraph Co. have changed the location of their "8th" district office; its old location, which has been at the north-east corner of 20th and Callowhill sts. since 1875, is changed to 1923 Callowhill. The new office is attractively fitted up and is a great improvement over the old. Mr. Jos. Hallman is the officer and operator in charge during the day, while old Cap. Delany continues to hold forth at night, with John Sheahan as operator.

W. U. NOTES.—Arrivals: H. E. Bailey, Norristown, Pa.; F. L. Welt, Portland, Me.; E. J. Mills, Harvey Williams, Atlantic City; Theo. Koenig, Cape May; E. W. Rigby, Chester; E. F. Droena, City. Departures: W. H. Shirgar, G. N. Harte, J. McGarr, R. H. Brooks, H. P. Klotz. C. B. Wood and M. G. Moyer recently sent 822 and received 470 messages on the Phelps "N. Y." printer, between 8.30 a. m. and 5.30 p. m. The Misses Merrick, Heilman, Hussey and Conner have returned from an enjoyable vacation. Miss Sally Murphy has been added to the clerical force. As a number of interested people are curious to know the sum collected here for the Johnstown sufferers, and its disposition, it may be well to state that \$190 was collected and forwarded to superintendent Rowe, of Pittsburg who satisfactorily disposed of the money.

BALTIMORE, MD., NOTES.—Baltimore has just passed a gala week and it is estimated that fully 250,000 strangers were in the city. The grand parade on Monday, the 9th inst., was an immense success. It took five hours for it to pass a given point. All kinds of trade displays were made. The Postal Telegraph-Cable Co. participated in the procession, and led the electrical display. Three messengers, neatly uniformed, bore a large silk banner upon which were inscribed the words "Electricity, Postal Telegraph System of Cables," etc. Then came the Hopkins Fife and Drum Corps, of whom some are Postal messengers, including the infant drummer, ten-year-old Harry C. Barr, who marched over the entire route and beat his drum splendidly. He received much attention from the ladies and was the recipient of several bouquets. Then came thirty well drilled Postal messengers bearing a flag with the inscription "Mackay-Bennett System." The boys marched like veterans and received many a cheer. The Postal float, with four horses attached, came next. It was built on a wagon twenty feet long and eight feet wide, with two large poles and eight wires, handsomely decorated. On the front of the poles was a beautiful wreath with initials "J. W. M." On the south side of the pole was an anchor two feet long, composed of beautiful flowers, with the words "Postal Tel." (meaning the Postal is anchored to stay). Several bouquets were attached to the cross-arms and underneath the arms hung four incandescent electric lights. Two large tables were covered with instruments. On the sides of the float was represented an ocean scene, twenty feet long and three feet wide, with a cable stretched from America to Europe. On the front of the float was marked

"United States" and on the rear "Europe." The cable rested on the Irish flag, and all the foreign flags were festooned, representing Europe. In the middle was a card marked "Atlantic Ocean—Mackay-Bennett Cables—Cablegrams from Baltimore to London and the answers received in thirty minutes." There was a card on the wires marked "Blizzard Wires," and another read "I can't injure those Postal Telegraph wires no matter how hard I blow; they seem to be as solid as a rock and stand up and defy me. Signed Blizzard." Another card read "Postal Telegraph-Cable Co.'s wires worked without interruption during the late severe blizzard storms. The railroad companies used our wires for their train orders, and we were the only company in Baltimore having working wires." Several other matters very appropriate to the occasion were displayed and read with interest by everybody. The Postal received considerable praise along the route. In passing the President's stand the Postal boys raised their hats and President Harrison and Governor Jackson returned the salute.

CHICAGO NOTES.—The last two months have been great ones for vacations, especially among the ladies, some of whom are still absent. Among those returned we note Miss Lizzie Heppy, Miss Kittie Sperry, Miss Minnie Thompson, Miss Kate Ritcher, Miss Mary Clark, Miss Haggard, Mrs. Bracken, Mrs. Everham and Mrs. Parker. Al. Hauter has also returned from several weeks of rest. During the encampment of the G. A. R., at Milwaukee, Messrs. Wangerein, Cameron, Meany, Cowdry and the Loewenthal brothers were sent to that city to help out. Nine brawny looking "lightning jerkers," from Milwaukee came down here Sept. 14th, disguised as a ball club, and succeeded in beating the Chicago Telegraph Ball Club by a score of 10 to 8. Mr. Kissenger, the popular wire chief, has invented an improved multiple contact transmitter which bids fair to become a great success. One of the new men here is possessed of the largest amount of consummate nerve on record. The other evening, having occasion to use a manifold-book he called Harry Burton, the division chief under whom he was working, and said, "Mr. Burton, I'm tired; please yell 'Book' for me." Among the departures are: Fahey, to Cleveland; Ledsworth, to St. Paul; Bird, to Oelwein, Iowa, as dispatcher for the C. St. Paul & K. C. Railway, and Hamlin to Cedar Rapids as chief operator of that office. Arrivals: Robbins, Denver; Murphy, Cleveland; Bergen, from the Postal; Maddigan, Boston; Miss Hayes, East Saginaw; Dudley, Kentucky, and Perrin, Denver.

CANADIAN PACIFIC NOTES.—The following are on vacations: F. Hogle, Rat Portage; Mr. McLellan, Bonheur, sick; J. A. Nicol, White River; E. E. White, dispatcher at Schreiber, is on an extended trip to San Francisco. F. A. Eby, Hawk Lake; J. H. Campbell, Rat Portage, and M. E. Farewell, Carlstad, have returned from their vacations. Transfers: A. A. Burke, Carlstad, to West Fort; W. Wormworth, English River, to Bonheur; A. A. Marlatt, "X" office, to assist in dispatcher's office; J. Jackson, Kaministiquia to "X" office. Departures: C. Eggett, Fort William; T. Urquhart, Hawk Lake. Arrivals: J. E. Mullen, White River; Chas. Thom, of Collingwood, Ont., to Rennie.

SAN FRANCISCO W. U. NOTES.—Samuel Rankin, our ex-chief operator, is now superintendent of the San Francisco Telegraph Corps. He was presented with a beautiful gold watch when leaving the Western Union. He was held in high esteem by all. W. J. Martin, the present chief, and S. H. Strudwick, manager of the Wheatstone department, are both the very soul of jollity. John Tonsor, the well-known man of New York, is master machinist of the Wheatstone. John E. Dooly, a bright young man, but modest, was united in marriage some weeks ago to Miss Fenton, a well-known lady operator of this office. The boys gave them a grand send off. Robert Pillow and Frank Reagan are both anxious to see their friends in New York, and advise them to come to "The Glorious West." Miss Viola Johnson has left to resume her old position in the Chicago Wheatstone department.

NEW YORK WESTERN UNION NOTES.—Messrs. Hutchinson, Bowser, Lou Smith, Dick O'Connor, Will Bender, John Ryan, Al. Field, Robert Smith and other Washingtonians, whom the New York delegation by rail to the Old Timers' Convention at Louisville, met in the capitol city must have made it exceedingly pleasant for the boys during their lay over there, as they haven't ceased talking about it yet. The delightful ride about the city in a tally-ho coach will be remembered, they say, as long as they live. The hospitality of the Washington boys ceased only when the depot was reached, and even then they expressed regrets that their guests could not have received better treatment. From there south the party was made up of Mr. J. H. Emerick, Supt. of the Postal Telegraph Co.; Mr. Richard Hutchinson, Supt. of the Stock Exchange and Messrs. Lounsbury, Scully, Calahan, Delaney and Holbrook of New York; Mr. Harris, of New Haven; and Mr. Eugene, of Bridgeport. Arriving at Louisville, these gentlemen exchanged their return tickets with Messrs. John Brant, Launcelot Jones, Theo. Fullon, Rupert G. Stephenson, Joseph Knittle, Wm. Ives, Thos. Finnegan and John C. Cleverdon, who reached there by boat, via Newport News. All returned in the best of health and greatly delighted with their trip. Messrs. Ed. F. Dean, E. H. Simmons, Ben. F. Bunce, J. McKenzie, John F. Martin, Joe F. King and John C. Kunkle have returned from Saratoga, where they went to assist the force there in handling the business of the State Convention. The walls and ceilings of the lower floors having been treated to a coat of paint, the hope is indulged in that the general operating department which is in need of similar ornamentation will not be slighted. Mr. Polak has taken six nights a week a 5.30 to 9.30 trick. G. W. Sawyer has been placed on the regular night force, *vice* Mr. Frothingham, changed to the day force for the month of September. Messrs. Geehr, Smith, F. B. Newman, Hutton, Hamilton, M. A. Delaney, A. Miller, McHugh, McDonald, McNeill and T. W. Greene have been assigned to the split trick. Misses Opper, Reiners, La Parle, Hauser, Swords, T. Lee, J. Lee, Hawk, Haw, A. Spellman, M. Spellman, Gowans, Gilman, Herclotz, Kellock, Stacom, Slessinger, Flynn, Clark, Machellis, Fox, Bulger, Kircher, Garthwaite, Saunders, B. Burck, R. Burck, Daily and Kitty Boyle have returned from their vacation. Mr. McGinnis has been placed on the 7.30 a. m. to 5 p. m. trick. Richard Powers has been given a regular day position and assigned to the eastern division. Messrs. W. J. Scully, Collins and De Baun are among recent transfers to the day force. Misses Robertson, Kingston, Coleman, Erickson and Finley are on their vacation. Walk Walk for Walla Walla; One Ida for Oneida, and Annie 100 for Annie well, are a few specimens of recent development. Misses E. King, E. Millen, L. Allen, Florence Miller and Miss Hauser have returned from summer offices. Messrs. Blackman, Collins, Jackson and Bonar have resigned. Messrs. Horace, McGuire and Byrne are recent appointees on the 7 a. m. force. Mr. Schryver has been transferred from the split trick to the day force. Thomas Foley has been regularly assigned to the night force. Miss Alice Spicer has returned from her vacation. Night manager Sink who has been enjoying a much needed rest after the arduous duties he has performed in the past few months returns to us greatly improved in health. It is rumored that had chief operator, Brannin of the Jerseys, and Mr. Topping of the same division, been rewarded with the good fortune they so sanguinely expected, additional trains, to carry the snipe-shot and fish caught, would have been put on to convey their product to market. Unfortunately, however, it was not necessary to increase the rolling stock of the Long Island Railroad between Sag Harbor and New York.

WASHINGTON POSTAL NOTES.—The telegraph business of Washington, with both companies I understand, has been unusually brisk this summer, the usual reductions of force not having taken place. The new southern connections of the Postal tend to increase the work of their Washington office, and

hence a larger force will be maintained here in the future. Among recent changes with us none has been more gratifying than the recognition of genuine worth by the new administration in the appointment of W. J. Slater to the operatorship of the government printing office by public printer Palmer. The relations of the public printer with his operator are necessarily so intimate that we feel sure Mr. Palmer will not fail to still further recognize Mr. Slater's services. "Jim," though a young man, is a fine press operator, and his grip will be missed on the *Chicago Tribune* wire. Mr. J. P. Gooch, of Stanton, Va., is now all-night chief; Mr. L. K. Miller, of New York, is at the *Chicago Tribune* Bureau; Mr. W. P. Budds, of Charleston, S. C., recently added to the force. Mr. Denny Brown, of Chicago, is very appropriately working on the Chicago quad. Mr. W. H. Mayer is doing the early morning board work. Dr. Boyd is doing the service work in the new operating room. Most of the Postal employees subscribe for the *ELECTRIC AGE*. One conspicuous exception has left us.

BREVITIES OF THE OLD TIMERS' TRIP.

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The reception tendered the Old Timers by the Washington boys deserves special mention. A more hearty, wholesouled crowd of men than Messrs. Lou Smith, Will Bender, Dick O'Connor, Fields, Young, and in fact the whole force, it would be hard to find. All we can say is that if they ever visit New York they can rest assured of a roaring time.

"I tell you, sir," said one of the tourists to a darky at Richmond, "the abolition of slavery was the salvation of the South. Look at your industries, sir. How they are progressing. How your natural resources are being developed and —"

"Say, Boss, you jess come down heah boot election time an' talk dat way an' yo git job stumpin' de State right away."

One of the entertaining features of the banquet was the singing of Col. Will S. Hayes, the well known song writer and composer. We remember the sweet melody of "Mollie Darling," "Silver Threads Among the Gold," "I'll Remember You, Love, in My Prayers," and many other songs that were sung from ocean to ocean early in the '70s. Mr. Hayes' voice is pitched in a very harmonious key and he sings his melodies with the ease and grace which characterized Tom Moore.

(In the mountains.)

Lounsbury: "This scenery is grand."

Hutch: "Indescribable."

Callahan: "A perfect picture."

Scully: "Ahem."

The train pulled up at a small town in Virginia late at night. Wishing to know exactly what State we were in Holbrook addressed a colored man thusly: "Say, what State is this?"

"Reckon ye'l hev to ask de operator. He's bout only one round heah knows."

Hotel Clerk, Clifton Forge, Va.—"From the North are you, gentlemen?"

Old Timers: "Yes, sir."

"Waiter! have the fire escapes removed from 42 and show the gentlemen up."

Mr. Emerick, of the Postal, piloted the pilgrims around the historical places at Richmond. Having served there during the war, his recollections of the stirring scenes around the Confederate Capital were very interesting. The visits to the former site of Libby Prison, Belle Isle, St. John's Church, etc., were very pleasing events of the trip.

TELEGRAPH LITIGATION IN CANADA.—The case of the Great Northwestern Telegraph Company against the Montreal Telegraph Company is being tried before Justice Davidson at Montreal. It is understood that the counsel for the plaintiff have given another notice that in consequence of the nature of the evidence elicited in the case so far they will make an application to the court for permission to put in an additional demand, asking that the reduction in the amount of rental payable to the Montreal Telegraph Company be increased by an additional two per cent., making the amount to be paid four instead of eight per cent.

THE TELEPHONE IN THE FRENCH NAVY.—Some interesting experiments are about to be carried out at Cherbourg, with the view of testing the possibility of establishing telephonic communication between vessels of the same fleet at sea. It is stated that a preliminary trial, which took place recently, demonstrated the fact that a torpedo boat can be kept in communication with the command afloat, and receive direct orders as to where to steer and how to act in general operation.

MUNICIPAL LIGHTING, by Fred. H. Whipple, of Detroit, Mich., is before us. It is the second edition of this interesting volume, which has already made a field peculiarly its own, and is much sought after by those interested in municipal lighting. Its aim is to honestly inform its readers upon the subject for which it stands—the illumination of cities and towns by whomsoever it may chance to be.

WASHINGTON, D. C., Sept. 16.—John W. Lane, of Portland, Me., a millionaire who was interested in the telegraph business before the formation of the Western Union Telegraph Company, died here last evening, aged 71.

America has 200,000 telephones more than the rest of the world combined.

Mr. Edison is arranging a scheme, in company with Herr Siemens, for lighting Berlin with his electric lamps.

Mr. Thomas A. Edison, before his departure from Paris for Berlin, gave 10,000 francs for the benefit of the poor of Paris.

"I'm just doing a little light work," said the man who changes the carbons of the electric lamps on Chestnut street.

New York has an electrical execution about every day, but is still waiting to see the first murderer executed by electricity.

The first electric tramway in Italy is soon to be opened between Florence and Fiesole. Its total length will be 7,300 metres.

A Moscow foundry fuses metals by electricity. The glare is greater than the sun, and employees work two hours per day.

London has fixed the cost of its electric light at 16 cents for one ten-candle lamp thirty hours, or twenty sixteen-candle lamps ten hours.

Mr. Edison is filled with gratitude and dyspepsia by the cordiality of his reception in Paris. He says a few more banquets would finish him.

A crank at Altoona wanted a telegraph operator to send his love to every operator in the world and to collect the costs on the delivery of the messages.

The Philadelphia electricity exhibit at the Centennial Exposition in 1876 was very small. To-day \$300,000,000 is invested in the 3,000,000 lamps and 109 railways.

Princeton College has organized an electrical course of study.

The Lehigh Valley railroad has adopted the Delany Line Adjusting system, which keeps their relays at all stations in adjustment in bad weather.

Thomas A. Edison has gone to Heidelberg. He will return to Berlin to exhibit the phonograph to Emperor William, Prince Bismarck and Count Von Moltke.

The Postal Telegraph-Cable Co. has opened offices as far south as Columbia, S. C. Some half-a-dozen offices have been opened in North Carolina within the past fortnight.

During the recent Telephone convention at Minneapolis, Minn., freedom of the wires was granted the delegates and visitors by Superintendent McMichael and Tuttle of the Western Union and the North American telegraph companies respectively.

Dynamos are being substituted in the Postal office, Pittsburgh, Pa., to take the place of the battery heretofore in use. The saving to the company by the substitution is about fifty per cent.

The Delany Line Adjusting System, a description of which appeared in a recent issue of this paper, is being tried with great success on the Erie, Lehigh Valley, Baltimore & Ohio, Chesapeake & Ohio, Old Colony, Fitchburgh, and New York & New England railroads. Some of these roads have adopted this system and others are about to do so. The system keeps the relays at all stations in adjustment in all sorts of weather.

Edison has given over his original plan of returning from Paris to New York without visiting London, and will arrive in the latter city in a day or two, accompanied by Senator Wm. Maxwell Evarts. Mr. Edison, it is stated, has had a reception in Paris such as no American or any other foreigner has ever received during the three weeks that he has been in the gay capital. Crowds have followed him in the streets, and his appearance at the Exposition has been the invariable signal for a blockade which only the police could move. As his picture has been published in all the illustrated papers and his photographs are on sale in the shop windows, his face became well-known, and he has been unable to appear anywhere in public without being recognized. Newspapers have published his goings and comings with greater attention even than they devoted to the Shah.

BUSINESS NOTICE.

The following letter tells its own story.

BUFFALO INTERNATIONAL FAIR, Buffalo, N. Y.
Mr. Geo. F. Shaver, New York.

Dear Sir:—The Shaver mechanical telephone exchange bought of you has been in constant use since the opening of the Fair, ten days, and has given good service although rain and wind storms prevailed part of the time. We have ten stations, and switch direct one station with another, the time required for making a connection being about five seconds. The longest line is about one-half mile, and the longest circuit when connected through the central office is about seven-eighths of a mile. We can recommend it as being fully equal to the Electric Telephone in articulation, besides working much louder.

