The Story of the Typewriter

1873 — 1923

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THE STORY OF THE TYPEWRITER

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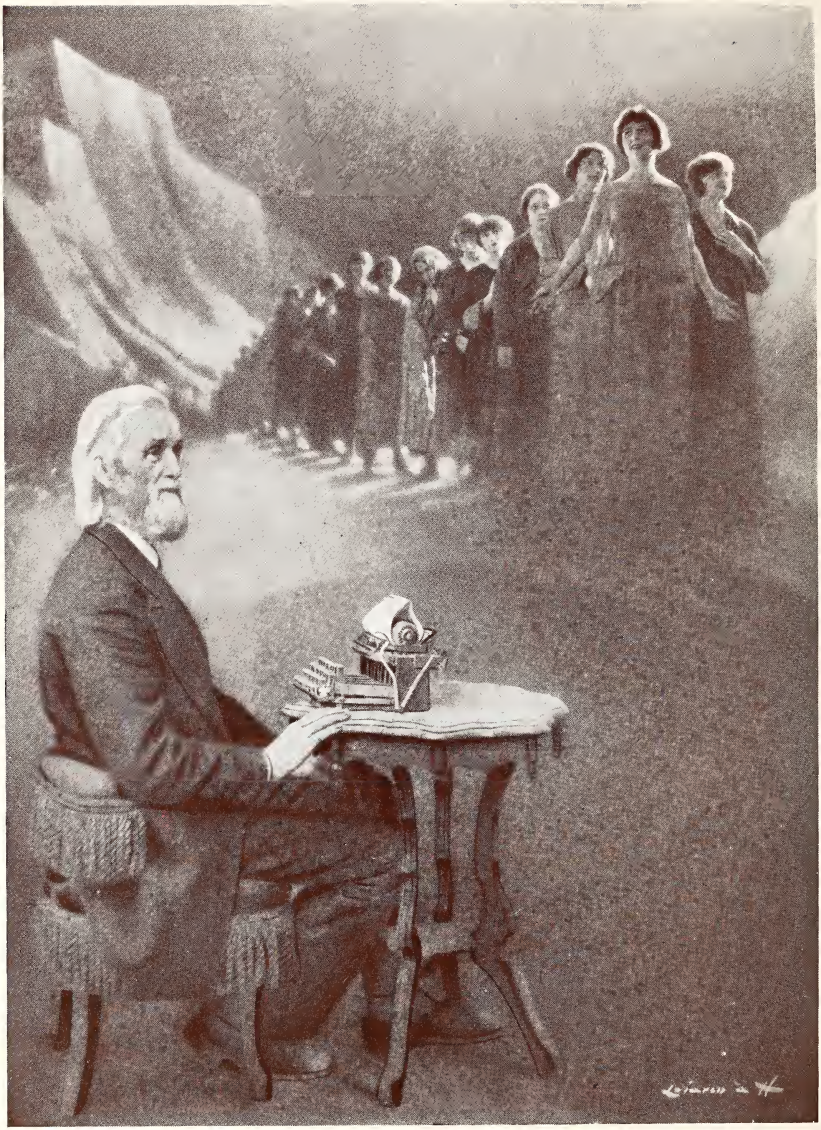
1873-1923



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THE STORY
OF THE
TYPEWRITER

1873-1923

PUBLISHED IN COMMEMORATION OF THE FIFTIETH
ANNIVERSARY OF THE INVENTION OF
THE WRITING MACHINE

BY THE

HERKIMER COUNTY HISTORICAL SOCIETY

HERKIMER, NEW YORK

1923

CONTENTS

Foreword

Local pride in achievement is not only pardonable, but, when that achievement marks a real contribution to human progress, it may even be laudable. It is with no apology, therefore, that the Herkimer County Historical Society presents to the public the story of the typewriter, which we of Herkimer County, New York, have seen unfold.

Half a century ago, in the little Mohawk Valley village of Ilion, was begun the manufacture of a machine which, in that comparatively brief period, has revolutionized intercommunication, contributed mightily to the expansion of modern business, and, what is of even greater significance, has proved the chief factor in the economic emancipation of women.

Realizing the importance of this service, the writer had the honor of suggesting to the Society and to the citizens of Herkimer County that its fiftieth anniversary be adequately observed. One step in this observance has taken the form of publishing this little volume. The data from which it was prepared has been gathered by the Society from a great variety of sources, including one man who has been identified with the history of the typewriter from its earliest days. It shows conclusively that

lion will go down in history as the center from which, in the main, has flowed this great contribution to civilization's progress.

The Society takes this occasion to extend an invitation to the general public to send to it any additional historical data which may serve to make our archives upon the subject more complete. We would be glad to be informed, for instance, of the names of any individuals now living, not mentioned in this volume, who have been identified in any important way with the development of the typewriting machine and its extension throughout the world during the last half century; the location and ownership of any typewriting machine which is over forty-five years old; the name and address of anyone who has been a continuous user of a typewriter for at least forty years; the location and ownership of any machine upon which any very important manuscript or public document was written. In a word, we would like to make the Herkimer County Historical Society's archives the repository where future historians may find complete and reliable information upon the invention which was Christopher Latham Sholes' gift to the world.

JOHN W. VROOMAN,
President, Herkimer County Historical Society.

Herkimer, N. Y., April 7, 1923.

CHAPTER I.

FIFTY YEARS OLD

THE manufacture of the first practical writing machines began at Ilion, Herkimer County, New York, in the autumn of 1873. This anniversary year 1923 is a fitting time to review the remarkable history of this great invention, and every phase of the incalculable service which it has rendered to the modern world.

Fifty years old! What will be the thoughts of the average reader when he is reminded of the actual age of the writing machine?

The typewriter has made itself such an essential factor in modern life, it has become so necessary to all human activities, that the present-day world could hardly be conceived without it. It is hard to name any other article of commerce which has played a more commanding role in the shaping of human destiny. It has freed the world from pen slavery and, in doing so, it has saved a volume of time and labor which is simply incalculable. Its time-saving service has facilitated and rendered possible the enormous growth of modern business. The idea which it embodied has directly inspired many subsequent inventions in the same field, all of which have helped to lighten

the burden of the world's numberless tasks. In its broad influence on human society, the typewriter has been equally revolutionary, for it was the writing machine which first opened to women the doors of business life. It has radically changed our modern system of education in many of its most important phases. It has helped to knit the whole world closer together. Its influence has been felt in the shaping of language and even of human thought.

The most amazing fact of all is that these stupendous changes are so recent that they belong to our own times. One need not be very old to recollect when the typewriter first began to be a factor in business life. The man in his fifties distinctly remembers it all. There are even some now living who were identified with the first typewriter when its manufacture began fifty years ago in the little Mohawk Valley town of Ilion, New York.

Such results, all within so short a period, indicate the speed with which our old world has traveled during the past generation—a striking contrast to the leisurely pace of former ages.

The story of the typewriter is really the latest phase of another and greater story—that of writing itself. Anyone, however, who attempted to write this greater story would soon discover that he had undertaken to write the whole history of civilization. The advance of man from primitive savagery to his present stage of efficiency and enlightenment has been a slow process, but each stage

of this process through the ages has been marked, as if by milestones, by some improvement in his means and capacity for recording his thoughts in visible and understandable form.

The earliest attempts at word picturing by savages, the Cuneiform inscriptions of Babylonia, the hieroglyphics of Ancient Egypt, the clay tablets and stone monuments of antiquity, the papyrus of Egypt, the wax tablets and stylus of the Romans, the parchment manuscripts of the Middle Ages, the development of the art of paper manufacture, the invention of the art of printing, and even the comparatively modern invention of steel pens, are all successive steps in this evolution. Looking back from our vantage ground of today over this record it is easy for us to see the writing machine as the outcome. The art of recording thought was always destined to remain imperfect until some means had been found to do it, which, in the very speed of the process, would be adequate for all human requirements. Even the ancients felt this need; of this fact the history of shorthand is sufficient proof. But never, until the nineteenth century, did men's thoughts turn seriously to machinery as a possible solution.

The invention of printing has been described as the most important single advance in the history of civilization, and it seems to us of today exactly the kind of invention which should have suggested the idea of a writing machine. But fate decreed otherwise, and more than

four centuries were destined to elapse after Gutenberg had begun to use movable types before the advent of the typewriter. It is interesting to note, however, that when the typewriter finally did appear, its influence on the printing art was almost immediate, many improvements in typesetting devices having been directly suggested and inspired by the writing machine.

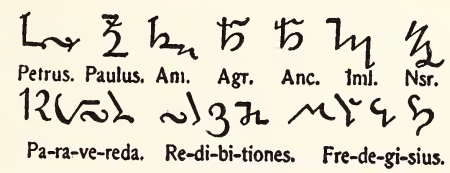
We have spoken of shorthand, an art so intimately allied with typewriting that they are known today as the "twin arts." The story of the typewriter cannot be adequately told if this other art is left out of the picture.

Unlike the writing machine, the beginnings of shorthand date back to antiquity. Some have believed that Xenophon wrote stenographic notes of the lectures of Socrates, but it is at least established that the learned slave Marcus Tullius Tiro, freed by Cicero and made his secretary, developed a system which soon came into widespread use. Few high school boys and girls today, who struggle with the orations of Cicero, know that it was the art of Tiro which preserved these classics for us.

The "Notae Tironianae" (notes of Tiro) consisted of some 5,000 signs for words, and it is doubtful if stenography would today be so popular a profession had one to burden his memory with an equal list. But the ancients were more patient than we, and, once mastered, these notes proved swift and practical. Busy Rome found much use for its stenographers. Atticus, a famous Roman book lover, trained a great force of slaves in the art for

the sole purpose of transcribing, and thus become a real publisher ages before the days of printing. Five manuscript readers were allotted to each one hundred stenographers, and these took down the spoken words. And the cost to the thrifty Atticus was one pound of grain and a small allowance of wine per slave.

Even Rome's greatest men, the Emperor Titus among them, did not scorn to master Tiro's notes. In a later age the sermons of the church fathers, the great Origen, Chrysostom, St. Augustine and others, were noted down in shorthand; so also in the fifteenth century were the sermons of Savonarola. Roger Williams wrote shorthand; so did Samuel Pepys, the author of the famous diary. Among later celebrities who mastered the art was Charles Dickens, who, in his early days, used the Gurney system in reporting speeches in the House of Commons.



TIRONIAN NOTES.
Courtesy of Isaac Pitman & Sons

Ultimately, however, the modern principle of "phonography" came into possession of the field. This system, evolved through the labors of Isaac Pitman and others, used characters to represent the spoken *sound* of words instead of their spellings, and was such an obvious improvement that, in its various forms, it has become practically universal.

Here we encounter a singular fact. After a history

covering ages, the great improvement in shorthand, which finally perfected the art, was delayed by destiny until the very eve of the invention of the typewriter. Its coming, just at this time, seems, in the light of later events, almost prophetic. For it is obvious that shorthand, even as perfected by phonography, would have been restricted, without the typewriter, to a limited field of usefulness. As a time saver, shorthand is clearly a half measure, and, so long as the art of transcribing notes in long hand could be done only at pen-writing speed, the swiftest shorthand writer could render only a partial time-saving service. In the days before typewriting, it would have required more than one stenographic secretary to free the busy executive from the bondage of the pen. He would have needed a complete retinue of them, to whom he would dictate in rotation, which is exactly what the great Julius Caesar is said to have done. But the Caesars of history are few, and equally few are the notables of the past, in any field of effort, who had the means or the inspiration to provide themselves with a whole battery of stenographers.

In this fact we find one outstanding distinction of the typewriter as a labor saver—it perfected the process which shorthand had begun—it completely emancipated the executive. When we talk of "labor saving" we usually think in terms of manual labor. But when the typewriter freed the executive from pen slavery it did more than save mere hand labor. It saved and conserved

the very highest quality of brain labor. True, the busy man of affairs works as hard today as he ever did, but the typewriter has made his labor more productive. It has relieved him of the old pen drudgery, so that the greater part of his time may now be devoted to creative tasks. It is common to speak of the higher efficiency of the present-day business man, as though men themselves had grown bigger in our own times. Perhaps they have. But let us not fail to credit a part of this growth to the emancipation achieved through the stenographer and the writing machine.

The typewriter, like every great advance in human progress, came in the fullness of its own time. Looking back over the past, we can now see why it came when it did, and why it could not have come before. In the days when commerce was smaller, when writing tasks were fewer, when the ability to write or even to read was limited, when life itself was simpler, the world could get along after its own fashion without the writing machine. As education grew, as business grew, as the means for transportation grew, as all human activities grew, so the need grew, and it grew much faster than any real consciousness of the need, which seems always to be the way with our poor humanity. It is this fact which explains the struggle and frequently the tragedy in the early history of so many great inventions. They do not come in response to a demand, but in recognition of a need, and this recognition, in its early phases, is usually confined

to the few. These few are the real pioneers of progress, and it is through their labors and struggles, often unappreciated and unrewarded, that humanity advances in all the civilized and useful arts.

It was even so with the writing machine!

CHAPTER II.

EARLY EFFORTS

THE first recorded attempt to invent a typewriter is found in the records of the British Patent Office. These show that on the 7th of January, 1714, or more than two centuries ago, a patent was granted by Her Majesty, Queen Anne, to Henry Mill, an English engineer. The historical importance of the first typewriter patent makes this document of such interest that we quote the opening sentences, as follows:

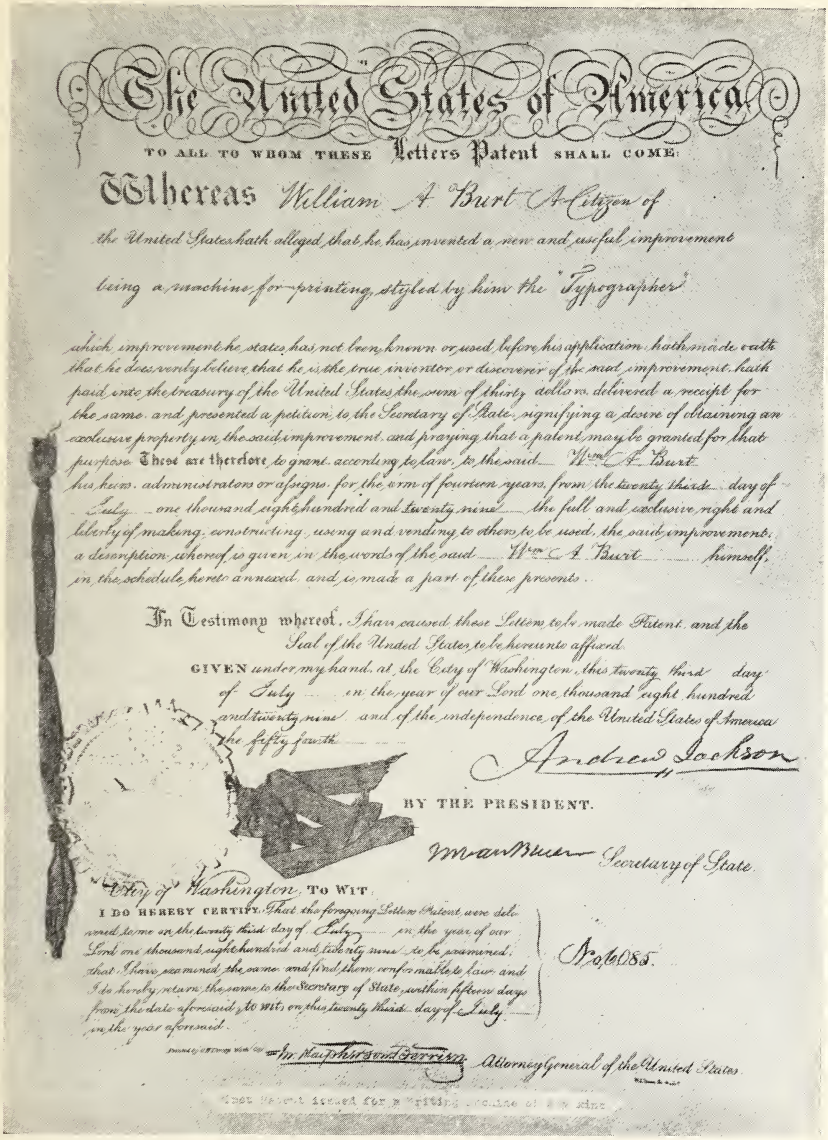
> *Anne,* by the grace of God, &c., to all to whom these presents shall come, greeting.
>
> *Whereas* our trusty and wellbeloved subiect, *Henry Mill,* hath, by his humble petic̃on, represented vnto vs, that he has, by his great study, paines, and expence, lately invented and brought to perfection *"An artificial machine or method for the impressing or transcribing of letters singly or progressively one after another, as in writing, whereby all writings whatsoever may be engrossed in paper or parchment so neat and exact as not to be distinguished from print; that the said machine or method may be of great vse in settlements and publick recors, the impression being deeper and more lasting than any other writing, and not to be erased or counterfeited without manifest discovery;"* and having, therefore, humbly prayed vs to grant him our

> Royall Letters Patents for the sole vse of his said Invention for the term of fourteen yeares, etc.

The quaint wording of this description has a pleasant flavor of the old days. Moreover, as a description of the typewriter, it sounds promising, but unfortunately this is all we know of the invention of Henry Mill. He was an engineer of prominence in his day, but even engineers sometimes dream, and this perhaps was not much more. No model, drawing or description of the machine is known to exist, there is no record to show that they ever did exist, and the secret, if there was one, died with the inventor. But Henry Mill, unknown to himself, accomplished one thing. In a single sentence he wrote himself down in history as the first man who is known to have conceived the great idea.

Throughout the remainder of the eighteenth century only one other attempt is recorded. This was a machine, said to have been invented in the year 1784, for embossing printed characters for the blind. Of this machine nothing is now known; nevertheless this early association of the typewriter with the blind is a point worth noting. We shall presently see how prominently the blind have figured in typewriter history; how much they have received from the writing machine and how much they have given in return.

