

*The Romance
of the Reaper*



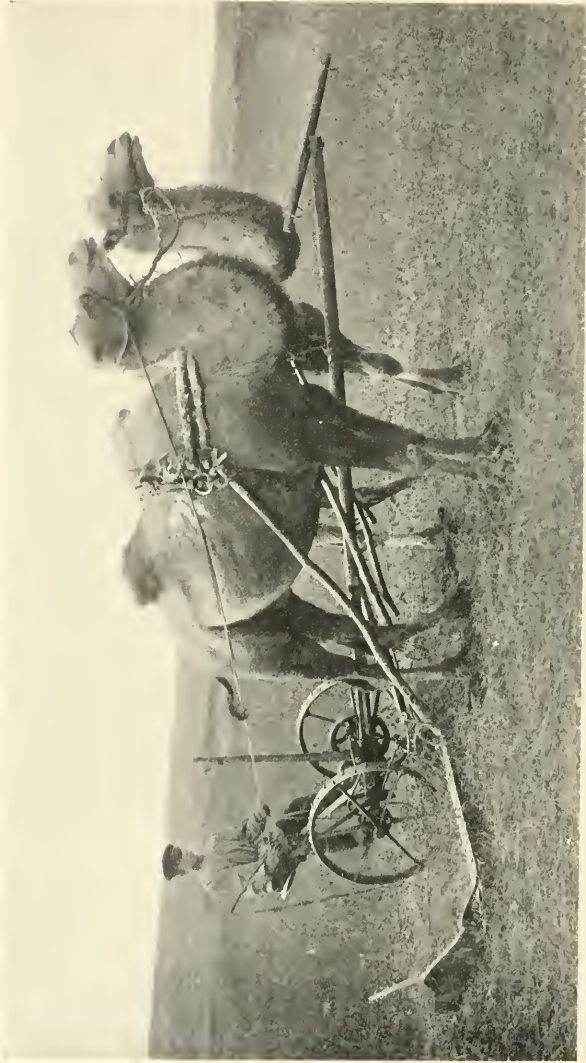
By Herbert N. Casson



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The Romance of the Reaper



A CHICAGO MOWER IN SIBERIA

The Romance of the Reaper

By
HERBERT N. CASSON

Author of "The Romance of Steel."

*Illustrated from
Photographs*

"And he gave it for his opinion, that whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together."

— *Dean Swift.*

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TO THE FARMERS OF THE UNITED STATES
WHOSE ENERGY AND PROGRESSIVENESS HAVE
MADE THIS WONDER-STORY COME TRUE

PREFACE

THIS is the story of our most useful business. It is a medley of mechanics, millionaires, kings, inventors and farmers; and it is intended for the average man and woman, boy and girl. Although I have taken great pains to make this book accurate, I have written it in the fashion of romance, because it tells a story that every American ought to know.

The fact is that the United States owes much more to the Reaper than it owes to the factory or the railroad or the Wall Street Stock Exchange. Without the magical grain machinery that gives us cheap bread, the whole new structure of our civilisation, with all its dazzling luxuries and refinements, would be withered by the blight of Famine. This may sound strange and sensational to those who have been bred in the cities, but it is true.

The reaper has done more to chase the

wolf from the door — to abolish poverty and drudgery and hand-labour, than any other invention of our day. It has done good without any backwash of evil. It has not developed any new species of social parasite, as so many modern improvements have done. It has not added one dollar to the unclean hoard of a stock-gambler, nor turned loose upon the public a single idle millionaire.

The reaper is our best guarantee of prosperity. In spite of our periodical panics, which prove, by the way, that the men who provide us with banks are not as efficient as the men who provide us with bread, we are certain to rebound into prosperity and social progress as long as we continue to make three hundred harvesting machines every working day — one every two minutes. The rising flood of wheat is bound to submerge the schemers and the pessimists alike.

And it is the reaper, too, which has done most to make possible a nobler human race, by lessening the power of that ancient motive — the Search for Food. Every harvester that clicks its way through the yellow grain means more than bread. It means more

comfort, more travel, more art and music, more books and education. In this large fact lies the real Romance of the Reaper.

In gathering the material for this book I have been greatly assisted by Messrs. E. J. Baker, of the *Farm Implement News*; B. B. Clarke, of the *American Thresherman*; Ralph Emerson, of Rockford, Ill; C. W. Marsh, of De Kalb, Ill.; Edwin D. Metcalf and T. M. Osborne, of Auburn, N. Y., Henry Wallace, of *Wallace's Farmer*, William N. Whiteley, of Springfield, Ohio; and the officials of the International Harvester Company, who made it possible for me to have free access to all of its works and to familiarise myself with its manner of doing business in this country and abroad.

Also, I take pleasure in reproducing the following editorial note from *Everybody's Magazine*, in which four chapters of this book were first printed:

“President Roosevelt in his message of December 3rd said: ‘Modern industrial conditions are such that combination is not only necessary, but inevitable . . . Corporation and labour union alike have come to stay. Each, if properly managed, is a source of good, and not evil.’ If capital combinations can be good, there must be some that are good. Would it not be a proper

service to the American people to tell them of a trust that, while it had reaped the economical advantages of combination, had yet played fair with the public and with its competitors? Hence this story of the great Harvester combine. Before we began to publish Mr. Casson's articles, we followed up his investigations with a thorough inquiry of our own, and we are bound to say that the business methods of this institution seem to conform to the highest standards of fair play and square dealing. The International Harvester combine is not a tariff trust. Its members surrendered dominance in their own business only when the trend of 'modern industrial conditions' and over strenuous competition made combination 'not only necessary, but inevitable.' The inside history of the 'Morganising' of this group of fighters, as narrated here, is as humorous as it is fascinating."

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The Romance of the Reaper

CHAPTER I

THE STORY OF McCORMICK

THIS Romance of the Reaper is a true fairy tale of American life — the story of the magicians who have taught the civilised world to gather in its harvests by machinery.

On the old European plan — snip — snip — snipping with a tiny hand-sickle, every bushel of wheat required three hours of a man's lifetime. To-day, on the new American plan — riding on the painted chariot of a self-binding harvester, the price of wheat has been cut down to *ten minutes a bushel*.

“When I first went into the harvest field,” so an Illinois farmer told me, “it took ten men to cut and bind my grain. Now our hired girl gets on the seat of a self-binder and does the whole business.”

This magical machinery of the wheat-field solves the mystery of prosperity. It explains the New Farmer and the miracles of scientific agriculture. It accounts for the growth of great cities with their steel mills and factories. And it makes clear how we in the United States have become the best fed nation in the world.

Hard as it may be for this twentieth century generation to believe, it is true that until recently the main object of all nations was to get bread. Life was a Search for Food — a desperate postponement of famine.

Cut the Kings and their retinues out of history and it is no exaggeration to say that the human race was hungry for ten thousand years. Even of the Black Bread — burnt and dirty and coarse, there was not enough; and the few who were well fed took the food from the mouths of slaves. Even the nations that grew Galileo and Laplace and Newton were haunted by the ghosts of Hunger. Merrie England was famine-swept in 1315, 1321, 1369, 1438, 1482, 1527, 1630, 1661, and 1709. To have enough to eat, was to the masses

of all nations a dream — a Millennium of Prosperity.

This long Age of Hunger outlived the great nations of antiquity. Why? Because they went at the problem of progress in the wrong way.

If Marcus Aurelius had invented the reaper, or if the Gracchi had been inventors instead of politicians, the story of Rome would have had a happier ending. But Rome said: The first thing is empire. Egypt said: The first thing is fame. Greece said: The first thing is genius. Not one of them said: The first thing is *Bread*.

In the Egyptian quarter of the British Museum, standing humbly in a glass case between two mummied Pharaohs, is a little group of farm utensils. A fractured wooden plough, a rusted sickle, two sticks tied together with a leathern thong, and several tassels that had hung on the horns of the oxen. A rummaging professor found these in the tomb of Seti I., who had his will on the banks of the Nile three thousand years ago. Egypt had a most elaborate government at that time. She had an army and navy, an art and literature. Yet

her bread-tools were no better than those of the barbarians whom she despised.

It is one of the most baffling mysteries of history, that agriculture — the first industry to be learned, was the last one to be developed. For thousands of years the wise men of the world absolutely ignored the problems of the farm. A farmer remained either a serf or a tenant. He was a stolid drudge — “brother to the ox.” Even the masterful old Pilgrim Fathers had no ploughs at all — nothing but hoes and sharp sticks, for the first twelve years of their pioneering.

Fifty-five years of American Independence went by before the first reaper clicked its way clumsily into fame, on a backwoods farm in Virginia. At that time, 1831, the American people were free, but they held in their hands the land-tools of slaves. They had to labour and sweat in the fields, with the crude implements that had been produced by ages of slavery. For two generations they tried to build up a prosperous Republic with sickles, flails, and wooden ploughs, and they failed.

There are men and women now alive who can remember the hunger year of 1837,

when there were wheat bounties in Maine and bread riots in New York City. Flour mills were closed for lack of wheat. Starving men fell in the streets of Boston and Philadelphia. Mobs of labourers, maddened by the fear of famine, broke into warehouses and carried away sacks of food as though they were human wolves. Even in the Middle West — the prairie paradise of farmers—many a family fought against Death with the serf's weapon of Black Bread.

Enterprise was not then an American virtue. The few men who dared to suggest improvements were persecuted as enemies of society. The first iron ploughs were said to poison the soil. The first railroad was torn up. The first telegraph wires were cut. The first sewing-machine was smashed. And the first man who sold coal in Philadelphia was chased from the State as a swindler.

Even the railway was a dangerous toy. The telegraph was still a dream in the brain of Morse. John Deere had not invented his steel plough, nor Howe his sewing-machine, nor Hoe his printing-press. There were no stoves nor matches nor oil-lamps. Petro-

leum was peddled as a medicine at a dollar a bottle. Iron was \$75 a ton. Money was about as reliable as mining stocks are to-day; and all the savings in all the banks would not now buy the chickens in Iowa.

Our total exports were not more than we paid last year for diamonds and champagne. Chicago was a twelve-family village. There was no West nor Middle West. Not one grain of wheat had been grown in Minnesota, the Dakotas, Nebraska, Colorado, Kansas, Washington, Nevada, Idaho, Montana, New Mexico, Oregon, Utah, Arizona, Wyoming, Oklahoma or Texas.

The whole structure of civilisation, as we know it, was unbuilt; and most of its architects and builders were unborn or in the cradle. Spencer was eleven years of age; Virchow was ten; Pasteur nine; Huxley six; Berthelot four; and as for Haeckel, Carnegie, Morgan, Edison and their generation, they had not yet appeared in the land of the living.

Then came the Reaper.

This unappreciated machine, about which so little has been written, changed the face of the world. It moved the civilised nations

up out of the bread line. It made prosperity possible; and elevated the whole struggle for existence to a higher plane.

Life is still a race — always will be; but not for bread. The lowest prizes now are gold watches and steam yachts and automobiles. Even the hobo at the back door scorns bread, unless we apologise for it with meat and jam.

It is so plentiful — this clean, white bread, that it is scarcely an article of commerce any longer. In our hotels it is thrown in free of charge, as though it were a pinch of salt or a glass of water. There is no “penn’orth of bread” in the bill, as there was in Falstaff’s day.

Seven bushels of wheat apiece! That is what we eighty-five million people ate in 1906 — twelve thousand million loaves of bread. Such a year of feasting was new in the history of the world. And yet we sent a thousand million dollars’ worth of food to other nations.

Suppose that bread were money, just for one day! What a lesson it would be on the social value of the reaper! Thirty loaves would be the day’s pay of a labourer —

as much as he could carry on his back. Two loaves for a cigar — three for a shave — five for a bunch of violets — forty for a theatre ticket — a hundred for a bottle of champagne! Is there anything cheaper than bread?

The reaper was America's answer to Malthus — who scared England into abolishing the Corn Laws by his proclamation that "the ultimate check to population is the lack of food." What would that well-meaning pessimist think were he now alive, if he were told that the human race is growing wheat at the rate of ten bushels a year per family? Or that Minnesota and the Dakotas (names that the world of his day had never heard) produce enough wheat to feed all the people of England?

The reaper was America's answer to the world's demand for democracy. Instead of bread riots and red flags and theories of an earthly paradise in which nobody worked but the Government, the United States invented a machine that gave democracy a chance. Instead of a guillotine to cut off the heads of the privileged people who ate too much, it produced a reaper that gave

everybody enough. This was not a complete answer, nor will there ever be one, to the riddle of liberty, equality and fraternity. But it was so much better than theories and riots that it helped to persuade twenty-five million immigrants to cross the ocean and become shareholders in the American Republic.

If it were possible to trace back a strand in the twisted thread of cause and effect, we would find that many a factory and steel-mill owes its origin to the flood of wheat-money that came to us from Europe in 1880 and 1881 — every dollar of it made by the humble harvester.

Without this obedient slave of wood and steel, all our railroads and skyscrapers and automobiles could not save us from famine. If we had to reap our grain in the same way as the Romans did, it would take half the men in the United States to feed us on bread alone, to say nothing of the rest of the menu.

Like most great things, the reaper was born among humble people and in a humble way. It was crude at first and dogged by failure. No one man made it. It was the product of a hundred brains.

The exact truth about its origin is not known and never will be. What few facts there were have been torn and twisted by the bitter feuds of the Patent Office. Every letter and document that exists is controversial. So I cannot say that the story, as I give it, is entirely true, but only that it is as near as I can get to the truth after six months of investigation.

There is evidence to show that Cyrus Hall McCormick completed a practical reaper in 1831, although the first reaper patent was taken out in 1833 by an inventive seaman named Obed Hussey, of Baltimore. The young McCormick did not secure his patent until 1834; but he had given a public exhibition in Virginia three years before.

There were nearly a hundred people who saw this exhibition. Not one of them is now alive; and the story as told by their children has many little touches of imagination. But in the main, it is very likely to be true.

It was in the fall of 1831 when Cyrus McCormick hitched four horses to his unwieldy machine and clattered out of the barnyard into a field of wheat nearby.



CYRUS HALL MCCORMICK

Horses shied and pranced at the absurd object, which was unlike anything else on the face of the earth. Dogs barked. Small boys yelled. Farmers, whose backs were bent and whose fingers were scarred from the harvest labour, gazed with contemptuous curiosity at the queer contraption which was expected to cut grain without hands.

A little group of Negro slaves had spasms of uncomprehending delight in one corner of the field, not one of them guessing that "Massa" McCormick's comical machine was cutting at the chains that bound their children. And a noisy crowd of white labourers followed the reaper up and down the field with boisterous enmity; for here was an invention which threatened to deprive them of the right to work — the precious right to work sixteen hours a day for three cents an hour.

The field was hilly and the reaper worked badly. It slewed and jolted along, cutting the grain very irregularly. Seeing this, the owner of the field — a man who was Ruff by name and rough by nature, rushed up to McCormick and shouted — "Here! This won't do. Stop your horses! Your

machine is rattling the heads off my wheat.” “It’s a humbug,” bawled one of the labourers. “Give me the old cradle yet, boys!” exclaimed a round-shouldered farmer. The Negroes turned handsprings with delight; and the whole jeering mob gathered around the discredited machine.

Just then a fine-looking man rode up on horseback. The crowd made way as he came near, for they recognised him as the Honourable William Taylor—a conspicuous politician of that day.

“Pull down the fence and cross over into my field,” he said to young McCormick. “I’ll give you a fair chance to try your machine.”

McCormick quickly accepted the offer, drove into Taylor’s field, which was not as hilly, and cut the grain successfully for four or five hours. Although the United States had been established more than fifty years before, this was the first grain that had ever been cut by machinery. The Fathers of the Republic had eaten the bread of hand-labour all their lives, and never dreamed that the human race would ever find a better way.

When he arrived home that evening, Cyrus thought that his troubles were over. He had reaped six acres of wheat in less than half a day — as much as six men would have done by the old-fashioned method. He had been praised as well as jeered at. “Your reaper is a success,” said his father, “and it makes me feel proud to have a son do what I could not do.”

Two Big Men had given him their approval — William Taylor and a Professor Bradshaw, of the Female Academy in the town of Lexington, Virginia. The professor, who was a pompous and positive individual, made a solemn investigation of the reaper, and then announced, in slow, loud, and emphatic tones — “That — machine — is — worth — a hundred — thousand — dollars.”

But if Cyrus McCormick hoped to wake up the following morning and find himself rich and famous, he was roughly disappointed. The local excitement soon died out, and in a few days the men in the village store were discussing Webster’s last speech against Nullification and Andrew Jackson’s war against the bankers. One old woman expressed the general feeling by saying that

young McCormick's reaper was "a right smart curious sort of thing, but it won't come to much."

McCormick was at this time a youth of twenty-two. He had been one of four pink, helpless babies, born in 1809, who became, each in his own world, the greatest leader of his day — Darwin, Gladstone, Lincoln, and McCormick. Like Lincoln, McCormick first learned to breathe in a long cabin — but in Virginia. He was bred from a fighting race. His father had wrenched a living from the rocks of Virginia for his family of nine. His grandfather had fought the English in the Revolution. His great-grandfather had been an Indian fighter in Pennsylvania; and his great-great-grandfather battled with a flint-lock against the soldiers of James II., at the siege of Londonderry.

The McCormick family, in 1809, had a good deal of what was then called prosperity. They had enough to eat — a roof that kept out the rain — 1,800 acres of land, or near-land — three saw-mills — two flour-mills, and a distillery. They had very little money, because there was little to be had. In the whole United States there was barely as

much money as would buy half of the New York Subway.

The first American McCormicks had a thousand dollars or more when they resolved to leave Ireland, and they were Scotch enough to invest the whole amount in linen, which they sold at a high profit in Philadelphia. This capital enabled them to acquire a small stock of books, tools, and comforts, which were passed along from father to son.

Robert McCormick — the father of Cyrus, was himself a remarkable Virginian. He was quick with his hands in shaping iron and wood. In fact, he was fairly famous in his county as the inventor of a hemp-brake, a clover-sheller, a bellows and threshing machine. His mind was greedy for knowledge; and it was his habit, when the seven children were asleep, to explore into the mysteries of astronomy until his candle had flickered its life out. Twenty or more of his letters, which I have seen, are well written and with a fine use of bookish words.

The one persistent ambition of his life was to invent a reaper. It is also true, and

a titbit of a fact for those who believe in prenatal influences, that during the year in which Cyrus H. McCormick was born, his father first began the actual construction of a reaping machine.

Especially during the harvest months, the topic of conversation in the McCormick home was whether the dream of "reaping grain with horses" could ever come true. "Reaper," was one of the first words that baby Cyrus learned to say; and his favourite play-toy, when he grew older, was the wreck of his father's reaper that would n't reap, which lay in rusty disgrace near the barn-door.

"Often I have seen Robert McCormick standing over his machine," said one of his neighbours. "He would be studying and thinking, drawing down his under lip, as was his habit when he was puzzling over anything." His friends ridiculed him for wasting so much time on a foolish toy, until he became half ashamed of it himself and quit his experimenting in the daytime. But at night, he and Cyrus hammered away in the little log workshop, as though they were a pair of conspirators.

The romantic mystery of these midnight labours made an indelible mark on the brain of the boy Cyrus. He grew up to be serious and self-contained — quite unlike the boys of the neighbourhood. He was not popular and never cared to be.

“Cyrus was a natural mechanical genius from a child,” said John Cash, who worked on the McCormick farm. “He invented the best hillside plough ever used in this country. He and his father would lock themselves up in the shop and work for hours on a reaping machine. The neighbours thought they were both unbalanced to have the idea of cutting grain with horses.”

Cyrus was always busy making or mending some piece of machinery. He abhorred the drudgery of the farm; but delighted in any work that had an idea behind it. He surprised his teacher one morning by bringing to school a twenty-inch globe of wood, which turned on its axis as the earth does, and had the seas and continents outlined in ink.

“That young fellow is ahead of me,” said the amazed teacher.

At fifteen Cyrus had invented a new grain

cradle. At twenty-one he improved a machine which his father had made to break hemp. And at twenty-two this young country-boy, who had never seen a college, a city, or a railroad, constructed *the first practical American reaper*. It was a clumsy makeshift — as crude as a Red River ox-cart; but it was built on the right lines. It was not at all handsome or well made or satisfactory; but it was a reaper that reaped.

But McCormick soon discovered that it was not enough to invent a reaper. What the world needed was a man who was strong and dominating enough to force his reaper upon the unwilling labourers of the harvest fields.

Tenacity! Absolute indifference to defeat! The lust for victory that makes a man unconscious of the blows he gives or takes! This was what was needed, and what Cyrus McCormick possessed, to a greater degree, perhaps, than any other man in American history.

Tenacity! It was in his blood. Back of him was the hardiest breed that was ever mixed into the American blend — the pick of the Scots who fought their way to the

United States by way of Ireland. These Irish Scots, few as they were, led the way across the Alleghanies, founded Pittsburgh, made a trail to Texas, and put five Presidents in the White House.

And tenacity was bred, as well as born, into Cyrus McCormick. He went barefooted as a boy, not for lack of shoes, but to make him tough. "I want my boys to know how to endure hardship," said his mother. He sat on a slab bench in the little log school house and learned to read from the Book of Genesis. He sang Psalms with forty verses, on Sundays, and sat as still as a graven image during the three-hour sermons, for his father was a Presbyterian of the old Covenanter brand.