Wishing you success, which this remarkable invention merits, we remain, respectfully, (signed.)

C. J. Hamlin, president; C. W. Robinson, secretary and general manager; J. F. Hause, assistant secretary; H. B. Stimson, treasurer; B. F. Taylor, general superintendent.

STANDARDIZING ELECTRICAL APPARATUS FOR
STREET RAILWAYS.

At the semi-annual meeting of the National Electric Light Association, held at Niagara Falls, on August 6th, the following resolution was offered and adopted:

Whereas, it is the belief of the members of this association that the electric motor service upon street railways will require a service of electric current for the motor that will be reliable and constant, and that the various electric light stations are capable of generating and distributing such current;

Resolved, that a committee of three be appointed by the president, who shall endeavor to make such arrangements with the manufacturing companies that they should adopt some standard potential to be used upon the various railways; the committee also to collect such data regarding the supply of current to railways as may be deemed of interest to the association.

The president appointed Messrs. Eugene T. Lynch, Jr., of New York; T. Carpenter Smith, of Philadelphia, and Marsden J. Perry, of Providence, as members of that committee.

It has been thought advisable to collect and compile the opinions and experience of such street railways that have adopted electricity as a motor power. It is requested, therefore, that those interested fill out and answer such of the following questions as possible:

1. What system do you use?
2. What proportion of your cars are equipped with motors?
3. Do you generate your own electrical power, or are you supplied by an electric light station?
4. What proportion does your greatest average H. P. in use bear to the total H. P. of engines and boilers which you have installed?
5. What is the voltage or pressure of your generators?
6. Is there any other railroad in your town using an electric system? If so, what system do they use, and do you know the pressure at which they run?

BURNED OUT.—The building in which the Western Union Telegraph office in Bangor, Me., was situated, was gutted by fire Sept. 19. It was mostly occupied by offices, and the loss will be heavy.

BENTLEY-KNIGHT COMPANY SOLD OUT.—The Bentley-Knight Electric Motor Company has disposed of its property to the Thomson-Houston Co. of Boston. The latter company will carry out the contracts of the former.

AN IDEAL STATION.—The Edison Incandescent system in Brooklyn is, without doubt, the most perfect in the United States. The station is an ideal one in every sense of the term. A description in detail will soon appear in these columns.

REPAIRING CABLES.—The Anglo-American Telegraph Company's cable between Brest, France, and St. Pierre, Miquelon, laid in 1869 and broken in deep water on the 17th July last, was successfully repaired on the 5th inst., by the company's steamship *Minia*, Captain Trott, commander.

ELECTRICAL CENSUS.—We have received the following from General Porter, Superintendent of Census: "In view of the representation made to this office by firms and corporations interested in electricity as to the extent and importance of this industry, it has been decided to make it the subject of a special investigation. Your endorsement of Mr. A. R. Foote, of Cincinnati, as a suitable person to have charge of the investigation has been duly considered and Mr. Foote's appointment will be issued in due season."

YOUR TELEPHONE EAR.

IT IS A MATTER OF RECORD THAT VERY FEW PEOPLE USE THEIR
RIGHT EAR AT A 'PHONE.

You have a telephone ear. You may not know it, but you have all the same, says the *Albany Express*. It is the left ear, for it is on record that only a very small percentage of men or women use the right ear at the telephone.

As a matter of fact the telephone has suddenly come into prominence as a medical proposition, and unless the scientists are mistaken the bulk of men and women who use the telephone within a few years may expect to find themselves rather hard of hearing in the left ear.

This is because when using the telephone every muscle and nerve of the ear is strained to catch the faintest sound from the person speaking at the other end.

Dr. Oliver W. Moore, the eminent eye and ear specialist, was asked the other day if he had heard of any cases of deafness from the telephone.

"It is rather difficult to state exactly," he replied. "I have seen where the repeated sounds of an instrument or the repetition of any sound has caused deafness. Telegraph operators are in danger of injuring their sense of hearing. Boilermakers often suffer from deafness. In the construction of boilers it is necessary for one man to be inside of the boiler and the other outside, and the incessant noise caused by the riveting of the boilers always causes either deafness or an affection of the ear.

"As to the telephone, it no doubt has the same effect. It is natural and reasonable to suppose that a person listening for a sound, and not knowing the moment when it will come, may injure the membrane of the ear, and in time that might affect the hearing power."

President Weeks, of the Electric Light Association, reports that twelve very important papers have already been submitted to be read at the Kansas City meeting of the association and a dozen others are expected. Those who imagine that the association is going to pieces will now change their minds. The association never was in a more healthy condition.

Hills school at Pottstown, Pa., has adopted electricity for lighting purposes. The United States Electric Light Co.'s system is used. Since the adoption of electric lights there has been a decrease of 80 per cent. in complaints of affection of the eyesight. This institution has also ordered a storage battery plant. Mr. Eugene T. Lynch, Jr., of N. Y., has taken the contract for this. The Julien system will be used.

What Edison says of electricity of the future:—"It is the coming motive power. It will be used on all the railroads some day, but the point is to get an economical engine. My theory is to have immense dynamos located all along the line of the road and have the electricity conveyed from these stationary engines to the locomotives by wire through the rails. For example I would put two big engines between New York and Philadelphia and enough power could be furnished to whisk the limited at the rate of a hundred miles per hour. But this is the point I have been working on for years—to convert heat directly into electricity without the intervention of a boiler, steam and all that. What an enormous amount of expense could be saved if this could be done. Think of putting something into the heat of that natural gas fire and making electricity out of it. It can be done. I feel it in my bones and just now have a suspicion that I am on the right track, but it is a pesky problem, one that can be worked out only in time."

MOSES RITTER.

Moses Ritter was born at Rahway, New Jersey, July 23, 1863. He received a high school education in his native town, spending his time on a farm meanwhile. In 1879 he had the great misfortune to lose his right arm above the elbow while gunning. Thus deprived of the ordinary methods of earning a living he turned his attention to telegraphy and commenced to learn it on the 19th of September, 1881, under the veteran operator, W. T. Harned (now dead), acting as message boy. Heavily handicapped by the difficulty of using his left hand in sending and copying he stuck to it like a man and in February, 1882, he took the position of night man at Rah-



MOSES RITTER.

way, Scott Avenue station for the P. R'y. Since that time he has worked for the same road at a number of different places, among them are Elizabeth, Waverly and various stations in Newark, N. J.

In August, 1883, he was stationed at Market street station, where he has been ever since. He is now living in Rahway in his own house. Mr. Ritter is not of a roaming disposition. He has never been connected with any other road but the Penn. R'y. He is held in high esteem by all.

On February 24th, 1886, he was married to Miss Carrie Neff, of Amsterdam, N. Y. If he has had any occasion to regret it since he hasn't let anyone know about it and so we presume he has no regrets. Through the efforts of organizer W. R. Blackmond, of the O. R. T., he became interested in that organization and being a worker, well-known and centrally located, he was chosen October 21st, 1888, chief of the Newark division, which position he has very ably filled.—*Weekly Telegrapher*.

MILWAUKEE, WIS., NOTES.—A little more than four years ago a Milwaukeean by the name of Simpson was murdered in Green Bay, Wis. Beach Lappere, a telegraph operator whose home is in Fond Du Lac, and who was at that time working in the Western Union office at Green Bay, where his brother, Chet. Lappere was manager, was arrested, convicted and sentenced to fourteen years in the state penitentiary for the crime, mostly on the testimony of the woman in whose house the murder was committed, she having sworn that she saw Lappere draw a revolver and shoot Simpson dead. A few months ago another murder was committed in the same house. The woman who had sent Beach to prison was accused of the murder of her husband, found guilty and sentenced to life imprisonment in the same prison where Lappere was confined. About two weeks after her conviction, this woman made a confession that has given Lappere his liberty after four years' imprisonment for a crime of which he was innocent. The

woman confessed that Beach Lappere had nothing whatever to do with the murder, and that she alone was guilty of the crime, and shortly afterward Lappere was released and is now working in the Western Union in Milwaukee. Beach is still a young man, and has many friends in this city and other parts of the state, who have always believed him to be an innocent man, but all efforts to secure his release were futile until this wicked woman added another victim to her list of crimes. About two years ago Lappere, who had gained the confidence of the prison officials, and had been given considerable liberty, secured a suit of clothes belonging to the son of the warden, and putting them on under his prison garb, managed to elude the watches and scaled the walls which surround the prison. He was pursued by guards, but hid himself in a marsh in the vicinity, where he lay in the tall grass for two days and two nights before he dare make another dash for the liberty which belonged to him. Throwing his prison clothes away he made his way to the nearest station and was soon en route to Chicago in a freight car. After travelling around for a while, he wrote a letter to a former friend who had gone to Montana to work, asking him if he could secure a position out there. This friend (?), however, proved to be an enemy, and the warden of Waupun prison was soon in possession of the letter, and later on Lappere was re-arrested and placed behind the bars for the second time, where he might have spent the best years of his life but for the confession of the murderess.

The Milwaukee operators again defeated their Chicago brethren by a score 9 to 6. The boys were royally entertained, and enjoyed their trip immensely.

KANSAS CITY NOTES.—Following are arrivals since last published: Bob Smith, R. McGuirk and Mr. D. S. Kennedy, St. Louis; Mr. Buchanan, Atlanta, Ga.; Mr. Clark, Dallas; and B. C. Elder, Wichita. The departures are Loring D. Gaskill to St. Louis and Claude Powell retiring. Business heavy at Postal and W. U. offices. Mr. Dickey, Ed. Moore and Mr. Huscher are on the sick list. Mr. Daniel Minnehan has been added to the force at the Postal.

BOSTON NOTES.—A short time ago Manager Maxwell of the W. U. office, Savannah, Ga., applied to Manager Henderson for three operators to report for duty at a certain date. The men were selected from a large list of applicants, and left for their new field of labor Sept. 26th, on the steamer Gate City. The matter created much excitement, and was the all-absorbing topic around the office till after the men were appointed. Business has fallen off to such an extent that a number of 5:30—11 p. m. tricks have been discontinued. Miss Hattie Chase of the Fitchburg quad took a brief vacation recently, relieved by Mrs. W. E. Brown; Mrs. Brown is now subbing for Miss E. T. Ellingwood of the Lowell wire. Miss K. G. Clifford, of the Providence depot office, is on a vacation for three weeks, relieved by Miss K. J. White, of the Nantasket Beach office, which has closed for the season. Miss M. A. Buckley has returned from Watch Hill, R. I., and Mrs. Campbell from a vacation; both have resumed their duties in the city line department. Messrs. W. S. Hutchinson, of the Chicago duplex, and T. C. Devine of the Albany quad, have changed places. John Hutchinson, our veteran battery man, has been on the sick list for some time past. Mr. S. C. Palmer, from the west, is a recent arrival. Mr. Robert R. Lyttell, of the Postal Broad Street force, New York, recently paid us a flying visit. Mr. J. L. Hughes leaves for Providence to assume a position with a broker. W. A. Gould, coat room clerk for some time past, resigned September 14th, much to the regret of all. Clerk T. W. O'Donnell has taken his place. The meetings of the T. M. A. Association are to be resumed the first Sunday in October, at Young's Hotel.

T. M. B. A.—The annual meeting of the Telegraphers' Mutual Benefit Association will be held in New York, on Wednesday, November 20th. Members who cannot attend personally are requested to send their proxies to delegates.

CHICAGO TELEGRAPHERS' ECCENTRICITIES.

The intricacies of the fearful and wonderful split trick kept me at my desk until after midnight not long ago, and as I came down into the hall my attention was attracted by the sound of several animated voices in the dining-room.

I stepped inside and discovered that these voices proceeded from a little group, consisting of a fat operator, two slim operators, a new man from the country and a check boy, who were evidently engaged in exchanging reminiscences. Seating myself quietly at one side and pretending to be absorbed in a newspaper, I overheard the following conversation:

"Speaking of ghosts,"—began one of the slim operators.

"Who was speaking of ghosts?" interrupted the check boy.

The slim man deigned no other reply than a withering look and resumed,

"Speaking of ghosts, I will never forget a terrible fright I had when I was working nights at B——."

In response to a chorused "tell us about it," the speaker continued:

"B—— was a little out-of-the-way town on the Mo. Pac. Railway. I was sent there to work nights and I can tell you it was the loneliest spot I ever struck. The depot was about a mile from town, in a sort of a hollow, and I would sit there all night long without seeing a human face. The dismal, creepy feeling that used to come over me I shall never forget. This feeling was not lessened by the fact that a few years previous a night operator had been killed in the same office by a large stone thrown through the window by some drunken strikers. Well, one evening we were sitting in the office, the agent, the day operator and myself, when the day man remarked, 'why it was just three years ago to-night that poor Jones was killed.' (Jones was the night operator referred to.) 'So it is,' replied the agent, and then turning to me said jestingly, 'ain't you afraid he'll come back and haunt you, Tom?'"

"Of course I laughed with them, but you bet I felt mighty queer, for I was only a boy; after they left I determined to steal a little rest, so I laid down on a table and was soon fast asleep."

"How long you slept you do not know," etc., etc., said the fat man, "skip all that stereotype and go ahead with the story."

The slim man condescended no reply but continued:

"When I awoke I was attracted by a peculiar sound from the instrument. It seemed familiar, but I could not tell just what it was. I arose, walked over to the desk and sat down. A moment later I was rooted to the spot with horror at the sight before me. The circuit-breaker was open and the key was moving, sending a message. In an instant I realized that it must be the invisible spirit of the dead operator to whose sending I was listening."

"What did he sign?" inquired the new man.

"Then the thought flashed over me," pursued the slim man taking no heed of the interruption, "that the chair in which I sat must be occupied by the ghost. I sprang to my feet——"

"Thought you was rooted to the spot," said the check boy.

"Sprang to my feet and started to the door only to find that it had been bolted from the outside. Then I fell to the floor in a dead swoon. When I recovered, the day operator and agent were leaning over me pretty badly scared, fearing they had killed me."

"Fearing they had killed you?"

"Yes; it all came out then. They had attached a fine wire to the key-lever, passed it through the holes in the table and floor and into the room below, opened the key,

knowing I would have nothing to do for several hours, and went below to lay for me. By pulling on the wire they had operated the key, and the key and sounder going in unison had caused the peculiar sound which attracted my attention."

Everybody heaved a sigh of relief and the other slim man said: "Well, I must go home and take some rest; business is getting awfully heavy on my wire lately."

"You fellows don't know what heavy business is," said the fat man contemptuously; "why, after the floods in '82 I sat down one night on first New York with a stack of business two feet seven and one-half inches high before me. Had to reach way up above my head, so, to time them."

"But how could you read them?" asked the new man.

"Fixed that easy enough. Had a mirror suspended over them and, by looking up into it, I read them all right. During that night I sent seven hundred and twenty-two messages."

"Bill," said the first slim man impressively, "you are the biggest liar I ever saw."

"Think so?" returned the fat man complacently as he drifted towards the stairs; "you ought to meet my brother."

DETROIT NOTES.—Among recent departures we note Mr. E. B. Vosburgh to join the "McGibbeny Family" concert troupe; Mr. E. E. Beebe to Beaman, Mo., for the M. K. & T. Ry. Co.; Mr. Paul Dorman to the D. L. & N. Ry. Co., and Mr. Larry O'Brien to try his luck in other pursuits; Mr. J. H. Hancock to Cleveland. Arrivals: Mr. George Boos from St. Clair, Mich.; Mr. C. H. Kent from Winnipeg, and Miss Rowland from Lansing. Miss Carrie Fox, and Mr. W. A. Kennedy, who have been doing relief duty through the district have been recalled to the Detroit main office. Mr. Frank Riley, who was detailed to help out at Lansing during the State Fair, has returned, Plank's Hotel office at Mackinac Island having been closed for the season. Miss Ella Shannon, after a two weeks' vacation will return to the Detroit main office. Mr. M. S. Corbett, chief operator, and Ed. Corbett, traffic chief, have returned from a short vacation and trip to Mackinac. Messrs. Fred Dolson and Tom Kennedy have also returned from ten days' vacation. In the Canadian division: Manager Dwight has just returned from a fortnight's vacation looking much benefited thereby. During his absence chief operator Powers officiated, assisted by Messrs. Fred Damon, George Lockhardt and George Fair; Mr. Damon taking a week off upon Manager Dwight's return. Mr. George Fair, who was subbing in this division, is a student at the Kalamazoo Theological College, and is filling in his summer vacation by working at the key. The International Fair and Exposition has opened here for ten days, and business is booming. Mr. Joe Richardson has charge of the company's interests at the Exposition Grounds. A new arrival handling a grain market, let it get away from him "Ress," and he hasn't tumbled yet, but may when this item strikes him.

NEW YORK POSTAL NOTES.—Arrivals: C. Zimmerman, T. Alcan, L. Straup, W. J. McGarr, J. O'Connor, J. E. Brick, R. H. Brooks, J. P. Regan, H. G. Funk, W. W. Wilson, Walter Holbrook and F. C. Frace. Harry Peters and R. A. Lynch have been transferred from the waiting list to the regular force. Departures: C. H. Ennis, E. J. Davin, E. J. Fullum, E. A. Hawley, J. J. Keating, G. McKenzie, C. L. McGerty, F. P. Newman, J. O. Wilson, F. N. Withey, W. C. Murray and J. M. Foley. The Misses Conway and Willis have left to take situations with brokers.

PENNSYLVANIA R. R. NOTES.—Mr. S. H. Hubbard, of 8 Broadway, New York, is on a well-earned vacation. E. C. Cuddy, of the same office, has just returned from a short trip through the western part of Pennsylvania.