The first American patent on a typewriter was granted in 1829 to William Austin Burt of Detroit, afterwards



The United States of America

TO ALL TO WHOM THESE Letters Patent SHALL COME:

Whereas William A. Burt A Citizen of the United States hath alleged that he has invented a new and useful improvement being a machine for printing, styled by him the "Typographer" which improvement he states has not been known or used before his application hath made oath that he does verily believe that he is the true inventor or discoverer of the said improvement hath paid into the treasury of the United States the sum of thirty dollars delivered a receipt for the same and presented a petition to the Secretary of State signifying a desire of obtaining an exclusive property in the said improvement and praying that a patent may be granted for that purpose These are therefore to grant according to law to the said Wm. A. Burt his heirs administrators or assigns for the term of fourteen years from the twenty third day of July one thousand eight hundred and twenty nine the full and exclusive right and liberty of making constructing using and vending to others to be used the said improvement a description whereof is given in the words of the said Wm. A. Burt himself in the schedule hereto annexed and is made a part of these presents.

In Testimony whereof I have caused these Letters to be made Patent and the Seal of the United States to be hereunto affixed.

GIVEN under my hand at the City of Washington this twenty third day of July in the year of our Lord one thousand eight hundred and twenty nine and of the independence of the United States of America the fifty fourth

Andrew Jackson

BY THE PRESIDENT.

Martin Van Buren Secretary of State

City of Washington To Wit

I DO HEREBY CERTIFY That the foregoing Letters Patent were delivered to me on the twenty third day of July in the year of our Lord one thousand eight hundred and twenty nine to be examined that I have examined the same and find them conformable to law and I do hereby return the same to the Secretary of State within fifteen days from the date aforesaid to wit on this twenty third day of July in the year aforesaid

No. 6185.

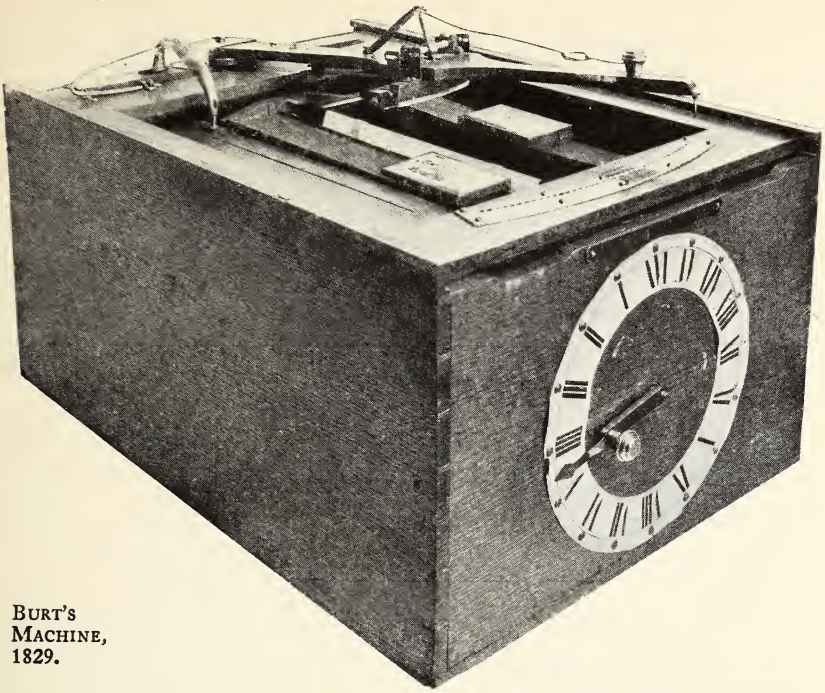
John Macpherson Berrien Attorney General of the United States

PHOTOGRAPHIC REPRODUCTION OF THE TITLE PAGE OF THE FIRST AMERICAN PATENT ON A TYPEWRITER, GRANTED TO WILLIAM A. BURT, JULY 23, 1829. SIGNED BY ANDREW JACKSON, PRESIDENT, AND MARTIN VAN BUREN, SECRETARY OF STATE.

better known as the inventor of the solar compass. The only model of this machine was destroyed by a fire at the Washington Patent Office in 1836. Many years later, however, the Patent Office, working from a parchment copy of the original patent and other papers in the possession of Burt's family, was able to produce a replica of this machine, which was exhibited at the World's Columbian Exposition in 1893. Burt's typewriter, as revealed in this patent, carried the type, not on individual bars, but on the segment of a circle, which makes it the ancestor of the present-day, type-wheel machines.

Although Burt's machine was never manufactured he at least succeeded in getting it talked about. A letter from a correspondent, published in the *New York Commercial Advertiser* of May, 1829, calls it "a simple, cheap and pretty machine for printing letters," and the editorial comment speaks highly of its possibilities, "should it be found to fully answer the description given of it." Both editor and correspondent confess themselves "stumped" in finding an appropriate name for the new invention, a point on which Burt had solicited advice. "Burt's Family Letter Press" was one of the bright ideas suggested. It seems that the honor of naming the "typewriter" was being reserved by destiny for the inventor of the first practical machine.

The next recorded effort was in 1833, when a French patent was granted to Xavier Projean of Marseilles for a device which he describes as a "Ktypographic" ma-

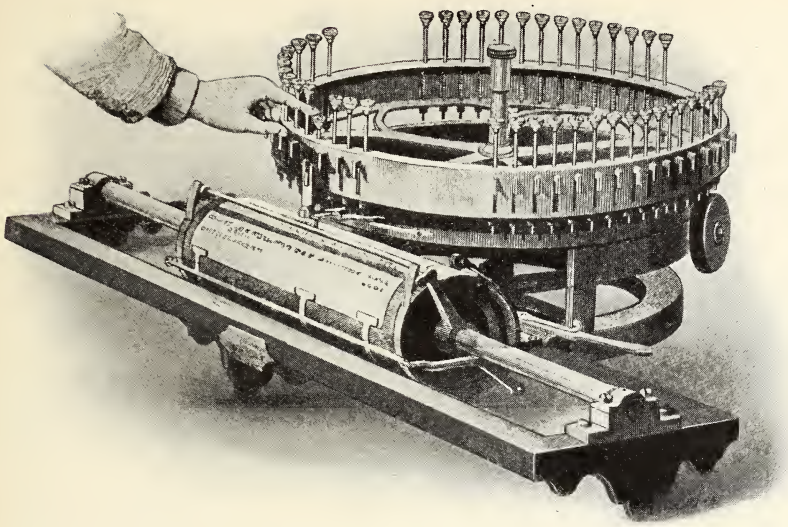


BURT'S MACHINE, 1829.

chine or pen. This machine consisted of an assembly of type bars arranged in a circle, each type striking downward upon a common center. All present day typewriters are divided, according to their operating principle, into two classes, the rotating segment or type-wheel machines, and the type-bar machines, and it is curious that each of these principles should have been embodied in the two earliest known devices, Burt's machine of 1829 and Projean's of 1833. But Projean's machine, like Burt's, contained nothing more than the germ of an idea. Projean's claim for his own invention, that it would print "*almost* as fast as one could write with an ordinary pen," is sufficient evidence that it was too slow to possess any practical utility.

A few years after Projean's effort we find a new influence at work. The electric telegraph had been invented, and the effort of inventors to produce a telegraphic printing mechanism gave an impetus to the idea of a writing machine. In 1840 the British Patent Office records the application of Alexander Bain and Thomas Wright on a writing machine for use in connection with the telegraph. These men were afterwards better known as the inventors of a telegraphic printer. As a typewriter, Bain's device was of no value and scarcely deserves serious mention. A more important step in the progress of the art was taken by Charles Thurber of Worcester, Mass., to whom a patent was granted in 1843, followed by another in 1845. The Thurber machine of 1843 contains one notable advance; the letter spacing was effected by the longitudinal motion of a platen, a principle which is a feature of all modern machines. This machine did excellent work, but the printing mechanism was too slow for practical use and none were manufactured. A model of Thurber's machine is now in the Smithsonian Institution at Washington, and a later model, showing important improvements, is preserved by the Worcester Society of Antiquarians.

Thurber's other model of 1845 was not a typewriter at all, but a "writing machine" in the strictest sense. It was designed to perform the motions of the hand in writing, and was intended for the use of the blind. This attempt was a failure, but it illustrates again how prom-



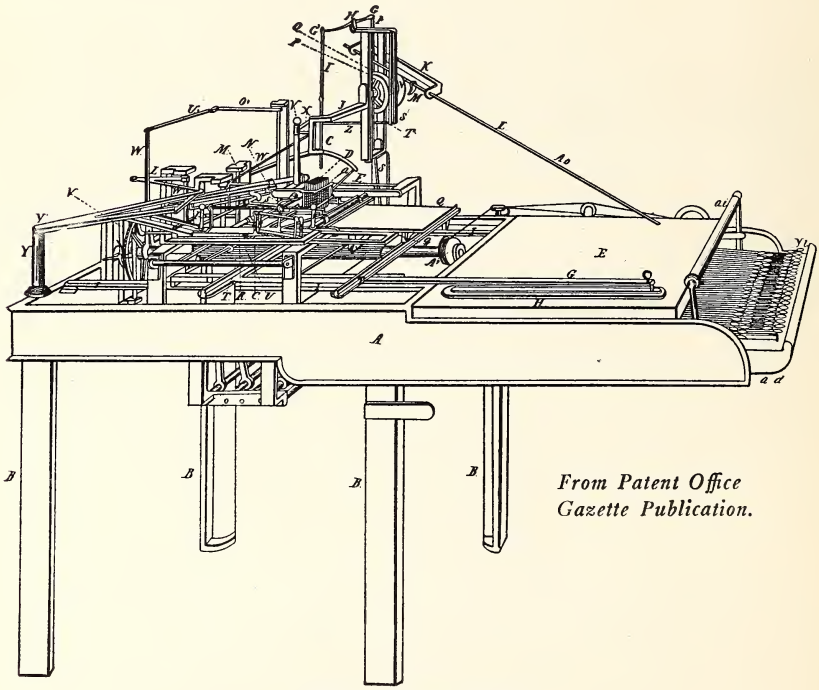
THURBER'S MACHINE, 1843.

inently the needs of the blind figured in the efforts of the early inventors.

The same is true of the next recorded effort, which was the invention of a blind man, Pierre Foucault, a teacher in the Paris Institution for the Blind. Foucault's machine, which was patented in France in 1849, printed embossed letters for the blind very successfully. This machine attracted great attention and was awarded a gold medal at the World's Fair at London, in 1851. Several of them were constructed and remained in service for a long time in institutions for the blind in different parts of Europe. But the machine never came into very general use.

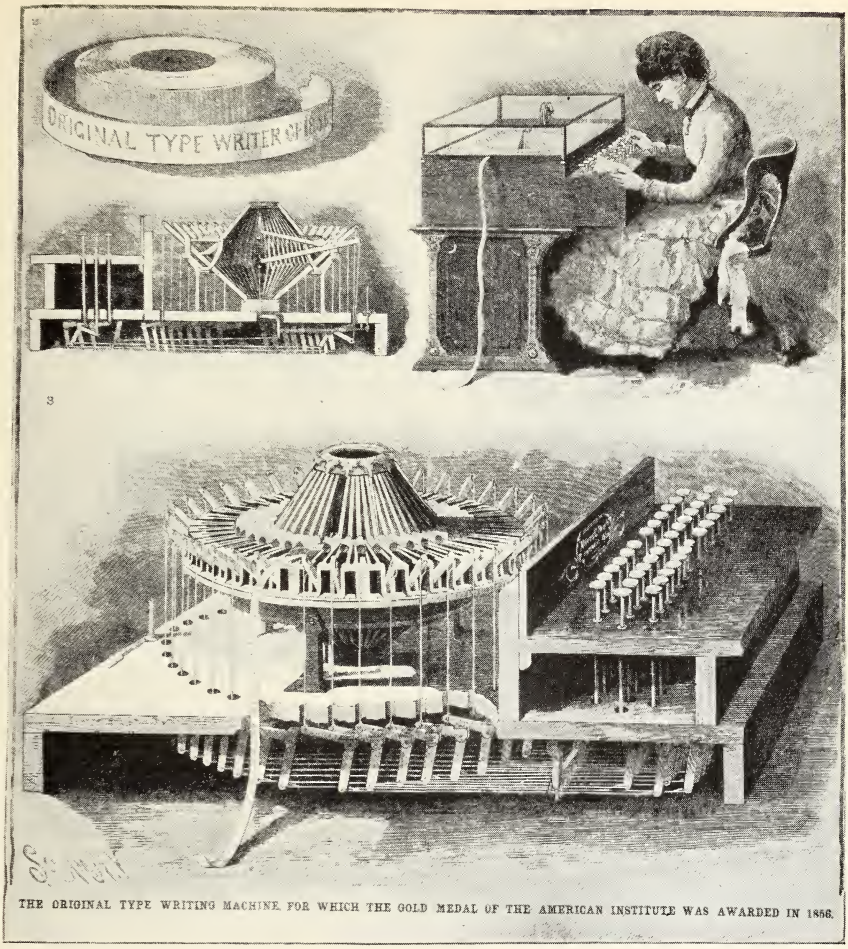
The scene now re-crosses the Atlantic, where it is destined to remain until the appearance of the first prac-

tical typewriter. Oliver T. Eddy of Baltimore took out a patent in the year 1850. This machine, in the inventor's own words, was "designed to furnish the means of substituting printed letters and signs for written ones in the transaction of every day business." Eddy's life record is one of the tragedies of early typewriter invention. He devoted many years of labor to his machine, and is said to have died in poverty after a futile appeal to the Government for assistance. The Eddy machine was highly ingenious and did good work, but was too cumbersome and intricate for practical use.



From Patent Office Gazette Publication.

EDDY'S MACHINE, 1850.



THE ORIGINAL TYPE WRITING MACHINE FOR WHICH THE GOLD MEDAL OF THE AMERICAN INSTITUTE WAS AWARDED IN 1856.

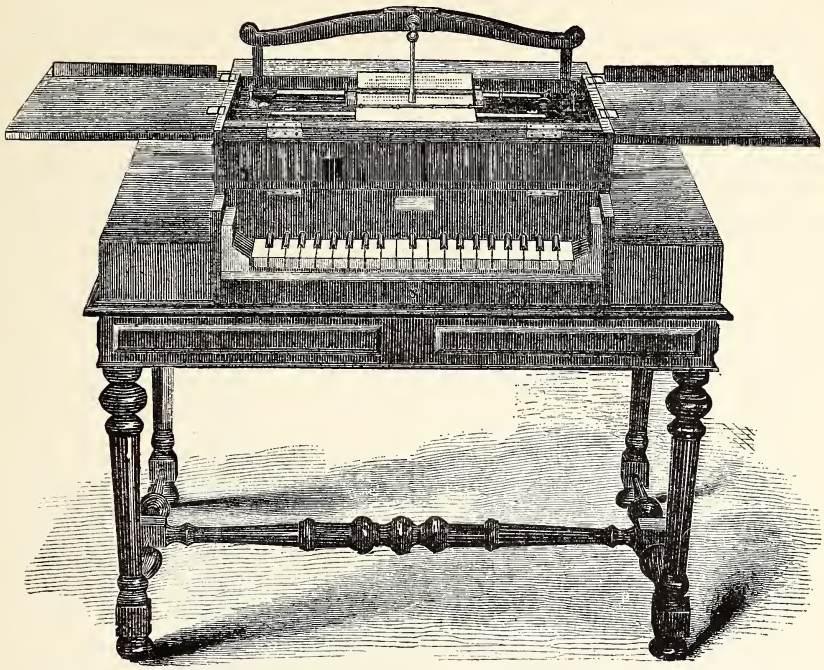
BEACH'S MACHINE, 1856.

As we enter the "fifties" the attempts at typewriter invention become more numerous. J. B. Fairbanks received a patent in 1850, and J. M. Jones, of Clyde, N. Y., in 1852, the latter machine marking some progress in the direction of a practical typewriter. Next in order comes A. Ely Beach of New York, for many years an editor of

the *Scientific American*. His machine, for which a patent was issued in 1856, marked a decided advance over anything that had yet appeared. It consisted of a series of type levers, arranged in the form, afterwards familiar, of a circular basket, all of which printed at a common center, much in the same manner as a modern typewriter. This machine, like so many others of this early period, was designed for the benefit of the blind, and printed raised letters which they could read by touch. The Beach machine did good work, but was slow in operation, and it had another very serious limitation—it wrote only on a narrow ribbon of paper. The machine attracted great attention when exhibited in New York, but it never emerged from the experimental stage.

In 1857 Dr. Samuel W. Francis, a wealthy physician of New York, took out a patent on a typewriter, the keys of which resembled those of a piano, and the types, which were arranged in a circle, printed at a common center. It was said of the Francis machine that it printed with a speed *exceeding* that of the pen, a degree of praise not accorded to any of its predecessors. But it was too bulky and costly for a commercial venture and no attempt was ever made to place it on the market.