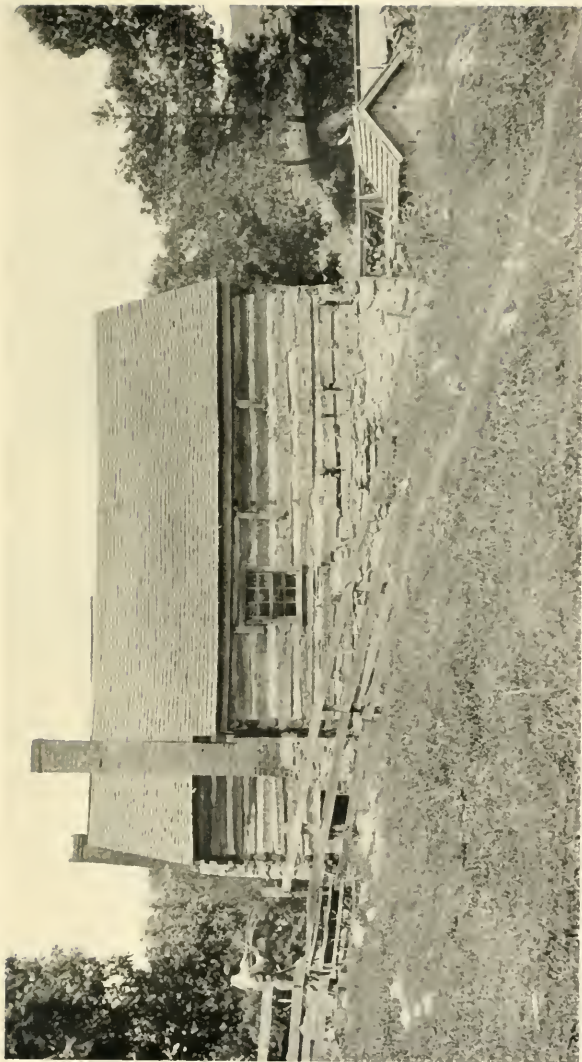
So it came to pass that Cyrus McCormick clung to his reaper, as John Knox had to his Bible. "His whole soul was wrapped up in it," said one of his neighbours. He grew as indifferent to the rough jokes of the farmers as Martin Luther was to the sneers of the village priests. The making of reapers became more than a business. It was a creed — a religion — a new eleventh commandment.

By the time he was thirty, he had become a nineteenth century Mohammed, ready for a world crusade. His war-cry was — Great is the Reaper, and McCormick is its prophet.

Like Mohammed, he had his visions of future glory. On one occasion, while riding on horseback through a wilderness path, the dazzling thought flashed upon his mind — “Perhaps I may make a million dollars from this reaper.” This idea remained for years the driving wheel of his brain.

“The thought was so enormous,” he said afterward, “that it seemed like a dream — like dwelling in the clouds — so remote, so unattainable, so exalted, so visionary.”

Also, like Mohammed, he had a period of preparatory solitude. Soon after the first exhibition of his reaper, he bought a tract of land and farmed it alone, with two aged Negroes as housekeepers. Here he lived for more than a year with no companion except his reaper. He seemed at this time, too, to have resolved upon a life of celibacy, for I find in one of his letters an allusion to two young ladies of unusual attractiveness. “They are pretty, smart and rich,” he writes, “but alas, I have other business to attend to!”



THE VIRGINIAN BIRTHPLACE OF THE MCCORMICK REAPER

The two things of which he stood most in need were money and cheaper iron. So, after thinking over the situation in his lonely cabin, he decided to build a furnace and make his own iron. His father and a neighbour joined him in the enterprise. They built the furnace, made the iron, and might have forgotten the reaper, if the financial earthquake of 1839 had not shaken them down into the general wreckage. The neighbour who had been made a partner signed over his property to his mother, and threw the whole burden of the bankruptcy upon the McCormick family, crushing them for a time into an abyss of debt and poverty.

Cyrus McCormick gave up everything he owned to the creditors — everything except his reaper, which nobody wanted. So far his vision of wealth was still a dream. Instead of being the possessor of a million, he was eight years older, and penniless.

There were four sons and three daughters in the family, and the nine of them slaved for five years to save the homestead from the auctioneer. Once the sheriff rode up with a writ, but was so deeply impressed with their

energy and uprightness that he rode away with the dreaded paper still in his pocket.

Up to this time Cyrus had not sold one reaper. As Mohammed preached for ten years without converting anyone except his own relatives, so Cyrus McCormick preached the gospel of the reaper for ten years without success. Then, in 1841, he sold two for \$100 apiece. The next year seven daring farmers came to the McCormick homestead, each with \$100 in his hands.

This brilliant success brought the whole family into line behind Cyrus, and the farm was transformed into a reaper factory. Twenty-nine machines, "fearfully and wonderfully made," were sold in 1843, and fifty in 1844. There were troubles, of course. Some buyers failed to pay. A workman who was sent out on horseback to collect \$300, ran away with horse, money and all. But none of these things moved Cyrus. At last, after thirteen years of delay, he was selling reapers.

Best of all, an order for eight had come from Cincinnati. These were the first reapers that were sold outside of Virginia. They were seen by the more enterprising

farmers of Ohio and created a sensation wherever they were used. Cyrus, who was now a powerful, broad-chested man of thirty-six, caught a glimpse of his opportunity and sprang to seize it. He saw that the time had come to leave the backwoods farm — forty miles from a blacksmith — sixty miles from a canal — one hundred miles from a railway. So, with \$300 in his belt, he set out on horseback for the West.

Here he saw *the prairies*. To a man who had spent his life in a hollow of the Alleghanies, the West was a new world. It was the natural home of the reaper. The farmers of Virginia might continue forever to harvest their small, hilly fields by hand, but here — in this vast land ocean, with few labourers and an infinity of acres, the reaper was as indispensable as the plough. To reap even one of these new States by hand would require the whole working population of the country.

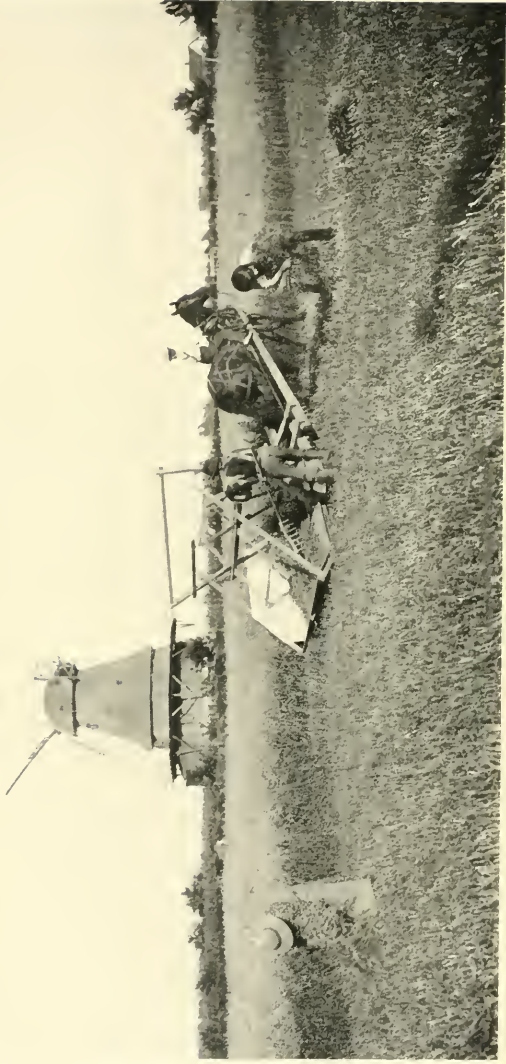
Also, in Illinois, McCormick saw what made his Scotch heart turn cold within him — he saw hogs and cattle feeding in the autumn wheat-fields, which could not be reaped for lack of labourers. Five million

bushels of wheat had grown and ripened — enough to empty the horn of plenty into every farmer's home. Men and women, children and grandmothers, toiled day and night to gather in the yellow food. But the short harvest-season rushed past so quickly that tons of it lay rotting under the hoofs of cattle.

It was a puzzling problem. It was too much prosperity — a new trouble for farmers. In Europe, men had been plenty and acres scarce. Here, acres were plenty and men scarce. Ripe grain — the same in all countries, will not wait. Unless it is gathered quickly — in from four to ten days, it breaks down and decays. So, even to the dullest minds, it was clear that there must be some better way of snatching in the ripened grain.

The sight of the trampled wheat goaded McCormick almost into a frenzy of activity. He rode on horseback through Illinois, Wisconsin, Missouri, Ohio, and New York, proclaiming his harvest gospel and looking for manufacturers who would build his reapers. From shop to shop he went with the zeal of a Savonarola.

One morning, in the little town of Brock-



A MODEL OF THE FIRST PRACTICAL REAPER

port, New York, he found the first practical men who appreciated his invention — Dayton S. Morgan and William H. Seymour. Morgan was a handy young machinist who had formed a partnership with Seymour — a prosperous store-keeper. They listened to McCormick with great interest and agreed to make a hundred reapers. By this decision they both later became millionaires, and also entered history as the founders of the first reaper factory in the world.

Altogether, in the two years after he left Virginia, McCormick sold 240 reapers. This was Big Business; but it was only a morsel in proportion to his appetite. Neither was it satisfactory. He found himself tangled in a snarl of trouble because of bad iron, stupid workmen, and unreliable manufacturers. He cut the Gordian knot by building a factory of his own at Chicago.

This was one of the wisest decisions of his life, though at the time it appeared to be a disastrous mistake. Chicago, in 1847, showed no signs of its present greatness. As a city, it was a ten-year-old experiment, built in a swamp, without a railway or a canal. It was ugly and dirty, with a river

that ran in the wrong direction; but it was *busy*. It was the link between the Mississippi and the Great Lakes — a central market where wheat was traded for lumber and furs for iron. It had no history — no ancient families clogging up the streets with their special privileges. And best of all, it was a place where a big new idea was actually preferred to a small old one.

Chicago did not look at McCormick with dead eyes and demand a certified cheque from his ancestors. It sized him up in a few swift glances and saw a thick-set, ruddy man, with the physique of a heavy-weight wrestler, dark hair that waved in glossy furrows, and strong eyes that struck you like a blow. It glanced at his reaper and saw a device to produce more wheat. More wheat meant more business, so Chicago said —

“Glad to see you. You’re the right man and you’re in the right place. Come in and get busy.” William B. Ogden, the first Mayor of Chicago, listened to his story for two minutes, then asked him how much he wanted for a half interest. McCormick had little money and no prestige. Ogden

had a surplus of both. So a partnership was arranged, and the new firm plunged toward prosperity by selling \$50,000 worth of reapers for the next harvest.

At last there had come a break in the clouds, and McCormick found his path flooded with sunshine. He was no longer a wanderer in the night. He was the Reaper King—the founder of a new dynasty. As soon as possible he bought out Ogden, and thenceforth established a one-man business. By 1851 he was making a thousand reapers a year, and owned one-tenth of the million dollars he had dreamed of in the Virginian wilderness.

At this point his life changes. His pioneer troubles are over. There are no more thousand-mile rides on horseback — no more conflicts with jeering crowds — no more smashing of reapers by farm labourers. The repeal of the Corn Laws in England had opened up a new market for our wheat, and the discovery of gold in California was booming the reaper business by making money plentiful and labour scarce.

Suddenly, McCormick looked up from his work in the factory, and saw that he was

not only rich, but famous. One of his reapers had taken the Grand Prize at a World's Fair in England. Even the London *Times*, which had first ridiculed his reaper as "a cross between an Astley chariot, a wheelbarrow and a flying machine," was obliged to admit, several days later, that "the McCormick reaper is worth the whole cost of the Exposition."

Seventeen years later, on the imperial farm, near Paris, Napoleon III. descended from his carriage and fastened the Cross of the Legion of Honour upon McCormick's coat. There was a picture that some American-souled artist, when we have one, will delight to put on canvas. How splendid was the contrast, and how significant of the New Age of Democracy, between the suave and feeble Emperor, enjoying the sunset rays of his inherited glory, and the strong-faced, rough-handed Virginian farmer, who had built up a new empire of commerce that will last as long as the human race eats bread!

From first to last, the stout-hearted old Reaper King received no favours from Congress or the Patent Office. He built

up his stupendous business without a land grant or a protective tariff. By the time that his Chicago factory was ten years old, he had sold 23,000 reapers, and cleared a profit of nearly \$1,300,00. The dream of his youth had been realised, and more. All told, in 1859, there were 50,000 reapers in the United States, doing the work of 350,000 men, saving \$4,000,000 in wages, and cramming the barns with 50,000,000 bushels of grain.

So, on his fiftieth birthday, the battle-scarred McCormick found himself a millionaire. He was also married, having fallen in love with Miss Nettie Fowler, of New York, a young lady of unusual beauty and ability. No history of the reaper can be complete without a reference to this remarkable woman, who has been for fifty years, and is to-day, one of the active factors in our industrial development. No important step has ever been taken either by her husband or her three sons, until it has received her approval. And Mrs. McCormick has been much more than a mere adviser. Her exact memory and keen grasp of the complex details of her husband's

business made her practically an unofficial manager. She suggested economies at the factory, stopped the custom of closing the plant in midsummer, studied the abilities of the workmen, and on several occasions superintended the field-trials in Europe.

Chicago may not know it, but it is true, that its immense McCormick factory owes its existence to Mrs. McCormick. After the Big Fire of 1871, when his \$2,000,000 plant was in ruins, McCormick concluded to retire. He still had a fortune of three or four millions and he was sixty-two years of age. His managers advised him not to rebuild, because of the excessive cost of new machinery.

As soon as the fiery cyclone had passed, he and his wife drove to the wrecked factory. Several hundred of the workmen gathered about the carriage, and the chief engineer, acting as spokesman, said: "Well, Mr. McCormick, shall we start the small engine and make repairs, or shall we start the big engine and make machines?"

Mr. McCormick turned to his wife and said, "Which shall it be?" It was a breathless moment for the workmen.

"Build again at once," said Mrs. McCormick. "I do not want our boy to grow up in idleness; I want him to work, as a useful citizen, and a true American."

"*Start The Big Engine,*" said McCormick. The men threw their hats in the air and cheered. They sprang at the smoking debris, and began to rebuild before the cinders were cold.

Such was the second birth of the vast factory which, in its sixty years, has created fully 5,000,000 harvesters, and which is now so magically automatic that, with 6,000 workmen, it can make one-third of all the grain-gathering machinery of the world.

Practically nothing has been written about McCormick from the human nature side. He was one of those Cromwellian men who can only be appreciated at a distance. He was too absorbed in his work to be congenial and too aggressive to be popular. He shouldered his way roughly against the slow-moving crowd; and the people whom he thrust out of his way naturally did not consider the importance of his life-task.

Most of the really great men of his day were his friends — Horace Greeley, for in-

stance, and Peter Cooper, Junius Morgan, Abram S. Hewitt, Cyrus W. Field, and Ferdinand De Lesseps. But among the men of his own trade he stood hostile and alone.

“McCormick wants to keep the whole reaper business to himself. He will not live and let live,” said his competitors. And they had reason to say so. He did want to dominate. He wanted to make all the harvesting machines that were made — not one less. He was not at all a modern “community-of-interest” financier. He was a man of an outgrown school — a consistent individualist, not only in business, but in politics and religion as well. There was no compartment in his brain for mergers and combines — for theories of government ownership — for Higher Criticism and the new theology. He was a Benjamin Franklin commercialist, a Thomas Jefferson Democrat, and a John Knox Presbyterian.

He had worked harder to establish the reaper business than any other man. He was making reapers when William Deering was five years old, and before Ralph Emerson and “Bill” Whiteley were born. He

had graduated into success through a fifteen-year course in failure. The world into which he was born was as hostile to him as the Kentucky wilderness was to Daniel Boone or the Atlantic Ocean to Columbus. He was hard-fibred, because he had to be. He was the thin end of the wedge that split into fragments the agricultural obstacle to social progress.

One careless writer of biographies has said that McCormick began at the foot of the ladder. This is not correct. When he began, there was no ladder. *He had to build it as he climbed.*

The first man who gave battle to McCormick was an erratic genius named Obed Hussey, who, as we have seen, secured a reaper patent in 1833. No two men were ever more unlike than Hussey and McCormick. Hussey was born in Nantucket; and he had roamed the frozen North as a whaling seaman. He was inventive, poetic, and as whimsical as the weather. His delight was in working out some mechanical problem. His first invention was a machine to make pins. Soon afterward, while he was living in Cincinnati, con-

structing a machine to mould candles, a friend said to him:

“Hussey, why don’t you invent a machine to reap grain?”

“Are there no such machines?” he asked in surprise.

“No,” said his friend, “and whoever can invent one will make a fortune.”

Hussey forsook his candle machine, set to work upon a reaper, and within a year had one in the fields. Then came a twenty-five-year war with McCormick, which was waged furiously in the Patent Office, the courts, and a hundred wheat-fields. Hussey won the opening battle by arriving first at the Patent Office, although his machine, as claimed by McCormick, was two years younger. By 1841 Hussey had sold reapers in five states, and ten years later he shared the honours with McCormick at the London World’s Fair.

Both machines were very crude and unsatisfactory. Hussey’s had a better cutting apparatus and McCormick’s was more complete. In the long run, each adopted the devices of the other, and a better reaper was evolved. Before many years, it became

apparent that Hussey was outclassed. By 1858 he was left so far behind that he lost his interest in reapers and invented a steam-plough.

His first machine was "really a mower," says Merritt Finley Miller, one of the two professors who have written on harvesting machinery. It lacked the master-wheel, the reel and the divider, without which the grain cannot be rightly handled. When Hussey gave up the contest, his invention was bought for \$200,000 by William F. Ketchum and others, who adapted it into a mowing-machine.

"Hussey was a very peculiar man," said Ralph Emerson. "His machine was fairly good, but it was a failure in the market, because he would not put on a reel. He refused to do this, saying he did not invent a reel, and it would be a falsehood if he put one on. He said that it was contrary to his principles to sell anything that he had not invented.

"On one occasion I went to buy a shop licence from him. 'Have you a thousand dollars in your pocket?' he asked. 'No,' said I. 'Can you get me three thousand

dollars by daylight to-morrow morning?’ ‘No,’ I answered, ‘but I can get it by noon. ‘Well,’ said Hussey, ‘I want to be very reasonable with you. If you’ll pay me one thousand dollars before you leave the house, or twenty-five hundred dollars before daybreak to-morrow, I’ll sell you a licence. Otherwise, it will cost you twelve thousand dollars.’

“Several days later I paid him twelve thousand dollars, and as he handed me the licence, he said — ‘Now, don’t say that I never offered you this for a thousand dollars.’”

Hussey’s adventurous life was snapped short by a tragic death. While he was on a train at Baltimore, a little girl was crying for a drink of water. The kind-hearted old sailor-mechanic got off the train, brought her a glass of water, and on his way to return the glass, he slipped and fell between the moving wheels.

Of all the men who fought McCormick in the earlier days, I found only two now alive — Ralph Emerson, of Rockford, and William N. Whiteley, of Springfield, Ohio. Both of these men to-day generously give the old warrior his due.

“McCormick was the first man to make the reaper a success in the field,” said Whiteley, the battle-worn giant of Ohio, where I found him still at work. “McCormick was a fighter — a bulldog, we called him; but those were rough days. The man who could n’t fight was wiped out.”

Ralph Emerson, now one of the most venerable figures in Illinois, rose from a sick-bed against his doctor’s orders, so that he might be magnanimous to his former antagonist.

“McCormick’s first reapers were a failure,” said he, speaking slowly and with great difficulty; “and he owed his preëminence mainly to his great business ability. His enemies have said that he was not an inventor, but I say that he was an inventor of eminence.”

So, as the gray haze of years enables us to trace the larger outlines of his work, we can see that McCormick was especially fitted for a task which, up to his day, had never been done, and which will never need to be repeated during the lifetime of our earth. He was absolutely mastered by one idea, as wholly as Copernicus or Columbus.

His business was his life. It was not accidental, as with Rockefeller, nor incidental, as with Carnegie. On one occasion when a friend was joking him about his poor judgment in outside affairs, he whirled around in his chair and said emphatically: "I have one purpose in life, and only one — the success and widespread use of my machines. All other matters are to me too insignificant to be considered."

He made money — ten millions or more. But a hundred millions would not have bribed him to forsake his reaper. It was as much a part of him as his right hand. In several of his business letters he writes as though he had been a Hebrew prophet, charged with a world-message of salvation.

"But for the fact that Providence has seemed to assist me in all our business," he writes on one critical occasion, "it has at times seemed that I would almost sink under the weight of responsibility hanging upon me. I believe the Lord will help us out."

Not that he left any detail to Providence to which he could personally attend. He was a Puritan of the "trust-in-God-and-keep-your-powder-dry" species. A little farther

down, in this same letter, he writes — “Meet Hussey in Maryland and *put him down.*”

The fountain-springs of his life were wholly within. He acted from a few basic, unchangeable convictions. If public opinion was with him, he was gratified; if it was against him he thought no more of it than of the rustling of the trees when the wind blew.

“When anyone opposed his plans and showed that they were impossible,” said one of his superintendents, “I noticed that he never argued; he just went on working.”