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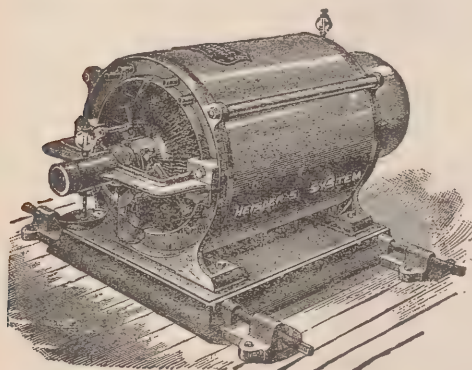
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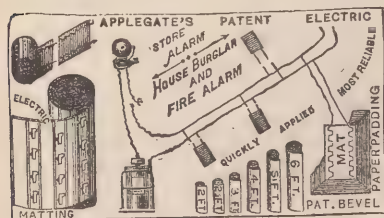
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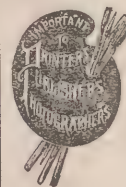
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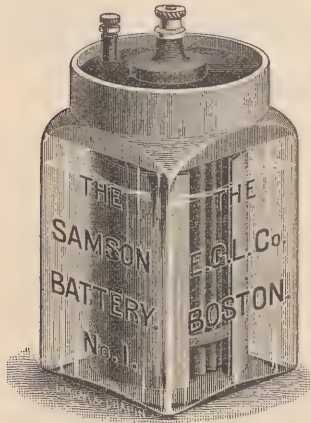
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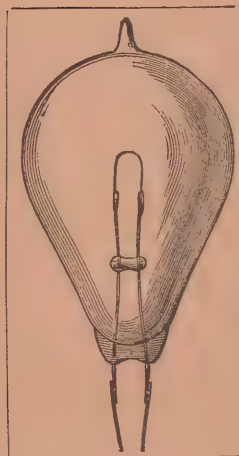
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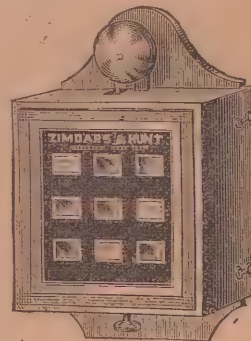
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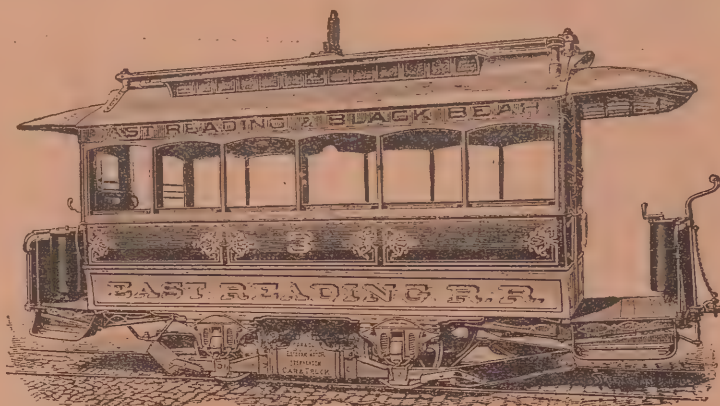
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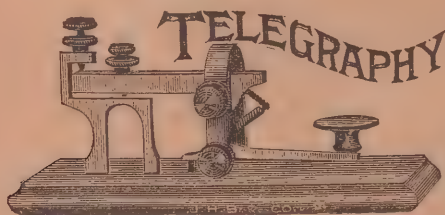
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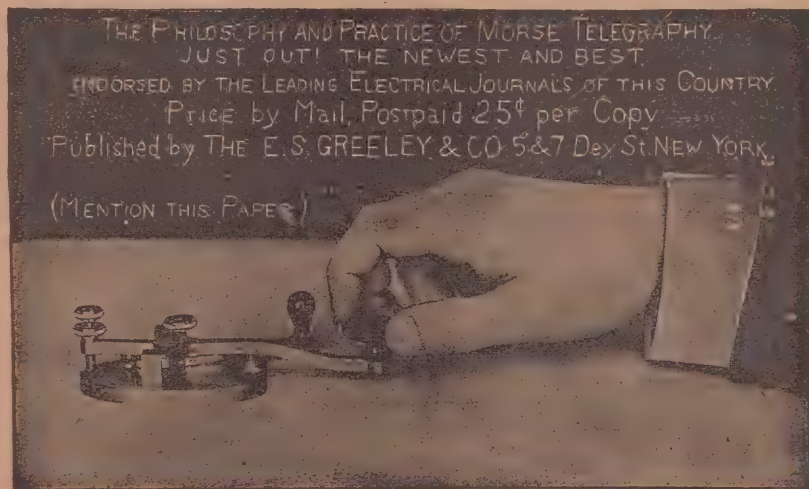
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The truth (referring to the true position of the telegrapher's hand in the act of "sending") exposed by a lightning wink of the instantaneous camera, and permanently fixed for our deliberate inspection by the science of photography, dawns upon the craft intellect accompanied with something of the amazement that startled the artistic world when the elaborate anatomical studies by Rosa Bonheur of the horse in the act of running were delivered over to universal ridicule by the subtleties of the same agent, instantaneous photography.—*The Electrical Review*, March 24, 1888.

The following diagram from the *Philosophy and Practice of Morse Telegraphy* gives an intimation of its scope.

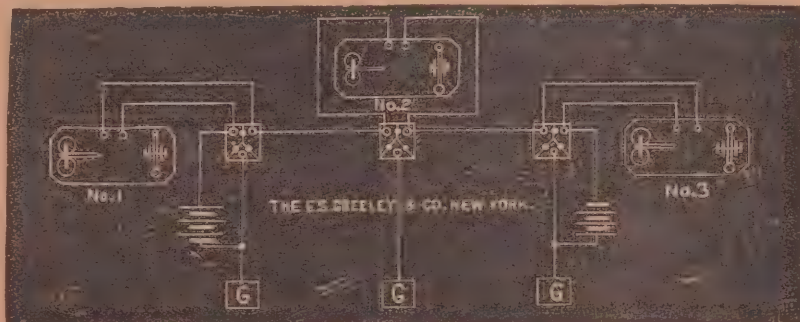


DIAGRAM No. 19.

Diagram No. 19, showing three Home Instruments or other short line combination sets, connected up on a grounded circuit with Excelsior Lightning Arresters at three distinct offices. The Switch Pin in this case, while instruments are in use, must be kept in the "dead hole," which is the hole in the center of the middle plate.

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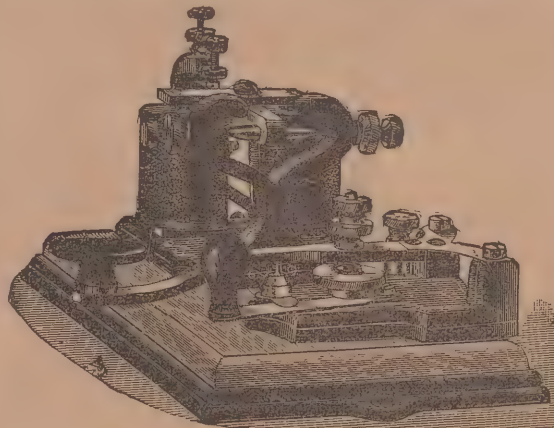
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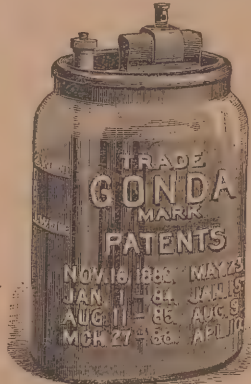
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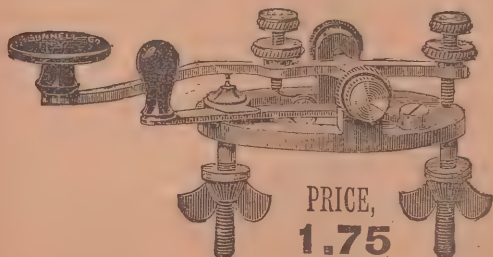
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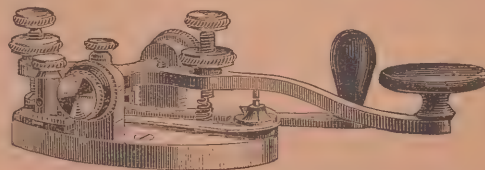


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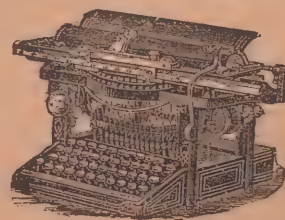
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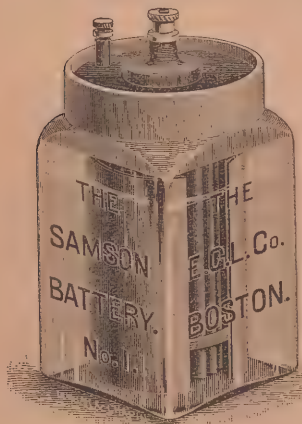
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NEW YORK, OCTOBER 16, 1889.

THE TELEPHONE SUIT.—The Government suit against the American Bell Telephone Company has now resolved itself into an action of fraud, which will be determined by itself. This has been the position sought after for a long time by the telephone people.

The Supreme Court, it will be remembered, in asserting last autumn the power of the Government to cancel a patent wrongfully obtained, went no further than to say that this could be done where the patent had been secured through fraud; it did not consider the question whether such suit could be brought upon the ground of a prior invention. But the Government in its present suit hopes to prove not only that Bell obtained his original patents by fraud, but that Drawbaugh was the original inventor, and this latter charge the telephone company has sought to evade in so far at least that they have asked not to be required to meet in the present suit the charge that Bell was not the inventor unless the Government will also prove that his patent was fraudulently obtained. The company is now given its wish to this extent.

GRAND PRIZES AND GOLD MEDALS.—The Paris International Exposition has justly awarded many grand prizes and gold medals to American electrical manufacturers, whose exhibits have all along called forth favorable mention from the representatives of all nations. The foreign machinery on exhibition was decided superior to that of French manufacture both in design and construction, and that the enterprising Americans should receive their just deserts in grand prizes and gold medals is but a natural outcome of events. Over fifty thousand citizens of the United States journeyed to France for the purpose of witnessing the exposition, and we have yet to hear of the first person who has any fault to find with what he saw. It is true our exhibit was somewhat curtailed, but what there was of it made an exceedingly satisfactory record for the owners.

MR EDISON'S RETURN.—Mr. Thomas A. Edison, the American inventor, has returned from Europe, where he passed a few weeks in a pleasant and profitable manner. Aside from the honors showered upon him while abroad

Mr. Edison returns to us impressed with America's superiority over Europe in electrical and mechanical achievements, and is confident that our excellent lead will be maintained for years to come. No doubt many new ideas have occurred to Mr. Edison during his absence abroad, of which we shall hear from time to time. He returns in the best of health and his fellow-countrymen unite in extending him a hearty welcome.

ELECTRIC LAUNCHES.—There appears to be a growing demand for electric launches, which will, no doubt, become somewhat more pressing when they are oftener seen, say twelve months hence. The storage battery has been utilized successfully both in this country and abroad recently, in carrying out experiments in this line of usefulness. The battery and motors occupy but a small fraction of the spare room of the boat, which is an important desideratum. Steam and naphtha launches will stand no show whatever in competing with the electric motor, when once the latter is given a fair chance to demonstrate what it can do.

ALLEGED ELECTRIC RAILWAY FAILURE.—Richmond, Va., is dissatisfied with its electric railway system, which it is claimed has never given satisfaction. It is said that the strong currents necessary to enable the cars to surmount the numerous heavy grades have burned out as many as twenty armatures, costing \$200 each, in one day. The company which furnished the plant is not composed of people who are likely to allow these statements to go unanswered. The system mentioned is a pronounced success in every section of the country where it has been introduced, and this alleged "failure" should not be permitted to gain widespread circulation until the true facts are made known.

STORAGE BATTERIES VERSUS OVERHEAD WIRES.—A division of opinion exists among electricians as to the efficiency of storage batteries, compared with overhead wires in furnishing power for street car propulsion. Without exemplifying the good points of either of these meritorious systems, it is of the utmost interest to note that the effect of this diverse opinion cannot but prove beneficial, for the reason that each interested party is striving for supremacy. So long as each interest confines its endeavors to outdo the other, and keeps out of court, good results will accrue to both systems.

WESTERN UNION ANNUAL MEETING.—The annual report of the Western Union Telegraph Company, which was presented at the annual meeting of the stockholders on the 9th inst., the principal points of which are printed on another page, shows very gratifying results. There was an entire absence of opposition or friction in the transaction of the business of the meeting. The harmony indicates with certainty one thing, and that is that the shareholders have entire confidence in the management of the vast concern.

TWO NEW CABLES.—The Western Union Company is laying two cables between New York and Newfoundland. The cables are already constructed, and the steamer Faraday sailed some days since with them to the coast of Newfoundland. This will give the Western Union uninterrupted communication with Europe, and avoid any possible interruption arising from storms which have so frequently interrupted their land lines.

ELECTRIC AND CABLE ROADS FOR BUFFALO.—The Buffalo Electric and Cable Street Railway company, formed to operate street surface roads on about 50 miles of streets in the city of Buffalo, has filed a certificate of incorporation with the secretary of state. The capital is \$1,500,000.

Mayor Grant has notified the electric light companies in New York City that the frightful frequency of deaths from contact with the wires makes it imperative to bury them, and invites immediate suggestions.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.

The thirty-seventh meeting of the Institute was held at the house of the American Society of Civil Engineers, 127 East Twenty-third street, New York, on Tuesday, September 10, 1889. The meeting was called to order at 8 P. M. by Vice-President Martin, who said :

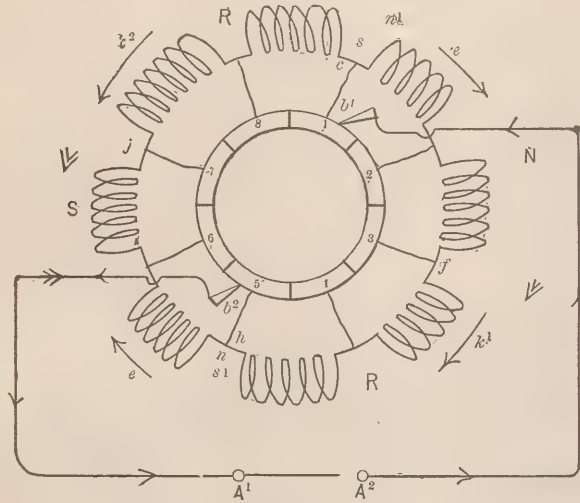


FIG. 1.

rent motor, one form of which is shown in the accompanying drawing.

The place that the alternating current electric motor is destined to fill in the industrial arts is familiar to you all, and the various ways known to the scientific world by which such machines may be rendered operative, have been ably considered and elaborately discussed in the Institute papers of the past two years by Professor Thomson, Dr. Duncan and Mr. Tesla.

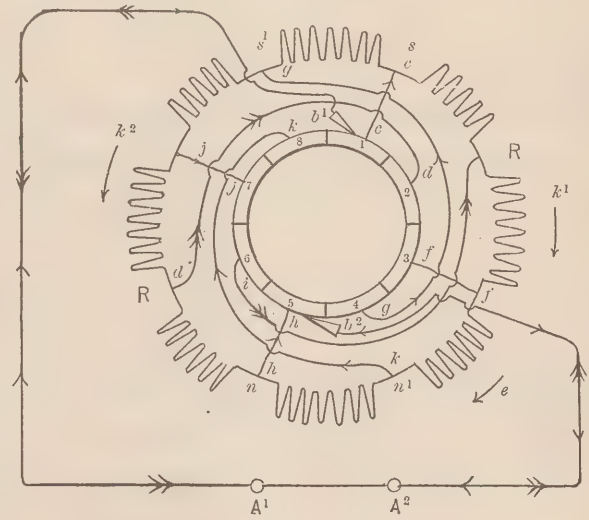


FIG. 2.

Gentlemen, this evening we have our thirty-seventh meeting, and the first of the present season. The paper which we shall have read to us is by Lieutenant F. Jarvis Patten, on "Alternating Motors—The Evolution of a New Type." Judging from the full attendance on so stormy an evening, the subject is one of great interest to us all, and I therefore have much pleasure in calling on the Lieutenant to read his paper.

We are thus all more or less acquainted with the prominent difficulties of the problem.

My experience in common with that of my predecessors teaches that the alternating current motor has a strong and persistent disposition to stand still, and when persuaded to motion it is apt to be a sort of "go-as-you-please" machine, and asserts its inherent right to turn in either direction indiffer-

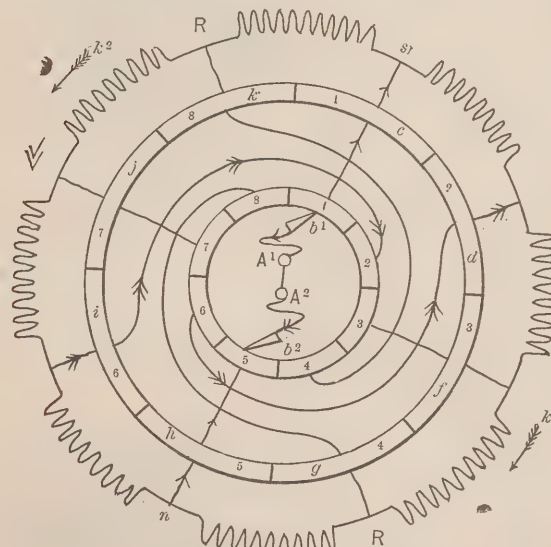


FIG. 3.

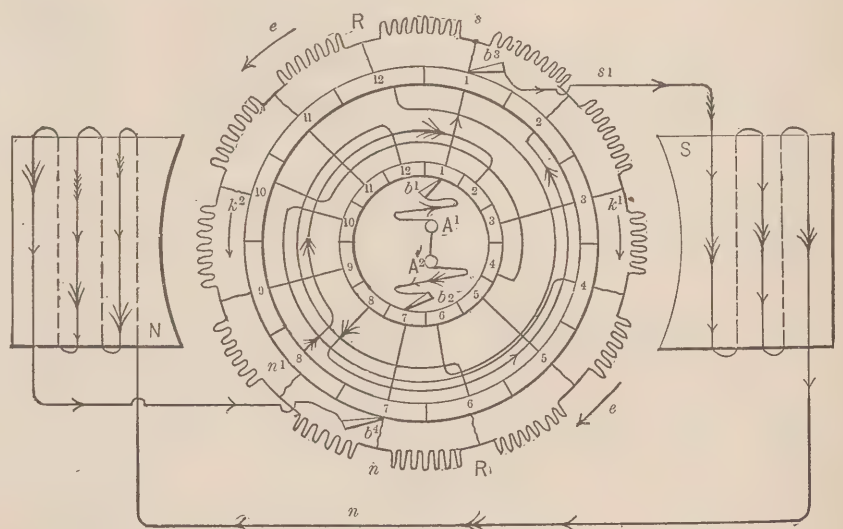


FIG. 4.