Among other men of this period who worked on the great problem were R. S. Thomas of Wilmington, N. C., who, in 1854, took out a patent on a machine called the "Typograph"; J. H. Cooper of Philadelphia, in 1856, who resorted to the type-wheel principle of construction;

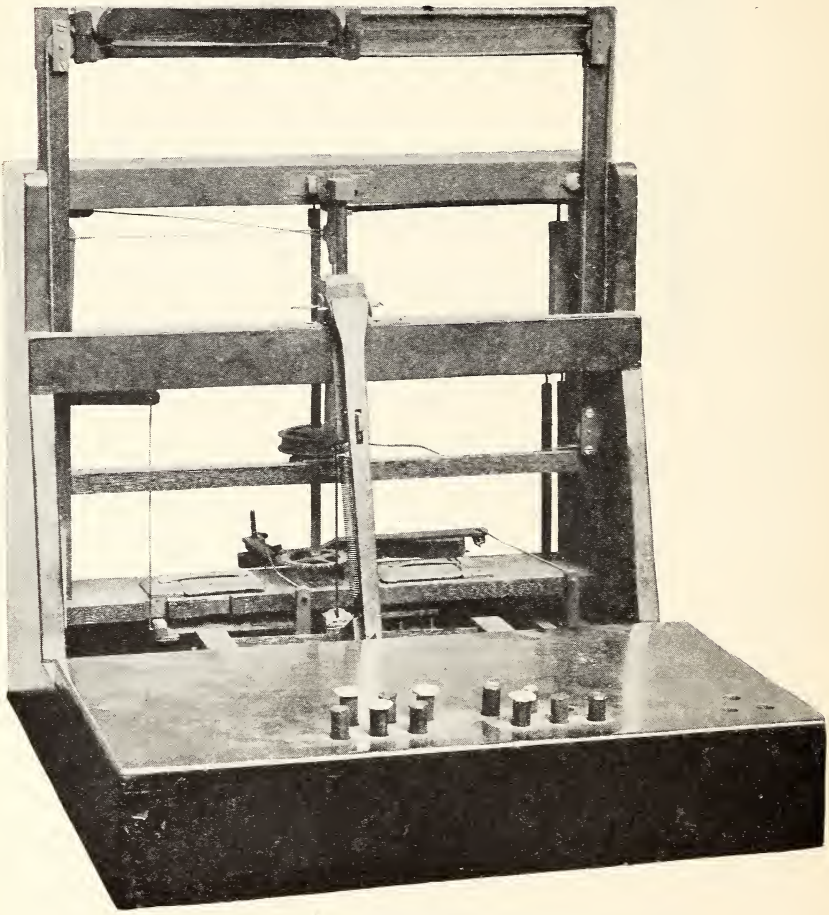


FRANCIS' MACHINE, 1857.

Henry Harger in 1858; F. A. deMay of New York in 1863; Benjamin Livermore of Hartland, Vermont, in 1863; Abner Peeler of Webster City, Iowa, in 1866; Thomas Hall in 1867; and John Pratt of Centre, Alabama, who in 1866 produced a device called the "Pterotype" (winged type), of which we shall have more to say in the course of this story. And this about completes the list of attempts which preceded the invention of the first practical writing machine.

The reader has doubtless sensed a certain monotony in this review of the early typewriter inventions. *"It did good work, but it was too slow,"* is the formula which fits

nearly all of them; certainly all of them that were able to write at all. The superior legibility of type over script is an undoubted advantage of the writing machine, but it is not the leading one, and the transition in the cost of a writing implement from a penny pen to a machine costing upwards of one hundred dollars could never have come to



JOHN PRATT'S TYPEWRITER—PATENT OF AUGUST 11, 1868.

pass on the basis of superior legibility alone. The great, outstanding merit of the writing machine is its *time-saving* service. This is the capacity that was needed in order to justify its existence, and the typewriter did not enter the practical stage until a machine had been invented which far surpassed in speed the utmost possibilities of the pen.

The real point of interest about these early efforts is the significant way in which their number increased as the time drew near for the solution of the problem. These attempts, during the twenty years before 1867, the year when the inventors of the first successful machine began their labors, far exceeded in number the sum of all previous efforts. Every year the need was growing, every year more men were becoming conscious of this need, and more men with an inventive turn were giving thought to the matter. *The hour for the typewriter had struck.* And when, in the course of time, the appointed hour strikes, it seems written in the book of human destiny that it shall produce THE MAN.

CHAPTER III.

THE FIRST PRACTICAL TYPEWRITER

THE time—the winter of the year 1866-67.

The place—a little machine shop in the outskirts of the city of Milwaukee.

The scene—three men, all middle aged, thoughtful and studious, each one hard at work on a pet invention of his own, without a thought in the mind of any one of them of the great achievement which was destined to come out of this chance association.

Thus was the stage set for the invention of the first practical typewriter, though nearly seven years were yet to elapse before its actual production began in the little town of Ilion, New York.

One of these three men, Carlos Glidden, the son of a successful ironmonger of Ohio, was engaged in developing a mechanical "spader" to take the place of a plow.

The other two, Samuel W. Soulé and Christopher Latham Sholes, both printers by trade, were engaged in developing a machine for numbering serially the pages of blank books and the like.

Of these men, the central figure in the association subsequently formed was Christopher Latham Sholes, a

name which must always occupy the place of highest honor in any history of the writing machine.

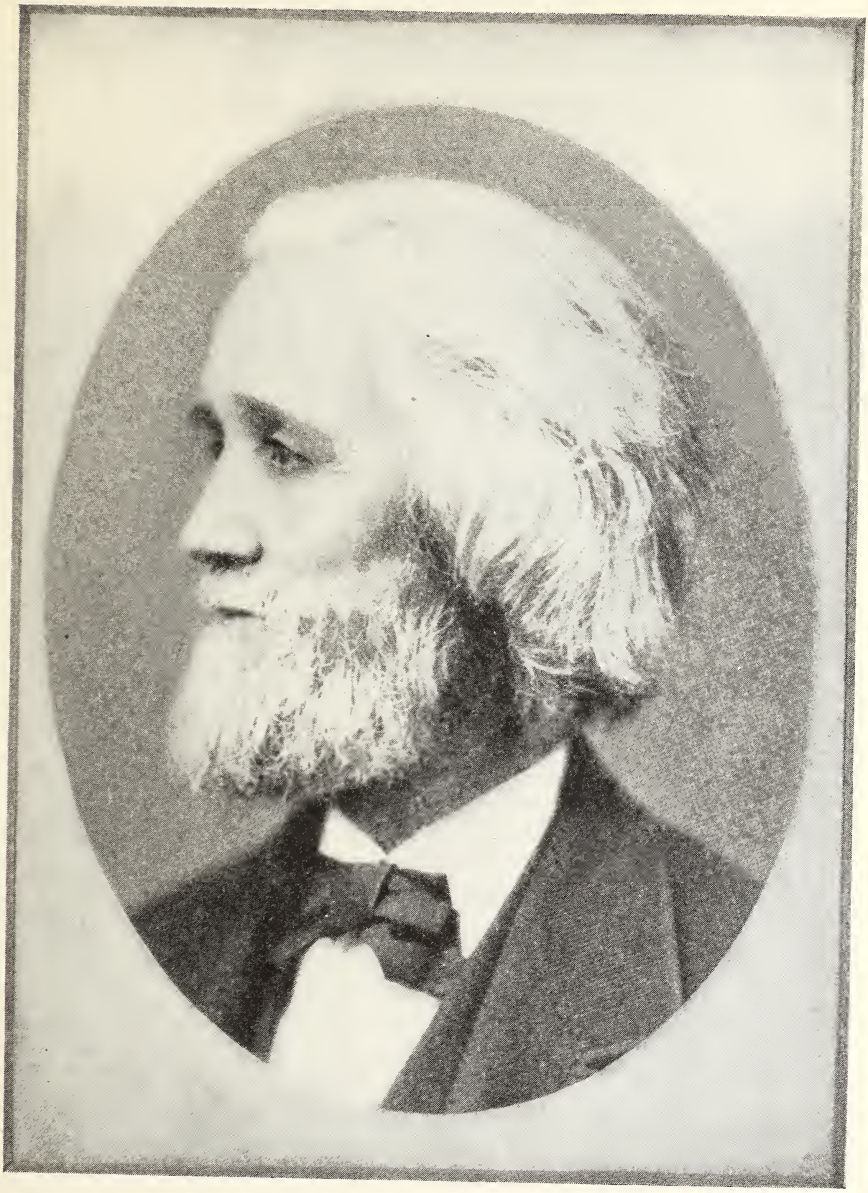
Sholes was born in Columbia County, Penn., on February 14, 1819. He came of the oldest New England stock and his ancestors had served with distinction in the War of the Revolution. His grandfather on the maternal side was a lineal descendant of John and Priscilla Alden, so the spirit of the pioneer was a part of his inheritance. It is also of deep significance that Sholes was a printer and publisher by trade, the most closely allied mechanical arts to typewriting that the world then knew. As a publisher, Sholes knew, from the necessities of his own occupation, the vital help that a writing machine would offer. And it certainly accords with the fitness of things that, after the lapse of four centuries, the art of Gutenberg should have furnished, in one of its disciples, the inventor of the typewriter.

At the age of fourteen young Sholes was apprenticed to the editor of the *Intelligencer* of Danville, Pa., to learn the printing trade, but four years later he joined his brother, Charles C. Sholes, well known in the early politics of Wisconsin, then living in Green Bay. A frail constitution, with a tendency to consumption, of which disease he finally died, seems to have influenced his early removal to what was then a wild region at the edge of the great pine forest. In the following year, when only nineteen years old, he took charge of the House Journal of the Wisconsin Territorial Legislature, which he carried

to Philadelphia to be printed; a long and difficult journey at that time. In 1839 we find him at Madison, where he became editor of the *Wisconsin Inquirer,* owned by his brother Charles. In the following year he went to Kenosha, where he edited the *Southport Telegraph,* afterwards the *Kenosha Telegraph,* and four years later was appointed postmaster of the town.

Sholes's activities as a journalist finally took him into Wisconsin politics, a career for which, in character and temperament, he was very poorly fitted. Nevertheless, he served two terms as state senator, in 1848 and 1849 from Racine County, and in 1856 and 1857 from Kenosha County. In 1852 and 1853 he represented Kenosha in the assembly. While a member of the council he was a witness of the homicide of one of the members by another, a tragedy made familiar to the world by Charles Dickens in "American Notes." The account given by Dickens was taken from Sholes's own paper, the *Southport Telegraph.* In 1860 Sholes removed to Milwaukee, where he had an active and varied career, first as postmaster, and later as commissioner of public works and collector of customs. He was also for a long time editor of the Milwaukee *Daily Sentinel* and the Milwaukee *News.* It was in 1866, while serving as collector of customs for the Port of Milwaukee, that the invention of the typewriter enters the story.

On the personal side much more could be written concerning Sholes, for he was a man of very unusual and



CHRISTOPHER LATHAM SHOLES,
INVENTOR OF THE FIRST PRACTICAL TYPEWRITER.

attractive character. Some might have called him an eccentric, but his eccentricities were of a kind which endeared him to everyone. He is described as one of the most unselfish, kind-hearted and companionable men that ever lived. He was also a man of extreme personal modesty, and of almost excessive tenderness of conscience, viewed from the usual business standpoint. He was always more than just to others and less than just to himself. Some phases of his character were a puzzle. As an editor he made it a rule to copy into his own paper all the adverse criticisms that were passed upon him by his political adversaries, and some of them were very bitter and unjust, and he would always omit all complimentary notice of himself and his work. Gentle and lovable, cultured and brilliant, modest and unselfish, these were the outstanding characteristics of Christopher Latham Sholes.

He was not the kind of man ever to make much money. In the days before the typewriter he had, by a fortunate chance, acquired wealth, but he did not keep it. The typewriter gave him another opportunity, but he let it pass. From first to last he was singularly indifferent to worldly fortune. One day, in his later years, he remarked to a friend that he had been trying all his life to escape becoming a millionaire and he thought he had succeeded admirably. He was always a visionary, and one of his visions was of a human Utopia which should witness the abolition of greed and poverty and the dawn of universal

love. Call him a dreamer if you will, but one day he dreamed a dream which he proceeded to translate into a wonderful reality, which has placed the whole world in his everlasting debt.

The typewriter was not the first evidence of Sholes's inventive genius. Years before he had been the first to conceive of the method of addressing newspapers by printing the names of subscribers on the margin. His more recent work on the machine for paging blank books brings us to the beginning of the typewriter story. But all else is now obscured by the memory of his crowning achievement, the invention of the writing machine.

What was the influence which caused these three men, Sholes, Soulé and Glidden, to drop the inventions on which they had been working and to pool their interests in a new and far greater undertaking?

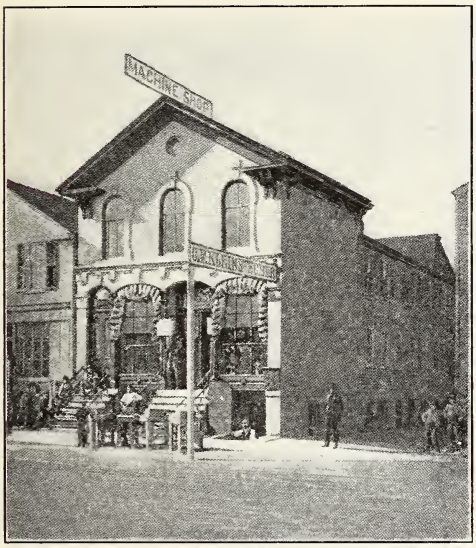
According to one story, the idea arose out of a chance remark of Glidden's, who had become interested in Sholes's paging machine and one day said, *"Why cannot such a machine be made that will write letters and words and not figures only?"* Nothing further was said or done at the time, but in the summer of the following year (1867) a copy of the *Scientific American,* which quoted an article from a London technical journal, fell into the hands of Glidden. It described a machine called the "Pterotype," invented by John Pratt, which was designed to do just what Glidden had suggested. This invention had inspired an editorial in the same issue of the paper

which pointed out the great benefit to mankind which such a machine would confer, as well as the fortune that awaited the successful inventor. Glidden immediately brought this article to the attention of Sholes, and it appealed so strongly to his imagination that he decided to see what could be done.

General William G. LeDue, whose own interest in the invention of a typewriter dated back to 1850, and who subsequently was the first man to introduce the machine into the Government service at Washington, tells how, in 1867, he visited Milwaukee and found Sholes, together with Glidden, at work on the book-paging machine, and suggested to them the idea of a typewriter.

These two accounts are in no sense contradictory. When an idea is "in the air," it is natural to find more than one influence at work. At any rate, we soon find Sholes working whole-heartedly on the new idea, assisted by Glidden and Soulé, both of whom had been invited to join in the enterprise. None of these men, so far as we know, had any knowledge at the time of any previous attempts to invent a typewriter, with the single exception of John Pratt's "Pterotype" already mentioned. In the building of the new machine they were, at the outset, wholly dependent on their own creative efforts. All of them were amply endowed with inventive talent, but not one of the three was a mechanical engineer by profession, or even a mechanic by trade, and they needed the help of the skilled mechanics at Kleinsteuber's machine shop

in the carrying out of their ideas. Of these mechanics, Matthias Schwalbach is the man who figures most prominently in this story. Schwalbach had already helped Sholes in developing his paging machine, and, when the efforts of the three inventors were transferred to the typewriter, he entered into the new work with interest and enthusiasm. As the work went on Schwalbach began to do more than merely carry out the ideas of Sholes; he developed some ideas of his own which were of the greatest help to the inventors.

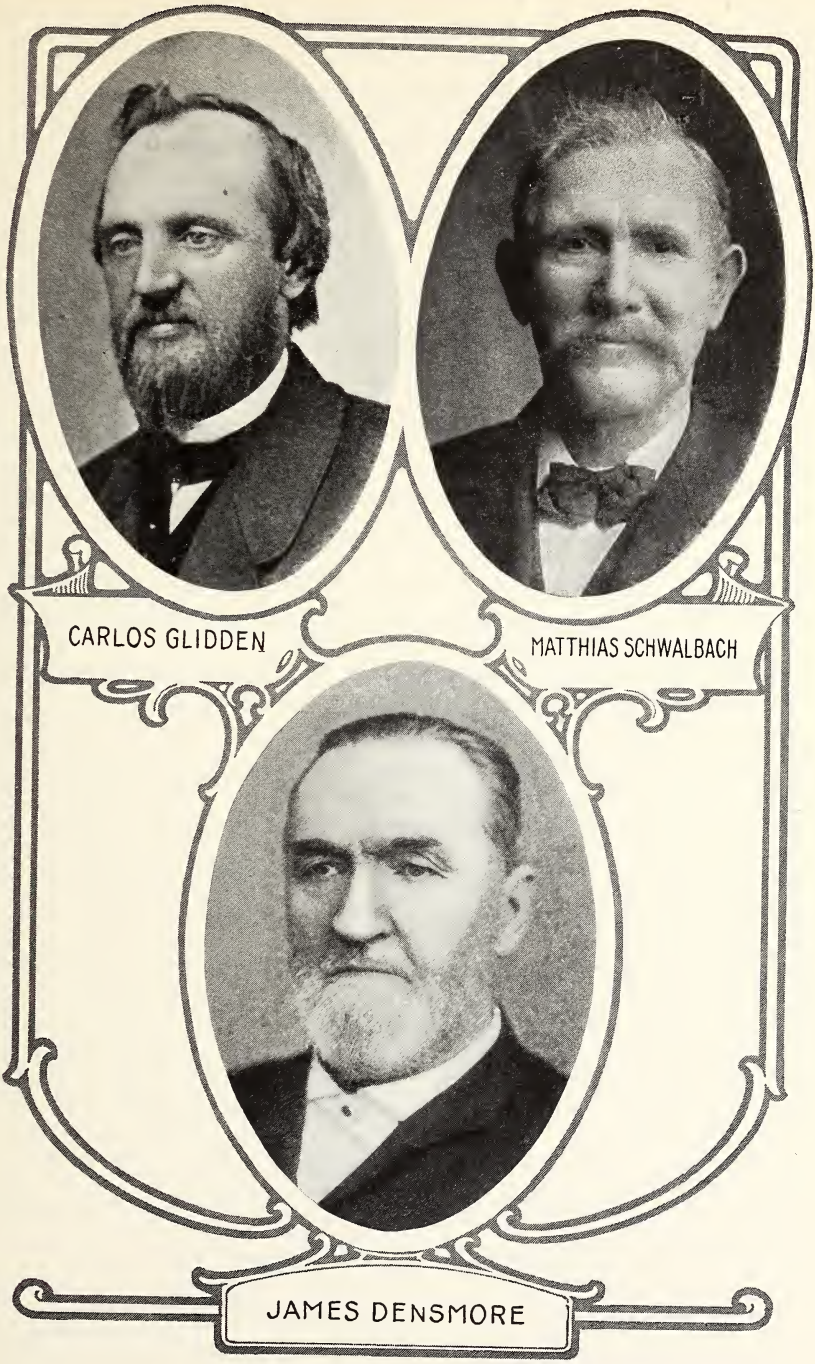


THE MACHINE SHOP WHERE SHOLES INVENTED THE TYPEWRITER

The work went steadily onward and by autumn of the year 1867 the first machine had been made, although no patent was taken out until June of the year following. This first machine had innumerable defects and was a crude affair in every way. But it wrote accurately and *rapidly,* and that was the main point. Moreover, as a self-advertiser, it soon scored a notable triumph. A number of letters were written with it and sent to friends, among these one to James Densmore, then of Meadville, Pa. Densmore was immediately interested.