His brain had certain subjects distinctly mapped out. What he knew — he knew. He had no hazy imaginings. He lived in a black and white world and abhorred all half-tints. He was right — always right, and the men who opposed him were Philistines and false prophets, who deserved to be consumed by sudden fire from Heaven.

It was this inward spiritual force that made him irresistible. Small men shrivelled up when he spoke to them.

“The exhibition of his powerful will was at times actually terrible,” said one of his attorneys. “If any other man on this earth

ever had such a will, certainly I have not heard of it."

Small and easy undertakings had no interest for him whatever. It was the impossibility that enraged and inspired him. At the sight of an obstacle in his path, he rushed forward like a charge of cavalry. When the Civil War was at its height, he and Horace Greeley, who was very similar to him in this respect, actually believed that they could stop it. They had several long conferences in the Fifth Avenue Hotel, New York, and McCormick went so far in 1864 as to prepare a statement of principles which he fully believed would restore peace and harmony between the North and the South.

Such was this massive, unbendable American. As we shall see, he was far from being the only strong, picturesque figure in the industry. But it would make many a book to tell in detail the effect of his life work upon the progress of the United States. It was a New World, truly, that had been created, alike for the people of the farms and of the cities, in the year that the victorious old Reaper King was carried to his grave, with a sheaf of wheat on his breast.

What if there had been no reapers, and no hunger-insurance, and no cheap bread! What sort of an American nation would we have, if we were still using such food-implements as the sickle and the flail?

Could we have swung through four years of Civil War, as we did, without famine or national insolvency?

Could the West have risen toward its present greatness if its billion acres had to be harvested by hand?

Could the railways alone, which produce nothing, have given us more food for less work — the first necessity of a civilised democracy?

Would our manufacturers be creating new wealth at the rate of sixteen billions a year, if the reaper had not enriched the farmers and sent half the farm-hands into the factories?

And our towering cities — two of them more populous than the thirteen colonies were, how large would they be and how prosperous if bread were twenty cents a pound?

As Seward once said, it was the reaper that "pushed the American frontier west-

ward at the rate of thirty miles a year." Most of the western railways were built to the wheat; and it was wheat money that paid for them. The reaper clicked ahead of the railroad, and civilisation followed the wheat, from Chicago to Puget Sound, just as the self-binder is leading the railroad to-day — three hundred miles in front in Western Canada, and eight hundred miles in Siberia. Even so unyielding a partisan of the railroads as Marvin Hughitt admitted to me that "the reaper has not yet received proper recognition for its development of the West."

During the Civil War the reaper was doing the work of a million men in the grain-fields of the North. It enabled a widow, with five sons, to send them all to the front, and yet gather every sheaf into the barn. It kept the wolf from the door, and more — it paid our European debts in wheat. It wiped out all necessity for Negro labour in the wheat States, just as a cotton-picker will, some day, in the South.

"The reaper is to the North what the slave is to the South," said Edwin M. Stanton in 1861. "It releases our young

men to do battle for the Union, and at the same time keeps up the supply of the nation's bread."

Lincoln called out every third man, yet the crops increased. Europeans could not believe it. They heard in 1861 that we were sending three times as much wheat to England as we had ever done before. They shook their heads and said — "Another American story!" when they were told that we were supporting two vast armies and yet selling other nations enough grain to feed thirty-five million people. Naturally, no country that clung to the sickle and flail could be convinced of such a preposterous miracle.

After the war, the mighty river of wheat that flowed from the West became so wide and so deep that it poured a yellow stream into every American home. It began to turn the wheels of fourteen thousand flour-mills. Rich cities sprang up, like Aladdin palaces, beside its banks — Chicago, St. Louis, Cincinnati, Milwaukee, Minneapolis, Kansas City, St. Paul, Omaha, Des Moines. All of these, and a hundred lesser ones, were nourished into prosperity by the rising

current of reaper-wheat, as it moved from the Mississippi to the sea.

By 1876 we had become the champion food-producers of the world. A Kansas farmer was raising six bushels of wheat with as little labour as an Italian spent to produce one. And there was one doughty Scot — Dalrymple of Dakota, who was guillotining more wheat with four hundred labourers and three hundred harvesters, than five thousand peasants could garner by hand.

Inevitably, the American Farmer became a financier. In 1876 he earned twenty-four per cent. He had twenty-seven hundred millions to spend. By 1880 he had begun to buy so much store goods that the United States was able to write a Declaration of Industrial Independence. Steadily he has grown richer and wiser, until now he is the owner of a billion-acre farm, worth thirty dollars an acre, operated with farm machinery that cost him \$900,000,000 and producing, in a single year, seven thousand times the value of a millionaire.

Such, in one country, is the amazing result which the Reaper has helped to create.

And this is not all. It is now more necessary to the human race than the railway. It is fighting back famine in fifty countries. Its click has become the music of an International Anthem. The nations are feeding each other, in spite of their tariffs and armies. The whole world takes dinner at the one long table; and the fear of hunger is dying out of the hearts of men; and the prayer of the Christian centuries is answered — “Give us this day our daily bread.”

CHAPTER II

THE STORY OF DEERING

FIFTY years ago two young farmers named Marsh were cutting grain near DeKalb, Illinois. They were too intelligent — too American — to be fond of work for work's sake. And of all their drudgery, the everlasting stooping over bundles to bind them into sheaves galled them most. Such back-breaking toil, they thought, might be well enough for kangaroos, but it certainly was not suitable for an erect biped, like man.

“If I did n't have to walk from bundle to bundle, and hump myself like a horseshoe, I could do twice as much work,” said one of the brothers.

“Well,” said the other, “why can't we fix a platform on the reaper, and have the grain carried up to us?”

It was a brilliant idea and a new one. Neither of the young fellows had ever seen a reaper factory; but they were handy and

self-reliant. By the next autumn they were in the field with their new machine, and as they had expected, they bound the grain twice as quickly as they had the year before.

So was born the famous Marsh harvester, which proved to be the half-way mark in the evolution of the grain-reaping machine. It was the child of the reaper and the parent of the self-binder. It cut in two the cost of binding grain. But it did more than this — it gave the farmer his first chance to stand erect, and forced him to be quick, for the two men who stood on the harvester were compelled to bind the grain as fast as it was cut. Thus it introduced the factory system, one might say, into the harvest-field. For the first time the Big Minute made its appearance on the farm.

The Marsh boys, never dreaming that they had helped to change the destinies of nations, took out a flimsy patent on their invention, and went on with their farm work. Two summers later, as they were at work with it, their home-made harvester broke down. A farmer from Plano, near DeKalb, named Lewis Steward, was riding by. He stopped, and, being a man of unusual abili-

ties and discernment, he at once saw the value of the Marsh machine, even in its disabled state.

"Boys, you 're on the right track," he said. "If you can run your machine ten rods, it can be made to run ten miles. It is superior to anything now in use."

Thus cheered, the Marsh brothers went to Plano, arranged a partnership with a clever mechanic named John F. Hollister, and began to make harvesters for sale. To their surprise the new machine was not welcomed. It was received with an almost unanimous roar of disapproval. It was a "man-killer," said the farmers. Now, the Marsh brothers were quick, nervous men, and they had built a machine to suit themselves. But it was undeniably too fast and nerve-racking for most farmers. The labourers refused to work with it.

The Marshes overcame the obstacle in a very ingenious way. They put *girls* on their harvesters, instead of men. Not ordinary girls, to be sure, but vigorous German maidens, who were swift and skilful binders. Also, they had well-trained men, disguised as hoboës, who mingled in the crowd around



WILLIAM DEERING

the harvester at times of demonstration, and volunteered to get aboard of it. To see a girl or a "Weary Willie" binding grain on the new machine shamed the labourers into a surrender, and in 1864 two dozen of the Marsh harvesters were sold.

In this year one of the Marshes performed a feat that seemed more appropriate for a circus than for a grain-field. Riding alone on a harvester, he bound a whole acre of wheat in fifty-five minutes. Little was heard of this amazing achievement at the time, as the national mind was distraught over the death grapple of Grant and Lee in Virginia.

But there was one quick-eyed man in Chicago named Gammon who heard of the event, and acted upon it so promptly that the goddess of prosperity picked him out as one of her favourites. Several years before, Gammon had been a Methodist preacher in Maine. A weak throat had brought his sermons to an end, and he became a reaper salesman in Chicago. He was shrewd and honest, and in 1864 his profits were very nearly forty thousand dollars.

When he heard that W. W. Marsh had bound an acre of grain in fifty-five minutes,

on a new-fangled reaper, he caught the next train for DeKalb, and bought a licence to manufacture Marsh harvesters. He took in a partner — J. D. Easter — and the business inched ahead slowly, until in 1870 the sales rose to a thousand. Easter and Gammon were driving their small factory ahead at full speed. If they only could secure enough capital, they would surprise the world.

One evening, while Gammon was worrying over this lack, he heard a gentle knock at the door. He opened it to one of his old acquaintances from Maine.

“Mr. Gammon,” said the visitor, “I have about forty thousand dollars of spare money that I would like to invest in Chicago real estate, and I want your advice as to the best place to buy.”

“What!” said Gammon, springing to his feet in delight. “Have you money to invest? Give it to me and I’ll pay you ten per cent. or make you a partner in the best business in Illinois.”

The visitor, whose name was William Deering, knew nothing whatever about reapers nor wheat-fields. He had gained a



Photo by Baumgardner, Springfield, O.

WILLIAM N. WHITELEY



C. W. MARSH



Photo by Rice, Milwaukee

JOHN F. APPLEBY



E. H. GAMMON

fair-sized fortune in the wholesale dry-goods business. But he was a Methodist and had confidence in the ex-reverend E. H. Gammon; so he passed his \$40,000 across the table and the next day went home to Maine.

Two years later Deering came down to see how Gammon and the \$40,000 were faring. The books showed a profit of \$80,000. So Deering requested that he be made a partner. A year afterward Gammon fell sick and begged Deering to come to Illinois and manage the business. Deering consented to be manager for one year only; but Gammon's sickness continued.

"So," said William Deering, who told me this story, "in that way I got into the harvester business and had to stay in. But I did not even know, at that time, the appearance of our own machine."

Deering's competitors at first called him a greenhorn. But they forgot that he was the only one among them who had been trained in the art of business. He was already a veteran — a prize winner — in the game of finance. For thirty years, ever since he began to earn \$18 a month in his father's woolen mills, he had been a man of affairs. He had,

in fact, established the wholesale dry-goods house of Deering, Milliken & Co., which still stands as one of the largest of its kind. This training was all the more valuable an asset because of the conditions that prevailed when Deering entered the harvester trade. For he arrived in that worst of all years in the last century — 1873. The Jay Cooke panic was at its height. The proudest corporations were falling like grass before a mower. It was a year of dread and paralysis. But Deering faced these disadvantages with ability, with sheer, dogged persistence, and with business training. In seven years he had become one of the greatest of the harvester kings, and was leading them all up to a higher level.

We shall understand more clearly what this means if we consider the state of the trade at the time of his entrance. A man of peaceable and kindly inclinations, Deering was dragged into a business that was as turbulent as a bull-fight. For as the reaper had evolved, it had become a bone of contention, and it remained so from the first patent to the last. The opening battle was fought by McCormick and Hussey, each claiming to

have been the Christopher Columbus of the business. After the gold-rush of 1849 new types of reapers sprang up on all sides. The crude machines that merely cut the grain were driven out by others that automatically raked the cut grain into bundles. These were soon followed by a combined reaper and mower, which held the field until the Marsh harvester was invented, as we have seen, at the close of the Civil War.

Among these different types of reapers, and the numerous variations of each type, the bitterest rivalries prevailed. There was no pool, no "gentlemen's agreement," no "community of interest." Indeed, the "harvester business" was not business. It was a riotous game of "Farmer, farmer, who gets the farmer?" The excited players cared less for the profits than for the victories. As fast as they made money, they threw it back into the game. Mechanics became millionaires, and millionaires became mechanics. The whole trade was tense with risk and rivalry and excitement, as though it were a search for gold along the high plateaus of the Rand. And this in spite of the fact that, with the exception of McCormick,

Osborne, and Whiteley, the men who came to be known as reaper kings were not naturally fighters. No business men were ever gentler than Deering, Glessner, Warder, Adriance, and Huntley. But the making of reapers was a new trade. It was like a vast, unfenced prairie, where every settler owned as much ground as he could defend.

Each step ahead meant a struggle for patents. Whoever built a reaper had to defend himself in the courts as well as approve himself in the harvest-fields. Cyrus H. McCormick, especially, as William Deering soon learned, wielded the Big Stick against every man who dared to make reapers. He was the old veteran of the trade, and he gave battle to his competitors as though they were a horde of trespassers. He was their common enemy, and the reaper money that was squandered on lawsuits brought a golden era of prosperity to the lawyers.

Some of these patent wars shook the country with the crash of hostile forces. The tide of battle rolled up to the Supreme Court and even into the halls of Congress. Once, in 1855, when McCormick charged full tilt upon John H. Manny, who was making

reapers at Rockford, Illinois, a three-year struggle began that was the most noted legal duel of the day.

McCormick, to make sure of his victory, went into the fight with a battery of lawyers whom he thought invincible — William H. Seward, E. M. Dickerson, and Senator Reverdy Johnson. Manny made a giant effort at self-defence by hiring Abraham Lincoln, Edwin M. Stanton, Stephen A. Douglas, Peter H. Watson, George Harding, and Congressman H. Winter Davis.

From first to last it was a lawyers' battle, and McCormick was finally defeated by Stanton, who made an unanswerably eloquent speech. For this speech Stanton received \$10,000, and Lincoln, who had made no speech at all, was given \$1,000. Yet, in the long run, the man who profited by this lawsuit was Lincoln; for it was this money that enabled him to carry on his famous debate with Douglas, and thus made him the inevitable candidate of the Republican Party.

McCormick's most disastrous lawsuit was with D. M. Osborne and the Gordon brothers, of Rochester. In 1875 the Gordons had

invented an attachment for a wire self-binder, and in a careless moment McCormick had signed a contract promising to make these self-binders and to pay \$10 royalty on every machine. Then a man named Withington appeared with a much better self-binder. McCormick at once began to make the Withington machine and was sued by the Gordons.

At this time McCormick was over seventy years of age, and crippled with rheumatism; but he believed that the Gordons had deceived him and he fought them sternly as long as he lived. After his death, his eldest son, Cyrus, consented to a compromise, whereby Osborne, who was owner of a share in the Gordon concern, and the Gordons were to be paid \$225,000. But in order to impress upon them the enormity of this amount, he prepared the money for them in small bills. When they called at the McCormick office in Chicago, they were taken to a small room on the top floor and shown a great pyramid of green currency.

“There is your money,” said McCormick’s lawyer. “Kindly count it and see if it is not a quarter of a million dollars.”

The three men gasped with mingled ecstasy and consternation. "B — b — but," stammered one of them, "how can we take it away? Can't you give us a cheque?"

"That is the right amount, in legal money, gentlemen," replied the lawyer. "All I will say is that there are a couple of old valises in the closet — and I wish you good afternoon."

For several hours Osborne and the Gordons literally waded in affluence, counting the money and packing it in the valises. By the time they had finished, it was eight o'clock. The building was dark. The elevator was not running. They were hungry and terrified. Step by step they groped their trembling way downstairs, and staggered with their treasure through the perilous streets to the Grand Pacific Hotel. None of them ever forgot the terror of that night.

Another warlike Reaper King was "Bill" Whiteley, of Ohio. Whiteley had invented a combined mower and reaper in 1858, which he named the "Champion"; and he pushed this machine with an irresistible enthusiasm.

His mode of attack was not the patent suit, but the field test. This was the white-hot

climax of the rivalry among the reaper kings; and it was great sport for the farmers. It was a reaper circus — a fierce chariot-race in a wheat-field; and its influence upon the industry was remarkable. It weeded out the low-grade machines. It spurred on the manufacturers to a campaign of improvement. It developed American harvesters to the highest point of perfection. It swung the farmers into the new path of scientific agriculture. And it piled expenses so high that few of the reaper kings escaped disaster.

A field test was conducted in this fashion: A committee of judges was appointed, and several acres of ripe grain were selected as the battle-field. After the field was marked off into equal sections, each reaper took its place. There were sometimes two reapers and sometimes forty. The signal was given. "Crack" — the horses leaped; the drivers shouted; and hundreds of farmers surged up and down in excited crowds.

"All's fair in a field test," said the reaper agents who superintended these contests; though each man said it to himself. They were a hardy and reckless body of men, half



ASA S. BUSHNELL



BENJAMIN H. WARDER



HON. THOMAS MOTT OSBORNE



DAVID M. OSBORNE

cowboy, half mechanic, and no trick was too dangerous or too desperate for them. Often the feud was so bitter that bodyguards of big-fisted "bulldozers" were on the spot to protect the warrior of their tribe who was in danger. "I had four men with me once who together weighed 1,000 pounds," said A. E. Mayer, who is now the general of an army of 40,000 salesmen. In most tests the machines were shamefully abused. Self-binders were made to cut and bind stubble as though it were grain. Mowers were driven full tilt against stumps and hop-poles. Rival reapers were chained back to back and yanked apart by plunging horses. The warrior agents exposed the weak points in each other's machines. They photographed each other's breakdowns, and bragged to the limit of their vocabularies. They raised prices in one town and cut them in the next; for when their fighting blood was aroused — and that was often — they cared no more for profits than a small boy cares for his clothes.

To give only one instance out of hundreds, here is a picture of a field test that I found in the diary of B. B. Clarke, of Madison, who

is now the editor of the *American Thresherman*, but who was in the eighties a harvester fighter in Indiana.

“We drove fourteen miles to the wheat-field, which was also the battle-field,” he wrote, “and found a heavy crop of rank grain, wild pea vines, morning glories and other vegetation, which tested both machines to the limit. The bundles were twisted together by the vines into almost a continuous rope. After adjusting the machine, we had to ‘open the field.’ This is considered the most severe test, as the machine, the horses and all are in the grain.

“A—— drove the team, a magnificent pair of big grays. McK—— watched the binder, while Y—— and I created sympathy for our cause among the farmers who had come to see the fight. With a crack of his whip and a shout to his team, A—— opened the ball. The machine was so crowded with grain and weeds that the sickle could not be heard fifty feet away. He cleared the first round without a stop. Then the other machine followed, but the driver, failing to recognise the necessity of fast driving, allowed his machine to clog, and



A SELF-BINDER IN SCOTLAND, WITH THE WALLACE MONUMENT IN THE BACKGROUND



lost the day. We received two hundred dollars in gold on the spot for our victorious binder.

“On returning to Fort Wayne we found the E—— people, whose headquarters were separated by a partition wall from ours, had coaxed one of our customers to cancel his order, and substitute their machine. For this act, we retaliated and replaced three of their orders the following week, and while loading these into the farmers’ wagons a fight took place between the opposing factions. I looked as though I had encountered a flax-hackle. The next day hostilities opened early with three on our side to six of the E—— host, requiring a riot alarm and a wagon-load of police to restore order.

“We had swept the enemy before us, using neck-yokes, pitman rods and even six shooters in the grand finale. Our expense account for that week included fifty dollars for lawyers’ fees, which was promptly O. K’d by the manager. After all, I had only obeyed instructions, which were to get the business and hold up prices, ‘peaceably if you can, but forcibly if you must.’”

An interesting relic of these fierce days of cut-throat competition was given to me by Mr. John F. Steward. It reads as follows:—

TO AGENTS FOR THE SALE OF HARVESTING MACHINERY:

The undersigned, manufacturers of harvesting machinery, call the attention of their travelling experts and local agents to a practice which has grown among them for a few years past, and which has become so disreputable and is carried to such an extent that we feel it necessary to bring it to your special notice. *It is the habit of trying to break up sales made by other agents when you have not been successful in securing the sale.* It has become a very common practice, as soon as a sale is made by one agent, for the agents of all other machines to try to break up that sale, by misrepresentations or by lowering the price, or by trying to convince the purchaser that the machine which he has bargained for is not as good as the one which the other agent sells. This practice is disreputable, and should not be tolerated by any manufacturer. We wish it now thoroughly understood that we will not tolerate this practice in any agent, and we will be glad to have reports from you of the agents of any machines who have tried to break up your sales of our machines in this way. There is nothing that tends more to demoralise business than this practice, and we wish it stopped.

Machines should be sold upon their merits, and not by disparaging or running down other machines. You will find that your customers will place more reliance upon what you say if you leave all other machines alone, and show the good features of your own and demonstrate them in actual work. An agent never makes any progress by running down or trying to show the defects of others, and you will be better able to sustain your prices and the reputation of your machines by following the course indicated above. Therefore, it is our wish that you should hold to your prices firmly, present your machines in the very best possible light, and use all honourable means for making a fair and honest sale; but if you are unfortunate enough to lose your sale, and some competitor gains it, don't be persuaded to put yours in the field by the side of your competitor, or try in any way to break up the sale; and do not, until the purchaser has discarded another machine, offer to put one of ours in its place.

Of course we do not mean by this that you shall stand quietly by and see other agents break up your sales, or if others habitually do this that you shall not retaliate, but you must not be the first to inaugurate this practice. We are always ready to meet fair and honest competition.