ALTERNATING CURRENT MOTORS—THE EVOLUTION OF A NEW TYPE," BY LIEUT. F. JARVIS PATTEN.

On giving our secretary the title of this paper, it was my purpose to treat the subject in a broader light, and to show the progressive steps in a series of experiments which led eventually to the type of machine that I shall bring to your notice this evening. The recent and urgent claims of other work have rendered such a treatment impossible at the present, and I shall limit the paper to a description of a new alternating cur-

rently; direction of rotation in some cases being purely a matter of chance. I shall not have much to say about efficiency, as my experiments with large machines are not sufficiently advanced to furnish any reliable data; but I will endeavor to give a general solution of the problem designed to meet the following conditions of practice :

1st. A machine that will start itself independently of the speed of the generator or number of alternations of current per unit of time.

2d. A machine that has but one direction of rotation and cannot reverse under any conditions of current alternation.

3d. A machine that is not necessarily synchronous with the generator, revolution for revolution.

4th. A machine in which reversals of current direction do not produce corresponding reversals of magnetism in any iron part when the machine is in motion at its normal speed and maximum efficiency.

5th. A machine of simple form, having an ordinary continuous wound armature revolving in a single or two-pole field.

Referring now to the figures, which are simply diagrams of the circuits and operative parts, we have in Fig. 1 an ordinary closed circuit armature shown as a Gramme ring merely for convenience of illustration, the points of the winding intermediate between the eight coils being connected in the usual way to the eight segments or bars of an ordinary Gramme collector, and it may be well in passing to note here the functions of this collector. It is not a commutator in the strict sense of that term, as it does not rectify or re-direct reverse or opposed currents. If the brushes b^1 and b^2 were held upon the outside wire of the ring, the same results would follow, and the Gramme collector, properly so called, simply transfers the

change position, either mechanically or otherwise, then with an alternating current a constant polarity, s and n , would be maintained at the upper and lower points of the ring—for then a direct impulse, starting from A^2 to the right, would enter the ring through the brush b^1 , flowing down both sides in the direction of the arrows $k^1 k^2$, out through brush b^2 , and back to the source at A^1 . The reverse impulse, indicated by the double arrows, would start from A^1 to the left, going to brush b^2 , and, if we now suppose this to have changed places with the brush b^1 , the reverse current would then enter the ring at s , and, flowing down both sides in the direction of the arrows k^1 and k^2 , would leave through n and the brush b^1 , and so back to the source a^2 , maintaining the polarity of the ring the same as before. If the brushes could be thus changed at each alternation, the polarity of the ring would be maintained constant with an alternating current. While, however, it is quite impracticable to thus cause the brushes to change position

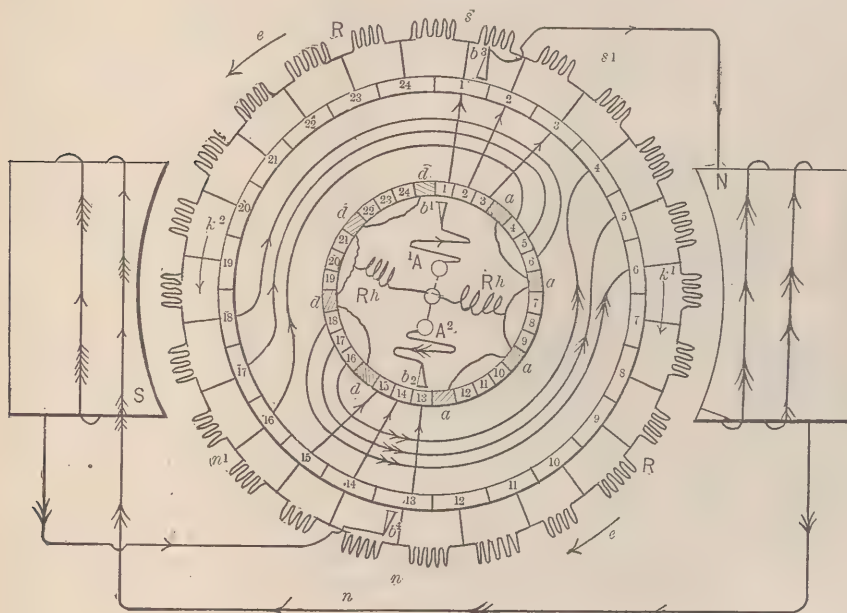


FIG. 5.

brush contact from point to point of the continuous ring winding. If a source of direct current be interposed between the terminals A^1 and A^2 , current will flow continuously from brush b^1 to b^2 downward through the right and left hand halves of the ring in the direction of the arrows k^1 and k^2 , making, say a south pole in the ring at the upper point S , and a north pole at the lower point n . With a continuous current these poles would be continuously maintained, and placed in the magnetic field indicated by N and S the armature would continuously revolve in the direction indicated by the arrows KK . If now a source of alternating current be inserted between the terminals A^1 and A^2 , the polarities of the ring would be reversed at each successive alternation of current, and if a direct impulse, indicated by the single arrows, in the external circuit produced the poles n and s in the ring, the reverse impulse, indicated by the double arrows, would produce the opposite polarities n^1 and s^1 at the same points, and the tendency to motion would be reversed if the fields remained the same, but, it will be noted, the motion would be in the same direction still if the fields were also reversed by the same reversal of current. If, however, the fields were maintained constant, as indicated by the large letters N and S , and some device could be contrived by which at each reversal of the alternating current the brushes b^1 and b^2 could be made to

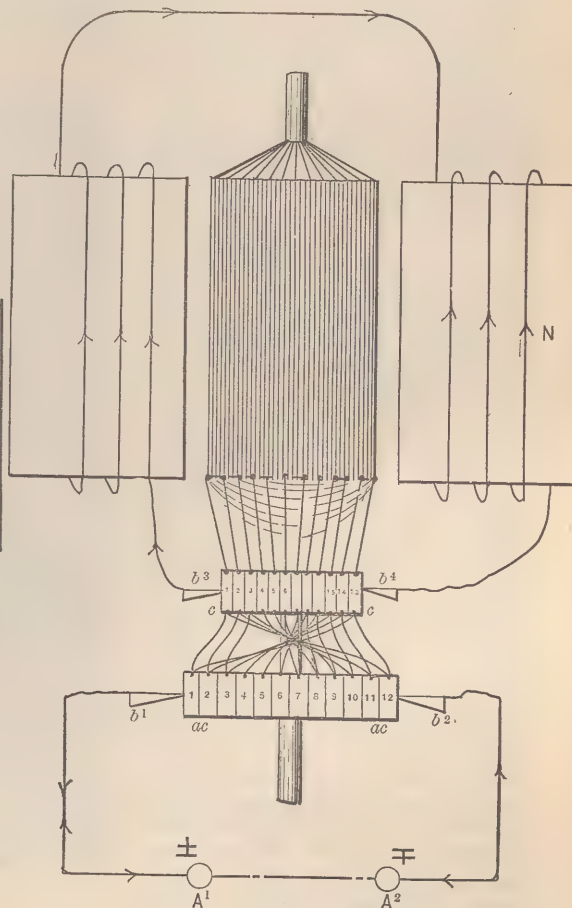


FIG. 6.

mechanically at each reversal of the current, it is perfectly feasible to produce the same effect without the mechanical change. The means of accomplishing this result are indicated in Fig. 2, which is identical with Fig. 1 with a single exception. There are eight coils, as before, and eight bars in the collector; the odd numbered bars, 1, 3, 5 and 7, are connected to the same points of the ring as before, c, f, h and j , but the even numbered bars, 2, 4, 6, 8, are connected respectively to points of the ring diametrically opposite them, bar 2 to the point d , bar 4 to the point g , and so on each even numbered bar to a correspondingly opposite point of the winding. If now a source of alternating current be interposed between the terminals A^1 and A^2 , and we make the single supposition that the ring shall turn through an arc of the circumference equal to that covered by one bar of the collector during each alternation of current, we shall still maintain a constant polarity at the

WILLIAM B. WILSON.

VICE-PRESIDENT U. S. MILITARY TELEGRAPH CORPS.

Mr. William B. Wilson, of Philadelphia, whose portrait we present with this issue, is not only a representative man of the commonwealth in which he resides, but is also a representative of the true outcome of American institutions. He was born in Harrisburg, Pa., on the fifth day of April, 1839, a son to Thos. L. Wilson, one of those old-time sterling public officers who held high position, but notwithstanding position remained true to the spirit of American institutions and consequently a poor man. Having a large family it was necessary to make every one of them self-sustaining, and the subject of our sketch when but 11 years of age was placed in a general country store in the vicinity. The selling of dry goods and the trading in butter and eggs not being congenial, the boy sought the telegraph as the school in which to be educated. On the fifth of July, 1852, when but a few months over 13 years of age, he entered the service of the Atlantic & Ohio Telegraph Company as messenger boy. In that early time of the telegraph the duties of the messenger boy were varied. He not only had the responsibility of the delivery of the telegrams but he also had to make up the Grove battery, sweep out the offices, answer the test calls in the mornings and, if the wires were broken down, go out and assist in repairing them. Young Wilson showed such appreciation of the advantages of education that were offered by the telegraph that he gave his whole being, as it were, to the advancement of that profession. He soon became a thorough operator and we find him in 1853 one of the most expert of sound readers. Between the years 1853 and 1857 he was interchangeably employed between the railroad and the commercial service and justly earned the reputation of being expert on press and train-movement work. He became identified with the Pennsylvania Railroad service in October, 1854, since which time he has in varied capacities remained loyal to that great corporation. In 1859, under the direction of Thos. A. Scott, he was placed in the commercial office in Philadelphia, on Chestnut street above 3d. There he remained until the spring of 1860. The war clouds threatening the country suggested to Mr. Scott that safe persons should be sent into the Southern States for the purpose of obtaining a consensus of opinion of what the Southern people were complaining and what they desired in the shape of government. Mr. Wilson was selected as one of those for this delicate service and Montgomery, Ala., was chosen as a basis of operations. Mr. Wilson accepted service in the telegraph office at that city, where Wm. L. Yancey, one of the ablest and most conscientious of all antagonists of this form of government, had his home and from whence he promulgated his revolutionary doctrines. After remaining in Montgomery for a few months Mr. Wilson went to Columbia, S. C., under the wing of Mr. R. B. Bullock, and became secretary and treasurer and chief operator of the



WILLIAM B. WILSON.

Columbia and Charlotte Tel. Line, owned and controlled by the Adams Southern Express Company. He rendered faithful service to that company, as ex-Governor Bullock attests, but at the same time keeping the lovers of good government well advised of passing events. Remaining in South Carolina until the tocsin of war was sounded, he worked his way North and found himself at Harrisburg in the midst of the excitement caused by the attack upon Fort Sumter. Col. Scott, who was in Harrisburg at this time, took Mr. Wilson to Governor Curtin's office for the purpose of aiding in organizing the militia called for by President Lincoln's proclamation for 75,000 troops. *It was here that Mr. Wilson opened the first telegraph office in the world for military purposes.* Surrounded by such men as Fitz John Porter, Wayne MacVeagh, Andrew Porter and Geo. H. Thomas he earned for himself merited commendation for his abilities. The necessities of the government requiring its best and most able and comprehensive men at the Capital caused Mr. Lincoln to request Col. Scott's presence there. He took with him Mr. Andrew Carnegie and Mr. Frank Thomson and left orders for Mr. Wilson to follow so soon as his place could be filled in the Executive Chamber at Harrisburg. Mr. Wilson reached the War Department on the 3d of May, 1861, and was made manager of the Military Telegraph in the War Department. All of the boys that entered the military service during the first fourteen months of the war kindly remember Mr. Wilson for the strict adherence to discipline, which characterized his administration, and also for the extraordinary warmth of disposition he displayed for their personal comfort. Broken health and change in the administration of the Department of War caused him to leave that department in the early part of 1862 accompanied by the regrets of all the operators in the military service. President Lincoln, Adjutant General Townsend, Assistant Secretary of the Navy Fox, Henry A. Wise, Chief of the Naval Ordnance Department, all testified, in writing, their regret at his leaving the service and to his patriotism and abilities whilst in it. He resumed his position as soon as his health

allowed on the Pennsylvania Railroad as its General Lost Car Agent. Whilst the duties of that position were co-extensive with the traffic of the continent his work was not confined to its requirements. Under Colonel Scott's direction he was made a secret service telegraphic scout and rendered important and delicate service in the Cumberland and Shenandoah Valleys during the Antietam, Gettysburg, and Early's Raid campaigns. His life at this time really reads like a romance of history and we regret that we haven't space to give it in detail. Subsequent to the war, Mr. Wilson assumed the superintendency of telegraph between Baltimore and Canandaigua on the Northern Central and Philadelphia and Erie railroads, then under the direction of the Pennsylvania Railroad, and also built in the same interest a line of telegraph over the Warren and Franklin Railroad, from Irvineton to Oil City, in the height of the oil excitement in that region. On the completion of that line, in 1866, he retired from telegraphy and

has since devoted his time and attention to the commercial or freight business of railroads. For a number of years he remained at Harrisburg, the great distributing point for the local commerce of Pennsylvania. In 1882 the requirements of his company demanded his attention elsewhere and he was sent to Lancaster, Pa., to develop the great agricultural interests of that wonderful county in their relation to transportation. So successful was he in his efforts that in 1884 his company called him to the manufacturing district of Philadelphia. The Kensington manufacturing district in its area is the largest in the world as to the number and variety of its manufactories and manufactures. His business has never occupied the whole of his time and attention, for he has always found odd hours to devote to literary and political subjects. He has written very freely on the questions of the times, as they have arisen, for the current newspapers, besides several excellent historical pamphlets on war times, and also several moral treatises. In his native town he served from 1868 to the middle of 1871 as a member of City Councils.

He has been a candidate for the legislature and Congress in districts having large adverse majorities; but, while not elected, he succeeded in reducing the figures very materially. Mr. Wilson has a beautiful home at "Waldon" Holmesburg, Philadelphia, where he enjoys the society of his interesting family and his friends, and never tires of saying that the telegraph was the mediumship through which he obtained the education that has insured all of his successes. He is the Vice-president of the United States Military Telegraph Corps Association. He has been the preceptor of many young men in the telegraphic art, all of whom he is intensely proud; but the one person to whom he taught the Morse alphabet, of whom he is the proudest because he read correctly the manly outcome in the friendless boy whom he had to teach surreptitiously and at the expense of his own position, is William J. Dealy, at present manager of the Western Union Telegraph Office at 195 Broadway, in this city.

In addition to his position in the U. S. M. Telegraph Corps, Mr. Wilson is a member of the Historical Society of Pennsylvania and of the Military Service Institution on Governor's Island, New York harbor.

Mr. Wilson is emphatic in his declaration that the railroad and the telegraph have been foremost in advancing civilization and have educated more prosperous men than the combined colleges of the country, and those men are the most important factors in our country's development.

TRANSFERS. — Geo. Geiger, Panama, to Tyler, Texas; F. J. Kasdorf, Peoria, Ill., to Keokuk, Iowa; Geo. H. McDonald, Saratoga, to Albany, N. Y.; J. Thorne Angell, Chatham, to Stanfordville, N. Y.; J. B. Rex, Glenbrook, to Saugatuck, Conn.; H. C. Allison, Memphis, Tenn., to New Orleans, La.; R. J. Horwood, to Lagrange, Texas; H. Heritage, Denver, Col., to Deming, N. M.; H. C. Stough, Colorado Springs, to Denver, Col.; Harry Beeton, St. Catharines to Toronto, Ont.; J. M. Scott, Kansas City, Mo., to Louisville, Ky.

The continued and flattering quarterly statements rendered by the Gold and Stock Life Insurance Association are having a telling effect on the membership, which has increased to 609, an advance of 104 since last January. The balance on hand has swelled to \$2,300—quite a respectable reserve fund in itself. The future of this association indicates continued prosperity and great usefulness.

President John W. Mackay paid the 187 Broadway office a visit a few days ago accompanied by Manager of Telegraphs Charles Hosmer, of Montreal. After the business of the office had been described by Assistant Manager Shirley, they were escorted to the basement, where Manager Usher explained to them the workings of the dynamo system.

THIS TYPEWRITER FOR TEN NEW YEARLY SUBSCRIBERS.



The World Typewriter will be given to any person who will secure ten new yearly subscribers to this journal. This is the greatest premium offer ever made by any paper and the offer no doubt will result in our friends everywhere putting forth their best efforts to earn a machine, which will prove of much assistance to them at all times. We guarantee that the commission on the ten new subscribers by securing this typewriter is \$10, or within one-third of the entire amount collected. In allowing this unusually large commission, of course, we expect new subscribers, and in fact this liberal offer is solely based upon this idea.

The World Typewriter was placed upon the market a little more than two years ago. Although then in a somewhat imperfect state compared with the World of to-day, its success from the start was remarkable, and it has steadily gained in favor. The World of to-day is the result of practical ideas, experiments, and improvements upon the original acceptable machine. The World is offered as the best machine for letter writing. It is practicable, durable, simple, and speedy, and will do as good work as any typewriter upon the market. It is intended as a legitimate companion to the telegraph and other office or professional desk, the stenographer's table, and for any other place where the pen or pencil is used. During the two years that the World has been before the public nearly fifty thousand have been sold. The compactness of the machine gives it advantages not possessed by large and weighty typewriters. It is but 12 inches long, 6 inches wide, and 2½ inches high, and weighs but 3½ pounds; consequently it can be easily placed in a convenient position on the desk or in the drawer, not necessitating an extra table and change of position whenever a letter has to be written.

Address, THE ELECTRIC AGE Publishing Co., 5 Dey street, New York.

PHOTOGRAPHS OF PROF. MORSE'S BIRTHPLACE.

PRICE, 50 CENTS. POSTAGE PREPAID.

We have made arrangements to furnish anyone desiring the same, photographs of the house in which Professor Morse, the inventor of the electric telegraph, was born. The house is situated at 199 Main street, Charlestown, Mass. (Bunker Hill District, Boston), and bears an inscription to the above effect, which can be readily discerned in the photograph. As the house is old and likely to be torn down very soon, the opportunity to procure this valuable souvenir should not be delayed. Address The Electric Age Publishing Company, 5 Dey street, New York.

Mr. F. W. Jones, electrician of the Postal Telegraph Co., is in Pittsburg, Pa., where he is putting in a dynamo plant to supersede the battery.

Mr. Harry J. Edson, of 195 Broadway, New York, is enjoying his vacation at Montpelier, Vt.