Like Sholes and Soulè, he had been both editor and printer, and could well realize the importance of such a machine. Densmore was a practical man of affairs, with imagination, foresight, energy and courage unbounded. Instantly he saw the possibilities of the new invention and shortly afterwards he purchased, by the payment of all expenses already incurred, an interest in the new machine before he had so much as seen it. Densmore did not actually see the typewriter until March of the following year (1868). He then pronounced it good for nothing save to show that the idea was feasible, and pointed out many defects that would need to be remedied before it would be available for practical uses. Shortly afterwards Soule dropped out of the enterprise, leaving it to Sholes, Glidden and Densmore.

The relationship which then began between Sholes and Densmore was a strange meeting of opposites, for two men more unlike could hardly be imagined. Densmore is described as bold, aggressive and arrogant. If Sholes was a dreamer and an idealist, Densmore in some respects was a plain "crank." He was a vegetarian of the militant type, and did not hesitate to remonstrate with meat eaters, even total strangers in public restaurants. His own diet consisted mainly of raw apples, a reminder of the raw turnips of Colonel Sellers. He was always impervious to the shafts of ridicule and insensible to slights. Indomitable and resolute, in the pursuit of any object he could not be discouraged or repulsed. But Densmore,



CARLOS GLIDDEN

MATTHIAS SCHWALBACH

JAMES DENSMORE

in his own rough way, was usually kind to the gentle Sholes, and it may be set down to his credit that more than once, during the years of inventive struggle from 1867 to 1873, when difficulties thickened and Sholes, if left to his own devices, would have become discouraged, Densmore's unquenchable faith was the salvation of the infant enterprise.

The relationship between Densmore and Sholes reminds us in some respects of the similar relationship in the eighteenth century between Boulton and James Watt. During these years Densmore consistently played the part of Boulton to Sholes, who, under his urging, continued to build model after model, until twenty-five or thirty had been made. Each one of these marked some improvement over the last, but in the hands of practical users each one showed some defect and broke down under the strain of actual use. It was not until early in the year 1873 that the machine was deemed sufficiently perfected for actual manufacture.

In the meantime other men had entered the typewriter story. One of these was James Ogilvie Clephane of Washington, D. C., who, years after, became closely identified with Ottmer Mergenthaler, the inventor of the Linotype. It was thus the unusual distinction of Clephane to place his name in intimate association with two of the greatest inventions of our times.

Clephane's role in the case of the typewriter was that of practical tester. As an official shorthand reporter, he

had a complete and instant appreciation of the boon that the new machine would confer on his own profession, and he faithfully and gladly tried out one model after another sent to him by the inventors. He was severe in his criticisms of the defects of these models, as they revealed themselves in actual service, so much so that Sholes frequently became disheartened. But it was all in a good cause, and Densmore kept assuring Sholes that such tests were just what were needed to reveal the weak points. Thus by slow degrees the original conceptions of the inventors were modified by their growing knowledge of practical requirements.

Mr. Charles E. Weller, during this period of typewriter development, played a role similar to that of Clephane. Mr. Weller, now a resident of La Porte, Ind., is the only present-day survivor of the many friends of Sholes, and his invaluable little book, "The Early History of the Typewriter" is the most intimate picture of the character and struggles of the inventor that we now possess. Weller was in personal contact with Sholes almost from the beginning. In July, 1867, when resident in Milwaukee working as a telegraph operator and student of shorthand, he tells how Sholes came into the telegraph office one day to secure a sheet of carbon paper, a rare article in those days. Weller knew Sholes as an inventive genius, and his curiosity was immediately aroused. Sholes told him that if he would call at his office he would be glad to show him something interest-

ing, and Sholes kept his word. What Weller saw was a crude experimental affair rigged up with a single key, like a telegraph transmitter, which printed through the carbon paper a single letter wwwww. But it printed this letter in sequence as fast as the key could be operated. "If you will bear in mind," says Weller, "that at that time we had never known of printing by any other method than the slow process of setting the types and getting an impression therefrom by means of a press, you may imagine our surprise at the facility with which this one letter of the alphabet could be printed by the manipulation of the key." Sholes then explained how he was developing this idea into a machine which would print in similar manner any and all letters of the alphabet—in other words a complete writing machine. Weller, shortly after, removed to St. Louis, to take up the profession of shorthand reporter. On leaving, Sholes promised to send him, for practical testing, the first completed model and in January, 1868, the machine arrived. Sholes, in the meantime, had chosen his own name for this machine, which he called a *"type-writer."* And thus to the inventor himself fell the honor of christening his own creation with the name which has always been universal among English speaking users.

The proper naming of the typewriter had been quite as long and difficult a job as the evolution of the practical machine itself. Those who came before Sholes failed in this, quite as much as in their inventive efforts. Henry

Mill did not even attempt to name his invention. Burt called his a "Typographer." Thurber called his first machine a "Patent Printer"; his second a "Mechanical Chirographer." Eddy, like Mill, made no effort to find a name. Jones called his invention a "Mechanical Typographer"; Beach called his an improvement in "Printing Instruments for the Blind"; Francis called his an improvement in "Printing Machines"; Harger called his an "Improved Mechanical Typographer"; DeMay also described his machine as an "Improved Mechanical Typographer or Printing Apparatus." Livermore, following the same lead, called his an "Improved Hand Printing Device or Mechanical Typographer." Peeler stated that he had invented a new and valuable "Machine for Writing and Printing." Hall did a little better when he described his invention as a "Machine for Writing with Type or Printing on Paper or Other Substance." Of all those who began before Sholes, the only one who showed any originality in picking a name was John Pratt with his "Pterotype," a word the meaning of which few people knew. It remained for Sholes himself, in his simple, direct way, to hit upon a name which no one has ever been able to improve upon.

During the next few years, Weller tested out the machine that Sholes had sent him, and also later models, in connection with his work as shorthand reporter. The letters he received from Sholes during these years, addressed to "Charlie" and "Friend Charlie," every one of

them typed by Sholes himself on his own machine, are striking word pictures of the writer in all his changing moods. In one we read, "The machine is done, and I want some more worlds to conquer. Life would be most flat, stale and unprofitable without something to invent." Again only two months later, "I have made another most important change in the machine," etc. Six months later, "I have now a machine which is an entirely new thing. I have been running this about two months, and in all that time it has not developed a single difficulty. In fact any such thing as trouble or bother has ceased to enter into the calculation." This sounds good and it sounds final, but listen to the last letter of the series, written two years later, on April 30, 1873. "The machine is no such thing as it was when you last saw it. In fact you would not recognize it." Sholes is always through and yet never through. But this time, as far as Sholes is concerned, the word was indeed final, for when this last letter was written the historic contract which placed the manufacture and further development of his machine in the hands of E. Remington & Sons, the famous gunmakers, had already been made.

All of this happened more than half a century ago, and now, after all these years, "Friend Charlie" begins to figure again in this story. Throughout his long life, Mr. Weller's devotion to the memory of Sholes has been unbounded, and recently, despite advanced years, he has become the leading spirit in a movement instituted by the

National Shorthand Reporters' Association to erect a monument to mark the last resting place of Sholes in Forest Home Cemetery, Milwaukee, which will be worthy of his name and fame as one of the world's great inventors. It is earnestly to be hoped that the efforts of "The C. Latham Sholes Monument Commission" to raise the necessary funds will soon be successful, in order that the erection of this monument may commemorate this anniversary year of the writing machine.

While Weller and Clephane, late in the sixties, were demonstrating the utility of the new machine in connection with shorthand reporting, another man was doing similar pioneer work in an entirely different field. This man was E. Payson Porter, an honored name in the history of telegraphy, and long known as the dean of American telegraphers. Porter first saw one of the Sholes models in 1868, at which time he was employed as an operator in the Chicago office of the Western Union Telegraph Company, and he astonished the inventor by the rapidity with which he manipulated the keys at first sight. His skill was due to the fact that he had formerly worked a House telegraph printer. Sholes, of course, was delighted. He promised Porter the finest machine he could make, upon condition that he could receive on the typewriter as fast as any telegrapher could send a message. In due time the machine arrived in Chicago, and Porter thus describes the demonstration which followed. "A sounder and key were placed upon the table and General

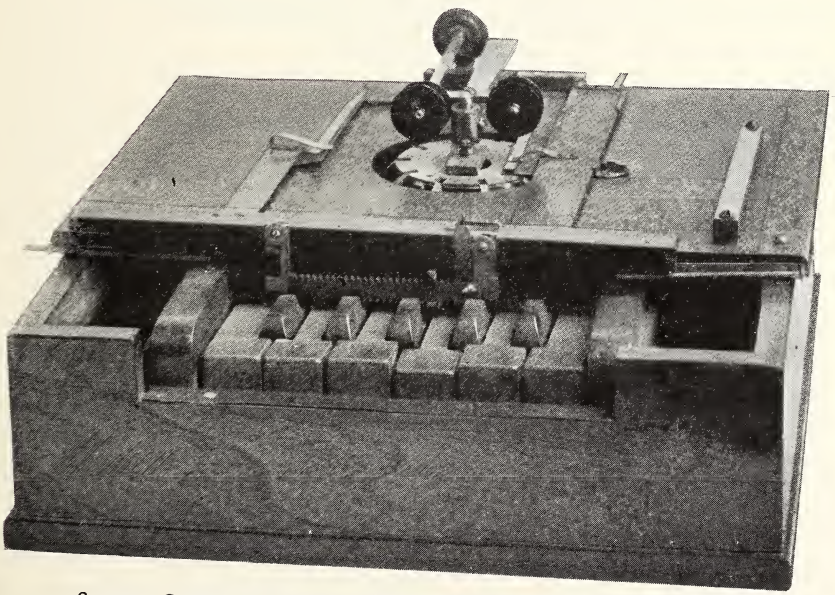
Stager was the first to manipulate the same for me to copy, which I did readily. Colonel Lynch then attempted to 'rush' me, and failing to do so, an 'expert' sender was sent for from the operating room. A thorough trial of my ability to 'keep up' resulted so satisfactorily that the typewriter was taken into the operating room."

This demonstration was made in the year 1869, and Porter's description of it gives the whole gist of typewriting in its relation to telegraphy. It lies simply in the superior speed of the "mill," as telegraphers call the typewriter, over handwriting, in receiving over the wire, and it is just this difference in speed which in the past forty years has revolutionized the telegrapher's profession. The partnership between telegraphy and the "mill" is as firmly established today as that other partnership between the typewriter and shorthand, and it is worth noting that, in each case, the reality of this partnership was demonstrated at least five years before the first typewriter was actually placed on the market.

The mention of telegraphy brings another name into this story, that of no less a personage than Thomas A. Edison. It has been said of this universal inventive genius that he has figured in some way in connection with nearly every development in the field of mechanical progress during the last half century; so it is not surprising to find his name written into the story of the typewriter. Early in the seventies Edison had a shop in Newark, N. J., and he tells how Sholes came there to consult

with him concerning his invention; a natural thing for Sholes to do, for even in those early days the fame of "The Wizard" was nation-wide. Edison was able to give Sholes some very valuable assistance. Later on, Edison helped D. W. Craig, a former general manager of the Associated Press, in the development of a machine, built on typewriter principles, designed to facilitate the transmission of telegrams. Edison also did some typewriter inventing on his own account. His patent of December 10, 1872, is for an electrically operated traveling wheel device, which was the forerunner of the stock-ticker printing machine in use today.

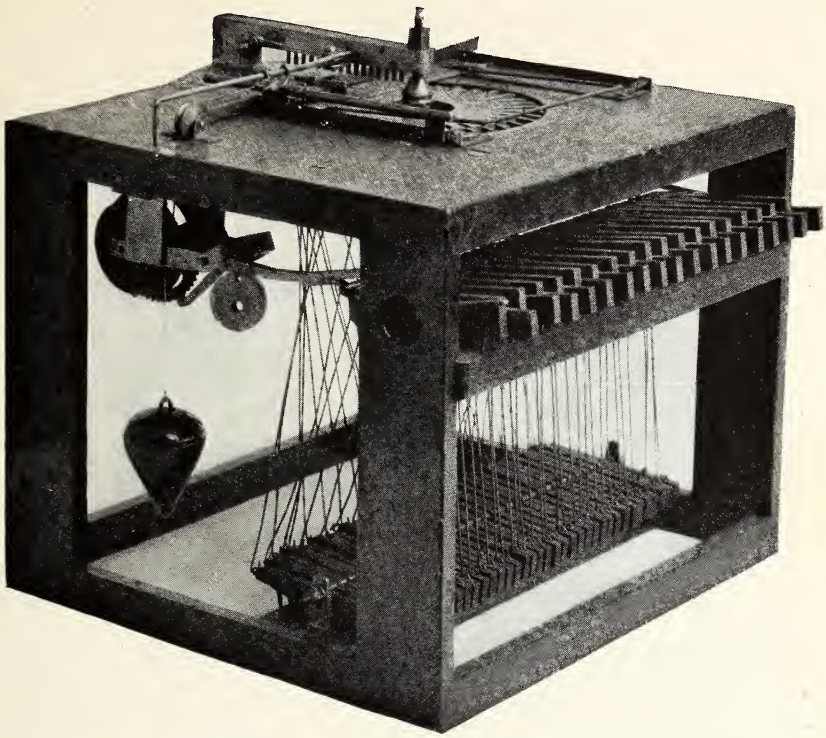
Of the twenty-five to thirty experimental models, built



Sholes, Glidden and Soule Machine—Patent of June 23, 1868.

by Sholes and Glidden during the years from 1867 to 1873, only a few are now in existence. But though many links in this chain are missing, it is fortunate that the two most important ones are still preserved, the first and the last. The first model constructed by Sholes, Soulé and Glidden, now in the Smithsonian Institution at Washington (Patent of June 23, 1868), shows a machine so crude that it would hardly be recognized as a typewriter. A second model, also in the Smithsonian Institution (Patent of July 14, 1868), is of equal interest because it has been identified by Weller as identical with the first machine sent to him by Sholes for practical testing. This machine shows a great advance over the other. Both machines, however, have the up-strike pivoted type bar, a feature which afterwards became standard for many years in typewriter construction. The last model of the long series was the one shown to the Remingtons in 1873, when the contract was made for the manufacture of the typewriter. This model, now in the historical collection at the home office of the Remington Typewriter Company in New York, although a crude affair, judged by present-day standards, contains many of the fundamental features of the modern type-bar machines.

The quality of the writing done by these early models is better known today than the machines themselves, for this writing has been preserved to us in Sholes's own letters. From the day when Sholes completed his first model, he seems to have discarded the pen entirely.



SHOLES, GLIDDEN AND SOULE MACHINE—PATENT OF JULY 14, 1868.

From that time all his personal letters are typewritten, the signature included, which would be considered extreme, even by the present-day business man. As for the quality of the typing in these letters, let it speak for itself. The letter shown on page 51, the original of which is in the Remington Historical Collection, was written by Sholes from Milwaukee on June 9, 1872.

The typing in this letter is interesting because it shows capital letters only, to which all the Sholes models were restricted. But even more interesting is the contents of

the letter itself, for in it we find Sholes in one of his not infrequent fits of deep despondency.

> "We shall be in a position," he says, "to furnish good machines provided any person is in a position to want them after they are furnished. You know that my apprehension is that the thing may take for a while, and for a while there may be an active demand for them, but that, like any other novelty, it will have its brief day and be thrown aside. Of course I earnestly hope that such will not prove to be the case, and Densmore laughs at the idea when I suggest it, but I should like to be sure that it would be otherwise."

Think of it! The typewriter a mere passing novelty! And think of such an idea entering the head of the inventor of the machine! How much better he was building than he knew! As we look back on this period of typewriter history we hardly know which to admire more, Sholes's inventive genius or Densmore's sustaining faith.

Of equal interest is a photograph from the same historical collection, dating from the same year, 1872. It shows the daughter of Sholes operating another one of his experimental models. What motive, we wonder, ever induced Miss Sholes to take such an interest in the machine, to learn to operate it, and to have her photograph taken seated before it? Probably it was only a daughter's natural interest in her father's invention. It is difficult to believe that Miss Sholes foresaw the wonderful future

MILWAUKEE, WIS. JUNE 9, 1872.

FRIEND BARRON,--

WHILE GLIDDEN AND DENSMORE ARE PLAYING A GAME OF CHESS ON THIS BLESSED SABBATH, I WILL IMPROVE THE OPPORTUNITY TO DROP YOU A LINE ON THE MACHINE, WHICH DENS-MORE HAS IN THE HOTEL AT HIS ROOM.