We want our business conducted in a fair and honourable way, and not descend to ways that are discreditable to us and to you. No one agent can expect to sell all the machines that are wanted in his district, for the poorest machine will have some friends, and, though he may have the very best one, we do not expect he will make every one see it. Let the purchaser take the risk. If he buys an inferior machine he should take the consequences, as if he was deceived or mistaken in his judgment in buying a horse. In such a case you would not think of putting your horse in work the purchaser was doing, to show him yours was the best, with the expectation that he would return the one he had bought because it did not prove quite equal to yours in drawing a load or in driving. If you would not in the case of a horse, why should you, in the case of a mower, reaper, or self-binding harvester? Our advice to you is:

- 1st. Hold firmly to your prices.
- 2d. Sell your own machine. Convince your purchaser that you have the best machine made.
- 3d. Settle for the machine at time of delivery. A machine works much better after being settled for.
- 4th. If you lose the sale do not try to break up the sale of your competitor. It won't pay.

Minneapolis Harvester Works
By A. Morrison

Mary Sawyer Miller
By W. J. Stewart

St Paul Harvester Works

Harvey Gairing

Greenleaf Harvester Machine Co. Limited
A. H. Greenleaf, Secy.

Chilman Miller Co.
East Corner Park

See Eddy & Son

J. S. Gairing

Phillips & Co.

W. Brown & Co. Mach. Co.
By C. A. W. Brown

W. L. Tutman & Co.
H. C. Beagle, Secy.

Emerson Safety Co.

THE PLANO MFG. CO.
By W. J. Stewart

Pratt & Kuhns

McWilliams & Barnster, Co.

Harvey Machine Co.

March & Underhill Co.
By C. A. March

Fairbank Works
By J. A. Fairbank

Champion Reapers
By J. A. White

The Deering Harvester Co.
By W. J. Stewart

Wheat & Wood Harving & Reaping Co.

Marden & Bushnell & Gleason

W. L. Tutman Co.
By W. L. Tutman

The king of the field test was William N. Whiteley. No other reaper king, in any country, received as much renown from his personal exploits. He was the Charlemagne of the harvest-field. He was as tall as a sapling and as strong as a tree. As a professor in the great field school of agriculture, he has never been surpassed. He could out-talk, outwork, and generally outwit the men who were sent against him. He was a whole exhibition in himself. "I've seen Bill Whiteley racin' his horses through the grain and leanin' over with his long arms to pick the mice's nests from just in front of the knife," said an old Ohio settler.

The feat that first made Whiteley famous was performed at Jamestown, Ohio, in 1867. His competitor was doing as good work as he was; whereupon he sprang from his seat, unhitched one horse, and finished his course with a single, surprised steed pulling the heavy machine. His competitor followed suit, and succeeded fully as well. This enraged Whiteley, who at that time was as powerful as a young Hercules.

"I can pull my reaper myself," he shouted, turning his second horse loose, and yoking

his big shoulders into its harness. Such a thing had never been done before, and has never been done since; but it is true that, in the passion of the moment, Whiteley was filled with such strength that he ran the reaper from one side of the field to the other, cutting a full swath — a deed that, had he done it in ancient Greece, would have placed him among the immortals. It was witnessed by five hundred farmers, and fully reported in the press. One of the reporters, as it happened, representing the *Cincinnati Commercial*, was a young Ohioan named White-law Reid, now the American Ambassador to the Court of St. James.

That ten minutes in a horse collar made \$2,000,000 for Whiteley. His antagonist, Benjamin H. Warder, was filled with admiration for Whiteley's prowess, and at once proposed that they should quit fighting and work in harmony.

"Give me the right to make your reaper and I'll pay you \$5 apiece for all I can sell," said Warder. "It's a bargain," responded Whiteley. And so there arose the first consolidation in the harvester business.

Whiteley and Warder did not merge their

companies; but they divided the United States into three parts — one for Whiteley, one for his brother Amos, who also made reapers in Springfield, and one for Warder. They united in building a malleable iron foundry and a knife works, so that they could use better materials at a lower cost. They made the first handsome and shapely machines.

For twelve years this triple alliance led the way, and all others, even the mighty McCormick and the sagacious Deering, had to follow. The "Champion" reaper became the leading machine of the United States, and the little town of Springfield, Ohio, was known as the "Reaper City." As many as 160,000 reapers and mowers were sent out as a year's work. In all, 2,000,000 of Whiteley's "Champion" machines have been made in Springfield, and have sold at a gain of \$18,000,000.

As the millions came pouring in so fast, Whiteley's head was turned and he began to run amuck. He cut loose from Warder and from his own partners, Fassler and Kelly, opened war on the Knights of Labour, built the biggest reaper factory in the world,

became a railroad president, helped to corner the Chicago wheat market, backed the "Strasburg Clock" — an absurd self-binder that was as big as a pipe-organ — and came crashing down in a failure that jarred the farming world from end to end.

Whiteley lost millions in this crash — and with comparative indifference. It was never the profits that he fought for. At heart he was a sportsman rather than a money-maker. He craved the excitement of the race itself more than the prizes. To win — that was the ambition of his life. And he did not shrink from spectacular methods to accomplish his ambition.

For instance, nothing less would satisfy him, when he exhibited at the Philadelphia Centennial, than a quarter-sized reaper, made daintily of rosewood and gold. This brought him so sudden a rush of orders from the East that in one day of the following year he sent seventy loaded cars to Baltimore. With flags flying and brass bands playing, these cars rolled off, with orders to travel only by daylight. When they arrived in Harrisburg, running in three sections, they caught the eye of a railroad superintendent named

McCrea — who is now, by the way, president of the Pennsylvania Railroad. McCrea saw a chance to advertise his railway as well as Whiteley's reapers, so he linked the seventy cars together into one three-quarter-mile train, put his biggest engine at the front, and sent the gaudy caravan on its way.

Whiteley never knew how to be commonplace, even in the smallest matters. Wherever he went, his trail was marked by stories of his exploits and his oddities. How he organised the famous "White Plug Hat Brigade" in the Blaine campaign — how he made a twelve-hour speech to help "Mother" Stewart close up the saloons of Springfield — how he found a Springfield farmer using a McCormick reaper, gave him a Whiteley reaper in its place, and flung the rival machine upon the junk-pile, as a sign that he was the monarch of Ohio — how he gathered up a peck of pies after a field test dinner, put them in a sack, and ate nothing but pies for half a week — such is the sort of anecdotes that his life has added to the folklore of the Western farmers.

Many a time his vaudeville tactics disgusted and enraged his fellow manufacturers;

but he was too big a factor to be ignored. Once, when a number of reaper kings had met together to see if they could rescue their business from its riot of rivalry, the chairman opened the discussion with the question — “What ought we to do to improve the conditions of our trade?” For a moment there was silence, and then John P. Adriance — as mild-natured a man as ever lived — said blandly, “Kill Whiteley.”

With daring originality Whiteley combined a tremendous physical vitality and a brain that fairly effervesced with inventiveness. He probably holds the record among the reaper-men for inventions, with 125 patents in his name. And he would work twenty-four hours at a stretch, without a yawn. One evening he asked a young machinist to remain in the factory and help him fix a refractory reaper. After working till midnight Whiteley said: “Well, Jim, I suppose you think you are tired. Go home and have a good night’s sleep, and come back here in three hours.”

He dashed with fanatical energy into any undertaking that appealed to his imagination. Once, when he had too much money, he

bought control of a new railway that ran through Ohio from Springfield to Jackson, — 160 miles. He wanted to know its real value, so, instead of asking the directors a few questions, as other men would have done, Whiteley travelled over the entire length of the railroad, *on foot*.

When I saw Whiteley, last June, he was time-worn and whitened. Since the great failure, he has been in the harvester business only intermittently. He has long outlived his Golden Age, but he is as busy as ever, with a new scheme and a new factory. And he still wears the Scotch cap and long boots that have been familiar at field tests for more than half a century.

Of the other Springfield men, Warder was unquestionably the ablest. "He was the main wheel," said Whiteley. As a young man of twenty-seven he was running a sawmill in Springfield when he first heard of the reaper. He was so impressed with its possibilities that he offered the inventor \$30,000 for a share in it.

"Young Warder is crazy," said Springfield people, for at that time \$30,000 was a fortune and a reaper was a fad. But thirty-

five years later, when Warder had removed to Washington and become noted among its social entertainers, his investment had multiplied itself very nearly two hundredfold.

Warder had associated with him two partners, Asa S. Bushnell and J. J. Glessner. Bushnell began earning his living in boyhood as a clerk at \$5 a month, and stumbled into a business career as a druggist. Then he became Warder's understudy, and piled up twice as many millions as he could count on his fingers. 'As a climax he rose higher in public life than any other reaper king, by serving twice as the Governor of Ohio. As for J. J. Glessner, he is still active, and one of the dozen solid pillars upon which the International Harvester Company is built.

Such were the strong men whom William Deering faced when he came, without a shred of experience, into the harvester world. He had no ancient patent-rights, like McCormick. He could not outrace thirty competitors in a wheat-field, like Whiteley and Jones and Adriance and Osborne. One way was left open to him.

"I'll beat them," he said, "by making a better machine."

He set out upon such a search for improvements that, during the rest of his life, inventors fluttered around him like moths around a candle. Until 1879, the best harvester was a self-binder that tied the sheaves with wire. It was the invention of Sylvanus D. Locke, and had been developed to its highest point of perfection by a farm-bred inventor named C. B. Withington, who is still living in Wisconsin. The Withington machine was pushed by McCormick with great energy, and fifty thousand were sold between 1877 and 1885. It was a marvelously simple mechanism, consisting mainly of two steel fingers that moved back and forth, and twisted a wire band around each sheaf of grain. As a machine it was a complete success; but the farmers disliked it.

“The wire will mix with the straw,” they said, “and our horses and cattle will be killed.”

So, when Deering met John F. Appleby, a stocky mechanic who claimed to have invented a twine self-binder, he at once set him to work upon fifty of the new machines.

When Deering saw his first Appleby binder at work in a field of wheat, he was

enthralled. Here, at last, was the perfect harvester. Its strong steel arms could flash a cord around a bundle of grain, tie a knot, cut the cord, and fling off the sheaf, too quickly for the eye to follow. It seemed magical.

“What am I to do?” asked the farmer who bought the first of these machines, as he climbed upon the seat and prepared to cut his grain.

“Do!” exclaimed John Webster, the Deering mechanic. “Do nothing! DRIVE THE HORSES.”

The amazed farmer started the horses, drove around the field, and came back swinging his hat and shouting like a lunatic — as well he might. For in the trail of his harvester the sheaves lay bound, as though there were some kindly genie hidden among its wheels.

Deering owned, at that time, not much more than a million dollars — the gleanings of thirty-five industrious years. But he resolved to stake it all upon this amazing machine. If he lost — he would be a poor man at fifty-three. If he won — he would be the harvester king of the world.

"I'll move the factory to Chicago and make 3,000 of these Appleby twine-binders at once," he said.

His partner, E. H. Gammon, held back, so the inflexible Deering bought him out, and from that day he, like his greatest competitor, McCormick, ran a one-man business.

"Did you hear the news about Deering?" gossiped his fellow manufacturers. "Clean crazy on a twine-binder!"

And, far more discouraging, the magical self-binder itself suddenly became ill-humored and refused to form its sheaves properly. It was no easy exploit, as any one may see, to make the first 3,000 of such complex machines. No other artificial mechanism must so combine strength and delicacy. No piano nor Hoe press, for instance, is expected to operate while it is being jerked over a rough field or along the steep slant of a hill.

One day in the early spring of 1880, Deering and his chief lieutenants — Steward and Dixon — were in a field of rye near Alton, trying to coax the new harvester to do its work. All day long it was obstinate and perverse, and the men were at their wits' end.

"Well, boys," said Deering, "if we can't do better than this, I'll lose \$1,000,000."

"Try one more day," said Steward. They went to their hotel, and as it happened to be crowded, the three were placed in a large double room.

"Steward and Dixon were mad at me the next morning," said Deering, when he told me of that critical occasion. "They had nothing at stake, yet they had lain awake all night; while I was apparently about to lose my only million, and had slept like a log."

That day a slight change was made, and the harvester became good-natured and obedient. The whole 3,000 machines were sold, and created as much excitement as 3,000 miracles. They swept away competitors like chaff. Of a hundred manufacturers seventy-eight were winnowed out. Instead of losing his fortune, Deering cleared at once about four hundred thousand dollars, for profits were large in those experimental days. Better still, he became an acknowledged leader of his class. He had taken the right line of development, as McCormick had in 1831, and all others who could,

choked down their rage and followed — quick march!

The man who had found the right path was John F. Appleby. He was the scout — the Kit Carson of the harvester business. It was he — the inspired farm labourer of Wisconsin — who had hurled another great impossibility out of the way of the world's farmers.

He did not of course originate the whole self-binder. But he put the parts together in the right way and pushed ahead to success through a wilderness of failure. There was a notable group of inventors in Rockford who did much to put him on the right track. One of these, Marquis L. Gorham, was the originator of the self-sizing device that regulates the size of the bound sheaf. Another, named Jacob Behel, invented a knotter, whittling it out of a branch of a cherry tree.

Appleby has been, and is yet, a knight-errant of industry. He takes his pay in adventure. He dislikes to travel with the crowd. When I saw him first, in his Chicago workshop, his thoughts were far from twine-binders. He was engaged on the task of perfecting a cotton-picker, which he hopes will do as much for the South as his self-

binder did for the West. And it was with some difficulty that I could persuade him to disentangle the story of the twine-binder from the various other romances of his life.

In 1855 Appleby was a rugged youngster doing chores on a farm for one dollar a week. Even this rate of pay was too high to the mind of the farmer who employed him; for he was always whittling and making toy machinery, instead of minding his work.

One day, when Appleby was seventeen, he was binding grain after a reaper. "How do you like the work, Jack?" asked the farmer.

"I don't like it," said Jack, "and what's more, I believe I can invent a machine to tie these bundles."

"Ho! ho!" laughed the farmer. "You little fool, you can't invent anything."

Twenty-five years later, when Appleby had made half a million by his invention, and was manager of a factory at Minneapolis, he noticed an old man pushing a wheelbarrow in the factory yard.

"Have n't I seen you before?" he asked.

"Yes, sir," replied the old man. "I was the farmer who gave you your first job."

“Well,” said Appleby, “you see I was n’t a little fool after all.”

Appleby actually had set to work to invent a knotting-machine when he was a farm-boy of seventeen, and had made his first model at that age — in 1858. A young school-teacher named Chester W. Houghton was the first man who put money back of the boy’s invention. He stood behind it to the extent of fifty dollars, and then became alarmed at such a reckless speculation, and quit. Had he been just a little more adventurous, and a little more patient, every dollar of his investment would have fruited into a thousand.

When the school-teacher deserted him, and wanted the fifty dollars back, Appleby was discouraged. The models that had been made at a gun shop in Palmyra, Wisconsin, drifted about. They were sold at auction on one occasion for seventeen cents; and the buyer thought they were not worth even that, for he made a present of them to Appleby. Then came the crash of the Civil War. Appleby enlisted, and for four years forgot knotters and thought only of guns.

Yet while he lay in the trenches at Vicks-

burg, he whittled out a new device for rifles. After the war, a capitalist saw this device, gave him \$500 for it, and then, before Appleby's eyes, sold a half interest in it for \$7,000. This awakened Appleby to the value of inventions and made him an inventor for life.

Once more he set to work on his long-neglected grain-binder, and in 1867 he drove his first completed machine into a field near Mazomanie, Wisconsin. The horses were fractious, and after being jerked along for several rods, the machine broke down, to the great delight of the spectators, most of whom knew Appleby and regarded him as a crank. But the machine had bound a couple of sheaves before it broke. Appleby displayed these, and one man — Dr. E. D. Bishop — pulled a roll of money from his pocket and handed it to the inventor.

“Take this,” he said, “and make me a partner. Your invention will be a world's wonder some day.”

All told, Dr. Bishop staked \$1,500 on Appleby's genius, for which, twelve years later, he drew out \$80,000. This was the first of the many incidental fortunes scattered

right and left in the path of the self-binder, which began in 1880, to sweep forward as gloriously as the triumphal car of a Roman emperor.

As for William Deering — the modest manufacturer from Maine, who in 1879 joined forces with Appleby, no sooner had he sold the 3,000 self-binders than he found himself floundering neck deep in an unexpected sea of troubles. There was not a flaw in the binders. They were cutting and tying the grain with the skill of 60,000 men. But the twine-bill! Three thousand farmers swore that it was too high.

Twine was an item that they had never in their lives bought in large quantities. To pay fifty dollars — the price of a horse — for mere string that was used once and then flung away, seemed outrageous. It was like buying daily papers by the thousand, or shoe-laces by the ton. And so it came about that though Deering had reduced the cost of wheat ten per cent., he got little thanks for his superb machines — nothing but a loud and angry roar for better and cheaper twine.

Deering moved against this new array of

difficulties with quiet and inexorable persistence. There were only three binder-twine makers in the United States, and all warned him that he was pursuing a will-o'-the-wisp. But Deering pushed on until he met Edwin H. Fitler, afterward a mayor of Philadelphia. From the unassuming way in which Deering stated his needs, Fitler concluded that the order would be a small one.

"What you want," he said, "is a single strand twine, which cannot be made without a new line of machinery. I regret to say that I cannot afford to do this for one customer."

"Well," said Deering, "I think I may need a good deal in the long run, though I wish to begin with not more than ten car-loads."

Ten car-loads! For a moment Fitler was dazed, but only for a moment. It was his chance and he knew it. Years afterward, he was fond of telling how he "made a million-dollar deal with William Deering in two minutes."

Thus, whatever Deering touched, he improved. He became the servant of the harvester. He lavished fortunes upon it as sporting millionaires spent fortunes on their horses. It was his one extravagance. In

his later endeavours to make the twine cheaper, he spent \$15,000 on grass twine, \$35,000 on paper, \$43,000 on straw, and failed. Then he spent \$165,000 on flax and succeeded. He was for thirty years a sort of paymaster to a small mob of inventors who had new ideas or who thought they had. There was one very able inventor — John Stone — who actually drew his salary and expenses every week for twenty years, until he had perfected a corn-picking machine. From first to last, Deering spent “perhaps more than two millions of dollars” on improvements, according to one of his closest friends.

The fact is that the Appleby binder had transformed Deering from a man in business simply to make money, into an enthusiast. While he remained as careful of the business as ever, he began to enjoy the work itself more than the profit. He would still fuss if he saw half a dozen nails in the sweepings, or any other waste of pennies. But he poured the golden flood of profits back into his factory with a recklessness that amazed his friends. He pampered his beloved machines with roller bearings and bodies of steel. He



CYRUS HALL MCCORMICK, JR.



Photo by Mattene, Chicago

CHARLES DEERING

sent them to Europe and showed them to kings. Then, as his enthusiasm grew, he looked ahead to the time when even the farm-horse shall be set free from drudgery; and he began to build automobile mowers and gasolene engines. In fact, he ripened, as he worked, into a seer who saw far past the gain or loss of the present into the splendour of the future.

Sagacity — that is, perhaps, the one word that best explains William Deering's success. He had an almost supernatural instinct, so his competitors believed, which kept him in the right line of progress. There seemed to be a business compass in his brain.

He was never a master of men, like McCormick, nor a good mixer among men, like Whiteley; but as an organiser of men he was easily superior to them both. He knew how to pit his managers one against another, as Carnegie did; and how to develop a factory into a swift and automatic machine. He was a statesman of commercialism. He piled up a big fortune, and earned it.

It was his misfortune not to have been schooled on a farm, as were most of the great reaper kings. McCormick, Whiteley,

Lewis Miller, Morgan, Johnson, Osborne, Sieberling, Jones, Esterley, and the Marshes were all farm-bred. But Deering was shrewd enough to gather around him a corps of men who had the experience that he lacked. At the head of this bodyguard stood a farmer's son — John F. Steward. Such were the versatility and the loyalty of Steward that he became Deering's Grand Vizier. He was inventive, combative, literary, mechanical, litigious. It is now forty-two years since Steward began to build harvesters; and he has ten dozen patents to his credit.

So, what with the mature business experience of Deering himself, and the skill and faithfulness of his captains, the little factory that he had begun to manage in 1872 expanded in thirty years into one of the two greatest harvester plants in the world, rolling out in every workday minute two complete machines and thirty miles of twine.

Largely because of his enterprise the spectres of Famine are now beaten back in fifty countries, yet there is not a word of self-praise in his conversation.

"A man told me once that I was nothing more than a promoter," he said; "and

perhaps he was right. I was n't an inventor, that 's true. All I did was to get the right men and tell them what I wanted them to do; so I suppose I was just a promoter."

The few anecdotes that are told of him relate chiefly to his overmodesty. Once, when he was travelling through Kansas with John Webster, one of his trusty men, a big Westerner loomed up in front of him and said:

"Are you the Deering that makes the self-binders?"

"Yes," replied Deering, blushing as red as one of his own mowers.

"Well," said the Westerner, shaking him by the hand, "I want to say that you 're a mighty smart man."

Deering looked thoroughly uncomfortable, and when the stranger had gone, he leaned over to Webster and said:

"Think of him saying that I made the binders when I pay you fellows for making them. I never felt so foolish in my life."

He is now eighty-one — older than our oldest railroad. In his lifetime he has seen his country grow seven times in population and twenty-four times in wealth.

He and his fellows have undeniably doubled the food supply of the world. More — they said, “Presto, change!” and the drudges of the harvest-fields stood up and became men. They have made life easier and nobler for untold myriads of people, and have led the way to the brightest era of peace and plenty that the hunger-bitten human race has ever known.