CONTINUED FROM PAGE 3.

upper and lower points of the ring without causing the brushes to change position mechanically.

Thus a positive impulse starting from A^1 to the left and indicated by single arrows enters the ring at b^1 , flows down both sides to n , producing the ring polarities s and n out brush b^2 and back to source at A^2 . The reverse impulse being in the opposite direction will start from A^2 to the right, go to brush b^2 which we will now suppose bearing on segment 4 of the collector, whence it will go by the inverse connection to the opposite point S^1 of the ring, then down both sides in the same direction as before to the point n^1 , thence back to the opposite segment 8 out, brush b^1 now bearing on this segment and back to source at A^1 .

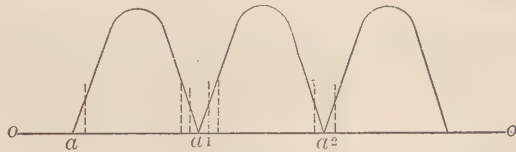


FIG. 7.

The reverse currents therefore, under the assumed conditions, are caused to maintain a constant polarity in the ring, so that in a constant field its tendency to motion would always be in the same direction with an alternating current in the armature. It will be further noted that the alternating current is not re-directed or commuted in the strict sense of the word, and we may enunciate the fundamental principle which underlies the construction of this type of machine as follows:

“The poles of any closed circuit may be maintained constant with an alternating current by causing opposite impulses to traverse the circuit in opposite directions. The direct and inverse connections, shown in Fig. 2, have precisely this effect, when, as supposed, a single bar of the collector passes under the brushes at each reversal of current. The connections, $c c$, $d d$, $f f$, etc., in Fig. 2 may have any form, and other bars may be interposed between their extremities without affecting in any way their functions as connectors. This step is shown in Fig. 3, where another collector bar $1c$, $2d$, $3f$, etc., is inserted in each of the connections $c c$, $d d$, etc., of Fig. 2, thus making another collector shown outside the first to avoid confusion of the drawing, while for the same reason the source of alternating current $A^1 A^2$ is placed inside the inner ring. As the polarities s and n of the ring are maintained constant, as previously described, with an alternating current, and current is constant in direction from s downward through the right and left halves of the ring to n , so must necessarily any current be constant in direction which is led from brushes through any shunt circuit connected to the segments $1c$ and n of the outer collector; a field circuit of constant direction may therefore be shunted from this outside collector. This is shown in Fig. 4, in which 12 coils are shown in the ring and 12 bars in each collector connected alternately direct and inverse as before. Tracing now two opposite impulses of current, we have the first indicated by the single arrows from source A^1 to segment 1 of the inner collector, thence to segment 1 of the outer collector, where the current divides, part going down the right and left hand halves of the ring to n and part out brush b^3 through the field circuit making the poles N and S , back to brush b^4 segment 7 of outer and segment 7 of inner collector to the terminal A^2 of source. If the armature be supposed now to turn through the space covered by one collector bar, the reverse impulse can be traced as follows: Starting at A^2 in the opposite direction to brush b^2 now bearing on segment 8 of the inner collector thence through the reverse connection to segment 2 of the outer collector, now under brush b^3 where the current divides going part as before down the right and left halves of the ring making a south pole at s^1 and a north pole at n^1 as before, and the other part out of brush b^3 through the field circuit in the same direction as before back to brush b^4 now on

segment 8 of the outer ring thence to the reverse connection back to segment 2 of the inner ring, now in bearing with brush b^1 and so returning to the source at A^1 . - Thus the two impulses of opposite direction have been made to traverse both armature and field circuits in the same direction, we have, therefore, with an alternating current constant armature polarity and constant field polarity, and therefore a constant tendency to motion in the same direction.

Not only this but the further condition is fulfilled that there are no reversals of magnetism in any iron part so long as one bar in the machine, as shown in Fig. 4, passes under the brushes at each alternation of current. It remains to show how this is brought about. Referring again to Fig. 4, let it be supposed that the first impulse of current did not cause the armature to turn through the arc of the circumference subtended by one segment, but all the brushes still bore on the same segments, as shown in the figure, and the reversals of current continued. By tracing the circuits it will be seen that each reversal of current reverses the polarity of both field and armature, and with either direction of current or rapid reversals there will be a constant tendency to motion always exerted in the same direction.

The machine under these conditions becomes therefore simply a direct current machine on an alternating current circuit with a constant tendency to start in one direction. Assuming the machine, therefore, self-starting, it will continually gain in speed until the condition is fulfilled of one segment passing the brushes at each alternation, for it then becomes in the broad sense a synchronous alternating motor. The current then produces no reversals of magnetism and there is a true alternating current in the armature circuit, producing however no reversal of armature polarity; and a current of constant direction in the field. Under these conditions the motor is self-regulating, moving at a constant speed and with a maximum rotary effort.

It is not, however, essential that one bar should pass the brush at each alternation, as any number may be caused to do this depending upon the speed required and the number of

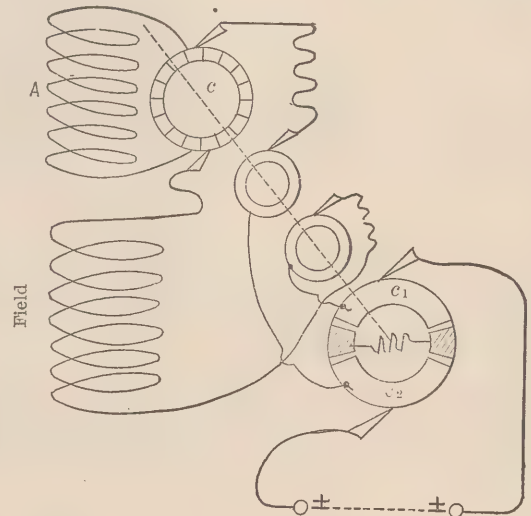


FIG. 8.

coils upon the armature. This is illustrated in Fig. 5, where the complete machine is shown. There are 24 coils in the armature, 24 bars in the outside collector and 32 bars in the inside one, this latter being composed of 24 connecting and eight insulating bars. The connecting bars of the inner ring are numbered to correspond with those of the outer ring around to the right from one to 24; the insulating bars, drawn shaded, separate the others into groups of three. In this machine three segments, 1, 2, 3, in the outer ring are connected direct to the corresponding segments 1, 2, 3 of the inner ring, likewise the opposite three 13, 14, 15 of one ring are connected

direct to 13, 14, 15 of the other. The next group of three is connected inversely 4, 5, 6 of the outer ring to the diametrically opposite bars 16, 17 and 18 of the inner, and the corresponding opposite group, 16, 17, 18 of the outer ring are likewise connected inversely to the diametrically opposite group, 4, 5 and 6 of the inner ring. The remaining segments are connected in the same manner, but the connections are omitted to avoid confusion of the drawing. The operation of the machine is evidently the same as that shown in Fig. 4, except that the required conditions are fulfilled in this instance when three bars of the collector pass under the ring at each alternation of current, and as there are 24 segments arranged in groups of three, the machine, at its normal speed, would make one revolution for every eight alternations of current, and connected in a circuit supplied with 16,000 reversals per minute its nominal speed would be $\frac{16000}{8} = 2,000$ per minute, and with 48 segments arranged in groups of three, its speed would be 1,000 per minute. The blank segments insulating the groups of the inner ring are connected to the extremities of a rheostat Rh. Rh., which is enclosed inside the commutator and is designed to offer a path for the alternating current such as there may be, and prevent its absolute rupture at a period of change from one group of segments to the next; they also serve an important purpose in preventing a dangerous short circuit which would be occasioned by the inner brush bridging two groups of segments oppositely connected.

It follows, as a matter of course, as the machine starts as a direct current motor connected in an alternating circuit, rapid reversals of magnetism will at first be produced in all the iron cores, and these should be made of laminated iron to prevent undue loss by heating at the period of starting. The machine, in fact, starts as a direct current motor, and automatically changes to a sort of synchronously alternating motor. When it gains its normal speed at this point it is self-regulating, and its capacity of doing work is a maximum.

Fig. 6 shows a plan of the machine as constructed. It consists simply of an ordinary closed circuit armature in a single field; *c c* is the ordinary collector, really a part of the armature circuit, from which the brushes *b³ b⁴* take a current of constant direction to the field shunt; *a c* is the reversely connected commutator, and the brushes *b¹ b²* bearing upon this commutator are connected to the terminals of the alternating current circuit.

I might add to the paper the fact that the inner commutator, the one which is the ordinary commutator of the Gramme ring winding, does not perform the ordinary functions, as the brushes bearing on this collector require no adjustment, it being merely a rubbing contact from which the shunt field circuit is taken as a derivation to the main circuit of the machine. With that exception, I think the machine is fully explained in the paper.

ELECTRICAL LEXICON.

TECHNICAL TERMS IN COMMON USE AMONG PROFESSIONAL ELECTRICIANS.

AMPERE (from Ampere, a Frenchman). One of a series of British Association units of electrical measurement, adopted by an international congress at Paris, 1881. The unit of the strength of an electrical current. It may be compared to the volume of steam in a boiler.

CURRENTS. The flow of electric force. A continuous current is "like a body of water running uninterruptedly through a pipe." An alternating current is "like the same body of water running through a pipe for a given time, when it reverses and runs in the opposite direction for a given time—the reversal taking place about 150 times in a second in a Westinghouse dynamo."—Edison.

DYNAMO. [from Gr. *dunamis*, power]. A machine for generating electric currents.

ELECTRODE. [from Gr. *electron*, amber, and *hodos*, a way.]

Either of the two poles of the voltaic circle; a metal plate, to which is often attached a wet sponge for the conveyance of the current to persons under treatment.

OHM [from G. S. Ohm, German electrician]. The unit of electrical resistance; i. e., the resistance offered a current of electricity. The average resistance of persons is 1,000 ohms, the extremes being 1,800 and 660 ohms.—Edison.

VOLT [from Volta, an Italian, who devised the first chemical apparatus for generating electricity.] The unit of electro motive force. It may be compared to the pounds pressure of steam.

WATT [from James Watt, an English inventor]. The unit of power, 746 being equal to one electrical horsepower, which is almost equal to one mechanical horsepower. Also called a Volt-Ampere.

WHEATSTONE BRIDGE [from Wheatstone, an early English electrician]. An instrument used in connection with a galvanometer for measuring the resistance of bodies to the electric current.

ELECTRIC LIGHT DEALS IN ST. LOUIS.

A new syndicate, headed by H. B. Hollins & Co., of New York, who are at the head of the syndicate owning the Laclede Gas Light Company, has closed negotiations by which it acquired a controlling interest in the stock of the United Electric Light Company, the owner of the Thomson-Houston electric lighting plants in St. Louis. The purchase is no doubt made by the Hollins people to strengthen their position in the lighting business in St. Louis, though it is already strong. This purchase will not interfere with the electric light plant at Mound and the Levee now in course of construction by the Laclede Gas Light Company.

The Laclede's contract with the city is for the incandescent lighting of the parks and public buildings in the northern portion of the city. These lights will be furnished from the plant it is now erecting, as has been intended from the first. The purchase of the United Company was made by the Hollins independent of the Laclede Company, though it will undoubtedly be turned over to the latter in due time, or at least operated in its interest.

The Laclede Gas Light Company has recently purchased of The United Gas Improvement Company, of Philadelphia, the owner of the Heisler patents, the right to use that patent in fitting up its incandescent plant, which is to supply the lights called for in the Laclede's city contract.

MACHINERY EXHIBITS AT ST. LOUIS EXPOSITION.

The Western arc lights are kept going by a Russell and a Phoenix center crank, the former running at 225 and the latter at 275 revolutions. Altogether the machinery department contains 1600 actual horse power, 700-horse power of which is in operation.

A compact engine of 150-horse power, made by the Buckeye Manufacturing Company, of Salem, O., is running independently at present in the north nave, but will be connected with appropriate machinery in a few days.

Another pretty piece of power-distributing machinery is the Russell engine, made at Massillon, O. Two of these are at work behind Heisler light dynamos, to operate which they were especially constructed.

Armington & Sims, Providence, R. I., show two high-speed engines, each of 14 1/2 x 13 cylinder dimension, 125-horse power, and 260 revolutions.

A Rice automatic high-speed engine, running ordinarily at 300 revolutions, is driving a Loomis dynamo.

"WHAT HATH GOD WROUGHT!"

WRITTEN FOR "THE ELECTRIC AGE."

(Respectfully dedicated to The Society of the U. S. Military Telegraph Corps.)

When Morse first chained the lightnings to the car
Of commerce—dedicate to arts of peace—
Th' inspiring question came, "What hath God wrought?"
A pregnant problem, which the human brain
Still wrestles with—so vast, so limitless!
Is it a Psychic force pervading space,
The soul of nature, her conservator?
Is it the heart-throb of Omnipotence,
Waiting full answer from the soul of man?
"What Hath God Wrought!"

The earth is girdled with electric bands!
Vast continents embrace—forgetting space!—
"Deep answers unto deep!" Old Ocean's pulse
Throbs, with the lightnings 'neath her trackless waste!
The mountains echo with the powerful trend
Of Nature's diapason. Swiftly o'er
The valleys sweep th' exultant harmonies,
Whilst e'en the stars forsake their orbit—shoot
Themselves through space, to vie with lightning's speed!
The markets of the world thus have exchange
Of values, arts of peace securely served,
By prompt interpretation.
A dying friend across the seas may send
Last words of blessing. Responsive thoughts of
Hope and Love, may yield their benediction!

When civil war was ours, a first foul act—
To cut these arteries of our Nation's life,
Create a north and south, where erst had waved
The Stars and Stripes, emblem of Union's crown.
Whilst armies waited, dazed, bewildered there,
A corps of brave, true men, sprang to the front,
Restored those wires, and strove henceforth to serve
The brain power of the Nation. Sacred trusts
Were given to their ken, and ne'er betrayed;
Vast armies moved, great battles fought and won,
Supplies sent forward, famished soldiers fed,
By aid of this supreme intelligence;
Paeans of vict'ry, horrors of defeat
And fateful lists of killed, or wounded men,
Were flashed across the wires! They even sought
To gather news from cloudland's lofty heights.
"What Hath God Wrought!"

No danger drove those faithful, valiant men
From post of duty; calmly, within range
Of shot and shell, they sent their messages
So fraught with interest to a waiting world.
When "Richmond's fallen!" northward flashed per wire,
In silent harbingers of peace restored,
First link to bear exchange of courtesies,
Between the conquered and their conquerors.
This band of heroes, once a thousand strong,
Had shared the soldiers' perils, and their wounds;
Imprisoned in those vermin haunted cells
They languished; beating 'gainst the bars of fate,
And many killed, some by the treach'rous bomb
Awaiting their approach in duty's quest,
Were blown to atoms! Their sad requiem
Was found upon the pay-roll of their country—
"Discharged!" This epitaph comprises all
Of rank, reward, or pension tendered to
Those men. Survivors cannot rank with e'en
Their comrades, who were soldiers in the war!

Were health, and life, and all the joys of home
Less valued then, by men who used their brains
Instead of loaded muskets? Did they not
Give all, upon the shrine of Liberty?
O God! this troubled world, so tempest tossed,
Forgets to wreath the brows of all its heroes.
Let their names be writ in tongues of flame,
On our Republic's records—Sons and heirs,
Inheriting its honors and rewards,
With pensions rich in loving gratitude!
And place them high on Heaven's muster-roll
To wear joy's crown through all eternity.

M. E. RANDOLPH.

THE McANEENY CONCERT.

The McAneeny Concert will be repeated at Chickering Hall, Thanksgiving night, November 28, and it is guaranteed to be fully up to the standard of the last one and in one or two particulars it may excel. Mr. Pearsall, as a matter of course, will take part; also Mrs. Johnson, the soprano; Miss Rosa E. Penner, contralto, who will make her first bow to a New York audience; Mr. S. Harry Holland, basso, and a chorus of twenty or thirty picked voices from the Brooklyn Apollo Club, under a competent director. Other strictly first-class talent is also being negotiated for. Tickets are now on sale and can be reserved upon application to Mr. McAneeny, 195 Broadway, New York.

NOTICE.

Dedication of the new Palace of Beauty, the Central Opera House, 205 to 217 East 67th street, by the New York Telegraph Operators, on Thursday evening, October 31, by an elaborate programme, including Robertson's society comedy "Caste," introducing the prominent amateur actress, Miss Ella Griffith Greene, supported by Messrs. Harry DuSouchet, J. T. Winders, J. C. Vancura and others. Extra attractions, Lillian Thorpe, recitations; Thomas Ballantyne, mimicisms; Arthur Hurd, tenor soloist, and M. J. Dixon, character songs. Tickets, admitting gentleman and ladies, 50 cents; private boxes, holding seven persons, \$3.00; secured from Ed. Blake-ney, J. C. Vancura and M. J. Dixon, 195 Broadway.

NEW YORK AID SOCIETY.—The following is the quarterly statement of the New York Telegraphers' Aid Society:

Balance on hand, June 7th, 1889,	\$2,167 65
Receipts: Fees and Dues,	776.50
	Total, \$2,944 15
Disbursements:	
For Sickness,	\$674.84
" Death,	100.00
" Expenses,	32.36
	807.20
Balance on hand Sept. 6th, 1889,	\$2,136.95

E. F. Stevens, D. C. Donohue and Edwin Dean, Auditing Committee.

MARRIED.—At Paterson, N. J., Sept. 30, by Rev. F. E. Miller, Florence M. Turnbull to Jesse T. Falkenbury, both of the W. U., New York.

DIED.—At his home in New Jersey, C. A. Bruce, secretary of the Empire and Bay State Tel. Co., formerly secretary to President Bates of the B. & O. Tel. Co.

KILLED.—Mr. Al. Githins, a well-known Western operator, was killed October 13 at Chillicothe, Mo., by being run over by a train. He was highly respected.

THE MAGNETIC CLUB.—The fall meeting of the Magnetic Club will be held at Martinelli's restaurant, Fifth Avenue., October 17. Mr. George H. Usher, manager of the Postal office, New York, will be the guest of the club for that evening.

John Feeks, a W. U. Lineman, at 195 Broadway, New York, was killed on October 11th by an electric light wire while in the discharge of his duties. The body was suspended for thirty minutes among a maze of wires, up a high pole, and presented a horrible scene to the thousands of spectators on the streets. The body was almost burned to a crisp. He leaves a wife and one child, and was a member of the Aid Society and Odd Fellows. He was 33 years of age.