AT THE SAME TIME, I KNOW OF NOTHING NEW TO SAY. WE ARE GETTING THE VARIOUS PIECES TOGETHER AND GETTING READY FOR SYSTEMATIC WORK. THE PIECES WHICH ARE OF BRASS IN THE MACHINE AT NEW YORK, WE ARE NOW GETTING MADE OF MALLEABLE IRON. WE SHALL BE IN A POSITION TO FURNISH GOOD MACHINES; PROVIDED ANY PERSON IS IN A POSITION TO WANT THEM AFTER THEY ARE FURNISHED. YOU KNOW THAT MY APPREHENSION IS, THAT THE THING MAY TAKE FOR A WHILE, AND FOR A WHILE THERE MAY BE AN ACTIVE DEMAND FOR THEM, BUT THAT LIKE ANY OTHER NOVELTY, IT WILL HAVE ITS BRIEF DAY AND BE THROWN ASIDE. OF COURSE, I EARNESTLY HOPE THAT SUCH WILL NOT PROVE TO BE THE CASE, AND DENSMORE LAUGHS AT THE IDEA WHEN I SUGGEST IT, BUT I SHOULD LIKE TO BE SURE THAT IT WOULD BE OTHERWISE. BBB I HAVE BEEN WORKING THE MACHINE WITH THE BRASS RING OFF FROM OVER THE TRUNNIONS, AND ISEE THE HYPHEN HAS RESTED ON TOP OF THE U AND HAS BEEN PRINTED GENERALLY, WHEN THE U SHOULD HAVE BEEN PRINTED. I HAVE REPLACED THE RING AND NOW ALL IS RIGHT. TIS LOOSE STRINGING, THE MORE I USE IT, THE MORE I THINK IT IS A VERY IMPORTANT STEP OF PROGRESS. THE PRINT IS BETTER WITH IT, I THINK IT WILL CORRECT THE WABBLING, AND IT SEEMS BETTER IN ALL RESPECTS. I ALSO TESTED THE MANIFOLDING BUSINESS WITH IT, AND TOOK EIGHT COPIES HANDSOMELY. BY REFLECTING ON THE PHILOSOPHY OF IT, YOU WILL APPRECIATE ALL OF ITS BENEFITS. I WISH YOU WOULD TRY ONE OF THE WORST TYPES FOR WABBLING, ON THE EMMETT MACHINE AND SEE, IF THE LOOSE STRINGING WILL CORRECT THE TENDENCY. IF IT WILL IN THAT CASE IT IS OF COURSE, CONCLUSIVE OF ITS MERITS.

YOURS,

SHOLES.

THE DAUGHTER OF SHOLES

WRITING ON ONE OF HIS EXPERIMENTAL MACHINES—PHOTOGRAPHED IN 1872.

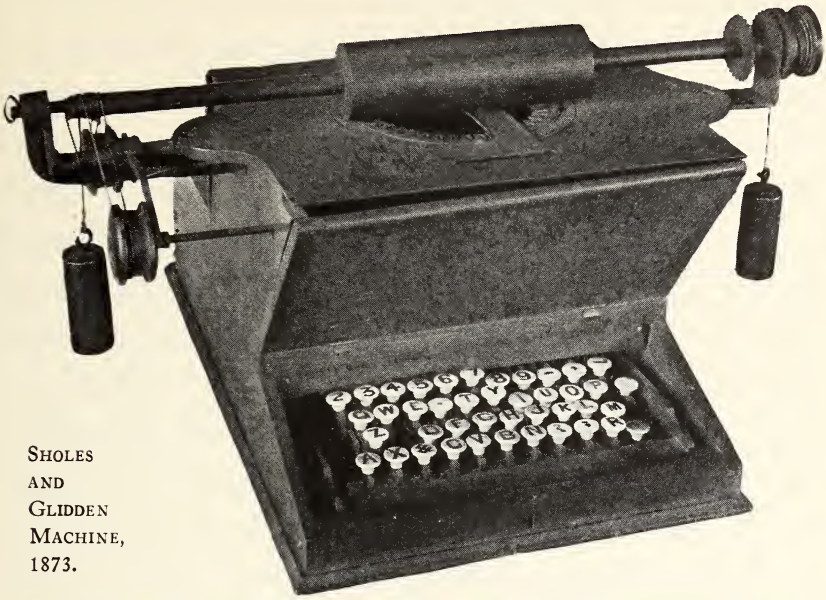
of the machine in connection with woman's work. Yet, as an accidental prophecy, this photograph of the first woman who ever operated a typewriter should be of interest to every one of the vast army of women who today owe their living to the writing machine.

The time now draws near for the opening of the second chapter of typewriter history, the entrance into the story of the great house of E. Remington & Sons. In casting about for a suitable manufacturer for the new invention, the minds of the inventors turned naturally to the noted gunmakers who had already made the name Remington famous. The origin and the rise of the house of Remington carries us back many years into the past. The story goes that in 1816 a young boy named Eliphalet Remington, who was working with his father at their forge in the beautiful Ilion Gorge in the Mohawk Valley, asked his father for money to buy a rifle and was refused. Nothing daunted, the boy Eliphalet welded a gun barrel from scraps of iron collected around the forge, walked fourteen miles to Utica to have it rifled, and finally had a weapon that was the envy of his neighbors. Soon he was making and selling other guns, and step by step the old forge grew into the great gun factory which in Civil War times did so much to equip the northern armies in the great struggle. In time the firm made big contracts to supply arms to foreign governments; they also added other lines of manufacture, including sewing machines and agricultural implements. In 1873, when the type-

writer begins to figure in the Remington story, the first Eliphalet, the boy gunmaker of 1816, had already been twelve years in his grave, and the business was in charge of his three sons, Philo, Samuel and Eliphalet, Jr. At the time of the signing of the typewriter contract, Samuel was absent in Europe. The president and active head of the business was the elder brother, Philo, and it was Philo Remington who was destined to father the new machine with his name and devote his utmost efforts and resources to its manufacture and sale.

It was late in the month of February, 1873, that Densmore came to the Remington Works at Ilion, bringing with him the precious model that was the culmination of six years of effort and struggle. Sholes, it appears, did not accompany Densmore on this journey, which perhaps was just as well, for he was far too modest a man to make a good pleader of his own cause. But Densmore did not go alone. He was accompanied by G. W. N. Yost, with whom Densmore had formerly been associated in the oil transportation business in Pennsylvania. The story of how Densmore came to invite Yost to join him is curious. It seems that he wanted the assistance of Yost's well known fluency, in persuading the Remingtons. Evidently Densmore must have felt keenly the fatefulness of his errand, for this is the only case on record where he failed to show the most complete confidence in himself.

George Washington Newton Yost—to give him the



Sholes and Glidden Machine, 1873.

This Was the Model Shown by Densmore to the Remingtons Which Resulted in the Historic Typewriter Contract

full benefit of his sonorous name—was a salesman par excellence. He had proved it in the oil business. He was destined to prove it again in after years, when he sold more typewriters through his own personal powers of persuasion than any other man in the early days of the business. Had Yost possessed equal ability as an organizer and sales director he might have written his name into this story as the man who made the typewriter a commercial success, for fortune gave him every opportunity. Fate, however, had reserved this achievement for other men.

It is now fifty years since the signing of the history-making contract between the owners of the typewriter

and the Remingtons, and all but one of the actors in these scenes have long since gone to their rest. It is fortunate, however, that there is one man now living who was present and an active participator in the conferences which resulted in the signing of the contract, and his memory of them is as vivid as though they were the events of yesterday. This man is Henry Harper Benedict, who afterwards became one of the founders of the commercial success of the writing machine.

Mr. Benedict, like others whose names figure prominently in this story, was a native Herkimer County boy. In 1869, after taking a degree at Hamilton College, he accepted a position with E. Remington & Sons, with whom he remained for thirteen years in a confidential capacity, becoming in time a director on the board of the corporation and treasurer of the Remington Sewing Machine Company. The story of the typewriter contract, and the events leading up to it, is thus told in Mr. Benedict's own words.

"Mr. Philo Remington's office and mine communicated. One day I saw on the mantelpiece in his office an envelope addressed to him in something that looked like print. I asked him what it was. He said, 'Read it.' It proved to be a letter from one James Densmore (unknown to us all) setting forth at considerable length the facts in connection with the invention of a machine to take the place of the pen, that is, to write by manipulation of keys. He told who were the inventors, and said

that after many years of effort they had finally produced a working model, and they wanted to find someone to undertake the manufacture of the machine. He wished to bring the model to Ilion to see whether the Remingtons would care to take it up.

"I said to Mr. Remington, 'Have you done anything about this?' He said, 'No, what do you think we had better do?' 'Why,' I said, 'of course we want to see the machine; it is a wonderful invention if it's anything, and we should not neglect the opportunity offered us to examine it.' The result was that the model was brought to Ilion early in 1873 by Mr. James Densmore and another man, whom Mr. Densmore introduced as Mr. Yost. Densmore, as we soon saw, was not much of a talker, and he had brought Yost to serve, as he himself expressed it, as 'Aaron to his Moses.' He did well, for Yost was one of the most persuasive talkers I ever listened to, and his tongue never tired.

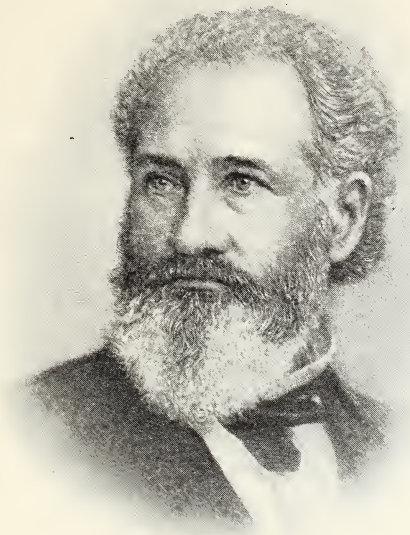
"Densmore and Yost opened up the model, and exhibited it to us in a room at the Osgood House, then known as Small's Hotel. There were present at the meeting, Mr. Philo Remington, Mr. Jefferson M. Clough, Superintendent of the Remington Works, Mr. William K. Jenne, Assistant Superintendent, Mr. Densmore, Mr. Yost and myself. We examined and discussed the machine for perhaps an hour and a half or two hours and then adjourned for lunch or dinner. As we left the room, Mr. Remington said to me, 'What do you think of it?'

I replied, 'That machine is very crude, but there is an idea there that will revolutionize business.' Mr. Remington asked, 'Do you think we ought to take it up?' I said, 'We must on no account let it get away. It isn't necessary to tell these people that we are crazy over the invention, but I'm afraid I am pretty nearly so.' "

The party met again later in the day and a tentative agreement was entered into which developed into the contract which opened a new chapter in the story of human progress.

The actual date of this contract was March 1, 1873. The original contract was for manufacture only, but in due course of time the Remingtons acquired complete ownership. Densmore was unsuccessful as selling agent and made little money in this role, but when the ownership passed to the Remingtons, he accepted a royalty, by which he was subsequently enriched. Sholes, either at this time or shortly after, is said to have sold out his royalty rights to Densmore for $12,000, a goodly sum in those days, but the only reward, so far as we know, that he ever received for his priceless invention and the years of labor he had bestowed upon it.

As soon as the Remington firm had agreed to undertake the manufacture of the new machine, the ample resources and the skillful workmen available at their great factory were brought into service in the further improvement of the typewriter. There was still much work to do, for the Sholes and Glidden machine, even



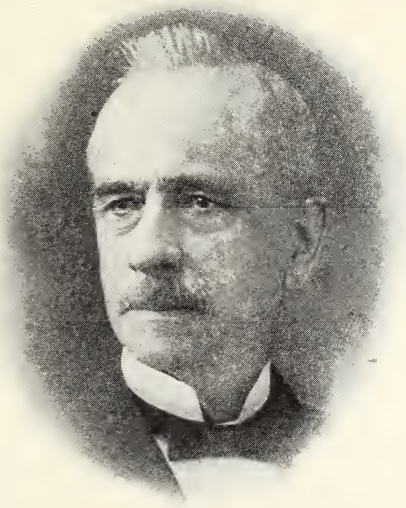
PHILO REMINGTON
MANUFACTURER OF THE FIRST COMMERCIAL TYPEWRITER

after the years of labor expended upon it, was, after all, only the inventor's crude model. Sholes and Glidden had worked out the basic ideas, and that was about all. To make these ideas practical, in a machine that could be produced and sold in quantities, now became the manufacturer's task. It was a fortunate thing for the infant typewriter that the Remingtons had in their service at this time a notable group of mechanical master minds, and the efforts of these men were now centered on the new machine. Prominent in this group were William K. Jenne, Jefferson M. Clough, afterwards superinten-

dent of the factory of the Winchester Arms Company, Byron A. Brooks, a professor of higher mathematics, and others. Brooks subsequently attained prominence in the field of typewriter invention. But the most notable personage among these men was William K. Jenne, and at this time the mantle passes from Sholes to Jenne, who became for many years the central figure in the history of the development of the typewriter on its mechanical side. It is true that Sholes, despite failing health, continued active in the invention of typewriter improvements during the greater part of his remaining days, but it was under the fostering care and supervision of Jenne that the Sholes and Glidden model of 1873 was transformed into the first commercial typewriter, and it was under his continued superintendence that this famous machine subsequently underwent one improvement after another until it finally won for itself an indispensable place in the world's work.

Jenne, like Sholes, came of good New England stock. He inherited his mechanical genius from his father, Siloam Jenne, who was a skilled mechanic and an inventor of some repute in his day. It was in 1861, at the age of 23, that Jenne migrated from his Massachusetts home to the town of Ilion, in the Mohawk Valley, where he was destined to spend all of the remaining years of his long, active and useful life. These were the Civil War times, when E. Remington & Sons were busy on the big war contracts, and the fame of their guns had already

spread to the four corners of the earth. Jenne almost immediately entered the Remington employ and, in the historic year 1873, he occupied an important position in their sewing machine department. From the time, however, of the arrival at Ilion of the Sholes and Glidden model he became identified with the typewriter exclusively. He soon became Superintendent of the Type-



WILLIAM K. JENNE
WHO DEVELOPED THE FIRST COMMERCIAL TYPEWRITER

writer Works, which position he continued to hold for thirty years, until his retirement, full of honors, in the year 1904.

We now come to the fateful hour, the appearance on the market of the first commercial typewriter. The actual manufacture of the machine began in September,

1873, and it may be said that in this year and month occurred the birth of the practical writing machine. In the early part of the following year the first machines were completed and ready for sale. The machine was then known simply as *"The Type-Writer."* Today it is known as the *"Model 1 Remington,"* and it will always be known as the *"Ancestor of All Writing Machines."*

CHAPTER IV.

SEEKING A MARKET

THE general appearance of the first typewriter is well known. A considerable number of these machines are in existence, preserved in museums and other historical collections, and, until recent years, a few of them still remained in active service.

The accompanying illustration, however, shows one of these machines which has a special interest all its own. This was the first individual typewriter ever manufactured and offered for sale. This machine was one of the first consignment of typewriters sent to the Western Electric Company, who were the original western selling agents. Later it came into the possession of the late Walter J. Barron, who had been a friend of Sholes, and afterwards became the inventor of a number of important typewriter improvements. Many years later Mr. Barron presented it to the Remington Historical Collection.

A single glance at this machine will show what a transformation had been wrought by the skilled Remington mechanics in the crude Sholes and Glidden model of the previous year. A more careful examination will reveal how primitive it still was compared with the efficient writing machines of the present day. The first thing that will strike the most casual observer is the obvious sewing

machine influence, in fact it has sewing machine "written all over it." In this we undoubtedly see the hand of Jenne, who, for years before he took up work on the typewriter, had been connected with the sewing-machine branch of the Remington business. This influence appears in the fitting of the machine to a stand, in the familiar grape-vine design of the pedestals, and especially in the curious foot treadle which operated the carriage return. The latter, however, quickly demonstrated its uselessness as a time saver, and was soon displaced by the now familiar hand carriage-return lever. After the disappearance of the foot treadle, the stand itself soon followed into the discard.

Another interesting feature is the metal case which completely encloses the machine. This in time gave way to the now familiar open construction, but it is worth noting that in recent years a tendency has set in to return to the enclosed feature of the first typewriter.

This original machine had many limitations, but the worst one of all was the fact that it had no shift-key mechanism—*it wrote capital letters only.*

Nevertheless, the fundamental principles of construction embodied in this first typewriter still survive, though their application has since been modified or transformed in the march of improvement. In this original machine we find the escapement or step-by-step "pulse beat," which causes the letter spacing, we find the type bars hung in such a manner that the type all strike the paper at a

THE FIRST COMMERCIAL TYPEWRITER
MODEL 1 REMINGTON, SHOP NO. 1.

common printing point, and we find a mechanism for the return of the carriage and line spacing of the cylinder. Most interesting of all, we find the *"universal keyboard"* in very nearly its present form. This was not an innovation introduced by Jenne or any of his co-workers, for, tracing back to the Sholes and Glidden model of the previous year, we find a very close approach to the same thing.

Who invented the universal keyboard?—meaning the present universal arrangement of the letters on the typewriter keys. Of all the questions concerning the origin of the typewriter or any of its features, this is the one most frequently asked. The answer is that *the universal keyboard, with some minor variations, has been standard since the invention of the writing machine.*

Some believe that the universal keyboard was invented by Alexander Davidson, a mechanic and surveyor of West Virginia, who was also one of the pioneers in the field of commercial education. It is known that Davidson, in the later seventies, made a special study of the subject of scientific keyboard arrangement. But there is no evidence that Davidson ever saw a typewriter before the year 1875, at which time the keyboard had already assumed the "universal" form.

It is positively known that Densmore and Sholes, laboring together, worked out the universal arrangement of the letter keys. Just how they happened to arrive at this arrangement, however, is a point on which there has al-

KEYBOARD DIAGRAM—FROM THE FIRST TYPEWRITER CATALOGUE

ways been much speculation. It must be remembered that both of these men were printers by trade, a most important point in this connection. The usual a b c arrangement of letters, which would naturally suggest itself to the ordinary layman, means nothing to a printer, who is more familiar with the arrangement of the type in the printer's case. Here, however, we encounter the fact that the arrangement of the letters on the universal keyboard is nothing like the arrangement of the type in the printer's case. The truth seems to be that the arrangement of the universal keyboard was mainly influenced by the mechanical difficulties under which Sholes labored. The tendency of the type bars on all the Sholes models was to collide and "stick fast" at the printing point, and it would have been natural for Sholes to resort to any arrangement of the letters which would tend to diminish this trouble. These mechanical difficulties are now of the past, but time has proved and tested the universal key-

board, and has fully demonstrated its efficiency for all practical needs.