Yet less than thirty of the reaper kings became millionaires. Not one can stand beside the great financiers of steel and real estate and railroads. And not one, in his whole lifetime, piled up as much profit as a Carnegie or a Rockefeller has made in a single year.

The get-rich-quick brigands of Wall Street meddled with the harvester business once — and never again. That was twenty-one years ago, when the famous “Binder-Twine Trust” set out with the black flag flying. It was a skyrocket enterprise. James R. Keene bulled the stock up to 136. This was the first and only “easy money” that was ever made in the harvester world. Then the farmers and the reaper kings rose up together and smote the Trust in twenty

legislatures. Its stock became waste paper; and in the financial hurricane of 1893, it was the first victim.

No other business shows so tragic a death roll. For fifty years its trail was marked by wreckage and disaster. Most of the few who succeeded at first, failed later. Out of every ten who plunged into the scrimmage, nine crawled out whipped or terrified.

And so the Romance of the Reaper was for fifty years a tragedy of competition. *Out of more than two hundred harvester companies, only fourteen survived in 1902; and these realised that if such waste and warfare continued, their business would be destroyed.*

CHAPTER III

THE INTERNATIONAL HARVESTER COMPANY

FOR fifty years the Harvester Kings fought one another in the open field of competition. Their armies of agents, drilled in the arts of rivalry, waged a war in which quarter was neither given nor sought. It was a fight almost of extermination. Out of two hundred companies that went to battle with flags waving and drums beating, less than a dozen came home.

David M. Osborne backed a new self-binder, lost a million, and died of heart-break. J. S. Morgan, who had a small factory at Brockport, saw the immense McCormick and Deering plants and quit. Even the great Whiteley fell, and Lewis Miller, the father-in-law of Edison and the founder of Chautauqua, went down "like a great tree upon the hills."

Walter A. Wood, after forty years of success, took Governor Merriam and James J.

Hill as partners, and set out to win the West for the Wood Company. Their factory was the pride of St. Paul. Their credit was the best, and their fame was over all the prairies. Yet after five years of battling they surrendered; and not one harvester is made to-day west of Illinois.

It is a common opinion among harvester men that from first to last there has been more money put into the business than has ever been taken out — so enormously wasteful were these years of competition. By 1902 the harvester business was merely a terrific and destructive war. The agents were tearing the whole industry to shreds and tatters. So far as the Harvester Men could see, they must choose between combination and ruin.

Not one of them was personally in favour of combination. They were individualists through and through. The spirit of competition had been bred in the bone. So, when several of them came together to check this warfare, it was not of their own free will. It was because they could do nothing else. They were hurled together by social forces over which they had no control.

One by one these battle-worn Westerners came to New York, "on an exploring expedition," as one of them said. Here they met Judge Elbert H. Gary, whom they had known intimately in Chicago. Gary had been William Deering's attorney for twenty-five years. He was a farmer's son, and had risen to be the official head of the Steel Trust; so that he was the one man who had an expert knowledge at once of farms, harvesters, and mergers. And naturally, when the Chicagoans ran to Gary with their tales of woe, he brought them across Broadway into the office of J. P. Morgan, which had become in 1902 a sort of Tribunal of Industrial Peace.

There were four of them — Cyrus H. McCormick, Charles Deering, J. J. Glessner, and W. H. Jones — and all of them added to the strong preference for competition a definite opposition to trusts, monopolies, and stock speculation. They were not the Wall Street type of millionaire. In that time of booming optimism, they might have made more money in one year by selling stock than they had made in thirty years by selling harvesters. But no one of them had



Photo by Matzene, Chicago, 1905

HAROLD McCORMICK



J. J. GLESSNER



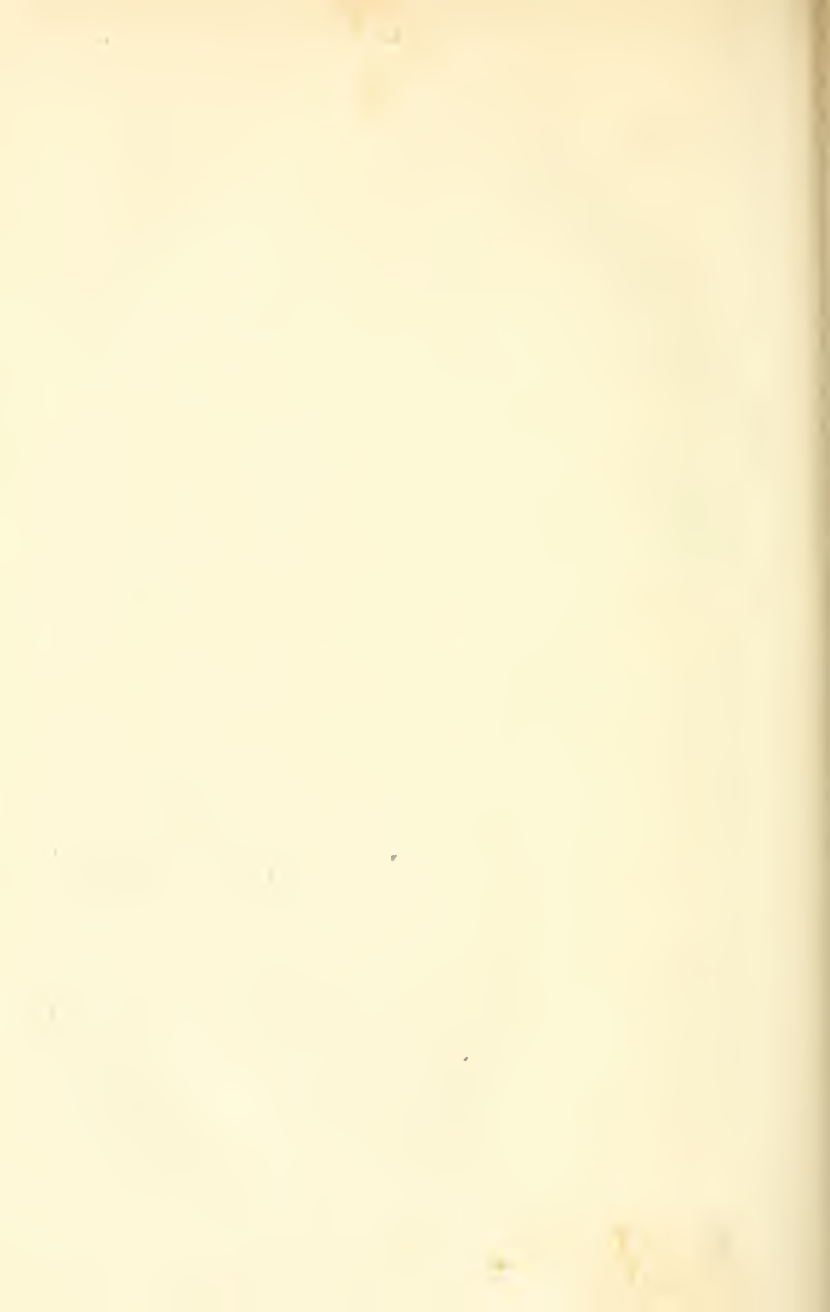
Photo by Smith, Evanston, Ill.

W. H. JONES



Photo by Dyer, Chicago

JAMES DEERING



tried it. The fact is that they cared more for the good-will of the farmers and the prestige of their machines than they did for larger profits. The thing that troubled them most in the proposed consolidation of properties, one of the Morgan partners told me, was the fear that prices would in any case have to be raised, because of the increasing cost of labour and raw materials.

No wonder that the financiers who undertook to organise them were driven almost to distraction by their obstinate independence. They had as many contradictory opinions as a Russian Duma; and it was soon clear that the only possible way to proceed was to keep them apart until all possible preliminaries were arranged.

So the four Harvester Men went back home until the details of the new combination should be worked out. Then they were summoned again to New York. As was their custom, they went to different hotels, and each man was handled separately until he was in an organisable frame of mind. This master-stroke of diplomacy was accomplished by George W. Perkins — Morgan's most versatile partner; and it gave

Perkins a day and a night that he will never forget. From morning until midnight — from midnight until the first ray of dawn slanted down Broadway, Perkins dashed from hotel to hotel like a human shuttle. Deering conceded one point if McCormick would concede another. Glessner yielded one of his claims, and Jones withdrew something else. Inch by inch these stubborn men were pushed within tying distance of each other; and the fifty-year harvester war was about to come to an end.

The next day Perkins renewed the struggle, but he was too tired to continue the cab driving between hotels. He telephoned the four Harvester Men to meet him at Morgan's office. As each man climbed up the rusty iron steps of the Morgan Building he was switched by the big Irish doorkeeper into one of those large inner rooms at the rear, on the ground floor, where many a broken business has been mended. Four men in four rooms, with Perkins flying in and out — such was the way that the great harvester company was finished. It was a unique situation, as much like an incident in comic opera as an affair of business. But the

Morgan experts knew that if the four men were allowed to meet, the old hurtful rivalries would break out afresh and the project might snap off like a broken dream.

To strengthen the new company with a big surplus of ready money, a one-sixth interest was sold for twenty millions to Morgan and several other New York financiers of the "old reliable" sort. Also, a fifth harvester company, in Milwaukee, was bought from Stephen Bull for about five millions. And when the last rivet had been clinched and the last nail driven home, the four Westerners suddenly found themselves sitting around the same table, in the new International Harvester Company, of Chicago.

There were several harvester companies that remained independent, but probably not from choice. I do not know of one that has not, at some stage of its career, tried to get into a trust. Fifteen companies were merged by Colonel Conger in 1892, but they were poorly fastened together and soon fell apart. It is also a fact, though one not before made public, that the Mutual Life Insurance Company tried to form a second Harvester

Combine in 1903, with four large manufacturing companies in the merger, and under the presidency of E. D. Metcalf, of Auburn, New York. When this project failed, three independent companies — two in New York and one in Canada, offered themselves for sale to the Harvester Company. It bought one — the Osborne — for six millions, and refused the others.

“We are big enough now,” said Cyrus H. McCormick. “It is not safe for one company to have a monopoly. What we want to do is to regulate competition, not to destroy it.”

Besides the big Osborne Company, which is now the third largest in the combine, the Harvester Company has bought five smaller concerns, and built two new plants — one in Canada and one in Sweden. It is like the original United States — a union of thirteen industrial colonies. Its output has risen to 700,000 harvesting machines a year, including all varieties; and its annual revenue is more than seventy-three million dollars.

With its 25,000 employees and 42,000 agents, this one company is supporting as many families as there are in Utah or Mon-

tana. A square mile of land would be too small to contain its factories. At its hundred warehouses there is trackage for 12,000 cars. Around its workshops are six busy railways of its own, whose engines last year pulled out 65,000 freight-cars, jammed full of machinery for the farmers of the world.

Its properties are so widespread that no member of the company has seen them all. To run around their circle would be a trip of 15,000 miles. It owns 20,000 acres of coal lands in Kentucky, 100,000 acres of trees in Arkansas, Mississippi, and Missouri, and 40,000,000 tons of ore in the Wisconsin and Mesaba Ranges. It has staked its money — \$120,000,000 — upon the belief that for fifty years longer, at least, the scientists will find no substitute for bread.

The fact that Elbert H. Gary, the official head of the Steel Trust, is one of its directors, has not prevented this self-sufficient company from owning a complete steel plant, where 2,000 Hungarians make iron from ore, and steel from iron. It saws its trees into lumber in Missouri, and roasts its coal into coke in Kentucky. Its domains are so extensive, in fact, that if they were contiguous, they would

make a Harvester City as spacious as Greater Chicago.

But the most surprising feature of this unique corporation, to one who sees it for the first time, is the distracting variety of things that pour out of its factories. Its business is by no means to make harvesters and nothing else. Its true character seems to be that of a manufacturing department store for farmers. As a matter of actual count, I found in its factories and warehouses thirty-seven different species of machines, besides all manner of variations of each sort.

Here you will see, not only a mower to cut the grass, but a tedder (a kind of steel mule, with an incurably bad temper) to kick and scatter the new-mown hay, so that it will dry in the sun; a rake to gather it together; a loader to swing it on the wagon; and a baler to compress it into bundles.

Here are the self-binders, not or the grain only, but for corn and rice as well. For the especial benefit of King Corn, whose tribute to this Republic has lately swollen to twelve hundred millions a year, the company is making machines that pluck the corn from

the stalk with iron hands, and others that wrench off the husks, shell the corn, and grind it into several varieties of breakfast food for the four-footed boarders of the farm.

Here is a new machine, much less elegant than useful, for flinging manure over a field. Barefooted women did this work in the old brutal days of hand labour. But now, thanks to the brain of a canny Canadian farmer, Joseph S. Kemp, one worker can feed the hungry fields without so much as soiling the tips of the fingers.

The farmer's wife — and there are 10,000,000 of her in the United States, has been the last one to be considered, in this outpouring of machinery. But I found at Milwaukee a rebuilt factory belonging to the International, where 2,500 men are making fifty cream separators and 100 gasoline engines a day, both designed to make life easier for Mrs. Farmer, as well as for her husband. Also, it will please her to know that she may soon be honking her way to town in an automobile buggy, which the big corporation is making for farmers in a new factory in Akron.

A harvester company must follow the whims of its customers, almost as much as though it had newspapers for sale. It must give 10,000,000 farmers what they want. At the Plano factory I saw 470 different varieties of wheels; and sixty-one kinds of wooden tongues at McCormick's.

"Nothing could be simpler than a tongue," said Maurice Kane, the chief mechanical expert of the International. "It is a mere pole. If we suited ourselves, we should only make two kinds — one for horses and one for oxen. But the farmers of the world have sixty-one different ideas as to how a tongue ought to be made, and we must give them what they ask for."

The last Minnesota Legislature, in the simplicity of its heart, proposed to establish a complete harvester plant for \$200,000. It may surprise the members of that Legislature to know that the International has lately spent twice as much merely to improve one twine factory in St. Paul, and four times as much to build one warehouse in Chicago. Though it began its career with sixty million dollars' worth of equipment, it has been forced by the pressure of

its trade to spend sixteen millions more on its factories. And for lack of a weather prophet, it is obliged to carry over from five to six million dollars worth of machines each year, which remain unsold in different countries.

By its very nature, this industry cannot be carried on in a small way. It is as essentially mutual and coöperative as life insurance or banking. If a malicious "green bug" devours the wheat in Kansas, the loss must be made up by larger sales somewhere else. This, no doubt, is the main reason why every plant that was ever built to supply a local trade has failed.

No other manufacturing business carries so many risks or includes so many factors. It is the most comprehensive industry in the world. It is the link between the city and the farm. It is both wholesale and retail, ready-made and made to order, local and international. It must make what the farmer demands, and yet teach him better methods. It is at once a factory, a bank and a university.

Thus, of necessity, the Harvester Company represents in the highest degree the new

American way of manufacturing: everything on a large scale, elaborate machinery, unskilled workmen, and a vast surplus to drive it past failures and misfortunes. From its ore mines in the Mesaba Range, where I saw a steam-shovel heap a fifty ton railroad car in ten swings, to the lumber yard of the McCormick Works, where 26,000,000 feet of hardwood are seasoning in the sooty rays of the Chicago sun, it was a panorama of big production.

“How many castings did your men make last year?” I asked of the hustling Irish-American who rules over one of the McCormick foundries.

“Very nearly 44,000,000, sir,” he replied. “And the gray iron foundry over there uses three times as much iron as we do, and it made more than 12,000,000.”

Fifty-six million castings! Merely to count these would take the whole Minnesota Legislature sixteen days, even though every member worked eight hours a day and counted sixty castings a minute. Far, far behind are the simple, old-fashioned days, when a reaping tool was made of two pieces — the handle and the blade. There are

now 300 parts in a horse-rake, 600 in a mower, 3,800 in a binder.

When McCormick built his first hundred reapers in 1845, he paid four and a half cents for bolts. That was in the mythical age of hand labour. To-day fifty bolts are made for a cent. So with guard-fingers. McCormick paid twenty-four cents each when James K. Polk was in the White House. Now there is a ferocious machine, which, with the least possible assistance from one man, cuts out 1,300 guard-fingers in ten hours, at a labour-cost of six for a cent.

Also, while exploring one of the Chicago factories, I came upon a herd of cud-chewing machines that were crunching out chain-links at the rate of 56,000,000 a year. Nearby were four smaller and more irritable automata, which were biting off pieces of wire and chewing them into linchpins at a speed of 400,000 bites a day.

"Take out your watch and time this man," said Superintendent Brooks of the McCormick plant. "See how long he is in boring five holes in that great casting."

"Exactly six minutes," I answered.

"Well, that's progress," observed Brooks.

“Before we bought that machine, it was a matter of four hours to bore those holes.”

In the immense carpenter shop he pointed to another machine. “There is one of the reasons,” he said, “why the small factories have been wiped out. That machine cost us \$2,500. Its work is to shape poles, and it saves us a penny a pole; that is profitable to us because we use 300,000 poles a year.”

In one of its five twine mills — a monstrous Bedlam of noise and fuzz, which is by far the largest of its sort in the world — there is enough twine twisted in a single day to make a girdle around the earth.

In the paint shop the man with the brush has been superseded — a case of downright trade suicide. In his place is an unskilled Hungarian with a big tank of paint. Souse! Into the tank goes the whole frame of a binder, and the swarthy descendant of Attila thinks himself slow if he dips less than four hundred of these in a day. The labour-cost of painting wheels is now one-fifth of a cent each. Ten at once, on a wooden axle, are swung into the paint bath without the touch of a finger. And the few belated brush-men who are left work with frantic

haste, knowing that they, too, are being pursued by a machine that will overtake them some day.

In the central bookkeeping office of the Harvester Company I found some almost incredible statistics. Here, for instance, are a few of the items in last year's bill of expenses:

Two hundred and thirty-five miles of leather belting, 940 miles of cotton duck, 2,000 grindstones, 3,000 shovels, 10,000 brooms, 1,670,000 buckles, 1,185,000 pounds paint, 4,000,000 pounds wire, 15,000,000 pounds nails.

Merely to maintain its experimental department costs this imperial company \$7,000 a week. Here are more than two hundred inventors and designers, well housed and well salaried, and not tramping from shop to shop, as inventors did in the good old days. They are paid to think; and the company is mightily proud of them. But the truth is that all large corporations which employ an army of unskilled workmen are being compelled to offset so much mere muscle by a special department of brains.

There is, besides, a most elaborate system

of inspection. In the Deering factory I saw a squad of ten men who were testing the newly made binders with straw. "About three out of a hundred need fixing," said the foreman.

The chains are tested by a violent pneumatic machine. Every link, even, is branded with a private mark — Δ . And in the Hamilton plant a new scheme is being tried — the whole packing gang has become a staff of inspection. Whenever a man finds a hundred defective pieces, he gets an extra dollar. One sharp-eyed Scot in the packing-room confided to me that he had made "as high as two shillin's a week."

Such is the scope of the International Harvester Company, created in 1902. As to the men who control it, I have had the greatest difficulty in penetrating back of the business to their personal characteristics. For they dislike the fierce light that beats upon a rich American.

Of its president, Cyrus H. McCormick the Second, the first word to be said is that he is not built on the same lines as his belligerent father. He would fare badly, very likely, if he were in charge of a catch-as-catch-can

business, such as the reaper trade was thirty years ago. The making of harvesters is, to him, half a duty — to his father, his workmen, and the machine itself — and half a profession — not a battle nor a game, as it was with the first Reaper Kings. He has no desire to play a lone hand in the business world. And his painstaking purpose, as a man of affairs, is to secure less speculation and more stability, less waste and more organisation, less friction and more community of interest.

In all things he is a simple and serious man. I have seen him work from noon until midnight; but in my opinion, if he really had his choice, he would prefer a quiet homestead, in the little town of Princeton, where he could pursue a life devoted to the interests of Princeton University and the Civic Federation. Even now, whenever he can get free from the treadmill of his office, his greatest delight is to escape to a camp in the wild lands of northern Michigan, where he can dress like a fisherman and forget that he is the servitor of a hundred and twenty millions.

Harold McCormick, his brother, and a vice-president of the big company, is a boy-

hearted man of thirty-five. He has a quick-action brain; but his strong point is his personal magnetism and likableness. He knows the harvester business throughout, having been a shirt-sleeve workman in the factory, an agent at Council Bluffs, and a field expert in several states.

Most of the stories told about him illustrate his naïve boyishness. For instance, when he had become an expert in handling the harvester, an agent-in-chief near Chicago telegraphed for a dozen men. Only eleven experts were available, so Harold volunteered to be the twelfth. He had his working-card made out in the usual form, entitling him to \$18 a week. On Saturday night, when the twelve men went to the agent-in-chief for their wages, he said, "I want all of you to come in and have a conference with me tomorrow morning at ten o'clock."

"Sorry to say, Mr. Blank," said young McCormick, "that I can't be here until Monday."

The agent stormed. How could anything be more important to a three-dollar-a-day man than his job?

"Well, if you really must know the reason,"

said the berated mechanic, "I have an appointment to go to church to-morrow morning with the Rockefeller family."

The third brother — Stanley McCormick, worked his way up from labourer to superintendent of the whole plant. For years he rose at five o'clock every work-day morning, and walked into the factory at six.

All three of the McCormicks show a remarkable sense of obligation, almost of gratitude, to their employees. At the time the International was organised, Stanley said to the others:

"What about the men? There are some of them that deserve a share in the new company, as much as we do."