Mr. F. N. Andrews, a well-known New York operator, has returned to the city from Saratoga,

TWO HUNDRED AND FIFTY-THREE MESSAGES
SENT IN THREE HOURS.

We have heard considerable in the past of the wonderful speed of the Wheatstone, but after your readers have perused this item, and acquainted themselves with the facts connected with the very brilliant piece of work accomplished by Mr. Ed. Thompson, (old reliable), of this office, the seeming time-saving system, so highly commended, will shrink somewhat in magnitude. There was filed on the night of the 22d 253 reds to be sent to Pittsburg. Mr. Young was for a short time in a quandary as to whom and how they should be handled. His eagle eye rested on the invincible "Ed," and calling this gentleman, entrusted to him the destiny of the *roast*. With a couple of twitches at his "Dundrearys," and adjustment of his cushion, the key was grasped, and away upon the fiery wings of Morse's mystery flew the *red caps*. Just three hours from the start "Ed's" *grunt* for copy told the story; he had accomplished the wonderful feat of averaging 84 messages to the hour, for three consecutive hours. Congratulations from all sides were extended, but the invincible coolly lighted his pipe and started in on a roast of special.

Washington, D. C., Sept. 22, 1889.

WHO REWARDS THEM?—Associations cannot be formed without entailing considerable gratuitous labor upon the officers, particularly the executive committees, examining boards and auditing committees. It very often happens that the thankless task is with annual and sublime regularity thrust again and again upon the same old willing shoulders, that have carried the burden of the association, perhaps, since its birth. Who rewards these faithful, honest, willing toilers? Certainly not the individual members of the association, for they could not afford to do so except to the extent of a hearty vote of thanks. The officers we speak of are certainly popular with the fraternity or they would not be honored with an election. Why, therefore, would it not be a good plan for the managers to select their chief operators and those they intend to promote from the ranks of those who are yearly elected to perform this labor of love and who never shirk the responsibility, but who conscientiously perform their duty as though their daily bread depended upon their so doing. If they so faithfully guard the interests of the individual, why should they not the interests of a corporation?

BONHAM, TEXAS.—The Bonham Electric Light and Power Co., of Bonham, Tex., has effected an organization with Dr. Benjamin Dabney as president, and John M. Russell, treasurer. A thirty years' franchise has been granted the company and a contract for lighting the city for the same length of time. They have placed their order for apparatus with the Heisler Electric Light Co., of St. Louis, manufacturers of the well known long distance system of incandescent lighting.

TAMPA, FLORIDA.—R. Mugge, Tampa, Fla., has been granted a permit to string wires and erect poles along the streets of that city for distributing electric lights. Mr. Mugge is pushing matters, and proposes to have his lights burning by November 1. He has contracted with the Heisler Electric Light Co., of St. Louis, for their system of long distance incandescent lighting, and is preparing buildings and steam plant sufficiently large to permit of being increased to three times the original capacity.

The New York *Record*, a well known metropolitan journal, in its issue of September 16, pays Mr. J. B. Sabine, the well known telegrapher, a high compliment for his indefatigability and gentlemanly conduct in the transaction of his rapidly growing law practice.

GOLD AND STOCK LIFE INSURANCE ASS'N.—The auditing committee of this association submits the following quarterly report, ending Sept. 30:

Balance on hand, July 1, 1889,	-	-	-	\$3,524 50
Receipts: For Fees,	-	-	-	\$24 00
" Dues,	-	-	-	864 50
" Interest,	-	-	-	78 96
				<u>967 46</u>
				\$4,491 96
Disbursements:				
For Death Claims,	-	-	-	\$150 00
Current Expenses,	-	-	-	5 96
Balance on hand, Sept. 30, 1889,	-	-	-	<u>4,336 00</u>
				\$4,491 96
Gain for quarter				\$811 50
(Signed) F. W. Baldwin, J. M. Moffatt, and W. H. Jackson,				committee.

The Boston telegraphers are to be congratulated on the increasing prosperity of the Telegraphers' Mutual Aid and Literary Association of Boston. This excellent organization on 25 cents per month dues pays a sick benefit of \$7 per week and a death benefit of \$100. We never have heard of anything better or cheaper and if there is a member of the profession at the "hub" whose name is not enrolled, he ought to be ashamed of himself.

A despatch from Birmingham, Ala., on the 9th inst, says: The telegraph lines of the Georgia Pacific Railroad, extending from Atlanta to Columbus, Miss., were to-day bought by the Western Union Telegraph Company. The line is 300 miles long, with a number of good towns and many small stations.

Edward L. Mann, a well-to-do telegraph operator in Louisville, Ky., committed suicide on the 2d inst., by shooting himself. Unreasonable jealousy of his wife and excessive drinking led to the crime. He leaves a wife and three children.

Morgan G. Williams, manager of the Mexican National Telegraph office, city of Mexico, is visiting his home in Pennsylvania for a month. On his return to Mexico he will be accompanied by Mrs. Williams. Congratulations are in order.

Mr. J. D. Vanderbeek, of Fall River, Mass., who has been ill for some time at his home in Jewett City, Conn., is, we are pleased to say, convalescing.

The progressive telegraph company—The Postal Telegraph Cable Co.—are about establishing dynamo plants at Boston, Pittsburgh and Chicago.

Mr. Tom. O'Reilly, now of Philadelphia, editor of the *Journal of United Labor*, recently spent a week's vacation in this city visiting his friends.

Mr. Dode Moreland, of the Western Union, Pittsburgh, Pa., was in town last week and saw the sights in the company of "Senator" Ives.

Mr. J. A. Brehm, of the Western Union Tel. Co., Peoria, Ills., was married a few days ago. He has our hearty congratulations.

The many Toronto, Ont., friends of the Misses Weaver, sympathize deeply with them in their late bereavements.

Mr. Joseph Russell, of the National Storage Co., this city, has just returned from a well-earned vacation.

W. H. Grant, of the New England Associated Press, New York, is enjoying a well-earned vacation.

Mr. James A. Murray, well-known in St. Louis W. U. office, is now at Margaret, Tex.

Mr. O. D. Richardson, of The United Press, Evansville, Ind., was in town last week.

ELECTRICAL NOTES.

Ocean tides as well as waterfalls are to be brought into use for electrical purposes.

An electric drill greatly facilitated the cutting of the steel bolt-heads in the Boston's planking.

An electric battery for firing shot into hard ore has been introduced. It can fire sixteen shot simultaneously.

A company is about being formed in Baltimore for operating a system of telegraphing to and from moving railroad trains.

An incandescent lamp, known as the Backstrom lamp, and in use abroad, has a filament of carbonized silk of high resistance.

The break in the New Zealand submarine cable has again raised the question of duplicating telegraphic communication with Europe by a more secure route than the one now in use.

Bridges moved by electricity are among the most interesting features of the Paris Exposition. They run on overhead supports, and carry visitors about the hall in large numbers.

It is said that with the exercise of ordinary care each strand of a cable may be united to that of another, end to end, by the electric welding process, so that the joint is practically imperceptible.

An electric reading lamp, fitted to railway carriages on the Southeastern line in England is among the latest novel applications. It is on the "drop-a-nickel-in-the-slot" principle. A penny's worth of light will last a half hour.

A simple pattern of an incandescent lamp lately appeared in Liege. It consists of two horizontal rods of copper, placed about four millimeters apart. A thin pointed rod of carbon, placed vertically, rests on the copper rods and forms a bridge between them.

ATLANTIC CABLES SNAP. — Both of the Western Union cables have snapped asunder in twenty fathoms of water, just off Flemish Cape, close to the American coast. The company, however, is sending business over the Anglo Company cables. This break is a very serious affair, since it leaves the Western Union absolutely without any direct cable connection. It is the first time since they were laid that both the cables have snapped. To make matters worse the dock strike has prevented the telegraph steamer Faraday from going to sea with a new cable to splice the breaks. This delay means much, for, under the most favorable conditions, it would probably take at least a month to repair the damage, and if it is not done before November the work may have to be delayed until next Spring. The cost of repairing the cables will be over \$7,500 a day from the time when the Faraday sails. When, in addition to this, one takes into account the loss of the great volume of commercial and press business which usually goes over the Western Union lines, it will be seen that the accident is a very expensive one for the company.

BELL TELEPHONE STOCK. — At a special meeting of the Bell Telephone Directors, Sept. 12, at Boston, the act of the Legislature authorizing the increase of the company's stock was accepted, and it was voted that the capital stock be increased from \$10,000,000 to 12,500,000; that the number of shares be increased from 100,000, to 125,000, the stockholders to be entitled to take additional stock in the proportion of one new share for every four shares now held by them.

Edison's portrait is on every wall in Paris, and in nine out of ten of the newspapers.

THE COMMERCIAL CABLES BIG HIT. — General Manager George G. Ward, of the Mackay-Bennett Commercial Cable Company, felt particularly proud September 9. The Commercial Cable Company had scored another brilliant triumph in transmitting news from London of the great Searle-O'Connor sculling race. And the sporting public to a man registered a silent vote of thanks in favor of the management of this most excellent service. The Commercial Cable bulletin of the Searle-O'Connor race were received in Montreal, Toronto and New York twenty-five minutes in advance of other cable news of the race. Mr. Ward received several messages from Montreal and other Canadian papers thanking him for the excellent service of the company.

THE WESTERN UNION DIVIDEND. — Sept. 11 the Western Union directors declared the regular quarterly dividend of 1¼ per cent. The statement for the quarter ending Sept. 30 estimates the net revenue at \$1,750,000, the largest in years, and leaves a surplus after paying dividends of \$402,015. The total surplus is \$9,074,016.

Mr. J. B. Sabine contributed an excellent article on the subject of exempting building associations from taxation, in *Home Seeker*, of July 13. It is an exhaustive and convincing review of the whole subject, and reflects credit on the author as a master of the subject.

Mr. Ed. F. Guzman, business manager of the *Inventive Age*, of Washington, D. C., gave us a call a few days ago. This journal is a new one and is meeting with much success.

An office boy recently asked one of the chief operators for a cork with which to stop the electric light from leaking. N. B. He had only been in the service three hours.

A catalogue of Edison lamps of low voltage has been issued by the Edison Lamp Company, of Harrison, N. J., copies of which can be obtained upon application.

Mr. W. H. Hartney, formerly of the C. R. of N. J., is making a success of his general ticket office which he has opened at 1420 Broadway.

Mr. F. W. Jones, assistant general manager and electrician of the Postal Telegraph Co., has been confined to his residence by illness.

Mr. A. J. Walker, of Philadelphia, Pa., has been appointed manager of the W. U. office at Medicine Lodge, Kansas.

A plug in a box may not appear quite so ornamental as one at the key but it is often more useful.

Mr. Sol. Palmer, superintendent construction W. U. Tel. Co., St. Louis, Mo., was in town last week.

Mr. S. J. Pryor has returned to New York after a short sojourn in Europe.

DIED. — At his residence, in Brooklyn, N. Y., on April 25, 1889, Thomas P. Bladen. "Tom" Bladen, as he was familiarly called, and known, by his many friends and acquaintances in the telegraph service, was one of the oldest employees of the Western Union Co., having been connected with the auditing departments of that company, and of predecessor companies amalgamated with it almost continuously for nearly 40 years. The beginning of his connection with the telegraph service was in 1850, when he entered into that of the Magnetic Telegraph Co., with which he continued, until its amalgamation in 1859 with the American Telegraph Co. With the latter Company he then continued until its amalgamation in 1866 with the Western Union Telegraph Co., with which he continued (with the exception of a few years prior to 1873, when he was treasurer and auditor of the International Ocean Telegraph Co.) until his death. He was honored, and is held in affectionate remembrance, by all who knew him.

WHY SHERMAN SHUNNED AUGUSTA.

A TELEGRAPHER CLAIMS TO HAVE SCARED THE GREAT COMMANDER.

[From the Charleston (S. C.) News.]

An old resident of Columbia tells me that he does not put much faith in the recent declaration of Sherman, the Vandal, that he omitted a visit to Augusta during his march through Georgia because, for strategic reasons, he did not care to go there.

The old resident says that quite another story was told in Columbia after the war by Sherman's officers, and was current in Augusta besides. He himself had been assured of its correctness by a prominent Federal officer. The story was, that while Sherman was marching towards Augusta, with the purpose of taking that city, he directed one of his army telegraphers to "tap" a wire leading to Augusta and ascertain something about the military strength of that city.

It is well-known that work of this kind was frequently done during the war. It is not as generally recognized, but is nevertheless an absolute fact, that operators who have been working on the same line find it as easy to recognize the touch of a fellow-operator upon the telegraph key as one friend does to recognize the voice of another. The General's operator "tapped" the line and entering into a conversation over the wire with an operator in Augusta, endeavored adroitly to "pump" him as to the importance of the Confederate force in that city.

The Augusta man knew that the enemy was somewhere down the line and thought that he recognized a stranger at the key. Without, therefore, revealing his suspicions, he told a fine tale of the strength of Augusta's garrison. His information, apparently given in good faith, was detailed to Gen. Sherman, and that warrior, desiring rapid transit and plunder more than battles and glory, gave Augusta a wide berth and took the route which promised the least resistance.

Electric lights are said to be as good as policemen, and they are no doubt very useful in protecting particular properties within the immediate range of their rays of light. But what becomes of the burglars and sneak thieves? They surely are not reformed by the electric lights, but simply change their places of working. So also electric lights change immoral neighborhoods for the better, but they do not necessarily promote morality. They are useful adjuncts to other means of preventing or exposing crime, but nothing more.

A Brazilian inventor, to whom a patent has been issued, proposes to remedy the annoyance suffered from the shaking of dishes upon the tables on shipboard by means of an electric contrivance. His idea is to use an electro-magnetic device. To the under side of the dishes will be attached small pieces of iron, and on the table will be laid long strips of soft iron to which wires leading to a battery will be connected. The use of this electro-magnetic appliance will not mar the appearance of the tables, and certainly it should prove effective.

There are now in use in the United States more than 5,650 central electric stations for light and power. There are 210,000 arc lights and 2,600,000 incandescent lamps. There were fifty-nine electric railways in operation in March last, and eighty-six roads in process of construction. The increase of capital in electrical investments during 1888 was nearly \$70,000,000. These are very significant figures, and they point unmistakably to the course of future inventions and discoveries.

The Providence *Journal* says that there seems to be no difficulty about the electric current killing anybody who is not a criminal.

Additional proof that overhead wires ought to go comes from Cincinnati, where the local telephone company has brought suit against the electrical street railways asking heavy damages and an order from the Court requiring the railway companies to change their plant so that induction from the overhead wires may not interfere with the telephone service. Storage batteries in cars and telephone wires underground would speedily settle this difficulty; yet such a means of escape from the dilemma has evidently not occurred to the parties in interest. The prevalence of overhead electric wires is fast becoming an intolerable nuisance crowded cities.

London, after lagging strangely behind some little backwoods towns in America, is, at last, seriously to take up electric lighting. Three great companies, with a capital of over \$12,000,000, have taken contracts to light the main thoroughfares, and extensive plants are being laid for private consumers as well. The Board of Trade has fixed the maximum charge at 16 cents for a unit, which means 20 lamps of 16 candle-power for an hour or one ten-candle lamp for 30 hours.

Davain A. Henry, superintendent of construction for the East River Electric Light Company, at New York, was killed on 2d inst. at the company's works by receiving a shock from a 1,000-volt current. Henry had gone to the switchboard and mounted a ladder to fix some wires that were out of order. He incautiously placed his hand on a live wire and fell to the ground dead. He was only twenty-eight years of age.

Jay Gould tells a reporter of the *Sun* that he thinks Postmaster-General Wanamaker favors the proposed scheme of postal delivery of telegrams. He adds that this scheme is not a new one by any means, and that it is believed to be "practicable and advisable." No other telegraph or post-office authorities are near at hand to speak in regard to the matter.

A telegraphic money order service has been established in Great Britain between eighteen of the principal cities as a part of the postal service. Payment of money is made at the post office on identification of the recipient, who gives the name of the remitter, as required in the transmission of money orders by mail.

In the line of electrical manufactures and supplies, light, power, etc., America leads the world, and is receiving the patronage of Europeans to a very flattering extent. Several new companies, with large capital, have recently been organized to still further control the markets of foreign countries.

The Darling Electric Locomotive which is being built by the New York Locomotive works at Rome, N. Y., is nearly completed. The motor will be placed in a day or two and the engine will be experimented with in Rome. The electricians look upon its success as certain.

A Chicago inventor has patented an electrical contribution box. If a button or piece of tin is deposited in the box a bell rings. Such a device will be very useful in Chicago. That city knows its own needs.

Electricity will kill at times. A Kentucky woman has just died of fright at the reflection of an electric light which she mistook for a ghost.

The French Government has taken formal possession of all telephone stations, despite the protests of the Telephone Company.

Thomas A. Edison, on his return to this country, will give his friends a phonographic account of his trip.

The Postal office at 234 Pearl has been removed to No. 231 Pearl street, which is a better location.