Keyboard reform has been agitated more than once since the invention of the typewriter, but such movements have always come to nothing—for a very simple reason. It is an easy and simple matter for the manufacturers to supply any keyboard the user may require; indeed the special keyboards now in use number thousands. But to induce typists generally to unlearn the universal keyboard and learn another would be a well nigh impossible task. And it would not pay them to do so, for no "reformed" keyboard could ever confer a benefit sufficient to offset the time loss that such a change would involve. The universal keyboard has a hold similar to that of language itself.

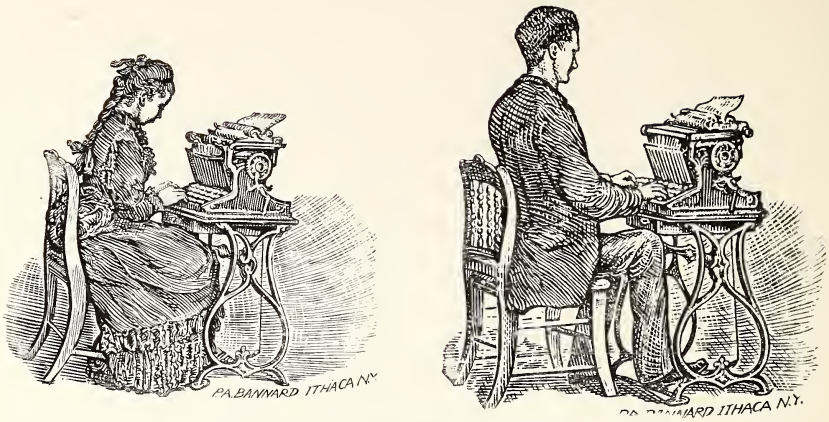
In the historical collection which contains the original typewriter is another item of almost equal interest. This is a copy of the first typewriter catalogue. We know what the first typewriter was like. This old catalogue, however, gives us a different slant. It tells us what the builders themselves thought of it, and what they wished the public to think.

It certainly looks its age—does this old catalogue. The sheets are yellow and time stained, the illustrations are old wood cuts which carry us back to the days before the invention of process engraving, and the typesetting is of the period—let us say no more, for possibly our present-day ideas of typesetting will look as antiquated to our

own children. But the first of anything, whether an automobile, a typewriter, or just a catalogue, ought to be primitive enough to look the part, and this catalogue certainly does.

"The Type-Writer," so says the catalogue, "in size and appearance somewhat resembles the Family Sewing Machine." A very good description, as all will agree. The next sentence, however, says, "It is graceful and ornamental—a beautiful piece of furniture for office, study or parlor." No one can question the utility of the typewriter, but the beauty of the machine is not regarded in these modern days as a "selling point." There is also another claim that makes us pause. "Persons traveling by sea," the catalogue says, "can write with it when pen writing is impossible." Maybe so, but people who have been at sea under conditions when they found pen writing impossible, will probably have their doubts.

But there is food for thought in this old catalogue from beginning to end. The clause in the title, *"A Machine to Supersede the Pen,"* reads today like one of the world's great prophecies. The advantages of typewriting over pen-writing are enumerated as *Legibility, Rapidity, Ease, Convenience* and *Economy,* and time, which proves all things, has certainly proved these claims. It is only when we pass from the description of the machine itself to "Some of its uses" that we seem to discern a halting note. First in the list of prospective users come the *Reporters,* and it is interesting to know that, to the inventors of the



Woodcuts from the First Typewriter Catalogue

typewriter, court reporting appealed as the principal field of the new machine. Next in order come *Lawyers, Editors, Authors* and *Clergymen.* These apparently are the only classes of users who are considered worthy of a special appeal. But how about the business man? We search in vain for any mention of his name until we come to a single sentence, evidently intended as a "ketch-all" for the left overs, which reads: "The merchant, the banker, ALL men of business can perform the labor of letter writing with much saving of valuable time."

Did the builders of the first typewriter fully appreciate the tremendous truth contained in these words? If so, it is hard to believe that they would have confined all reference to the business man to a single sentence in an obscure portion of their first catalogue. This one sentence, in this place, seems to lack the ring of conviction. It makes one wish that the typewriter men of 1874 could live again to

witness the typewriter wonders of 1923, and see how many-fold greater has been the fruit of their labors than anything of which they dreamed.

So much for what the builders thought of their own product. But what did the buyers and the users think? We turn eagerly for information on this point to the testimonials, of which this old catalogue contains several. But the first one that meets our eyes engrosses us so completely that we straightway forget about all the rest. It is from no less a person than "Mark Twain," and this is what he says:

Hartford, March 19, 1875.

Gentlemen:

Please do not use my name in any way. Please do not even divulge the fact that I own a machine. I have entirely stopped using the Type-Writer, for the reason that I never could write a letter with it to anybody without receiving a request by return mail that I would not only describe the machine but state what progress I had made in the use of it, etc., etc. I don't like to write letters, and so I don't want people to know that I own this curiosity breeding little joker.

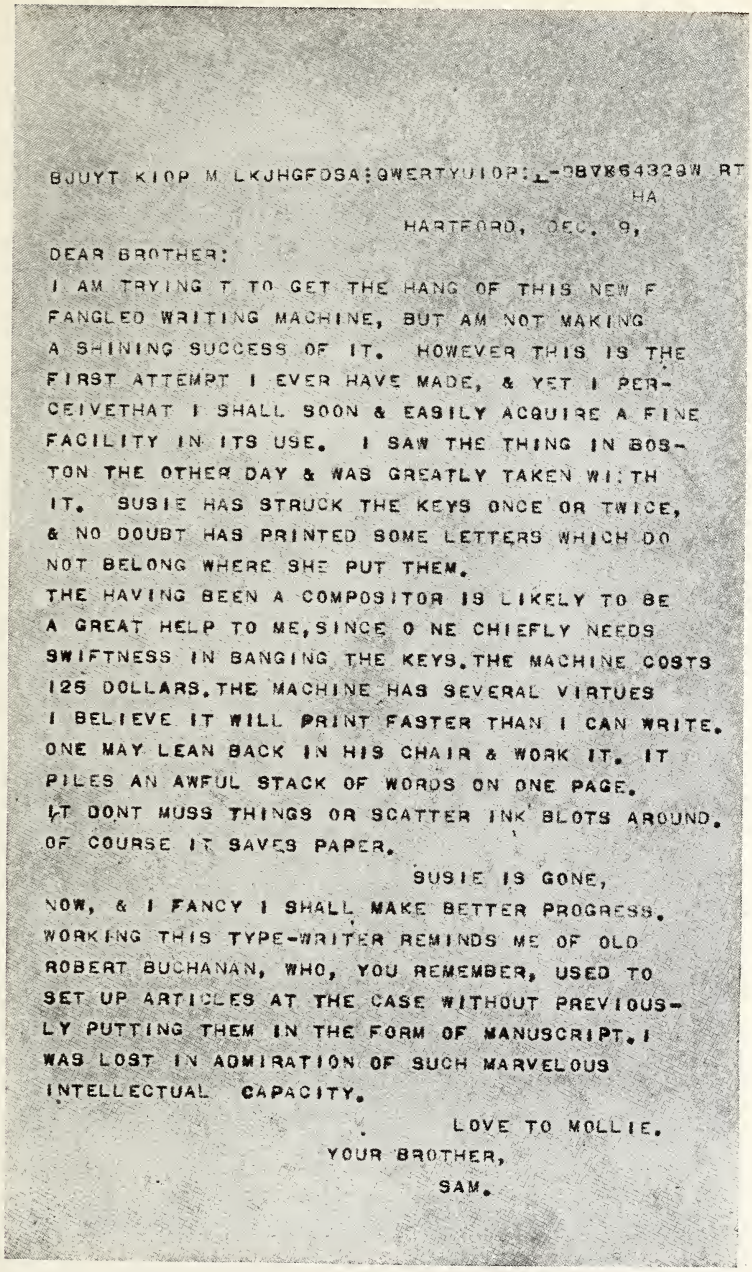
Yours truly,

Saml. L. Clemens.

Certainly a queer "testimonial." And we are glad that the selling agents, in spite of Mark Twain's prohibition, had the "nerve" to publish it. In course of time Mark Twain overcame his reticence, and many years after, in his "Autobiography," he tells in his own inimitable man-

ner all about his first typewriter. It seems that he bought it in Boston late in the autumn of 1874, when in company with that other famous humorist D. R. Locke, better known as "Petroleum V. Nasby." He and Nasby saw the strange looking device in the window of the Remington store, were drawn in by curiosity, and Mark Twain purchased one on the spot. What Nasby's impressions were of his purchase Mark Twain does not tell us, but we know that they must have been deep and vivid, for only a short time later we find Nasby a member of the firm which for a time controlled the sale of the Remington Typewriter. Shortly afterward Mark Twain had one of his manuscripts type-copied on this typewriter. The "Autobiography" says that this book was "The Adventures of Tom Sawyer," but in this statement, based only on his memory of the long ago, Mark Twain must have been mistaken. A letter of his, written many years earlier, proves that the book was "Life on the Mississippi." However, the exact identity of the book is a minor matter. In any case, Mark Twain was unquestionably the first author who ever submitted a typewritten manuscript to a publisher, a practice now universal. And it accords with the importance of this great step in progress that this original typewritten manuscript should have been a literary masterpiece.

Another letter, typed by Mark Twain himself, appears in fac-simile in his "Autobiography." This letter was written to his brother, Orien Clemens, three months be-



BJUYT KIOP M LKJHGFDSA;QWERTYUIOP;[-=0BV8643209W RT
HA

HARTFORD, DEC. 9,

DEAR BROTHER:

I AM TRYING T TO GET THE HANG OF THIS NEW F
FANGLED WRITING MACHINE, BUT AM NOT MAKING
A SHINING SUCCESS OF IT. HOWEVER THIS IS THE
FIRST ATTEMPT I EVER HAVE MADE, & YET I PER-
CEIVETHAT I SHALL SOON & EASILY ACQUIRE A FINE
FACILITY IN ITS USE. I SAW THE THING IN BOS-
TON THE OTHER DAY & WAS GREATLY TAKEN WI TH
IT. SUSIE HAS STRUCK THE KEYS ONCE OR TWICE,
& NO DOUBT HAS PRINTED SOME LETTERS WHICH DO
NOT BELONG WHERE SHE PUT THEM.

THE HAVING BEEN A COMPOSITOR IS LIKELY TO BE
A GREAT HELP TO ME, SINCE O NE CHIEFLY NEEDS
SWIFTNESS IN BANGING THE KEYS. THE MACHINE COSTS
125 DOLLARS. THE MACHINE HAS SEVERAL VIRTUES
I BELIEVE IT WILL PRINT FASTER THAN I CAN WRITE.
ONE MAY LEAN BACK IN HIS CHAIR & WORK IT. IT
PILES AN AWFUL STACK OF WORDS ON ONE PAGE.
IT DONT MUSS THINGS OR SCATTER INK BLOTS AROUND.
OF COURSE IT SAVES PAPER.

SUSIE IS GONE,

NOW, & I FANCY I SHALL MAKE BETTER PROGRESS.
WORKING THIS TYPE-WRITER REMINDS ME OF OLD
ROBERT BUCHANAN, WHO, YOU REMEMBER, USED TO
SET UP ARTICLES AT THE CASE WITHOUT PREVIOUS-
LY PUTTING THEM IN THE FORM OF MANUSCRIPT. I
WAS LOST IN ADMIRATION OF SUCH MARVELOUS
INTELLECTUAL CAPACITY.

LOVE TO MOLLIE.

YOUR BROTHER,

SAM.

MARK TWAIN'S FIRST TYPEWRITTEN LETTER
WRITTEN DECEMBER 9, 1874.

fore the letter to E. Remington & Sons, and before the "curiosity breeding little joker" had worn out his patience. It has a special interest because it was the first letter written by Mark Twain on his first typewriter. The row of characters typed across the top of the sheet are undoubtedly the work of Mark Twain's little daughter Susie, to whom reference is made in the letter.

Mark Twain's description of the first typewriter as a "curiosity breeding little joker" applies very well to those who had some inkling of what the machine really was, but, on those who did not, the impression was sometimes very different. The story is classic of the Kentucky mountaineer who returned his first typewritten letter to the man who wrote it, with the words indignantly scribbled on the margin, *"You don't need to print no letters for me. I kin read writin."* This particular yarn cannot be verified, but there were plenty of similar cases. J. P. Johns, a Texas insurance man and banker in the seventies, gives the following transcript from memory of a reply he once received from one of his agents to one of his first typewritten letters:

> Dear Sir:
>
> I received your communication and will act accordingly.
>
> There is a matter I would like to speak to you about. I realize, Mr. Johns, that I do not possess the education which you have. However, until your last letter I have always been able to read the writing.

> I do not think it was necessary then, nor will be in the future, to have your letters to me taken to the printers, and set up like a hand bill. I will be able to read your writing and am deeply chagrined to think you thought such a course necessary.

Another story, of somewhat similar flavor, was told by William K. Jenne himself. On one occasion he planned to visit New York with his family and sent a typewritten letter, making a reservation, to one of the hotels. When he and his family reached the hotel, nothing was known of his application. Finally he asked them particularly about his letter and described the way it was written. The clerk then recalled such a communication, but he supposed it was a printed circular and had thrown it away.

As a self-advertiser, the writing machine possessed some obvious advantages. The only trouble with this "curiosity breeder" in its early days was that it did not breed the kind of curiosity that translated itself into real buyer interest. The most curious were usually skeptical of the utility of the new machine. They objected to the fact that it wrote capitals only, and they could not assimilate the idea of paying $125 for a writing machine, when pens could be bought for a penny. This price question recalls the case of one of the early inventors, who might have won the honor of anticipating Sholes as the creator of the first practical typewriter, had he not become

obsessed by one unfortunate idea. He believed that five dollars was about the limit that anyone would or should pay for a writing implement, and in the vain effort to produce such a machine he squandered a splendid inventive talent. The point that he overlooked was the actual value of the time and labor saved by the writing machine. The world today understands this point perfectly, but when we find this simple truth hidden even from an enthusiastic typewriter inventor, we must not be surprised that it was very little understood in the seventies of the last century. The marketers of the first typewriter soon discovered that they had undertaken something more than the sale of a new machine. Their real job was to sell a new idea, and to do this was a slow and toilsome work of education. No wonder the typewriter made such small and discouraging progress in its early years.

This lack of public interest was painfully in evidence at the great Centennial Exposition held at Philadelphia in 1876. Here the typewriter made its initial bow to the public, and it was carefully groomed for the occasion in a brand new court dress. The identical machine exhibited at the Centennial is now another prized relic in the Remington Historical Collection. It was a special machine, with mother-of-pearl finish, on which had been lavished all the splendors suggested by the decorative tastes of fifty years ago. But the public was neither dazzled nor convinced. They came indeed to see it in fair numbers. Curiosity there was in plenty, but it was

curiosity mingled with some ridicule and very little serious interest. Very few machines were sold, and about the only revenue derived by the exhibitors was from samples of typwriting sold as curios for a quarter apiece.

Model 1 Remington—Exhibited at Centennial.

The Centennial Exhibition will be forever memorable as the occasion of the first public appearance of two of the greatest inventions of modern times, the telephone and the typewriter. But how different their receptions by the public! When Alexander Graham Bell made his first public exhibition of his invention, an Emperor stood at his side and the news of his achievement was heralded the world over in cable dispatches and newspaper head-

lines. Few then realized that on exhibit in the same building was another new invention, comparatively unnoticed, which was destined to rival even the telephone in the magnitude of its service to the world.

We have mentioned some of the obstacles which made the early progress of the typewriter so slow and difficult. Added to all these was another, the task of furnishing the operator. It was not a case of finding the operator, for in those days there were none to find. It was another selling job, usually that of persuading someone to become an operator and then, in most cases, of training that operator. Truly the early typewriter salesman earned all that he made.

This necessity of supplying the operator led to the growth of another distinctive feature of the typewriter business, namely the free employment departments for stenographers and typists, maintained for the service of typewriter users. The yearly total of stenographers placed in positions by these departments has grown to enormous figures. More than one typewriter company today places upwards of one hundred thousand typists per year in positions in the United States alone. This development anticipates our story, but it all had its beginning in the early days of the business.

In these modern days, when commercial education has become a universal institution, when the public, private and religious schools in the United States alone, which teach shorthand and typewriting, number thousands,

Dec. 16, 1875] The Nation. xvii

The "Type-Writer."

A machine now superseding the pen. It is manufactured by Messrs. E. Remington & Sons of Ilion.

It is the size of a sewing-machine, and is an ornament to an office, study, or sitting room.

It is worked by keys, similar to a piano, and writes from thirty to sixty words per minute—more than twice as fast as the pen—in plain type, just like print.

Any one who can spell can begin to write with it, and, after two weeks' practice, can write faster than with the pen.

It is worked without effort, and is not liable to get out of order.

It is always ready for use, does not soil the dress or fingers, and makes no litter.

It is certain to become as indispensable in families as the sewing-machine.

Hundreds have come into use in the last few months in banking, insurance, law, and business offices, in the Government departments in Washington, and in private families, giving everywhere the highest satisfaction.

Editors, authors, clergymen—all who are obliged to undergo the drudgery of the pen, will find in the "Type-Writer" the greatest possible relief.

Young persons acquire the use with wonderful ease and interest. It fascinates them, and then no device comparable to it for teaching children to spell and punctuate.

There is, therefore, no more acceptable, instructive, or beautiful

CHRISTMAS PRESENT

for a boy or girl

And the benevolent can, by the gift of a "Type-Writer" to a poor, deserving, young woman, put her at once in the way of earning a good living as a copyist or corresponding clerk.

No invention has opened for women so broad and easy an avenue to profitable and suitable employment as the "Type-Writer," and it merits the careful consideration of all thoughtful and charitable persons interested in the subject of work for woman.