So a list of the old employees was made, from Charlie Mulkey, the old watchman, to R. G. Brooks, the superintendent, and \$1,500,000 was divided among them. Recently a complete profit-sharing plan, such as Perkins had worked out for the Steel Trust, was put in working order, and about \$200,000 of extra money have been scattered through the pay-envelopes.

The two Deerings, who are now chairman and vice-president, were disciplined in

the same stern, old-fashioned way as the McCormicks.

“Put this young man to work at the bottom rung of the ladder,” said William Deering, when his younger son, James, was graduated from the university.

Being in many respects a chip of the old block, James Deering plunged into business with as much energy as though he had to toil for his millions as well as inherit them. He became a field expert, and followed the harvest from Texas to North Dakota. He asked for no favours, but sweltered along among the Western farmers for several summers. Then he went to the foot of the ladder in the factory and wrestled with big iron castings and steel frames. Step by step he worked up, until even his Spartan father was satisfied and made him the manager of the whole plant.

At present there is perhaps no man in the harvester industry who has so great a variety of attainments as James Deering. He is a shrewd commercialist, yet he has found time, no one knows how, to master several languages and to run the whole octave of self-culture.

Charles Deering, the older of the two

brothers, had less farm experience, as he served for twelve years in Uncle Sam's navy. He was a lieutenant when he came ashore to help his father make harvesters. At that time he did much to solve the binder-twine problem — how to get better twine and plenty of it. Then, when the drama of consolidation was staged by Morgan, he took a leading part. Personally, he is a bluff, forceful, but companionable man, such as one would expect to find on the deck of a war-ship rather than in the telephone-pestered office of a sky-scraper.

The two other vice-presidents of the Harvester Company are battle-worn veterans of the competitive period — J. J. Glessner and William H. Jones. Glessner, beginning as a bookkeeper in Ohio, has for many years been regarded as a sort of unofficial peace-maker and balance-wheel of the trade. Everybody confided in Glessner. He did as much as any one else to harmonise the warring Harvester Kings; but it is also true that it was the gentle Glessner who developed competition to the explosive point by originating the system of canvassing. He poured first oil and then water on the fire.

As for William H. Jones, he is a sturdy and genial Welshman, who was born and bred in a farmhouse. As a boy he reaped wheat with a sickle in the valleys of Wales. About forty years ago, when he had become an American, he bought a reaper and a tent, and set out to earn his fortune. By working twenty hours a day, he had earned enough money, by 1881, to begin making reapers of his own, at Plano; and he built up a large business.

The General Manager of this big anti-famine organisation is a young Illinoisan, named C. S. Funk. "He is the central man," says Perkins. No other Chicagoan of his age — he is only thirty-five — has pushed up so quickly to so high a place, with nothing to help him except his own grit and ability. To-day he manages a 65,000-man-power corporation; yet it is very little more than twenty years since he was trudging six miles on a hot July day, to ask for his first job in a hay-field. Young as he was, he was then the support of a widowed mother, and there were seven children younger than he.

His office, in which I was permitted to take notes for several days, is a nerve-centre of

the world. Everything that happens to the human race is of interest to this alert young chancellor of the Harvester Company. A drought in Argentina, the green bug in Kansas, a tariff campaign in Australia, a shortage of farm labour in Egypt, a new railway in Southern Russia, such are the bulletins that guide him through his day's work.

His wide-flung army is officered mainly by farmers' sons who had a knack for business or for machinery. His assistant, Alex. Legge, is an ex-cowboy from Nebraska. Before the era of peace and unity began, Funk and Legge had fought each other in twenty states.

"Legge was one of the best fighters I ever knew," said Funk; "and I think you might put him down as the most popular man in the company."

Maurice Kane, the company's Chief Improver, and a fine type of the Irish-American, was born on a small farm near Limerick. He was a farm hand in Wisconsin when he first saw a harvester, and he has pulled himself up every inch of the way by his own abilities. A. E. Mayer, the first of an army of forty thou-

sand salesmen, was born on a farm in New York. He is a sort of human Gatling gun, loaded with the experience of his trade. B. A. Kennedy, the overlord of the thirteen factories, is a seasoned veteran who can remember when he stood by the forge of a country blacksmith shop and hammered out ploughs by hand. Only one of the company's generals, H. F. Perkins, began life with such a luxury as a university education. He is in charge of the raw materials — the coal and iron and lumber and sisal and flax.

These are a few of the men who manage this international empire of bread-machinery. They are all practical men, hard workers, close to the farm and the farmer. They are not fashionable idlers, nor promoters, nor Wall Street speculators. And they have no more use for tickers than for telescopes — a fact which is vitally important, now that they are making more than half the harvesters of the world.

Such is the International Harvester Company from the inside. But an outside view is equally necessary. It is of tremendous interest to 10,000,000 American farmers to know the habits and the disposition of this

powerful organisation. As Theodore Roosevelt has said, there are good combinations and bad ones. Which is the International Harvester Company?

In order to get the facts about it at first hand, I interviewed the four chief competitors of the Harvester Company, three Attorneys-General, seven editors of farm papers, four professors of agricultural colleges, seven or eight implement agents, thirty farmers in Iowa, Minnesota, and Wisconsin, two state governors, and the Federal Bureau of Corporations. Before I had gone far, I learned that the big Harvester Company has been beset by a host of new troubles.

It is an evidence of the eternal futility of human ambition, that when a group of warring Harvester Kings had made peace with one another, when they had healed their wounded and buried their dead, and sat down to enjoy a future of prosperous tranquillity, up sprang a host of new enemies, armed and double-armed with weapons from which there seemed to be no sort of defence. Their outposts were shattered by legislative dynamite. Tariff walls were built across their paths. And half a dozen giant

ogres, otherwise known as Attorneys-General, crashed into their peaceful business with destructive clubs of law.

The bigger the organisation the more trouble to protect and preserve it. This is what Abraham Lincoln learned — what the whole United States learned, half a century ago; and it is the lesson that the harvester-makers are studying to-day. It is a new phase of an old fact; it is the Tragedy of the Trust.

Some foreign nations, too, have taken their cue from American Legislatures, and have become almost as hostile to the Chicago company as though it were exporting roulette wheels and burglars' jimmys. France taxed half a million from it last year by a penalising tariff. Australia has made it a political issue. Germany takes a toll of \$11 on every self-binder, and Austria takes \$25. Roumania raised the duty on harvesters several months ago; and there is a general feeling that the time has come to check the supremacy that the United States has always had in this line.

Yet the fact that the Harvester Company has been fined in two states does not mean that it has taken advantage of its size to

become a lawbreaker. The "crime" of which it was declared guilty, was the maintenance of the old practice of "exclusive contracts," which has been the almost universal custom for fifty years. Each agent was pledged not to sell any other company's goods. *The International abolished this requirement two years ago, and several of the independent companies still retain it.* Until the merger was organised it was regarded as fair enough. It is one of the most usual habits of agency business. But the American people are now demanding that a big company shall be much more "square" and moral than a small capitalist who is fighting for his life.

Many of the old methods of the rough-and-tumble days have survived. It is not possible to say "Presto, change!" to 40,000 battling agents, so that they shall at once begin to play fair and coöperate. But the general opinion is that the Combine has raised the harvester business to a higher level. At one of its branch offices I came accidentally upon a letter written by Cyrus H. McCormick, in which he forbade the taking of rebates from railways.

“You must clearly understand,” he wrote, “that this company will maintain a policy of absolute obedience to the law.”

Among the farmers of Iowa and Kansas I found no definite charges against the harvester combine — nothing but that vague dread of bigness which seems natural to the average mind, and which even the great-brained Webster had when he opposed the annexation of Texas and California. Of four farm editors, one was against all “trusts” on general principles; and the other three believed that the evils of harvester competition were much greater than those of consolidation. The bare fact that this one corporation has \$120,000,000 of capital alarms the old-timers. Others have become more accustomed to the Big Facts of American business.

“Why,” said one implement dealer, “after all, \$120,000,000 is less than the American farmers earn in a week.”

He might also have said that it was less than the value of one corn crop in Iowa, or half as much as the Iowa farmers have now on deposit in their savings banks. It is very little more than Russell Sage raked in

through the wickets of his little money-lending office, or than Marshall Field accumulated from a single store. In fact, if bread were raised one cent a loaf for one year in the United States alone, the extra pennies would buy out the whole "Harvester Trust," bag and baggage.

The bulk of the farmers, so far as I could harmonise their opinions, are now too well accustomed to big enterprises among themselves to be scared by the Chicago merger. They have at the present time more than five thousand coöperative companies of their own. And some of these are of national importance; as, for instance, the powerful Cotton Growers' Trust, and the Farmers' Business Congress, which owns 800 elevators for the storage of grain.

"My only objection to the International Harvester Company," said a business man in St. Paul, "is that it sells its machinery cheaper in Europe than it does in the United States." I investigated this charge, and found it wholly incorrect. The greater expense and risk of foreign trade compels the manufacturers to ask almost as high prices as American farmers had to pay

twenty years ago. But there is a quite credible reason for this rumour. It is simply this — that for some less progressive countries a crude, old-fashioned reaper is being made, to sell for \$45. The modern, self-rake reaper is too complex for the simple mind of many a Russian farmer, so he is supplied with a clumsy machine which is \$15 cheaper, but which looked, to my unskilled eye, more than \$30 worse.

No one accuses the "Trust" of having unreasonably raised prices. On the contrary, it is generally given full credit for holding prices down, in spite of the fact that it is paying from twenty to eighty per cent. more for its labour and raw materials than was paid in 1902. Generally speaking, all farm implements except thrashing-machines are cheaper now than they were in 1880, when the competition was most strenuous. Binders have dropped from \$325 to \$125; hay-rakes from \$25 to \$16; and mowers from \$80 to \$45.

"I paid \$200 for a self-binding harvester twenty-five years ago," said a Kansas farmer. "Ten years later I bought another for \$140 and in 1907 I bought one from the Inter-

national for \$125, which is in my judgment the best of the three machines."

The International has competitors, too—very active and able ones. Binders are made by 4 large independent companies, mowers by 17, corn-shredders by 18, twine by 26, wagons by 116, and gasoline engines by 124. Of the thirty-seven different machines made by the International there are only three—hemp-reapers, corn-shockers, and rice-binders—that are made by no other company, and even these machines are not protected by any basic patents. Powerful as the International is, it is still far from the place where business is one long sweet dream of monopoly.

The four independent companies that make binders seem to have no fear of the "Trust." "We have no fault to find with it," said President Atwater, of the Johnson Company. "We don't want it smashed. Why? Because our business has doubled since it was organised; and because we would sooner compete with one company than with a dozen."

"The 'Trust' was the only thing that saved the whole harvester business from annihilation," said the ex-president of an-

other independent company, when I pressed him for his personal opinion, and promised not to use his name. "The cold fact is really this," he added, "that the International Harvester Company has bettered conditions for the farmer, for the independent companies, and for everybody but itself."

"The big combine has never misused its power," said a third of the International's competitors. "Now and then its agents make trouble, just as ours do, no doubt. But the men at the top have always given us a square deal."

So it is my duty to state that on the whole the Harvester Combine is a good combination and not a bad one. I have found it radically different from the get-rich-quick trusts that have been described in recent books and magazine articles. It is not a monopoly. It is an advocate of free trade. Its stock is not watered, nor for sale in Wall Street. And the men at the top are very evidently plain, hard-working, simple-living American citizens, who are quite content to do business in a live-and-let-live way.

They are not thoroughly reconciled, even

yet, to being a merger. They look back with open regret to the wasteful but adventurous days of competition. Of the combination the elder Mrs. Cyrus McCormick finely said:

“It was a hurt of the heart. Each of our companies was like a family. Each had a body of loyal agents, who had been comrades through many struggles. But the terrible increase in expenses compelled us to subdue our feelings and to coöperate with one another.”

“I am not a merger man myself,” said William Deering, “although I believe that the International Harvester Company has been a benefit to the farmers.”

Cyrus H. McCormick goes still further. He is a “trust-buster” himself, so far as the over-capitalised and oppressive leviathans of business are concerned. He said to me frankly: “Some of the hostility to our company is inspired by worthy motives, growing out of the general opposition to the so-called trusts.” And when a North Dakota congressman proposed in 1904 that the International Harvester Company should be investigated, Cyrus McCormick at once

sent a message that amazed the Bureau of Corporations — “Please come and investigate us,” he said. “If we’re not right, we want to get right.”

“Yes,” said one of the highest officials of the Roosevelt administration, when I asked him to corroborate this very remarkable story. “It is true that from 1904 it has been the continued desire of the International Harvester Company that we should investigate them. In fact, during the last year (1907) they have urged us with considerable earnestness to make this investigation.”

So, this big business has evolved from simple to complex in accordance with the same laws that rule plants and empires. It has probably not yet reached its full maturity, for it is greater than any man or any form of organisation, and the tiny ephemeral atoms who control it to-day are no more than its most obedient retinue. They come and go — quarrel and make friends — live and die. What matter? The big business, once alive, grows on through the short centuries, from generation to generation.

And what does it all mean — this federation of thirteen factory cities — this coordina-

tion of muscle and mind and millions — this arduous development of a new art, whereby a group of mechanics can take a wagon-load of iron ore and a tree, and fashion them into a shapely automaton that has the power of a dozen farmers?

It means bread. It means hunger-insurance for the whole human race. As we shall see in the next chapter, it means that the famine problem has been solved, not only for the United States, but for all the civilised nations of the world.

CHAPTER IV

THE AMERICAN HARVESTER ABROAD

THE first American reapers that went to Europe were given a royal welcome. There were two of them — one made by McCormick and one made by Hussey, and they were exhibited before Albert Edward, the Prince Consort of England, at a World's Fair in London in 1851.

There had been reapers invented in England before this date, but none of them would reap. All the inventors were mere theorists. They designed their reapers for ideal grain in ideal fields. One of them was a preacher, the Rev. Patrick Bell; another, Henry Ogle, was a school-teacher. James Dobbs, an actor, invented a machine that cut artificial grain on the stage. And a machinist named Gladstone made a reaper that also worked well until he tried it on real grain in a real field.

But the exhibition of the American reaper

in London did not result in its immediate adoption. There was little demand for harvesters in England fifty years ago; and in other European countries there was none at all. Farm labour was cheap — forty cents a day in England and five cents a day in Russia; and the rush of labourers into factory cities had not yet begun.

In the years following 1851, the American reaper did, however, become popular among the very rich. It became the toy of kings and titled landowners. By 1864 Europe was buying our farm machinery to the extent of \$600,000. This was less than she buys to-day in a week; but it was a beginning. Several foreign manufacturers began at this time to make reapers, notably in Toronto, Sheffield, Paris, and Hamburg. This competition spurred on the American reaper agents, who were already taking advantage of the interest shown by royalty in the American reaper. And from the close of the Civil War on, there was an exciting race, generally neck and neck, between Cyrus H. McCormick, Sr., and Walter A. Wood, to see who could vanquish the most of these foreign imitators, and bag the greatest number of kings and nobilities.

It was a contest that not only resulted in the triumph of the American reaper, but also brought the Reaper Kings recognition and reputation abroad. In 1867 both McCormick and Wood were decorated with the Cross of the Legion of Honour by Napoleon III.; and later they stood side by side to receive the Imperial Cross from the hand of the Austrian emperor. Hundreds of medals and honours were showered upon these two inventor mechanics; and the French Academy of Science, in a blaze of Gallic enthusiasm, elected McCormick one of its members, because he had "done more for the cause of agriculture than any other living man."

Many and strange were the exploits of the American Reaper Kings at the courts and royal farms of the real kings. Unable to speak any language but their own, unused to pomp and pageantry, breezily independent in the American fashion, the Reaper Kings plunged from adventure to adventure, absolutely indifferent to everything but their reapers and success.

"There is to be a trial of reapers at Rome next June," wrote David M. Osborne, a New Yorker who began to export reapers to

Europe in 1862. "Think of invading the sacred precincts of that ancient place with Yankee harvesters. We will wake up the dry bones of these old countries, and civilise and Christianise them with our farm machinery."

C. W. Marsh, inventor of the Marsh Harvester, made a sensational *début* in Hungary in 1870. Several grand dukes had arranged for a great contest of the various sorts of reapers on one of the royal farms in Hungary, so that the Minister of Agriculture might take notice. When the day arrived, there were nine reapers at the farm, mostly of European design.

Marsh's strange-looking machine seemed to be a combination of reaper and work-bench. But ten minutes after the contest began, Marsh had the race won. His machine was a new type, the forerunner of the modern self-binder. It was so made that two men could stand upon it and bind the grain as fast as it was cut. But on this occasion Marsh could hire no farmer to help him and was obliged to do the work alone. The judges were stunned with amazement, therefore, when they found that he had bound

three-quarters of an acre in twenty-eight minutes. Here was a man who could do in half an hour what few Hungarian peasants could finish in less than a day!

"He is an athlete," said one. "A wizard," said another.

Before they could recover from their astonishment, Marsh had stored his harvester, pocketed the prize of forty golden ducats, and hurried away to his hotel, eager for a bath and a chance to pick the thistles out of his hands.

But the grand dukes and miscellaneous dignitaries were not to be escaped so easily. An officer in gorgeous uniform was sent to find Marsh and bring him forthwith to the main dining-hall of the city. Here a banquet was prepared, and a throng of high personages sat down, with Marsh at the head of the table, cursing his luck and nursing his sore fingers.

At the close of the banquet, amid great applause, a medal was pinned upon his coat, and the whole assemblage hushed to hear his reply. Now Marsh, like two-thirds of the Reaper Kings, could no more make a speech than walk a rope. On only one

previous occasion had he faced an audience, and that was at the age of twelve, when he had recited a scrap from the "Lay of the Last Minstrel" at a school entertainment. As he rose to his feet, this poetic fragment came into his mind; and so, half in fun and half in desperation, Marsh assumed the pose of a Demosthenes and addressed the banqueters as follows:

"O Caledonia! Stern and wild,
 eet nurse for a poetic child!
Land of brown heath and shaggy wood,
Land of the mountain and the flood,
Land of my sires! What mortal hand
Can e'er untie the filial band
That knits me to thy rugged strand!"

"That was the first and only speech of my life," said Mr. Marsh, when I saw him in his home as DeKalb, where he has retired from business. "But it certainly established my reputation as an orator in that region of Hungary."

At one famous competition near Paris, in 1879, three reapers were set to work in fields of equal size. The French reaper led off and finished in seventy-two minutes. The English reaper followed and lumbered through

in sixty-six minutes. Then came the American machine, and when it swept down its stretch of grain in twenty-two minutes, the judges were inclined to doubt either their watches or their eyesight.

Another of these tournaments, which also did much to advertise the United States as the only genuine and original reaper country, took place on an English estate in 1880. There was only one American reaper in the race, and in appearance it was the clown of the circus. The ship that carried it had been wrecked on the Irish coast, so that when it arrived the machine was rusted and dingy.

Cyrus H. McCormick, Jr., had it in charge. He was then a youth of twenty-one, and equally ready for an adventure or a sale. There was no time to repaint and polish the machine, so he resolved to convert its forlorn appearance into an asset.

“Oil her up so she ’ll run like a watch,” he said to his experts. “But don’t improve her looks. If you find any paint, scrape it off. And go and hire the smallest, scrubbiest, toughest pair of horses you can find.”

The next day five or six foreign reapers were on hand, each glittering with newness

and drawn by a stately team of big Norman horses. The shabby American reaper arrived last, and met a shout of ridicule as it rolled into its place. But in the race, "Old Rusty," as the spectators called it, swept ahead of the others as though it were an enchanted chariot, winning the gold medal and an enviable prestige among British farmers.

In Germany, as in England, the reaper was introduced into general use through royalty. This was in 1871, when a New York Reaper King named Byron E. Huntley gave the German emperor and empress their first view of harvesting on the American plan. The exhibition took place in a grain-field that lay near the royal residence at Potsdam. At first, the empress watched the machine from a window; but soon she became so keenly interested that she went into the field to study it at closer range.

"I admire you Americans," she said to the delighted Huntley. "You are so deft — so ingenious, to make a machine like this."

The present Emperor of Germany is not merely interested in American harvesters; he is an enthusiast. On several occasions

he has held harvester matinées for the benefit of his cabinet ministers, so that they could see with their own eyes the superiority of machinery to hand-labour. The first of these matinées was given on one of the Kaiser's farms, near the ancient city of Bonn, in 1896; and I was told the story by Sam Dennis, the Illinois Irishman who was in charge of the harvester.

Dennis arranged a contest between his one machine and forty Polish women who cut the grain with old-fashioned sickles. As soon as the emperor and his retinue had arrived, all on horseback, a signal was given and the strange race began. On one side of the field were the forty women, bent and browned by many a day's toil under the hot sun. On the other side was Sam Dennis, sitting on his showy harvester.

"Get ap!" said Dennis to the big German horses, and the grain fell in a wide swath over the clicking knife, swept upward on the canvas elevator into the swift steel arms and fingers, and was flung to the ground in a fusillade of sheaves, each bound tightly with a knotted string.

The emperor was radiant with delight.



AMERICAN SELF-BINDERS ON THE ESTATE OF PRESIDENT FALLIERES, IN FRANCE

him a bound sheaf, so that he could see a knot that had been tied by the machine. The old man studied it for some time. Then he asked me — ‘Can these machines be made in Germany?’