LIVERPOOL (ENG.) NOTES.—Agreeable to my promise to give your readers the benefit of my observations while abroad, of matters that will be of interest to them, probably a few words descriptive of Liverpool will not prove uninteresting, as that city contains one of the three Western Union telegraph offices in England. The city is built on the southeastern shore of the River Mersey and is about two hundred miles from London. The important trade between England and America (Liverpool and New York) has been the chief factor of its growth among the world's great cities. The immense floating docks, or rather basins, with huge flood gates, necessitated by the great rise and fall of the tide, which would otherwise leave the vessels "high and dry," are unequalled for extent and capacity. Taking into consideration the extent of these enclosed docks, there is nearly 27 miles, costing nearly \$1,500,000,000 to the present time; they are built of massive blocks of granite, and while the river docks proper are only eight miles long, the enclosed floating docks make up the difference of 19 miles. Without her docks Liverpool would have remained a small city, while her commerce would have gone to other points. They are the wonder and admiration of the seafaring men of the world, and afford accommodation for the mercantile marine of every country. Leaving the docks I soon reached the magnificent Liverpool Exchange, covering between one and two acres of ground, a strange sight meets my eyes, especially if during exchange hours. Here you find in the large court yard the cotton speculators in great numbers, probably two or three hundred, transacting their business in the open air. It would surprise many Americans to know that the price of their cotton is, to a certain extent, made here. During a lively market the scene is undoubtedly animated. Bad weather drives them indoors. In this building you will find in one corner of the immense basement that extends all around the building the Western Union telegraph office, with Mr. D. Le Rougetel, superintendent, in charge, and who has by his enterprise secured a good share of the cable business for the W. U. He is ably assisted by Mr. T. Healy, the senior or chief operator, and Mr. H. Miller as counter clerk, and the following staff: Messrs. R. Williams, W. H. Donovan, C. V. Auger, W. H. Swift, W. C. Halsted, T. Leeson, R. M. Sinclair, and D. P. Mooney as batteryman. The force is a fine one as shown by their magnificent record, which I had the pleasure of seeing. The office is underground, poorly ventilated and with a very small quantity of daylight struggling for admission. To make the force at this place supremely happy, a new office and an increase of salary are necessary. They have my best wishes for both. It may be consoling to them to know that the W. U. have several employees in America who would also like an increase. Within a stone's throw of the office stands old St. Nicholas church, on whose tower was one of the five "telegraph stations" worked on the semaphore system between Holyhead and Liverpool, before the advent of the electric telegraph. The old tower was an important factor to the commercial welfare of Liverpool, but how much more our electric system, the reader can judge. The English force of the W. U. have what many of the American force would be delighted to get, an annual vacation of three weeks with pay. At this office, with a few exceptions, the cable business for England, Ireland and Scotland is relayed, being received direct from Penzance, with Bristol as a repeater station. In case of wire troubles they work *via* London. The English government requires the Western Union and all other offices to give a receipt to each customer whose bill amounts to £2 or over, with a two cent postage or revenue stamp, which must be cancelled. Every store in Great Britain is compelled to do the same, and if I wish that the W. U. may have many "penny" stamps to affix, it is because they may so prosper as to enable them

to make the English fraternity happy with a good increase of wages. Leaving, with regret, Liverpool with its pleasant parks, magnificent docks, and our Western Union brothers (a number of whom I have no doubt will soon subscribe for your bright little paper, and thus be brought nearer to us fraternally), I soon reach the metropolis where I shall take pleasure in introducing to the American fraternity the W. U. force there, with a few words devoted to the Penzance office. Many old-timers will doubtlessly be pleased to learn of the advancement towards the top of fame's ladder of one of their number. The genial Tom Sherman, who was for many years an operator, and one of the most expert, too, of the Old American Telegraph Company before and during the war of the Rebellion, now represents the telegraphic as well as the remainder of the sixty million American citizens of the United States, as American Consul at Liverpool, a position only second in importance in the whole consular service of the government. His office is only about 200 feet from the Western Union Telegraph office. He has an able staff of clerks and the rapid method in which he handles the heavy business of the consulate, which is so important to the great trade of the United States, shows the years of excellent training received while he was with James G. Blaine. He is one of the most valuable business men appointed under the present administration. It was with pleasure that I accepted his kind hospitalities while in Liverpool, and it may interest his old comrades to know that he has as happy and bright a home in England as a man could desire, at Alexandria Terrace, near Prince's Park, and ably presided over by his most charming wife, who is fast becoming a social attraction, although only a few months in the country. Their only son, John Carelton, a bright, manly fellow of nineteen, who is well able to stand as a model American youth, has just entered college at Liverpool, where he hopes to finish his education before starting out in the battle for life's honors. Mr. Sherman and son, Superintendent Le Rougetel and Mr. Healy, of the Western Union, added to my happiness by accompanying me on the steam tender to the steamer City of New York, which was to bear me to my native land. Ah! The recollection of Liverpool will live long and very pleasantly in my memory.

W. E. PEIRCE.

WASHINGTON NOTES.—Work will soon be started on the remodelling of the operating room. The partitions are to be replaced by iron uprights, thereby throwing four large rooms into one, which will make it quite commodious. There has been a number of changes in the force lately and more will be made before the assemblage of Congress. The AGE expects to get its work in this winter, and will keep the outside world posted, telegraphically speaking, of the doings at the nation's capital.

OMAHA W. U. NOTES.—Continuing the personnel from the last issue we find the Wheatstone looked after by Stephen Burke, days; Tingle Eshman, nights. In the Morse department are Allen, Kelly, Bridwell, Titus, Reed, Mooney, Hooper, Sisk, J. McGrath, Frazier, M. McGrath, Keogh, Jackson, Naile, McCurdy, Baptist, and the Misses Stagg, Enright, Ward, Liverette, Meaney and Adams, days; Messrs. Watson, Deems, Seabrook and G. D. Jones, split tricks; Potts, Delevan, Thompson, Green, Dion, Ominger, Owens, A. E. L. Jones, O'Donnell, Smythe, Barnhart, McKee and Cralle, regular nights; Butler, all night. Messrs. Smythe and Frenzer handle an enormous amount of special business at the *Daily Bee* office, including the Bennett cable and North Western report. Ominger and Dowd are at brokers' offices. Eddie Fitch, manager of the down town branch office. The Misses Rosa Schroeder and Charlotte Talmage, Messrs. McGuire and Farmer in Superintendent Dickey's office. W. H. Doyle, managers' chief clerk; Miss Flora Talmage, bookkeeper; Miss M. P. Doyle, Kate Nicklas, Ella Riley, Sara Enright, Mary

Beck, Daisy McElroy, Messrs. Wm. Kennedy, Geo. Swanson, Frank Weiner, Jos. McDonough. Changes: Goff, Bisdorf, Munz, Parkinson, Kerrigan, Dillon, Howe, LaChapelle, Howland, Spitznagle, Murphy, and others whom we do not now recall have lately left us. Edward Carman and Frank Johnson, formerly with this office, have purchased a cigar store and will soon retire from the key. They are obliging and courteous young gentlemen and deserve the smiles fortune has bestowed upon them. Mr. Chas. Pond, formerly of Utica, N. Y., returned from his vacation a few days since bringing with him one of New York's fairest daughters. We congratulate the bride and groom. Mr. Geo. W. Shaw and Theo. D. Thomas, two popular and well known operators, are holding responsible positions with the B. & M. Ry. Another branch of the Jones family has been started. Mr. G. D. Jones, the enthusiastic captain of our base ball nine, returned last week from his honeymoon. The English language does not contain words strong enough to express our wishes for his future happiness. Mr. Thomas MacCammon, for several years night chief, has accepted the chiefship of the Denver W. U. office. Mr. MacCammon, as an impartial disciplinarian, has won the respect and esteem of our forces here and leaves many warm friends to wish him future success.

NEW YORK WESTERN UNION NOTES. — Among those who have left us to engage in other business we recall no instance in which a man's ability has been so justly appreciated as has that of Mr. J. David Barry who, two months ago, left the service of this company to accept at Mineola, L. I., a position as travelling correspondent of the *Union Press Exchange*. Miss Rosie Uth has been transferred to the 8 o'clock force. Mr. Conaty has returned from the Hotel Kaaterskill. Congratulations are extended to Mr. J. Falkenbury who, a few days ago under circumstances of a romantic nature, was married at Paterson, N. J., to a little lady who has so ably presided over the office at the Hotel Breslin, Lake Hopatcong, the past season. Misses Kitty Boyle, Susie Stephenson, Kitty Brown, Irene McNally and K. Stephenson have been assigned to the split trick, 9 to 6 30. Mr. J. P. Seeley, who performed such creditable work in the handling of the business entrusted to his care on the Asbury Park branch wire the past summer, has been transferred to the east. The announcement of the death of Miss Martin, who for some time past has been employed in the superintendent's office, fills with sorrow the hearts of her many friends here. Deceased was a sister of Mrs. Nourse, *née* Fanny Martin, late chief of the Long Island division. Eelease for release was perpetrated by one of the best friends of your correspondent in the office. Howard A. Knudson, a well-known operator is, we are pleased to announce, rapidly gaining distinction by the able manner in which, as manager of the Criterion Theatre in Brooklyn, he conducts the business of that popular place of amusement. The following named ladies have returned from vacations: Misses Dealing, Finley, Alberts, Erickson, Fitch, Coleman, Robertson, Kingston and May Burck. Dick Waycott, chief of the South Western division, has been showing the city to his brother Ned, who recently arrived from Canada. In his absence Mr. W. A. Van Orden very creditably discharged his duties. Court Cunningham says it is a girl, and nobody can dispute the assertion, for he's one of the happiest looking men in the Southern division. Mr. and Mrs. Becker, recently returned from Saratoga, have been assigned to the South. The many friends of Miss Alice Whalen will regret with us to learn of the unexpected death of her father in England. As if his loss was not enough to break the heart of the little lady more grief is added by the intelligence that her mother is painfully near death's door with illness of a serious nature. John G. Purple has resigned to enter other business at Bradford, Pa. Misses Marston, Fox, Conklin, McLean, McGill, Erbeling and Lyle have returned from country offices. Mr. A. E. Smith, whose reputation as a gilt-edge operator has long been established on the Richmond

wire, has been transferred to the Race track at Jerome Park. William H. Moffett, than whom no better man lives, pleased and at the same time created astonishment in the ranks of his friends by going off in a quick manner, on the 30th of September, and getting married. Mr. McWha's absence from his accustomed place on the Pittsburg quad is due, we are informed, to the lamentable fact that one of his twins died a few days since and that the condition of the remaining one is critical in the extreme. One day last week a message addressed to a man in care of "some hotel" at Martin's Creek, N. J., was duly filed, and after innumerable breaks on the word "some" was sent. Ten minutes later came back the surprising information from the operator "that there ain't no such hotel in this here place." Then, as if to clinch matters, he remarked, "There's a hotel over at Sand's Eddy, but I don't know whether it is named 'Some' or not." And strange to relate there wasn't a man in the office inquisitive enough to find out. To Miss Eliff, whose happy disposition and lady-like deportment has endeared her to a host of friends here, as well as adding to this list the name of every operator with whom she has worked on 14 Erie, your correspondent in their behalf extends heartfelt sympathy over the death of her brother, which occurred unexpectedly a few days ago. Messrs. Skirrow, Pease, Burger, Falkenbury and McKim have been assigned to the split trick. Henry Riddick has taken a position on the 6 to 3 force. Messrs. Geehr, McCormick and Heldman have been transferred from the split trick to 8 a. m. force. Mr. Lane comes on at 7.30 instead of 11.30; McGinnis at 8, and C. W. Hanson at 5.30, the latter having changed tricks with Lou. Kirschbaum. Messrs. Gordon and Landy have been given the waiting list. Mr. George W. Hann has been to Washington on a business trip. The boys there, however, saw to it that it could be made one of pleasure and he admits the correctness of their theory. Mr. Blakeney, chief of the Western ways, has at his own request been assigned to a wire on the night force; this will enable him to give wider attention to his outside business than he has been able to heretofore. His successor is Mr. Al. Lauer. Mr. Heidemark succeeds as assistant to Mr. Willis H. Jones, chief of the Chicago division, the position vacated by Mr. Lauer. Mr. Gis. Ward, the latest acquisition to the 6 a. m. to 3 p. m. force, is one of the best known men in the office. As every man employed here between the hours of 1 and 8 a. m. is expected to be a hustler, Mr. Ward is assuredly in excellent company. Chief Firman on the West has a fund of ready wit in store and can give a witty reply without moving a muscle of his face. A few nights ago one of the check boys, who had learned the office call, heard Columbus calling "N. Y." He at once rushed up to Mr. Firman, his eyes bulging with pride, and remarked, "Say, Mr. Firman, Columbus is calling 'N. Y.' like fun. 'Oh, that's nothing,'" replied F. looking sternly at the boy. "It's Governor Foraker, wanting to speak to Bob." With a look of astonishment the boy walked off and shortly afterward was heard telling one of the other boys "that the Governor of Columbus hadn't the big head; he comes in and talks to de feller that works de wire."

DIED.—Chas. G. Williamson, of the W. U. Tel. Co., New York, for many years in Vice-President Van Horne's department, died at his residence in Brooklyn on September 30. He was a member of the Gold and Stock Life Insurance Co.

The Canadian Pacific force at Winnipeg, Man., advise their associates in Ontario and elsewhere to give Winnipeg a wide berth, as an effort is being made to reduce the standard salary from \$75 to \$65 per month, which effort is successful to a certain extent.

Mr. J. E. Wright, who has represented The United Press in London for three years, has returned to New York. He was accompanied across the ocean by Mr. R. D. Blumenfeld of this city.

Mr. W. E. Peirce, of Washington, D. C., has returned from Europe.

AN OPEN LETTER TO THE MEMBERS OF THE
NATIONAL ELECTRIC LIGHT ASSOCIATION.

I am not surprised that the electrical journal which has, for some time past, been conspicuous for its lagging pace, should have found my communication of the 16th inst. "so shallow" as to require further consideration before publication; but no one who prides himself upon his "journalistic manhood" should intentionally misquote.

It may not now be out of place to set before those who wish to form a correct judgment of the conduct of the association, a fact which will perhaps explain the animus of the recent personal attacks, and show that the attempt to use the association for personal ends did not come from your president.

Prior to the reception of the report of the committee on nominations and place of meeting, and after the names suggested for the next executive committee had become known, a member of the association having a grievance against one of the nominees, protested against his preferment and advised me that unless his name was stricken from the list the next convention would be held in St. Louis. I declined to interfere, answering that I saw no connection between the nomination of the gentleman in question and the place of meeting, and informing him that the whole matter was in the hands of the nominating committee and must be passed upon by the association in convention. Confident that the large majority of our members do not favor moving the association through political wire-workers, or prostituting it to personal gain or the punishment of personal enemies, I feel sure that had I chosen to take the floor and, by descending to personalities, sacrifice the feelings of a few, the first vote on the meeting place would have been different.

I am charged with inconsistency in that upon one day I said, "We certainly could not legislate members out of the association," and upon the next but one decided that the new constitution was adopted. I still maintain that central station men could not vote associate members out of the association. But when such movement originated with the associate members, when the motion to accept came from an associate member, when the motion was carried unanimously by a house at least two-thirds associate, and was immediately followed by a motion made and seconded by associate members to appoint a committee on by-laws, all charge of inconsistency must fall. Had the proportion of active and associate members been reversed, and had the motions above referred to come from active members and been carried by them notwithstanding the protests of associate members, the charge of inconsistency would be just.

I will pass the statement that I have used the association for my personal advantage with the observation that the decision upon the adoption of the new constitution was first made upon a question foreign to the place of meeting, and that the movement to convene in Kansas City did not originate with me, nor can a convention held there in any way assist my private fortune or those of the companies which I represent. We have no advertising or subscription lists to maintain, or chattels of any kind to sell. Mr. Rhodes, Mr. Gilbert, Mr. DeCamp, Mr. Morrison or any of the purely central station men who have entertained the association will doubtless testify that the balance is heavily against profit and loss.

My action in relinquishing the chair on appeal from my decision seems to have been generally misunderstood. While I might have retained it by parliamentary rule, I chose to follow custom and at the same time avoid deciding against a personal friend. Knowing that the work of the convention was not complete I expected to resume the chair after the decision upon the appeal. As I could not hear the conversation between the chairman and the

secretary as to the next order of business, nor the motion to adjourn, no one could have been more surprised than I at the abrupt adjournment. Far from being indifferent, I refused to recognize it as *sine die* until forced to do so by the record of the secretary, and by parliamentary law.

In conclusion, I would suggest that the interests of the association cannot be furthered by personal attacks or by general charges unsupported by proof of record. My only desire is, that the facts as shown by the secretary's minutes shall be the basis of judgment upon the work of the Niagara convention.

EDWIN R. WEEKS,
President.

KANSAS CITY, Mo.,
August 28, 1889.

THE PACIFIC CABLE. We published in a recent issue the official report of the survey recently undertaken in the Pacific Ocean by H. M. S. *Egeria*. We understand, on good authority, that so far as the survey has gone the result is regarded with considerable satisfaction by those who look forward to the early establishment of a cable route from British Columbia to Australasia by way of the Pacific Ocean. There is nothing, it appears, in the features of the sea bed so far reported upon that need present any difficulty; while the depths are not excessive on the route likely to be selected. Moreover, it transpired at the proceedings of the Colonial Conference that coral reefs are only injurious to a cable when found at or near the surface of the water, and liable to cause friction in the neighborhood of the cable. In the case of the route surveyed in the Pacific Ocean there is no evidence as yet of any coral reefs which are likely to present obstacles in this respect. The main object of all concerned should now, of course, be to expedite the completion of the survey.—London *Electrical Review*.

TYPE-WRITING.—On the 17th inst., at the International Shorthand Congress now sitting in Paris, one of the English delegates, Miss M. P. Ellis, at the end of some remarks on the value of type-writers for transcribing shorthand notes, demonstrated the speed of the bar-lock type-writer, which machine she now uses, by allowing herself to be timed by the committee. At the conclusion of the test it was announced that Miss Ellis had written at the high speed of 135 words per minute, thus beating the record of 126 words per minute done on the caligraph by Miss Osborne and 123 on the Remington by Mr. McGurrian at the contest for the championship of the world, held at Toronto in November, 1887. Special attention was drawn to the even quality of the writing, though written at such a remarkable speed.—London *Electrical Review*.

BLEACHING BY ELECTRICITY.—*Industries*, of London, gives a description of the Hermite process of bleaching by electricity: "By the passage of the current through the liquid, the magnesium chloride and the water are simultaneously electrolyzed.

Copper telegraph wire is replacing the other along the Pennsylvania Railroad, and an operator tells the *West Chester News* that it is lighter, more durable, carries a heavier current of electricity, and holds less sleet.

It is said that the president of France almost lost his job for not going to the station to meet Thomas A. Edison, the great American inventor, on his arrival in Paris, so angered were the people of that Republic.

A very notable point in the economics of electricity as employed for purposes of light and power is the fact that none of the improvements has rendered any of the original electrical apparatus less efficient.

The electric lighting at the lighthouse on Cape de la Heve in France is generated from a motor which is run by the wind.

PHOTOGRAPHS OF PROF. MORSE'S BIRTHPLACE.

PRICE, 50 CENTS. POSTAGE PREPAID.

We have made arrangements to furnish anyone desiring the same, photographs of the house in which Professor Morse, the inventor of the electric telegraph, was born. The house is situated at 199 Main street, Charlestown, Mass. (Bunker Hill District, Boston), and bears an inscription to the above effect, which can be readily discerned in the photograph. As the house is old and likely to be torn down very soon, the opportunity to procure this valuable souvenir should not be delayed. Address The Electric Age Publishing Company, 5 Dey street, New York.