More girls are now earning from $10 to $20 per week with the "Type-Writer," and we can at once secure good situations for one hundred expert writers on it in counting-rooms in this city.

The public is cordially invited to call and inspect the working of the machine, and obtain all information at our show-rooms,

No. 707 Broadway.

LOCKE, YOST & BATES.

COPYING WANTED.

Clergymen, business men, actors, and authors, who have copying to do, will consult their interest by bringing it to us. We can do it at half the price that it can be done with the pen, in good, clean type, as plain as the plainest print.

We are now doing copying for all the theatres in this city.

Address "COPYING DEPARTMENT," 707 BROADWAY

AGENTS WANTED.

We want a good live agent in every county in the United States to sell the "Type-Writer."

It is a safe, sure, and profitable business.

Address for full particulars,

"TYPE-WRITER," No. 707 BROADWAY.

One of the Earliest Typewriter Advertisements.

when similar schools have made themselves indispensable the world over, it is hard to realize that fifty years ago there were none. The whole modern system of commercial education is a creation of the writing machine.

It is true that in America there were some pioneers in this field, men like Eastman, Packard, Spencer, Bryant and Stratton, whose schools antedated the typewriter. But the so-called "business colleges" of fifty years ago were few in number and, in the days before the typewriter, their scheme of instruction was necessarily limited to bookkeeping and business practice, with frequently an undue emphasis on fancy penmanship. Nevertheless these schools did form the nucleus around which was ultimately built our modern commercial school system, and it is this fact, as we shall presently see, which has made the history of commercial education in America so different from the same history in other countries.

The relationship between the typewriter and the business school was slow in its early development, and equally slow was the growth of the general relationship between typewriting and shorthand. A single sentence in the first typewriter catalogue is interesting on this point. "Stenographers," it says, "can come to our office and dictate to operators *from their shorthand notes,* and thus save the labor of transcription." A very graceful invitation, but why not suggest to shorthand writers or their employers that they buy their own machines? We see in this sentence that the builders of the first typewriter sensed the partnership that was coming between shorthand and typewriting, but in those days the great union of the "twin arts" was still in the future.

When did it actually come? From the very beginning

in many individual cases, like Clephane's and Weller's and Wyckoff's. But as a feature in commercial education, not until several years after the invention of the writing machine. The first school which taught typewriting, of which there is positive record, was opened by D. L. Scott-Browne at 737 Broadway, New York, in 1878. From that time, however, the development became rapid, and within a few years there were similar schools in every large city in the country. From this time also begins the real success of the typewriter in finding a market. As shorthand writing, during the ages that preceded the writing machine, had only a restricted field of usefulness, so the typewriter in its early years, before it joined forces with shorthand, was confined to a very limited sale. And then it made its partnership with stenography—the most remarkable partnership in all business history. Of late years another important invention, the office phonograph, has made its bid for a share in this partnership, but the status of the writing machine, as the senior partner, is impregnably established.

Meanwhile the typewriter itself was about to undergo a great development. It is hardly a coincidence that the first school to teach typewriting and the first typewriter which won a wide popularity both appeared in the same year, 1878. This machine was the Model 2 Remington, the first typewriter which wrote both capitals and small letters. This first shift-key model, like the Model 1 of 1874, was the product of several master minds. Jenne,

of course, had a big hand in it; so also did other men who had labored with him on the first model. The problem of printing both capitals and small letters, with the standard keyboard arrangement, was solved by the combination of the cylinder shifting device, invented by Lucien S. Crandall, with type bars carrying two types, a capital and a small face of the same letter, invented by Byron A. Brooks. The shift-key machine proved to be a long step in advance, and the typewriter soon began to gain in popular favor.

Since the advent of the typewriter in 1874, one firm of selling agents after another had been battling against heavy odds to find a profitable market for the machine. Densmore and Yost were the first selling agents, followed by Densmore, Yost & Company, General Agents (the style assumed when Densmore personally withdrew from the selling agency), and finally by Locke, Yost & Bates, a firm composed of D. R. Locke (Petroleum V. Nasby), G. W. N. Yost, and J. H. Bates, afterwards a successful advertising agent in New York. During all of this time the load of debt on the enterprise grew greater and greater, until the problem of getting back the amount that had been sunk in manufacture and unsuccessful sales effort seemed well nigh impossible of solution. Further changes were now made which eliminated Yost entirely, and in July, 1878, the selling agency was entrusted to the well-known house of Fairbanks & Company, the celebrated scale makers. As the Fairbanks business was well

THE FIRST SHIFT-KEY TYPEWRITER—1878

organized, it was thought that their facilities would largely increase sales.

One of the first acts of Fairbanks & Company was to appoint C. W. Seamans as manager of typewriter sales. With the appearance of Seamans in the story begins the chain of events which finally led to the commercial triumph of the writing machine.

CHAPTER V.

LAUNCHED ON THE COMMERCIAL WORLD

CLARENCE WALKER SEAMANS was born in Ilion, and his first employment was in assisting his father, who had charge of the gunsmithing department of the Remington factory. This was in 1869, when he was only fifteen years old, and he continued in this service through the memorable years 1873 and 1874. In the following year, however, a company of Ilion men of means bought a silver mine in Utah and sent young Seamans to the mine to look after their interests. Here he remained for the next three years.

In 1878 we find Seamans again in Ilion, just at the time when Fairbanks & Company had been intrusted with the selling agency for the typewriter. They needed some one to look after this branch of the business, and Yost recommended Seamans. Philo Remington thought him too young, and was not favorably disposed to the selection. Henry H. Benedict, however, strongly advised that Seamans be appointed, and this was finally done.

Seamans entered upon his new work with enthusiasm and enterprise. He held his position with Fairbanks & Company for three years, and they were years of tremendous struggle. Nevertheless some progress was

made, and in the year 1881, when E. Remington & Sons decided to take over the selling agency, the efficient work already done by Seamans resulted in his appointment as the sales head of their typewriter business. Under this new arrangement progress became more pronounced, but still the business was absurdly small, judged by present-day standards. The actual sales in this year numbered 1200 machines.

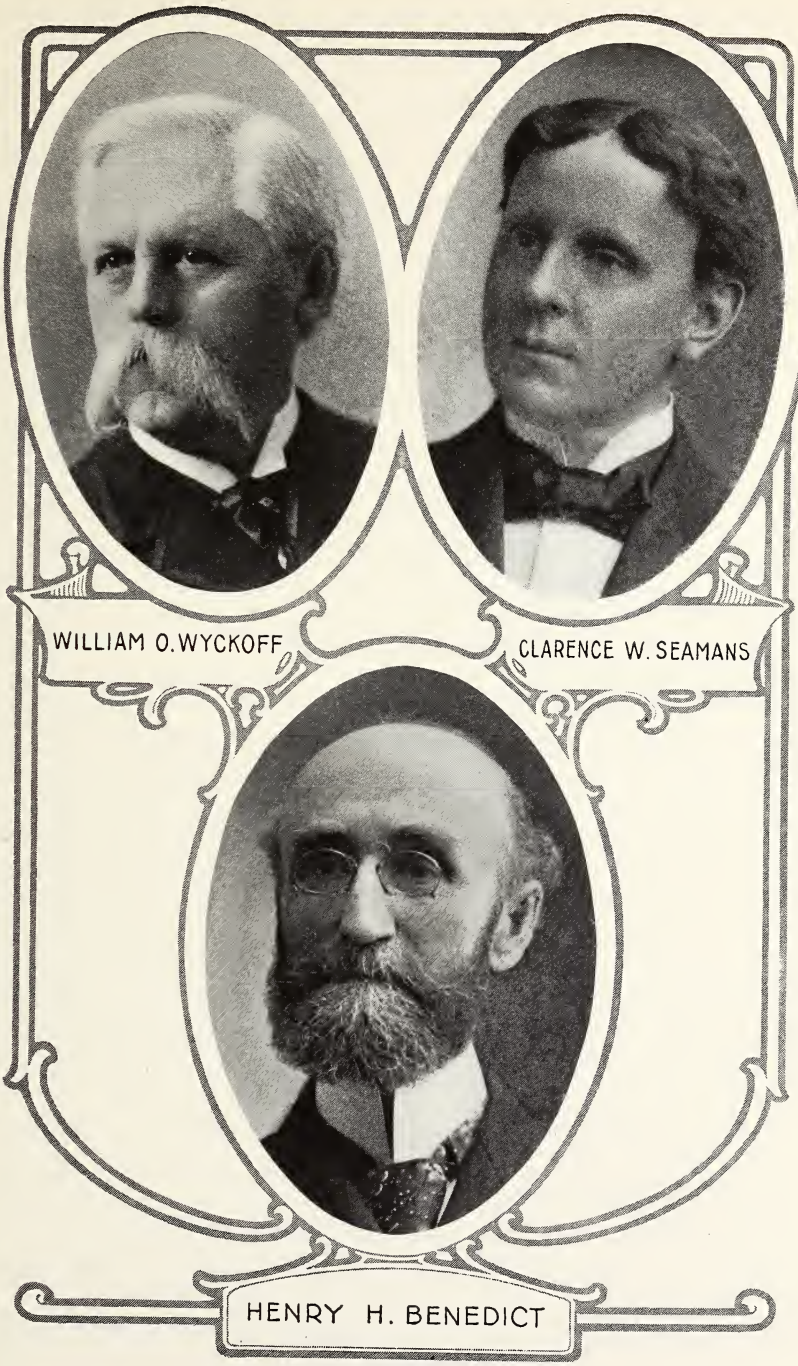
These results did not satisfy Seamans, who soon began to form broader plans. He entered into negotiations with Mr. Henry H. Benedict and Mr. W. O. Wyckoff of Ithaca, N. Y., a widely known and successful court reporter, which resulted in the organization, on August 1, 1882, of the historic firm of Wyckoff, Seamans & Benedict. The new firm made a contract with the Remingtons, who conceded to them the selling agency for the entire world. They agreed to take all the machines the Remingtons could build, who on their part agreed to furnish all that could be sold. This contract marked the turning point in the history of the writing machine.

The members of the firm of Wyckoff, Seamans & Benedict were the real founders of the commercial success of the typewriter, and the personalities of these three men are as interesting as their achievements were notable.

William Ozmun Wyckoff was a giant of a man, in mind, heart and body, robust and whole-souled, whose dauntless courage and invincible faith in the typewriter were reminiscent of Densmore. When the Remingtons

first began to manufacture the typewriter, he saw one of the new machines, and his own profession of court reporter gave him an instant vision of its future. He immediately secured the selling agency for Central New York State and his first act was to place the typewriter in service in his own offices in Ithaca. Here, at the very outset, he encountered a situation which furnished a real test of his faith. Every member of his staff rebelled against the use of the new machines. But Wyckoff was equal to situations of that sort. *"Use it or quit,"* was his answer, and they used it. This was all very well for a start, but it was quite different in the great outside territory, where the possible buyers were not open to this particular form of sales argument. One of the first to enter Wyckoff's employ as typewriter salesman was J. Walter Earle, hardly more than a boy then, who many years after became president of the Remington Typewriter Company. The letters written by Wyckoff to Earle during the late seventies, filled with sage advice and admonition, selling suggestions and unfailing encouragement, supply a graphic picture of all that the typewriter salesman of that day was "up against." They also furnish an intimate and attractive picture of the man Wyckoff himself, sketched unconsciously by his own hand.

The characteristics of the two other members of the firm, Clarence W. Seamans and Henry H. Benedict, have already revealed themselves in this story. Seamans, like Yost, was a wonderful salesman. Better still, he was a



WILLIAM O. WYCKOFF

CLARENCE W. SEAMANS

HENRY H. BENEDICT

natural leader, with a gift for the successful handling of marketing problems which proved of incalculable value in establishing the business on a successful basis. Mr. Benedict likewise possessed marketing abilities of a high order, which he later demonstrated by his important work in organizing the typewriter business in Europe, where the difficulties encountered were even greater than in the American field. He possessed a habit of thoroughness, combined with a foresight and soundness of business judgment which, time and again, were of vital service to the firm. Taken all in all, these three men represented a combination of qualities not often found in a business partnership.

The new firm possessed unbounded energy and enthusiasm but its material resources were limited. Many discouragements were encountered, but they overcame them all and the business increased steadily. The firm started in a very limited fashion, occupying a corner of the Remington concern's office at 281 Broadway, New York, the staff consisting of a few clerks with two or three mechanics, perhaps numbering ten persons in all. In 1884 the firm moved to its own offices at 339 Broadway.

In the winter of 1885-1886, while the business was in the full tide of success, a disquieting rumor reached the three partners that the Remingtons were planning to sell their interest in the typewriter. It had been known for years that the old house, owing mainly to wasteful factory management, had been sinking deeper and deeper

into debt, and now it seemed that the crisis had come. Here was a situation which imperiled the future of the whole enterprise, but a difficulty is often a disguised opportunity, and so it proved to be in this case.

Henry H. Benedict immediately took the train to Ilion and his interview with Philo Remington in March, 1886, which resulted in the transfer of the ownership of the typewriter, is another one of the big moments in this story. Here is the account of what happened, as told by Mr. Benedict himself.

"I arrived in the morning and spent the fore-noon with Mr. Philo Remington. I began by asking him if the rumor was true that they were thinking of disposing of their typewriter interests. He said it was true. I said, 'But why do you do this?' He replied, 'We need money.' I said, 'May I ask for what purpose?' He replied, 'To pay our debts.' 'But,' I said, 'you could not expect to get for the typewriter enough to pay a tenth of your debts.' 'Well, perhaps not,' he said, 'but it would satisfy the more pressing of our creditors.'

" 'Mr. Remington,' I said, 'I was with you for thirteen years, and served you to the best of my ability, and I was absolutely loyal to you. I am going to be loyal now. My advice to you is not to sell your typewriter. The amount of money you would get would not go far; ninety per cent of your creditors would still be unpaid, and they will be after you more savagely if you pay the claims of others and leave theirs unsatisfied.'

"He shook his head and said, 'Well, we think we had better sell.' 'Is that your final decision?' I asked. He answered, 'Yes, I think so.' I said, 'Have you a customer for your plant?' 'Well,' he said, 'there are some people talking about taking it.' 'Have you committed yourself to them?' I asked. He replied, 'No, not absolutely.' 'You're determined to sell, are you?' 'Yes!'

" 'Very well," I said. 'I have given my advice. *Now I want to buy the plant.'*

"Then we began to talk business, and before night I telegraphed to New York to send me a certified check for ten thousand dollars to bind the bargain."

Thus it was that the entire plant used in the manufacture of the machine, together with all patent rights, franchises, etc., necessary to a complete control of the business were purchased by Wyckoff, Seamans & Benedict. The manufacturing plant was established in the building formerly occupied by the Agricultural Works, and W. K. Jenne was installed as mechanical superintendent. The typewriter enterprise since that day has been entirely separate and distinct from the other activities with which the name Remington is associated, and thus it escaped the disasters which shortly after befell the old and honored house of E. Remington & Sons.

In 1888 the need for greater office facilities had become so urgent that Wyckoff, Seamans & Benedict removed their New York office to 327 Broadway, which remained their home office for nearly thirty years. At

first only one or two floors were occupied, then the entire building, and finally the two additional buildings on either side. In 1892 the original co-partnership was changed into a mercantile corporation which included the manufacturing company, and in 1903 the corporate name was changed to Remington Typewriter Company, of which Mr. Benedict became the first president. Of the three members of the original firm, Wyckoff died in 1895 and Seamans in 1915. Henry H. Benedict, the surviving partner, has been from the beginning a director of the company, and enjoys in this anniversary year a unique distinction as the only man now living whose identification with the typewriter business has been continuous throughout the entire fifty years of its history.

The progress of the typewriter, once a real start had been made, continued without serious interruption. The very conditions which made early progress so slow and difficult now began to reverse themselves. The machine, with widening opportunities, proved itself more than ever a most efficient self-advertiser, and every typewriter in actual service carried its own message of legibility and utility to many thousands.

In course of time typewriting became as familiar as pen writing in business correspondence, and the superior speed of the machine soon suggested new uses for which the pen had never been employed. The typewritten circular letter came into being, the forerunner of the various duplicating devices, and indeed of the whole system

of direct-by-mail advertising as we know it today. The United States mail bags soon felt, in their bulkier contents, the impetus of the new machine. General business also felt this impetus. Formerly lashed to a pen point, it now became articulate, and as business creates business, so the new forms of business activity, fostered by the typewriter, opened new and wider opportunities for ever increasing sales. The machine, which won its entry as a labor saver, soon intrenched itself as a business builder, and general business, which was merely helped by the machine at the outset, became completely transformed by it in the end.

This wonderful transition has come about so gradually that the business world, though proudly aware of the fact itself, is only dimly conscious of the part played by the great transforming factor. We call this the age of big business, and so it is, but it is only necessary to compare the average business office and business methods of today with those of fifty years ago to realize the extent to which modern business is an actual outcome of the writing machine.