“‘No, your Excellency,’ I said. ‘They can be made only in America.’”

“‘Well,’ said Bismarck, speaking very good English, ‘you Yankees are ingenious fellows. This is a wonderful machine.’”

When Loubet was President of France, he and Seth Low, of New York, were walking together over the President’s estate. Loubet pointed to a reaper which was being driven through a yellow wheat-field.

“Do you see that machine?” he remarked. “I bought it from an American company in 1870, and I have used it in every harvest since that time. I have four of those machines now, and I want to say to you that they are the most useful articles that come to us from the United States. I am stating no more than the simple truth when I tell you that without American harvesters, France would starve.”

In still other countries the American reaper has been popular with kings and

potentates. The Sultan of Turkey and the Shah of Persia each bought one during the Chicago World's Fair. And the young King of Spain, who ordered a mower in 1903, narrowly escaped being minced up by its knives. Being an impulsive youth, he gave a cry of joy at sight of the handsome machine, sprang upon the seat, and lashed the horses without first laying hold of the reins. The horses leaped, and the seventeen-year-old Alphonso went sprawling. Twenty workmen ran to his help, and one level-headed American mechanic caught the reins; so the worst penalty that the boy king had to pay for his recklessness was a tumble and a bad scare.

In Russia, the Czar and the grand dukes at first bought reapers partly as toys and partly as strike-breakers. If the labourers on their estates demanded more pay than fifty cents a week, the manager would drive them in a body to his barn, then throw open the doors and show them five or six red harvesters.

“Do you see those American machines?” he would say. “Unless you go back to work at the same wages, I will reap the grain



KING ALPHONSO OF SPAIN DRIVING AN AMERICAN SEEDER

with these machines, and you will have no work at all, and no money." A look at these machine-devils has usually sent the cowed serfs back to their sickles. But here and there it has set them to wondering whether or not a fifty-cent-a-week job was worth having, and so has given them an A B C lesson in American doctrines.

Many of the Russian nobility, too, have begun to learn a trifle about democracy from the American harvester agents. There is a certain young baron, for example, whose estate is not far from Riga. Last year, to be in fashion, he bought a Chicago self-binder. When it arrived, there came with it, as usual, an expert mechanic to set it up and start it in the field. In this case, the mechanic was a big German-American named Lutfring, born in Wisconsin, of "Forty Eighter" stock.

The baron was evidently impressed by the manly and dignified bearing of Lutfring, who stood erect while the native workmen were bowing and cringing in obeisance. And when Lutfring said to him, "Now, Baron Hahn, we are all barons in my country, but you'll pardon me if I do this work in my

shirt-sleeves," the baron was so taken by surprise that he offered to hold Lutfring's coat. Half an hour later he was at work himself, doing physical labour for the first time in his life. And when the harvester had been well launched upon its sea of yellow grain, he took Lutfring — the baron from Wisconsin — to dinner with him in the castle, and spent the greater part of the afternoon showing him the family portraits.

From such beginnings the harvester has advanced, to make in Russia the greatest conquests it has achieved anywhere. More business is now being done in the land of the Czar than was done with the whole world in 1885. One recent shipment, so large as to break all records, was carried from Chicago to New York on 3,000 freight-cars, and transferred to a chartered fleet of nine steamships, \$5,000,000 worth of hunger-insurance.

During the Russo-Japanese War a striking incident occurred that showed the respect of the government for American harvesters. Several troop-trains that were on their way to the front were suddenly side-tracked, to make way for a long freight train, loaded with heavy boxes. The war generals and

grand dukes in charge of the troops were furious. Why should their trains be pushed to one side and delayed, to expedite a mere consignment of freight? They telegraphed their indignation to St. Petersburg, and received a reply from Count Witte. "The freight train must pass," he said. "It is loaded with American harvesters. *It means bread.*"

As a result of this attitude, there are now some provinces in southern Russia where not even Secretary of Agriculture James Wilson would find much fault with the farming. I have secured the figures for the Province of Kuban, in the Caucasus. Here there are 3,500 thrashing-machines, 5,000 grain-drills, 37,000 harvesters, 50,000 harrows, 70,000 grain-cleaners, and 65,000 cultivators. This is a region where, one generation ago, were only the wooden plough, the sickle, and the flail.

There is, to be sure, still a dense mass of Russians whose yearly habit it is to wait until their wheat is dead ripe, then in a few days of frantic labour to cut down half of it with sickles, leaving the rest to rot in the fields. And in one Caucasian province,

richer in its soil than Iowa, it is the custom of the wandering natives to move every three years to a new tract of land, in order to avoid the trouble of fertilising the soil.

“I have seen farmers ploughing in Russia with a piece of board,” said one agent. “And I have seen their thrashing done by the feet of oxen.” But the new idea has been planted and is growing. “Russia is the land of to-morrow,” said another expert. “We have been educating the farmers there for seventeen years, yet we have only scratched the surface. We who have lived among the Russian peasants expect great things from them.”

They have succeeded, then, in their campaign for the supremacy of the American reaper — the Reaper Kings who enlisted the crowned heads and the nobility of Europe in their service. By 1899 Europe was a customer at our farm machinery factories to the extent of twelve millions a year. This figure was doubled in 1906, and is now increasing by leaps and bounds. All told, this one industry has brought us \$150,000,000 of foreign money in less than fifty years.

Europe has sent us emigrants — twenty-

five million in the past seventy-five years. But we have more than replaced them with labour-saving farm machinery. There were in 1907 as many American harvesters in Europe as would do the work of eleven million men.

If our foreign trade goes ahead at its present rate of speed, we shall soon have Europe hopelessly in our debt, in this exchange of men for machinery. In the past four years, for instance, Europe has sent us less than four million emigrants, but we have sent to Europe, in that time, enough agricultural automata to equal the labour of five million men.

And this means much to Europe. What with her 4,500,000 soldiers and her 4,000,000 public officials, she has to serve more than twenty-five million meals a day to men who are non-producers. She has to clothe and house these governmental millions and their families. How could she do this if it were not for the eleven million man-power of her American harvesters, and the half billion bushels of reaper-wheat that she can buy from other countries?

France must have our harvesters because

she has been short of men since the wars of Napoleon. She has half a million soldiers and nine-tenths of a million officials. Even now, with harvesters clicking merrily in all their largest grain-fields, she and Germany cannot feed themselves. Spain at one time exported wheat, but at present is buying 10,000,000 bushels a year. England grows less than a quarter as much as will feed her people. And Russia would be famine-swept from end to end, in spite of her 30,000,000 farmers and her illimitable acres, if she had to depend wholly upon the sickle and the scythe.

But the story is by no means ended with Europe. To-day the sun never sets and the season never closes for American harvesters. They are reaping the fields of Argentina in January, Upper Egypt in February, East India in March, Mexico in April, China in May, Spain in June, Iowa in July, Canada in August, Sweden in September, Norway in October, South Africa in November, and Burma in December. It is always harvest somewhere. The ripple of the ripened grain goes round the world and the American harvester follows it.

Even from this incomplete list one may begin to understand how tremendous is the task that the International Harvester Company has assumed in undertaking to cater to the farmers of fifty countries — to adapt itself to their various customs.

In Holland, for instance, where the grass is short and thick, a mower must cut as close as a barber's clippers; and in Denmark, where moss grows under the grass, it must cut so high as to leave the moss untouched. The careful Germans of Wisconsin will buy a light harvester, such as the "Milwaukee"; but in Argentina a light machine would be racked into junk in a season. The Argentinians, having raised cattle for generations, rush to the harvest in cowboy fashion. It is the joy of their lives to hitch six or eight horses to a big "header," crack the long whip, and dash at full gallop over the rough ground.

There are small horses in Russia, big ones in France, oxen in India, and camels in Siberia, and the harvesters must be adapted to each. Certain backward countries demand a reaper without a reel. Australia must have a monster machine called a "stripper,"

which combs off the heads of the grain. California and Argentina, because of their dry climate, can use "headers," a combination of reaper and thrashing-machine. And so the American harvester has become a citizen of the world, adopting the national dress of each country.

The men who are dealing hand to hand with these problems are no longer the Reaper Kings, personally introducing their harvesters through royalty and nobility. These have been succeeded by an army of fifteen hundred American harvester experts. They are all salaried, most of them by the "International"; and their work is to put the farmers of the world to school. They are the teachers of a stupendous kindergarten. As an example of the rapidity with which they are sometimes able to teach, take the Philipines. Nine years ago the Filipinos spent nothing whatever for farming machinery; in 1905 they bought \$90,000 worth. Even yet, however, they do not raise enough rice to feed themselves; and although half of them are farmers, only one-twentieth of their land is cultivated.

"Many of our agents are now living in



BISMARCK HAVING HIS FIRST VIEW OF AN AMERICAN SELF-BINDER

Siberia with their families," said C. S. Funk, the General Manager of the International. "They are teaching the mujiks to grow wheat and harvest it. We have similar missionaries in South Africa and South America and most of the countries of the world. Some of them have gone as far as water and rail would carry them, and have then crossed the mountains with their machinery on the backs of mules, so that they might teach the natives how to farm on the American plan. All told, we have more than a thousand such missionaries in foreign countries."

In Chicago, I met two of the leaders who are in control of this army of teachers. One was a strong-faced young Illinoisan named Couchman, who handles several nations from Hamburg; and the other was a courteous commercial diplomat named La Porte, who supervises France, Spain, Italy, and Northern Africa from his office in Paris. Each is in charge of several hundred American mechanics, who are exiled from home for the sake of our harvester trade.

No renown comes to these men. No medals are pinned upon their coats. They

are only one regiment in the great pay-envelope army of American mechanics. But they are on the firing-line of the greatest battle against ignorance and famine that has ever been fought. They are the pioneers of the new farmer. To show the world's peasantry how to work with brains and machinery, to bring them up to the American farmer's level — that is their task. What could be more essentially American, or more profitable to the human race?

Many European farmers, of course, are easily up to the Kansas level; but the vast majority have been mistaught that the path of the farmer must forever be watered with sweat. Many of them are so cramped by the shackles of drudgery that they cannot even conceive of the value of leisure.

"Why don't you use a scythe? Then you could cut twice as much," said Horace Greeley, who was deeply interested in farm machinery and agriculture, to a French peasant. The peasant scratched his head. This was a new idea.

"Because," he answered stodgily, "I have n't got twice as much to cut."

The quick, handy ways of American

farmers are seldom found in other countries. A Swiss will put a big stone upon a land-roller, to give it weight, and then walk behind it. To ride on the roller himself does not occur to him. A South German will usually take the reel off his reaper, and handle the grain by hand. Operating five levers is too great a tax upon his mind. An Argentinian wastes his pesos by hiring drivers — one on the seat and another astride one of the horses.

“A Spanish farmer sent for me on one occasion,” an expert told me, “and I found him in great trouble. He had bought a new harvester, and put it together *inside* his barn, which had only one narrow door. He had to choose between taking the machine to pieces and pulling his barn down.”

Next to Russia, in the list of countries that this army of experts has won to the harvester, comes Canada. Like the trek of the Boers into the Transvaal, and of the Japanese into Korea, there has been a trek of three hundred thousand American farmers into Western Canada — into the new forty-bushel-to-the-acre wheat-land of Alberta. Most of these emigrants were Minnesotans and Dakotans;

therefore they are not poor. They carried two hundred millions across the border. And they are now uprearing a harvester-based civilisation in a vast region that will probably some day have a population of twenty-five million people.

That billiard-table country — Argentina — stands third among the foreign patrons of our Harvester Kings. As a wheat nation it is little older than Alberta. It was only about eighteen years ago, after three centuries of revolution, that Argentina settled down to raise wheat and be good.

To-day the Argentinians raise more wheat than Germany, and their country has become a land of milk and honey. It is a South American Minnesota, but eleven times larger, made fertile by the slow-moving Platte River — a hundred miles wide when it reaches the sea — which moves through its plains like an irrigating canal.

The fourth in rank of our harvester buyers is Australia, which is now sending a yearly tribute of more than a million to the International Company. This profitable reciprocity between Chicago and the island continent was greatly furthered when the



AN AMERICAN HARVESTER AT WORK IN ARGENTINA

International bought the sixty-five-acre Osborne plant, at Auburn, New York, which had been remarkably successful in its Australian, as well as its French, trade.

Ride along any of the historic roadways of the world and you will see the painted automata from Chicago. "On the road to Mandalay," and along the Appian Way, and the trail of death that marks the flight of Napoleon from Moscow, you will find these indispensable machines. They are cutting grass and wheat on the battle-fields of Austerlitz and Sedan and Waterloo.

Scutari, near the Adriatic Sea, bars out foreign machinery by law; but Roumania has been using our reapers and mowers for more than fifteen years. Once in a while a reaper is sent over the Andes on muleback; or into Central China via the wheelbarrow express. And now that there are irrigation pumps at the base of the Sphinx, that ancient female, who has been staring at sand-hills for three thousand years may soon look across yellow fields in which American binders are clicking cheerfully. They are for sale, too, in the holy cities of Rome, Jerusalem, Mecca, and Benares — almost

everywhere but Lhasa, the sacred capital of Tibet. So far as I can learn, not one harvesting machine of any kind has entered that land of mystery and superstition. In a few other countries harvesters are not numerous. Very few have been sold or will be in Japan. Here are the smallest farms in the world. A fork and a pair of scissors would seem much more appropriate implements for such tiny plots. Take the whole arable area of Japan, multiply it by three, and you will have only the state of Illinois.

In India, where a family "lives" on fifty cents a week, where one acre makes three farms and an entire farm outfit means no more than a ten-dollar bill, a harvester is still almost as great a curiosity as an Indian tiger is to us. One of the harvester agents told me of a rich Hindoo who bought a complete set of American farm machines, and had them set in a row near his house, apparently regarding them only as curios from a foreign land. They have never been used, and a mob of starving labourers reap his grain by hand within sight of his idle machines.

There are few harvesters in Asia Minor,

where farmers live almost like groundhogs — a whole family in one windowless hut of burnt clay. And there are fewer still in Africa, where five million idle acres of fertile land will some day be made to work for the human race.

But since the formation of the big Chicago company, every foreign nation is being reached and taught to throw away its reaping-hooks and to cut its grain in a civilized way. There is now practically no great city anywhere in which a farmer cannot buy one of the handsome red harvesters that have done so much to give a "full dinner-pail" to the civilized nations.

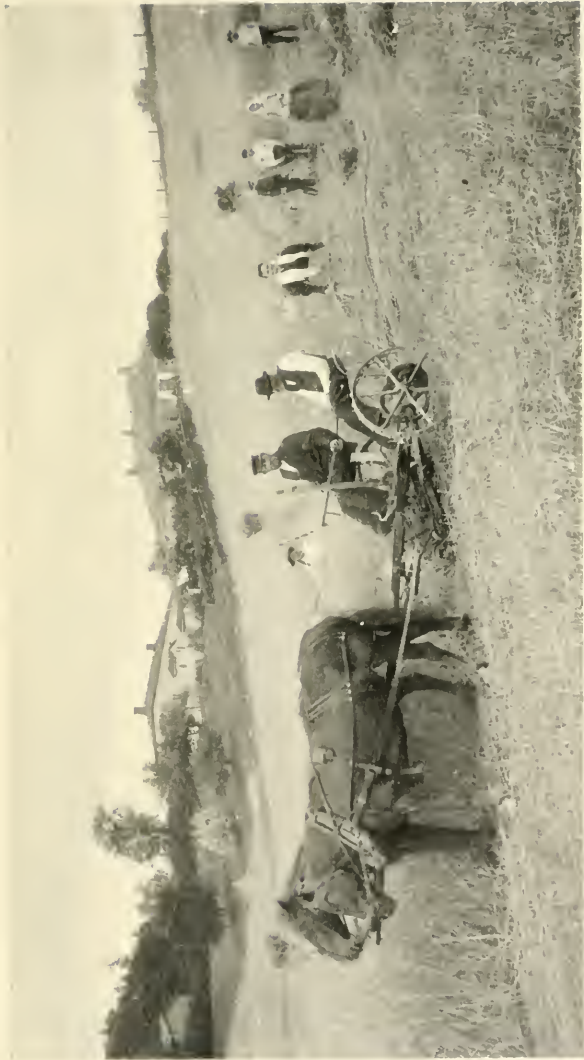
"The world is mine oyster," says the International Harvester Company. In the first five years of its career, it has sent to foreign countries 920,000 harvesters of all sorts, for which it has been paid \$70,000,000. It has doubled its foreign sales and now makes two-third of the harvesters of the world.

What with the profits, and the big orders, and the medals, and the appreciation of monarchs, the Harvester men have found their foreign trade from the first a business

de luxe. In fact, one of the principal reasons why they quit fighting was that they might handle this world commerce in an organised way.

To-day they are not battling with one another on the royal farms of Europe, like gladiators who make sport for emperors. There is more business and less adventure. They have a geography of their own, and have divided the whole world into eight provinces. The "Domestic" Department of the International comprises the United States and Canada and is managed from Chicago. Central Europe, with Russia and Siberia, has its headquarters at Hamburg; Western Europe and Northern Africa are handled from Paris; Great Britain is directed from London; South America from Buenos Ayres; Australia from Melbourne; New Zealand from Christchurch; and Mexico from Mexico City. Such is the commercial empire that has its seat at the foot of Lake Michigan.

Other countries can sell us automobiles and bric-a-brac. They may even get over our tariff wall with hay and cotton and steel and lumber. But they have never



GATHERING IN A FINLAND HARVEST

dared to try to sell us farm machinery. Every harvester in the United States was made at home.

Either one of the two immense harvester plants of Chicago is larger than the combined plants of England, Germany, and France. France, recently, made a brilliant dash toward success in the harvester business. M. Racquet, a journalist, built a great factory at Amiens. He bought the best American machinery. He allied himself with a savings bank and sold stock to the farmers. He was protected by a high tariff. But, alas for his eloquent prospectus! His selling force was too small. His American machinery made more reapers in a month than he could sell in a year. And in 1904 he fell into bankruptcy under a debt of ten million francs.

An American harvester is practically above competition in foreign countries, and commands an exceptional price. As for tariffs, there is a wide open door in Great Britain, Holland, Norway, Bulgaria, Brazil, Servia, and South Germany. But there is a toll-gate fee of \$25 per harvester in Hungary, and \$20 in France; and for lack of a com-

mercial treaty, the tax has lately been increased in part of Germany, in Hungary, Switzerland, and Rumania. The harvester companies feel that they have a substantial grievance against a government that allows them to be not only hazed and harried at home by tariffs on raw material, but driven out of foreign markets as well. "The whole world is doing business on a single street to-day," said one harvester maker; "but the trouble is that there are two hundred tariff toll-gates along that street."

In self-defence, against these tariffs, the "International" has been forced to build two foreign factories, one in Canada and one in Sweden. The Swedish plant is a small affair as yet, making rakes and mowers only; but the Canadian enterprise supports one-tenth of the city of Hamilton, and holds about half the Canadian trade. Its worst vexation, so far as I can tell from a hasty visit, is a lack of Canadian raw materials. Its chains, bolts, nuts, and canvas aprons come from Chicago, its steel and coal from Pittsburg, and three-fourths of its lumber from the Southern states.

The country that perhaps most disturbs

the dreams of our harvester companies, is as far as possible from being one of the great nations. It is scarcely a country at all — only a scrap of coral reef uprisen at the foot of Mexico — Yucatan. Yet this is the land on which the United States depends for binder twine. Manila fibre we can now get from our new co-Americans — the Filipinos; but there is never enough of it to supply the millions of self-binders. Only sisal-hemp yields abundantly enough. And Yucatan is the only spot in the world where sisal can be grown in commercial quantities.

Yucatan is smaller than South Carolina, with not quite the population of Milwaukee. It was once the poorest of the Central American states; but since the arrival of the twine-binder it has become the richest. It sells from fifteen to eighteen million dollars' worth of sisal a year, and the United States buys it all. *Three-fourths of this money is clear profit; and it is an almost incredible fact that the forty Sisal Kings of Yucatan have a larger net income than the owners of the immense International Harvester Company.*

Roughly speaking, the American farmer pays Yucatan \$12,000,000 a year for string

— mere string, which is used once and then flung away. It is an extortion and a waste, besides being the only un-American factor in the whole harvester business.

How can we save these twelve millions and completely Americanise the trade? This is a problem that William Deering toiled at for twenty years. The Harvester Company has a solution. I saw it at St. Paul — a new factory, which twists twine from flax. A farmer's son named George H. Ellis has found a quick and cheap way to clean the flax fibre; and at the time I visited the factory there were more than three hundred workers at the spindles. Two million pound of the twine were sold in 1906, so that the enterprise is no longer an experiment. This means, probably, that the farmer of the future will grow his own twine. Instead of yielding tribute to the forty Sisal Kings of Yucatan, he will pay no more than the charges of the railroad and the factory. The flax will be his own.

Yucatan is the only cheap-labour country that has been enriched by the harvester. Elsewhere it is the rule that the common people of the nation must reach a certain



IN THE ANCIENT FIELDS OF ALGIERS

high level before the harvester trade can begin. Where human labour has little value, it is plainly not worth saving.

For this reason, the harvester is the best barometer of civilisation. It cannot go where slavery and barbarism exist. It will not enter a land where the luxury of the city is built on the plunder of the men and women who work in the fields. Whoever operates a harvester must not only be intelligent: he must be free.