Although subscriptions amounting to 70,000 pounds have been secured in England, in all probability the direct cable between Great Britain and the Dominion of Canada will not be laid. The only reason the government would have for granting the company a subsidy would be that of securing direct cable communication, which has been accomplished by the Anglo-American Company lifting its cable at Newfoundland and splicing it with a new cable into Halifax. As this was done by express agreement with the British Government, it accounts for the refusal to grant the subsidy.—*Modern Light and Heat.*

Mr. S. D. DeShazor, for many years connected with the Southern and Western Union Telegraph companies at Petersburg, Va., resigned his position with the last named company, August 10th, to take charge of the Postal Telegraph-Cable Company's affairs at that point. He is the youngest manager in the State of Virginia, being only twenty-one years of age. Mr. DeShazor is an excellent operator and is also possessed of a good deal of business tact, and no doubt the Postal Company's interest will be well looked after under his able supervision.

The performance and reception by the New York Telegraph operators, to be given at the new Central Opera House, on Thursday evening, Oct. 31, will be the last under Mr. Dixon's direction. The beautiful comedy of "Caste" will enlist the services of Harry DuSouchet, J. C. Vancura, J. M. Winder, Thos. Ashcroft and Miss Florence Miller. This affair will mark the opening of the above palace of beauty, which is certainly the handsomest place in New York.

Superintendent of an electric railway (to applicant for a position)—"What is your name?"

Applicant—"Wood, sir"

"You want to be appointed conductor?"

"Yes, sir."

"Can't take you, sir."

"Why not?"

"Electric experts say that Wood is a poor conductor.—*Texas Siftings.*

At the request of the Postmaster-General, the Secretary of War has directed the Quartermaster-General to instruct his subordinates to pay no more Government telegraph bills until the rates to be paid are furnished by the Postmaster-General.

One of the congratulatory messages that most interested Dr. Holmes on his eightieth birthday was from an entire stranger. It was telegraphic, and marked "Collect 90 cents."

Mr. Jules de Castro, managing director of the Commercial Cable Co., London, arrived in New York on the City of Paris.

The Western Union Telegraph Company has bought on the Port Royal & Western Carolina Telegraph Companies' plant.

CABLE STOCK INCREASED.—The Commercial Cable Company has filed in the office of the Secretary of State a certificate of increase of the capital stock of the Company from \$6,000,000 to \$10,000,000 for the purpose of taking up the debenture bonds of the Company, which would soon become due.

The following authorized agents of The ELECTRIC AGE are responsible for the transaction of business pertaining to subscriptions, electrical books, or advertising: H. I. Jolley, 195 Broadway, New York; W. J. Anderson, C. P. R. Tel. Co., Toronto, Ont.; J. J. Seitz, G. N. W. Tel. Co., Hamilton, Ont.; David Adams, G. N. W. Tel. Co., London, Ont.; C. S. Loewenthal, W. U. Tel. Co., Chicago, Ill.; Jos. Laird, Postal, Chicago, Ill.; J. Vautier, Campbellton, N. B., Can.; C. L. Hallett, C. P. Ry., Port Arthur, Ont.; J. W. Thompson, W. U. Tel. Co., Nashville, Tenn.; A. V. Cutler, W. U. Tel. Co., Kansas City, Mo.; J. E. Janney, W. U. Tel. Co., Philadelphia; C. A. Stimpson, Postal Tel. Co., Philadelphia; W. A. Hazelboom, W. U. Tel. Co., Boston; D. Kearney, Box 343, Oil City, Pa.; F. B. Beach, W. U. Tel. Co., Detroit, Mich.; D. Urquhart, G. N. W. Tel. Co., Toronto; Frank Farrell, 532 Third st., Louisville; Geo. W. Spaid, W. U. Tel. Co., Savannah, Ga.; S. H. Riker, 218 Merriman Ave., Syracuse, N. Y.; R. W. Gillette, W. U. Tel. Co., San Francisco; Wm. Christie, Postal, Victoria, B. C.; F. L. Saunders, W. U. Tel. Co., Dallas, Tex.; E. D. Williams, W. U. Tel. Co., Duluth, Minn.

The other day I was watching some men removing telegraph poles from the streets, and I remarked to a bystander, concerning a man who was on top of a tall, swaying pole: "That's a brave man." "Yes," he replied, "they are plucky fellows, all the linemen, but the most remarkable thing about them is their vision. A bee hunter has no better eye than a competent lineman. The city poles are high and the wires are far from the pavement, yet a lineman can walk at fair speed along the curb and follow with his eye a wire that he has been sent to repair, never confusing it with others, and detect the place where it has been crossed. Now, I suppose, the subways will develop a man with an organism so sensitive that by touch he can tell between which man holes the circuit is broken."

The committee appointed recently by the local chamber of commerce, to investigate the feasibility of laying an ocean telegraph cable from San Francisco, Cal., to Australia, has reported in favor of the project, and estimates the cost of a cable line from San Francisco to New Zealand, by way of Honolulu and Tutulla, at \$10,000,000. It is urged that the line would be a paying investment.

A well-known firm of New York recently handed a cablegram to the Direct Cable office, at 444 Broome street, at 10.05 a. m., for Bradford, Eng. The message was sent and reply received and handed to firm at 11.15 a. m. Considering the numerous retransmissions and the postal service in Bradford this record cannot be beaten. This is not an unusual occurrence with this company.

Postmaster-General Wanamaker's postal telegraph scheme possesses the unusual advantage of being fairly satisfactory in its general scope to both the public and the telegraph companies. The consummation of the project would be a large, proud feather in Mr. Wanamaker's hat.

George Gould, accompanied by his wife, sailed for Europe, Sept. 4, on the City of Paris. His father, Jay Gould, his brother Eddie, Gen. Eckert, and several of the officials and directors of the Western Union and Manhattan companies went to see him off.

United States Consul-General Sherman, at Liverpool, Eng., is an old U. S. Military telegrapher.

COLUMBUS, OHIO.—Quite a number of changes have taken place in this office since the readers of the AGE last heard from us, there being several promotions, new arrivals and departures, and vacations. Chief Operator L. M. Owings recently returned from a month's vacation in the east, a rest which he much desired and deserved. The resignation of Night Chief Operator W. R. Cole caused considerable regret. Mr. Cole has been appointed secretary of the United States Board of General Appraisers of Merchandise, with headquarters in New York. He left for his new field of duties with the well wishes of all. Mr. Chas. Colwell, all-around day operator, succeeds Mr. Cole as night chief, a promotion well earned. H. E. Rawson succeeds Mr. Colwell, as all around operator and Sunday chief. F. T. and T. D. Rutherford recently returned from a month's vacation at and in the vicinity of Mt. Clemens, Mich. Clint. H. Towns, of Pomeroy, Ohio, (the son of that old timer T. H. Towns) has been permanently located here, after subbing for T. D. Rutherford, who has been promoted to the Pittsburg division. E. H. Ayers has been promoted both in salary and position to the New York division. C. R. McKnight, of Coshocton, and W. I. Faraha, of Zanesville, are two new arrivals. We were all very pleasantly surprised a short time ago by a visit from Mr. Wm. H. Jones, day press operator, who has been hovering around death's door for the past six months with inflammatory rheumatism. "Mike," as he is called, is now regaining strength and will soon be able to return to work. M. J. Keenan, formerly of Pan Handle office, has been subbing for Jones all summer. The Associated Press is now being taken at the respective newspaper offices, viz.: Daily *Journal*, nights, with J. B. Martin and Alva Wolford as the efficient operators; and the Daily *Dispatch*, with that well known and brilliant lady operator, Miss Nellie M. Kelly, as operator. Miss Kelly's smiling face is missed from among the main office force, although she frequently pays us a visit. Mr. Frank Wolford has gone to Atlanta, Ga. O. H. Newell and wife recently spent a few days in Pittsburg. W. C. Dunn, is spending a few days in Chicago, the guest of his brother. Mr. Tim. Sullivan spent a few days in Chicago, the guest of his brother. Miss O'Neill, of Shawnee, who has been ill for some time, is again able to assume her duties as manager of that office. Those of your readers who are acquainted with Mr. H. C. Garber, manager of Greenville, Darke County, Ohio, office, will be pleased to learn that he has been nominated for representative from that county, and as that county is usually his way by 1,300 majority, it is reasonable to suppose Mr. Garber will be elected. Mr. Garber is 25 years of age, and began his telegraph career as a messenger in '77, and after serving as an operator on the Pan Handle railroad, was appointed manager of the Greenville office, where he has gained the good will and esteem of the people in that county to the extent that his party has seen fit to nominate him to represent their interests in the State legislature. Mr. Garber has been a subscriber of the AGE for a long time; and as an example that may be taken by others, who subscribe for the AGE at once, it is possible to achieve like results.

OLEAN NOTES.—As several changes have taken place in this hamlet since our last letter, perhaps a few notes would not be out of place. At the W. U. Mr. Geo. F. Thompson is manager, assisted by his daughter Carrie. At Erie depot Fred Hill days, Mr. Salisbury nights. At W. N. Y. & P. R. R. Frank J. Martin superintendent telegraph and train master, assisted by the following dispatchers: M. A. Miller, W. A. Gessie, W. F. Potter, G. P. Jackson, C. A. Reed, and Will Shiber. At freight office Mr. Fox. At junction Jerry Driscoll and Wade Van Natta. At United Pipe Line, Fred B. Humphrey; United, F. H. Reaser; Acme Oil Works, Harry Davis. At the Postal

Fred. Tarbell manager; Joseph Carroll, night manager; A. J. Mayer, from New York, all night chief; C. A. Hawkins, from Fish Pond Ridge, Australia, P. F. Gallagher and W. A. Dana, on days and split; J. M. Chapman, line and batteryman. At W. N. Y. & P. the Passmore brothers are line and batteryman. A dozen or so boys about Olean, N. Y., have a private line and are learning the art, assisted by Westbrook's College, which has a dozen or so sets of instruments, making that town well supplied with factory made hams, but none of them have been sugar cured as yet. As several of the graduates have been around that vicinity and town the past year since being turned out of the college, we take it jobs are not plenty for that kind of men.

SYRACUSE NOTES.—The large amount of press matter occasioned by the Democratic State convention, which finished its deliberations in this city a few days since, was handled in a manner which reflects much credit upon the management and operators. Manager Howell of Utica, Doyle of Oswego, George of Cortland, and Horton of Auburn, and Messrs. Bryant and Blanchard of Rochester, were here to assist during the convention. J. F. Kerrins of The United Press, A. Bruch of the Associated Press, and W. F. Jones assisted nights. A. S. Ayres, of New York, was present for The United Press, and S. A. Farley, of Rochester, for the Associated Press. The Postal handled their share of the convention news. Late arrivals at the W. U. are: J. D. Daggett, J. F. Paddock, Wm. Spencer, C. E. Snyder, A. L. Patty, W. H. Merrill, Ed. Schermerhorn; Miss A. E. Landon, from the Postal, this city, and Mrs. A. E. Bettenger. David R. Stafford, late manager of the Bankers and Merchants, and the United Lines at this place, was recently married to Miss Hattie E. Wheeler, of Fayetteville, N. Y.

BALTIMORE POSTAL NOTES.—F. J. Conner, Harry Siegman, H. C. Wooden, R. J. Bauer, Wm. Ardison, Fred. Hilmer and Arthur Tweatt were on board the Postal ship. Mr. Connor certainly displayed good judgment and taste in superintending the construction of the float, and it is due to his untiring efforts that we were so finely represented. The following changes have occurred since our last. Arrivals: N. S. McCauley from W. U.; A. C. Tweatt, W. Staylor, J. Dugan, from Dallis, Tex. S. Engels has been promoted to manager of the coffee district, *vice* F. Flowers, resigned. A. D. Bodell left for Nashville. J. R. Pittinger transferred from commission district to coffee district. Wm. Pittenger clerk commission district. J. Lawlor and J. H. Twyford have returned from their vacation looking much improved by their outing. Business has improved wonderfully since the addition of the Southern connection.

DETROIT NOTES.—Mr. Tom Tracy was summoned to Zanesville, Ohio, a fortnight ago by a telegram announcing that his brother had been accidentally killed. Tom's brother was a passenger on a night train and in the morning he was found lying beside the track near Zanesville. How the accident happened no one can tell. We extend our sympathy. Mr. J. Carter has left us and is now with the United Lines in Chicago. "Home to-night. Meet me with a sack," is about as good a one as we've seen, and "Please wire me authority to make 'Fred Avery'" for "Free delivery," is another. Let us pray!

C. P. R. WESTERN DIVISION NOTES.—Departures: C. E. Culleton, Fort William. Transfers: A. A. Marlatt, dispatcher, to "X" office; J. Jackson, "X" to Fort William office; S. D. Ward, Black River to Bremner; Briggs, Buda to West Fort; A. A. Burke, West Fort to Fort William; J. Jackson, Fort William to Kaministiquia. Miss Boyd, town office, Port Arthur, resigned to accept a position in Portage La Prairie, Man. J. J. O'Callaghan, from Winnipeg office, has been appointed agent in her stead.

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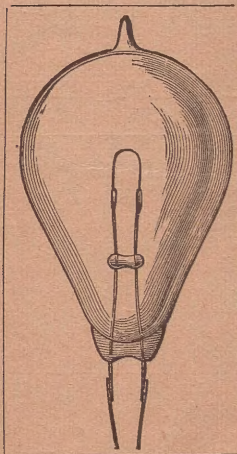
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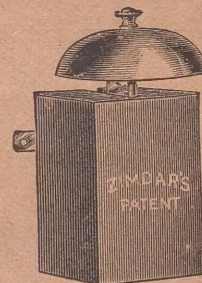
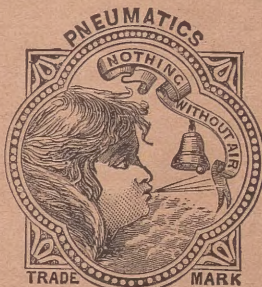
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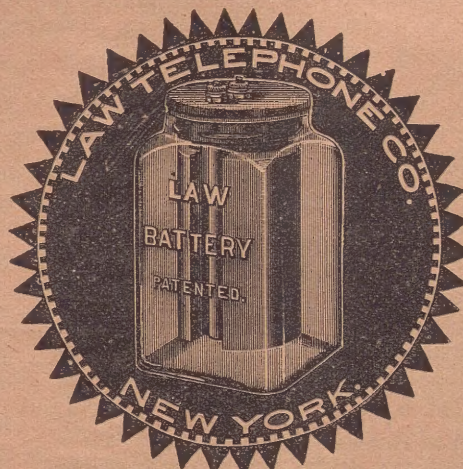
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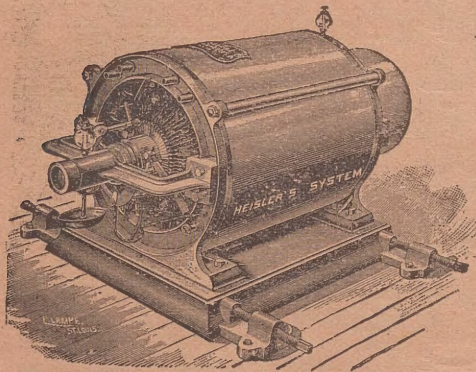
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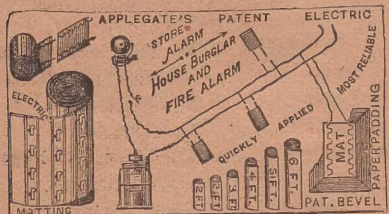
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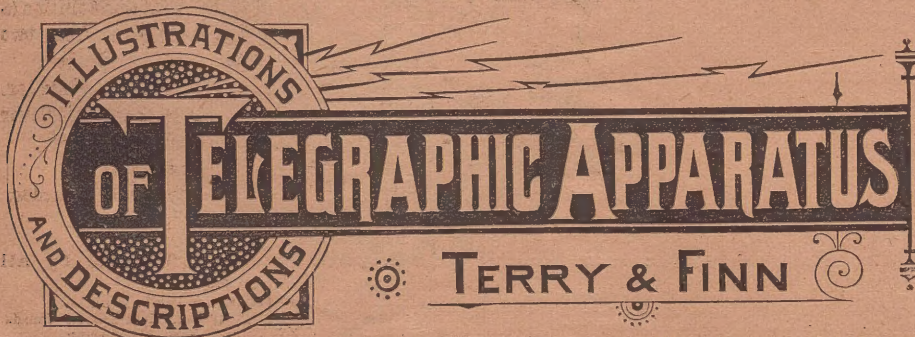
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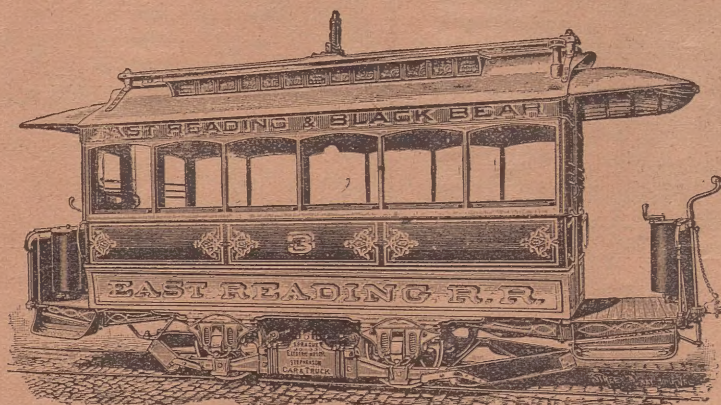
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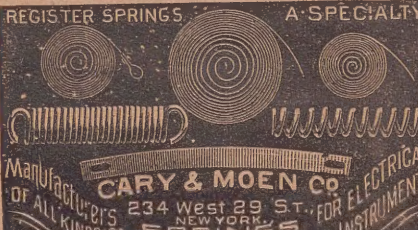
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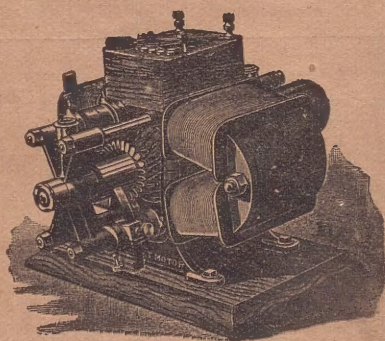
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