To hundreds of millions of foreigners, the United States is known as "the country where the reapers come from." They realise, too, that farm machinery represents our type of genius, that it springs out of our national life, and comes from us as inevitably as song comes from Italy or silk from France.

Why? Read the history of the United States. This was the first country, so far as we can know, where men of high intelligence went to work *en masse* upon the soil, and under such conditions as compelled them to develop a high degree of mechanical skill. The pioneer American farmer had to be his own carpenter and blacksmith. He had to

build his own house and make his own harness. Consequently, before this Farmers' Republic was two generations old, the reaper was born in the little workshop behind the barn.

In the Old World every occupation stood alone and aloof. The mechanics knew nothing of the farm and the farmer knew nothing of the workshop. "Every man to his trade," said Europe, Asia, and Africa. But in the New World, where trades and classes and nationalities were flung together in a heterogenous jumble, there sprang up a race of handy, inventive farmers, set free from the habits and prejudices of their fathers. They were the first body of men who were competent to solve the problem of farm machinery.

And so, the American harvester is much more than a handy device for cutting grain. It is the machine that makes democracy possible. It reaches the average man, and more — it pushes the ladder of prosperity down so far that even the farm labourer can grasp the lowest rung and climb. *It has become one of our national emblems. It is as truly and as exclusively American as the Stars and Stripes or the Declaration of Independence.*

CHAPTER V

THE HARVESTER AND THE AMERICAN FARMER

IF THE American Farmer went out of business this year he could clean up thirty thousand million dollars. And he would have to sell his farm on credit; for there is not enough money in the whole world to pay him half his price.

Talk of the money-mad Trusts! They might have reason to be mad if they owned the farms, instead of their watered stock. When we remember that the American Farmer earns enough in seventeen days to buy out Standard Oil, and enough in fifty days to wipe Carnegie and the Steel Trust off the industrial map, the story of the trusts seems like "the short and simple annals of the poor."

One American harvest would buy the kingdom of Belgium, king and all. Two would buy Italy. Three would buy Austria-

Hungary. And five, at a spot cash price, would take Russia from the Czar.

Talk of swollen fortunes! With the setting of every sun, the money-box of the American Farmer bulges with the weight of twenty-four new millions. Only the most athletic imagination can conceive of such a torrent of wealth.

Place your finger on the pulse of your wrist and count the heart-beats; one — two — three — four. With every four of those quick throbs, day and night, a thousand dollars clatters into the gold-bin of the American Farmer.

How incomprehensible it would seem to Pericles, who saw Greece in her Golden Age, if he could know that the yearly revenue of his country is now no more than one day's pay for the men who till the soil of this infant Republic!

Or, how it would amaze a resurrected Christopher Columbus, if he were told that the revenues of Spain and Portugal are not nearly as much as the earnings of the American Farmer's Hen!

Merely the crumbs that drop from the Farmer's table (otherwise known as agri-

cultural exports), have brought him in enough of foreign money since 1892, so that he could, if he wished, settle the railway problem once for all, by buying every foot of railroad in the United States.

Such is our New Farmer — a man for whom there is no name in any language. He is as far above the farmer of the story-books, as a 1908 touring-car is above a jinrikisha. Instead of being an ignorant hoe-man in a barn-yard world, he gets the news by daily paper, daily mail, and telephone; and incidentally publishes seven hundred trade journals of his own. Instead of being a moneyless peasant, he pays the interest on the mortgage with the earnings of four days, and his taxes with the earnings of a week. Even this is less of an expense than it seems, for he borrows the money from himself, out of his own banks, and spends the bulk of the tax money around his own properties.

Farming for a business, not for a living — this is the *motif* of the New Farmer. He is a commercialist — a man of the twentieth century. He works as hard as the Old Farmer did, but in a higher way. He

uses the four M's — Mind, Money, Machinery and Muscle; but as little of the latter as possible.

Neither is he a Robinson Crusoe of the soil, as the Old Farmer was. His hermit days are over; he is a man among men. The railway, the trolley, the automobile and the top buggy have transformed him into a suburbanite. In fact, his business has become so complex and many-sided, that he touches civilisation at more points and lives a larger life than if he were one of the atoms of a crowded city.

All American farmers, of course, are not of the New variety. The country, like the city, has its slums. But after having made allowance for exceptions, it is still true that the United States is the native land of the New Farmer. He is the most typical human product that this country has produced, and the most important; for, in spite of its egotistical cities, the United States is still a farm-based nation.

There could be no cloth-mills without the wool and cotton of the farm; no sugar factories without beets; no flour-mills without wheat; no beef-packing industry without

cattle. The real business that is now swinging the whole nation ahead is not the ping-pong traffic of the Stock Exchanges, but the steady output of twenty millions a day from the fields and barn-yards. If this farm output were to be cut off, the towering skyscrapers would fall and the gay palace-hotels would be as desolate as the temple of Thebes.

The brain-working farmer is the man behind prosperity. That is the Big Fact of recent American history. It is he who pays the bills and holds up the national structure in the whirlwind hour of panic. Last year, for instance, while banks were tumbling, the non-hysterical farmer was quietly gathering in a crop that was worth three times all the bank capital in the United States; and since 1902 he and his soil have produced as much new wealth as would support Uncle Sam, at his present rate of living, for fifty years.

What was called "McKinley Prosperity" was really created by the agricultural boom of 1897. There had been a general crop failure in Europe, and the price of wheat had soared above a dollar a bushel. Other

nations paid us twelve hundred millions for farm products; and this unparalleled inpouring of foreign money made us the richest and busiest nation in the world.

The supreme fact about the American Farmer is that he has always been just as intelligent and important as anyone else in the Republic. He put fourteen of his sons in the White House; and he did his full share of the working and fighting and thinking and inventing, all the way down from George Washington to James Wilson.

He climbed up by self-help. He got no rebates, nor franchises, nor subsidies. The free land that was given him was worthless until he took it; and he has all along been more hindered than helped by the meddling of public officials.

His best friend has been the maker of farm-machinery. But this is a family matter. Four-fifths of the Harvester Kings were farmers' sons; and the biggest harvester factory is only a development of the small workshop that always stood beside the barn. There are no two men who are more closely linked together by the ties of blood and business than the farmer and the man

who makes his labour-saving machines. Neither one can hurt the other without doing injury to himself

The inventor of the modern plough, Jethro Wood, was a wealthy Quaker farmer of New York — a man of such masterful intelligence as to count Clay and Webster among his friends. The late James Oliver, and David Bradley, one of his greatest competitors, were born and bred near the furrowed soil.

McCormick built his first reaper in a blacksmith shop on a farm. So did John F. Sieberling, William N. Whiteley, Lewis Miller and C. W. Marsh. And the man who owned the first of the reaper factories, Dayton S. Morgan, grew up amid the stumps of a New York farm.

The American Farmer has always grown *ideas*, as well as corn and potatoes. That is the secret of his prosperity. It was out in the wheat-fields where the idea of a self-binder flashed upon the brain of John F. Appleby; where Jacob Miller learned to improve the thresher and George Esterley to build the header and Joseph F. Glidden to invent barb-wire.

Before 1850 there was some progress among farmers, but it was as slow as molasses in Alaska. They were free and independent, and little else. They had poor homes, poor farms, poor implements.

Then came the gold-rush to California. What this event did for farmers and the world can scarcely be exaggerated. It opened up the prairies, fed the hungry banks with money, lured the farm labourers westward, and compelled the farmers to use machinery.

Three years later the Crimean War sent the price of wheat soaring, and the farmers had a jubilee of prosperity. Away went the log-cabin, the ox-cart, the grain-cradle, and the flail. In came the frame house, the spring buggy, the reaper, and the thresher. The farmers began to buy labour-saving devices. Better still, they began to invent them.

There is one farm-bred man, named R. C. Haskins, in the Harvester Building in Chicago, who, in his thirty years of salesmanship, has supervised the selling of \$275,000,000 worth of harvesters to American farmers. And as for the amount of money represented by our farm machinery of all kinds, now in

use, it is very nearly a billion dollars — a total that no other nation can touch.

To measure American Farmers by the census is now an outgrown method, for the reason that each farmer works with the power of five men. The farm has become a factory. Four-fifths of its work is done by machinery, which explains how we can produce one-fifth of the wheat of the world, half of the cotton, and three-fourths of the corn, although we are only six per cent. of the human race.

The genie who built Aladdin's palace in a night was the champion hustler of the fairy tale countries. But he was not so tremendously superior to the farm labourer who takes a can of gasolene and cuts fifty cords of wood in a day, or to the man who milks a herd of sixty cows in two hours, by machinery.

To-day farming is not a drudgery. Rather it is a race — an exciting rivalry between the different States. For years Illinois and Iowa have run neck and neck in the raising of corn and oats. Minnesota carries the blue ribbon for wheat, with Kansas breathless in second place. California has shot

to the front in the barley race. Texas and Louisiana are tied in the production of rice. Kentucky is the tobacco champion; and New York holds the record for hay and potatoes.

To see the New Farmer at his best, I went to Iowa. No other State has invested so much money — sixty millions — in labour-saving machinery, so it can fairly claim to be the zenith of the farming world.

Here there are twenty thousand women and three hundred thousand men who have made farming a profession. They are producing wealth at the rate of five hundred millions a year, nearly sixteen hundred dollars apiece. How? By throwing the burden of drudgery upon machines.

Iowa is not so old; she will be sixty-two, this year. She is not so large; little England is larger. Yet, with her hog-money she could pay the salaries of all the monarchs of Europe; and with one year's corn crop she could buy out the "Harvester Trust," or build three New York Subways.

When the Indians sold Iowa to Uncle Sam they got about eight cents an acre. To give the price exactly, to a cent, it was

\$2,877,547.87. When this money was paid, there were statesmen who protested that it was too much. Yet this amount was less than the Iowans got for last year's colts; it was less than one quarter of the value of the eggs in last year's nests. Every three months, the Iowa hen pays for Iowa.

Through the courtesy of Mr. Harlan, of the Des Moines Historical Society, I obtained the addresses of nine old settlers, who went into Iowa with ox-carts, before 1850, and who are still living. I found that every one of them had remained on the land and was prosperous. The poorest owned \$7,000, the richest \$96,000; and their average wealth was \$36,000.

These fortunes are not made, as in France, by sacrificial economies. The Iowan is noted as a high liver and a good spender. Here, for instance, is the menu of a chance supper I enjoyed at the home of an Iowa farmer, nine miles from Des Moines: Mashed potatoes, poached eggs, hot biscuits, white bread, fresh butter, honey, jelly, peaches and cream, gooseberry pie, and good coffee — all served on china, with fine linen tablecloth and napkins. The

man of the house was the son of a rack-rented Irish immigrant, who had been reared "on potatoes and salt, mostly."

I found one young county, born since the Civil War, in which five thousand farmers now own property worth seventy-five millions. They have fourteen thousand horses, seventeen thousand sheep, sixty thousand cattle, and ninety thousand hogs. In the furnishing of the homes in this county, so its Auditor informs me, more than twenty-five thousand dollars have been spent on the one item of pianos.

In a small, out-of-the-way town, called Ames, I came upon a farmers' college — a veritable Harvard of the soil. Here, on a thousand acres which fed the wild deer and buffalo in the days of Andrew Jackson, is a college that equals Princeton and Vassar combined, in the number of its pupils. Its farm machinery building is the largest of its kind. Five professors are in charge, and it is a curious fact, showing how new the New Farmer is, that these professors are obliged to teach without a text-book. As yet, there is no such thing in the world as a text-book on farm machinery.

The Iowans pay half a million dollars a year to sustain this college. They pay it cheerfully. They pay it with a hurrah. Why? Because it is the biggest money-maker in the State. One little professor, named Holden — the smallest of the whole hundred and forty, is revered by the Iowans as a King Midas of the cornfield. He has shown them how to grow ten bushels more per acre, by using a better quality of seed. This one *idea*, in a State where every fourth dollar is a corn dollar, meant an extra twenty millions last year.

First in corn, first in farm machinery, and first in the number of her banks! That is Iowa. There are a few of her villages that have no banks, but they are conscious of their disgrace. They feel naked and ashamed. In all, there are as many banks as post-offices, very nearly; and they are crammed with enough wealth to build three Panama Canals.

“Money is a trifle tight just now,” said an Iowa banker. This was last September. “You see, at this time of year, the farm labourers cause a drain on the currency by keeping their wages in their pockets.” This

surprising fact did not seem surprising to the banker. He was himself bred on the soil — the son of a farm-hand who had become a rich farmer. But to the financiers of Europe, what an incredible thing is this — that the wages of the farm-labourers should sway the money market up and down.

The pride of Iowa is Des Moines, a city of farm-bred people. It is so young that some of its old men remember when wolf-hunting was good where its one skyscraper stands to-day. It has no ancient history and no souvenirs. A little while ago a lot of industrious people came here poor, and now they are prosperous and still busy — that is the story of Des Moines in a sentence.

In the main hall of the five-domed Capitol at Des Moines is a life-sized painting of a prairie wagon, hauled by oxen. In such a rude conveyance as this most of the early settlers rolled into Iowa, at a gait of two miles an hour. But there are no prairie wagons now, nor oxen. Ten thousand miles of railway criss-cross the State, and make more profit in three months than all the railways of ancient India made last year.

Instead of being tax-ridden serfs, these

Iowans pay the total self-governing cost of their Commonwealth by handing over the price of the summer's hay. Instead of being the prey of money-lenders, they have made Des Moines the Hartford of the West, in which forty-two insurance companies carry a risk of half a billion. And so, in each one of its details, the story of these Corn Kings is staggering to a mere city-dweller, especially to anyone who has cold storage ideas about farmers.

Big Men, too, as well as big corn, are grown in Iowa. Here is a sample group — half educators and half statesmen — John B. Grinnell, Henry Smith Williams, Albert Shaw, Newell Dwight Hillis, Carl Snyder, Emerson Hough, Hamlin Garland, Senators Allison and Dolliver, Leslie M. Shaw, John A. Kasson, Horace Boies, Governor Albert B. Cummins and our Official Farmer — James Wilson. There are now fifteen hundred newspaper men in Iowa. (One of them ships seven carloads of magazines a month.) There are three hundred and fifty architects, two thousand engineers, five thousand doctors, three thousand bankers and brokers, and thirty thousand teachers.

These amazing changes have taken place within the memory of men and women who are now alive.

“I can remember when the first mowing-machine was made in our county,” said Governor Cummins, who is still far from being a man of years.

“I walked eight miles through the forest and sold eggs for three cents a dozen and butter for four cents a pound,” said John Cownie — a well-known figure at the Des Moines Capitol.

One short half-century, and here is the whole paraphernalia of a high civilisation — a fruitage which has usually required the long cultivation of a thousand years.

And Iowa is not a freak State. A traveller hears the same story — from ox-cart to automobile, in almost every region of the prairie West. The various States are only patches of one vast grassy plain where

“painted harvesters, fleet after fleet,
Like yachts, career through seas of waving wheat.”

“My first experience with the ‘New Farmer,’ as you call him, was in Texas,” said a Kansas City business man. “I had taken an agency for harvesters in a section

of Texas that was bigger than several dozen Vermonts, and I made my headquarters in a town called Amarillo. The first morning I went into the bank to get acquainted. While I was there in came a big, roughly dressed man. “‘Come here, Bill,’ said the banker. ‘Maybe you want some farm machinery.’

“‘Maybe I do,’ said the big fellow; so I gave him a catalogue and went on talking with the banker.

“Ten minutes later the big fellow looked up from the catalogue and asked — ‘How much do you want for ten of these binders?’ I nearly had a spell of heart failure, but I gasped the price. He said — ‘all right; send ’em along.’

“‘Don’t you worry about Bill’s credit,’ said the banker, seeing I looked dazed. ‘He has more than \$100,000 in this bank right now.’

“This was my cue to get busy with the big farmer, and before he left the bank he had bought a thresher, four traction engines and half a dozen ploughs.”

Harvesting by machinery has actually become cheaper than the ancient method

of harvesting by slaves. This surprising fact was first brought to the notice of Europeans during the Chicago World's Fair, when forty-seven foreign Commissioners were taken to the immense Dalrymple farm in North Dakota. Here they saw a wheat-field very nearly a hundred square miles in extent, with three hundred self-binders clicking out the music of the harvest. There were no serfs — no drudges — no barefooted women. And yet they were told that the labour-cost of reaping the wheat was LESS THAN A CENT A BUSHEL.

It has now become impossible to reap the world's wheat by hand. As well might we try to carry coal from mines to factories in baskets. Merely to have gathered in our own cereal and hay of last year's growing, would have been a ten days' job for every man and woman in the United States, between the ages of twenty and twenty-six. But even if it had been possible to return to hand-labour, in the production of the world's wheat, the extra cost would have swollen, last year, to a total of \$330,000,000 — so I am told by a Wisconsin professor who has made a careful study of the costs

of harvesting. This amount is more than equal to the entire revenue of the International Harvester Company, in the five years of its existence.

Roughly speaking, the time needed to handle an acre of wheat has been reduced from sixty-one hours to three, by the use of machinery. Hay now requires four hours, instead of twenty-one; oats seven hours, instead of sixty-six; and potatoes thirty-eight hours, instead of one hundred and nine.

It is machinery that has so vastly increased the size of the average American farm. In India, where a farmer's whole outfit can be bought for ten dollars, the average farm is half an acre or less. In France and Germany it is five acres. In England it is nine. But in the United States—the home of farm machinery, it is one hundred and fifty acres.

Very little has been written about this stupendous prosperity of American farmers. Why? Because it is so recent. The Era of Big Profits began barely ten years ago. There was a time when the blue-ribbon New Farmer was the man who grew wheat in the Red River Valley. He was the

aristocrat of the West. His year's work was no more than a few weeks of ploughing and sowing, and a few days of harvesting. Even this was done easily, sitting on the seat of a machine and driving a team of splendid horses. After harvest, he cashed in, carried a big cheque to the bank, and settled down for a long loaf or a trip to the old homestead in the East.

But it was the bad year of 1893 that first put the farmers, the country over, on the road to affluence. Up to that time it was their usual policy to depend upon a single crop. One farmer planted nothing but wheat; another planted nothing but corn; a third nothing but cotton; and so on. But in 1893 the prices of wheat, corn, and cotton fell so low that the farmers' profits were wiped out. This disaster set the farmers thinking; and in four years they had changed over to the new policy of *Diversified Farming*.

Instead of putting all their work upon one crop, they planted from three to a dozen different crops each year. They manufactured their corn into cattle. They gave the soil a square deal in the matter of fertilisation. They learned to plant better seed

and to pay attention to the Weather Bureau. They studied the market reports. And, best of all, they swung over from muscle to machinery, until to-day the value of the machinery on American farms is fully a thousand millions.

All this amazing progress that I have been describing is by no means the best that the New Farmer will do. It is merely what he has done by the aid of machinery. What he will do by the aid of SCIENCE remains to be seen.

Scientific agriculture is young. It has had to wait until machinery prepared the way, by giving the farmers time to think, and money to spend. The first scientist who took notice of farming was the Frenchman, Lavoisier. He found out the composition of water in 1783, and was in the midst of many discoveries, when a Paris mob hustled him to the guillotine. The famous Liebig next appeared and founded the first agricultural experiment station. Then came Berthelot — the father of synthetic chemistry, with his sensational announcement — “The soil is alive.”

To-day the New Farmer finds himself

touched by Science on all sides. He knows that there are more living things in one pinch of rich soil than there are people on the whole globe. He knows that he can take half a dozen handfuls of earth from different parts of his farm, mix them together, send one thimbleful to a chemist, and find out exactly the kind of crop that will give him the best harvest. And more, now that science has given him a peep into Nature's factory, he can even feel a sense of kinship between himself and his acres, because he knows that the same elements that redden his blood are painting the green hues on his fields and forests.

There are now fifteen thousand New Farmers who have graduated from agricultural colleges; and since the late Professor W. C. Atwater opened the first American experiment station in 1875, fifty others have sprung into vigorous life. There is also at Washington an Agricultural Department which has become the greatest aggregation of farm-scientists in the world. To maintain this Department Uncle Sam pays grudgingly eleven millions a year. He pays much more than this to give food and

blankets to a horde of lazy Indians, or for the building of two or three warships. But it is at least more than is being spent on the New Farmer in any other country.

Step by step farming is becoming a sure and scientific profession. The risks and uncertainties that formerly tossed the farmer back and forth, between hope and despair, are being mastered. The Weather Bureau, which sent half a million warnings last year to the farmers, has already become so skilful that six-sevenths of its predictions come true. In Kansas, wheat-growing has become so sure that there has been no failure for thirteen years. And in the vast South-West, the trick of irrigation is changing the man-killing desert into a Farmers' paradise, where there is nothing so punctual as the crops.

Already gasolene engines are in use among the New Farmers. The International Harvester Company made twenty-five thousand of them last year at Milwaukee, without supplying the demand. These engines, in the near future, will be operated with alcohol, which the farmers can distil from potatoes at a cost of ten cents a gallon.

This is no dream, as there are now six thousand alcohol engines in use on the farms of Germany alone.

When this Age of Alcohol arrives, the making of the New Farmer will be very nearly complete. *He will then grow his own power, and know how to harness for his own use the omnipotence of the soil.*

HD

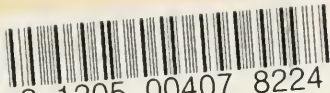
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