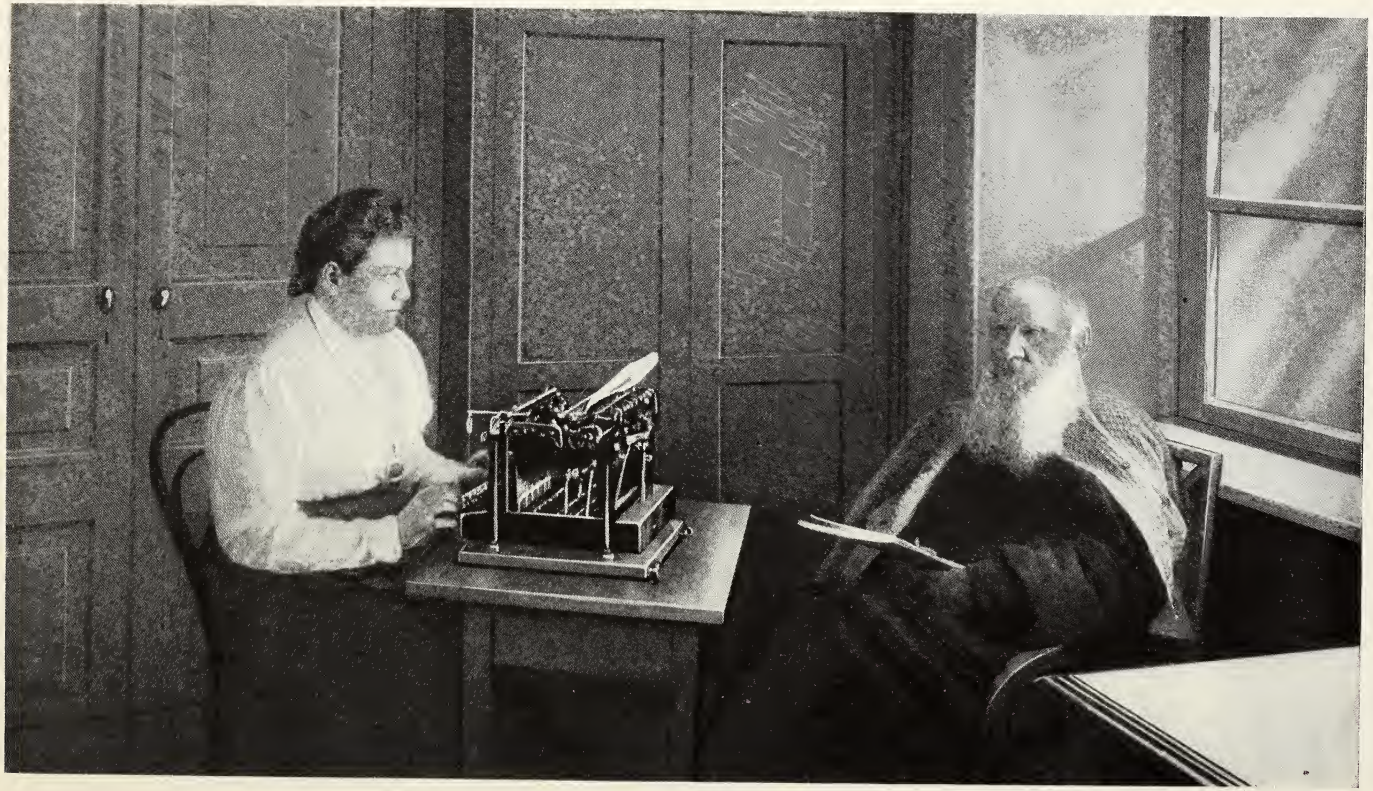
The story of the typewriter in Europe, and in foreign countries generally, is very nearly a repetition of its history in the United States. In every case we find the same early years of struggle and in the end the same transforming influence on business and business methods. The introductory struggle in America was hard enough, but in the Old World there were some even greater obstacles

to be encountered. Here the writing machine was forced to make headway against the more deliberate and leisurely habits of the people, and the more deeply rooted conservatism of an older civilization. There were also some graver practical difficulties, as we shall presently see.

The systematic invasion of the European market began very soon after the firm of Wyckoff, Seamans & Benedict took up their great selling task, and it was mainly through the efforts of Mr. Benedict that the foundations of the business were laid in the Old World countries. Prior to this time E. Remington & Sons had made their own attack on the British market, and their first British catalogue, published over the imprint of their London address, 50-54 Queen Victoria Street, E. C., contains an impressive list of press notices in British journals, published at different times in 1876, also a list of patrons which includes the King of the Netherlands, the Duke of Bedford, the Marquis of Salisbury, Earl Granville and other notables of the period. There is testimonial evidence in this old catalogue that machines were sold in England as early as the year 1874, and similar early efforts are traceable in other European countries. But this early selling effort was not sustained, and it was more than ten years later before any real impression was made on the European market. The London office of Wyckoff, Seamans & Benedict was opened in 1886, and by the year 1890 the machine had begun to occupy an important

place in the British commercial world. The successful introduction of the machine in most of the Continental European countries belongs to the same period. Offices were opened in Paris in 1884, and direct representation was established in Belgium in 1888, Italy in 1889, Holland in 1890, Denmark in 1893, and Greece in 1896. The German market was entered in 1883, and the Russian, with a special machine equipped to write the Russian characters, in 1885. From the very outset of its career in Europe the typewriter has been used by celebrities without number. Many of the crowned heads have been included among its personal users. Lloyd George, many years ago, while still an obscure and struggling attorney in Wales, owned and operated a Model 2 Remington. Count Tolstoi, that earnest disciple of the primitive life, to whom modern machinery in every form was abhorrent, was glad to make an exception in its favor, and many of his extant photographs show him in the act of giving direct dictation to his daughter on the typewriter. Indeed it is not surprising to find the writing machine thus intimately associated with the great, for the very nature of its service, the conservation of brain effort, places it in a far different class from any mere manual labor saver.

One development of the typewriter business in nearly all foreign countries is totally different from anything known in America. We have already spoken of the modern system of commercial education as the creation of the typewriter. In America, however, the typewriter com-



COUNT TOLSTOI GIVING DIRECT DICTATION TO HIS DAUGHTER ON THE TYPEWRITER.

panies and commercial schools, though each is a necessity to the other, have grown up as distinct and separate institutions. This may be accounted for by the fact that the germ of our modern commercial school system existed in a few of the so-called "business colleges" before the days of the typewriter. In England also, before the advent of the writing machine, we find a few schools teaching the recently invented art of phonography, the latter-day development of the ancient art of shorthand. In other foreign countries, however, there was not even the germ of the commercial school as we know it today.

If the task of getting operators during the early days of the business was a difficult one in America, in other countries it was formidable. It soon became evident that the problem could be solved only in one way, by the founding of schools of shorthand and typewriting, owned and operated by the typewriter company itself. This was the origin of the Remington system of commercial schools, which were established by the company or its selling representatives in practically every country on earth, with the one conspicuous exception of the United States. Even in Great Britain it was found necessary to establish these schools at several points in order to insure a sufficient supply of competent operators, and in the countries of Continental Europe there was no other recourse.

The Remington schools at Paris, Berlin, Vienna, Moscow, Petrograd and many other cities throughout Europe were established soon after the machine had invaded these

markets. In other continents the business met similar conditions and went through the same process. In Australia the great Remington schools at Melbourne, Sydney and other cities have graduated many thousands of operators; so also in South Africa, and throughout the entire South American continent, where not only the large centers but even many of the smaller cities now have their Remington schools. In the Asiatic countries the problem of securing competent stenographers and typists assumed another phase. Here the stenographers and typists are all natives, Chinese, Japanese, Siamese, Javanese, Hindu, etc., and they are all men, for this is one part of the world where the modern girl typist has not yet arrived. In the countries of the Far East, the Chinese predominate among the practitioners of the "twin arts." It's a stiff job, that of acquiring such mastery of a foreign language that the stenographer can take and transcribe accurately the shorthand notes taken from dictation in that language, but the Oriental peoples, with their remarkable linguistic gifts, have proved equal to the task.

The schools of shorthand and typewriting in the Eastern countries are easily the most interesting in all the world, and it is noteworthy that these schools maintain the highest standards of efficiency. The Remington schools in various cities throughout India, which train the Babu or educated native in the "twin arts," have been for many years the main source of supply of the typists employed in all branches of the Indian Government service.

The founders of the typewriter business had little realization that out of their efforts would come a new plan of practical education; still less did they realize that over a great part of the earth's surface the task of developing this plan would fall on the manufacturer himself. In their broad effect on human society, the by-products of the typewriter business, in more than one phase, have been quite as important as the main idea.

CHAPTER VI.

HIGH SPOTS IN TYPEWRITER PROGRESS

WE have noted the fundamental features contained in the original typewriter of 1873. It had the step-by-step escapement mechanism which caused the letter-spacing travel of the paper carriage. It had type bars on which type were mounted which printed at a common center. It fed the paper around a cylinder on the paper carriage. It was equipped with a line spacing and carriage return mechanism. It printed through a ribbon, which traveled across the printing point with the movement of the carriage. It had the standard number of printing keys, placed in four rows, and the characters on these keys, and the corresponding type bars, followed the arrangement now known as "universal." To these fundamental features the Model 2 Remington of 1878 added the shift-key mechanism, with two type mounted on a single bar.

Every one of the features above described is standard in all the leading writing machines of the present day. It must not be supposed, however, that the reign of each and all of these basic features has been undisputed throughout the entire fifty years of typewriter history. In time other typewriters appeared on the market, which

represented radical departures from one or another of these principles. Some of these machines proved practical in actual service and won a considerable popularity, and some of them are manufactured and sold today. A review of typewriter history would not be complete which failed to take note of these departures from the type of construction generally known as "standard."

One of the earliest issues in the typewriter field concerned the relative merits of the type-bar principle versus the type wheel. Mention of the type wheel brings us back to John Pratt's Pterotype and the article concerning it in the *Scientific American* of July 6, 1867, which is said to have suggested the idea of a typewriter to Sholes and his colleagues. Pratt is said to have actually built and sold some of these mechines in England, but they were not a success, and he for a time despaired of being able to construct a machine on which the printing wheel would move quickly and yet stop instantly. He worked over the problem for years, and when at last he approached the United States Patent Office he found himself in interference with two other inventors, James B. Hammond and Lucien S. Crandall, both of whom appeared with writing machines built on the type-wheel principle. A deadlock ensued which was finally settled by Pratt yielding precedence to Hammond upon a type-wheel machine and receiving a royalty, while Crandall proceeded with his application for a patent on a *type-sleeve* instrument. The first Hammond patents were

taken out in 1880, and the machine was placed on the market shortly thereafter. The early Hammond had what was called the "ideal" keyboard, semi-circular in shape, but later Hammonds have conformed to the "universal" keyboard arrangement.

The Hammond was the first practical type-wheel machine and is today the leading machine of this class. The type-wheel construction has always had strong advocates, but these machines have never been very serious competitors of the type-bar machines in the general commercial field.

Soon after the advent of the Hammond, another important typewriter issue arose—that of single versus double keyboard. The first double-keyboard machine was the Caligraph, placed on the market in 1883, an enterprise upon which Yost entered after it became evident that he could no longer retain his interest in the Remington. The Caligraph was devised under the direction of Yost, principally by a skilled German mechanic named Franz X. Wagner, who afterwards won prominence as the inventor of the Underwood Typewriter. Yost's aim was to construct a typewriter which would evade the Remington patents, but, failing in this, he was subsequently granted a license. In after years the Smith Premier became the leading double-keyboard machine. This machine, the invention of Alexander T. Brown, was placed on the market in 1890 by Lyman C. Smith, the gun manufacturer of Syracuse, and during the next few

years attained a wide popularity. It was urged in behalf of the double-keyboard machine that the key for every character made its operation easier and simpler for the beginner. The construction, however, was more complicated, because it doubled the number of type bars and connecting parts, and there was a further disadvantage in the enlarged keyboard, which time made evident. The double keyboard would probably have yielded to the shift key sooner or later, but it was the advent of the touch method of typewriting which really settled the matter. For use in connection with the touch system, the compact keyboard of the shift-key machine proved so obvious an advantage that the double keyboard lost ground rapidly and machines with this keyboard began in time to disappear from the market. The present Smith Premier Typewriter, invented by Jacob Felbel, is a shift-key machine of standard design.

Another early issue in typewriter construction concerned the relative merits of the ribbon and the inking pad. This brings us to the last enterprise of G. W. N. Yost, which he undertook after severing his connection with the Caligraph. In 1888 Yost brought out the machine, developed by Alexander Davidson, Andrew W. Steiger and Jacob Felbel, that ever since has borne his name. The most notable departure of the Yost Typewriter from the standard design was the elimination of the ribbon and the use instead of an inking pad, on which the face of the type rested. The first Yost was a double-

keyboard machine, but later models embody the shift-key principle. Of late years this type of machine has been hardly known on the American market, although it has always enjoyed a considerable sale in Europe.

The inking pad, as a substitute for the ribbon, found many advocates at one time because of one serious deficiency in the early ribbon machines. The automatic ribbon reverse is an old story now, and present-day typewriter users take it as a matter of course. Many of them may be surprised to hear that the typewriter was twenty-two years old before the first automatic ribbon reverse appeared on a writing machine. Some of the older generation of typists, however, can still remember the time when it was always necessary to operate the machine with one eye on the ribbon, in order to be sure to reverse it at the right time, or else suffer the consequences in a "chewed-up" ribbon and spoiled work. During the early nineties Jenne labored hard on the problem of an automatic ribbon reverse, the solution of which called for inventive skill of a high order. After several experimental devices had been designed, all of which were far too complicated, a simple solution was found by George B. Webb, and the first automatic ribbon reverse made its appearance on the Remington in 1896. Within a few years the old hand reverse became practically obsolete on all standard machines.

In the meantime a new demand had been steadily growing, which was destined to influence quite radically the

future course of typewriter development. All of the earlier type-bar machines were built on what is known as the understroke principle. The type bars were arranged in a circular "basket," underneath the carriage, and the type printed at a common point on the under side of the cylinder. These machines were satisfactory in speed and quality of work, but they had one practical defect—it was necessary for the operator to raise the carriage in order to see the writing line. The advantages of visible writing were so obvious that the problem began at an early date to engage the attention of typewriter inventors. On the type-wheel machines, visible writing was easily attained, but on the type-bar machines it called for real inventive effort. The first type-bar visible writer, the Horton, appeared as early as the year 1883. Most of the early type-bar visible writers were of the down-stroke type, the type bars striking downward to a common point on the top of the cylinder. Prominent among machines of this construction were the Columbia Bar-Lock (1888), the Williams (1890) and the Oliver (1894). The latter machine, in particular, secured and has since held a considerable market. Later on the front-stroke principle of construction took the lead in the general business field. The first front-stroke machine to attain prominence was the Underwood. This machine was the invention of Franz X. Wagner, whose earlier connection with the Caligraph we have already noted, and was placed on the market in 1897 by John T. Underwood,

who had long been identified with the writing-machine industry as one of the pioneer manufacturers of typewriter ribbons and carbon papers. The design of the front-stroke machines represented a new departure in the arrangement of the type bars, which were placed in a segment in front of the carriage, the type printing on the front of the cylinder. This front-stroke principle proved to be a satisfactory solution of the problem of visible writing, and all of the leading standard machines are now of the front-stroke type. Prominent among these machines today are the Underwood, the front-stroke Remington, which was largely the work of Oscar Woodward, followed by later improvements; the "L. C. Smith," brought out by Lyman C. Smith, the original manufacturer of the Smith Premier, and the Royal, followed some years after its first appearance by a new model.

Visible writing is an old story today, the last non-visible machines having disappeared from the market many years ago. Doubtless, when this problem had been solved, it seemed to some as though the typewriter had attained finality. But there is nothing final on this earth, and a new demand has been growing of recent years until it has become as strong and insistent as the demand for visible writing of twenty years ago. The familiar "clicking" noise of the typewriter has been with us as long as the machine itself, and in the early days people did not seem to mind it. But when the use of the typewriter had grown until whole batteries of them had invaded every depart-

TYPES OF PRESENT DAY CORRESPONDENCE MACHINES.

TYPES OF PRESENT DAY CORRESPONDENCE MACHINES.

ment of business, the accumulated noise became a disturbance, and users began to wish that the machine would imitate, if it could, the one and only virtue admittedly possessed by the pen—that of silence. The development of quiet typewriting brings us to the present-day stage of typewriter progress, which hardly belongs to this story. It is sufficient to say that the writing machine, which has always been equal to any demand made upon it, has run true to form in this case. During recent years one typewriter has appeared, the Noiseless, built around this central idea, also quiet models of at least three of the standard makes.

It seems a far cry from the first typewriter of 1873 to the shift-key, front-stroke, visible-writing, quiet machine of 1923. Equally great has been the progress in the skill of the operator, from the first would-be typists who awkwardly tried their hands on the early machines, to the standards attained by the best typists of the present day. The progress of the operator, however, has not been marked by the same slow, successive stages. It has been the outcome of one great development—the introduction of the scientific method of key fingering known as *touch typewriting.*

We have referred more than once to the article in the *Scientific American* of July 6, 1867, which started so many brain cells working to such good purpose. One more quotation from this article, which has a special application to the operator, is now in order:

> "The weary process of learning penmanship in the schools will be reduced to the acquirement of writing one's own signature and *playing on the literary piano.*"

Note the words "playing on the literary piano." They were suggested spontaneously in connection with the idea; they were an unconscious prophecy which time has fulfilled. To operate the machine with the eyes resting not on the keys but on the copy, as the eyes of the pianist rest on the music, to use all the fingers, to regulate the touch so that the best results are obtained, thus gaining time in the execution and excellence in the work; these are the ends secured by the touch system, a method now taught universally in business schools.

"Who was the first touch typist?" is a question now frequently asked. The answer is, the first blind typist, whoever that person was. We have recorded how the needs of the blind figured in the efforts of so many of the early typewriter inventors. Pen writing is almost an impossibility for blind people. A frame of parallel wires fitted over the writing paper, with one wire for each line of writing, is of some help to the blind in pen writing, but if they lose the line they cannot find it again, and it is the same with words and spaces between words. The human hand has no automatic spacing mechanism, like the typewriter, and that is what the blind person needs. But where sight is lacking there is only one possible method of operation—*by touch.* The touch method was

a discovery of the blind, and a gift by them to all the typists of the world.

It took time, however, for this idea to become diffused among schools and operators generally, and during the early years of the typewriter the style of typing now known derisively as "peck and hunt" was universal among sighted operators. Here was a paradox, where the gift of sight caused blindness and only the blind could see what was hidden from everybody else. In a few years, however, the art of touch typing was acquired by a few sighted typists of exceptional skill. The first of whom there is record was Frank E. McGurrin, who taught himself the art on a Model 1 Remington in 1878, while a clerk in a law office in Grand Rapids, Mich., and afterwards became the champion speed operator of his time. The exhibitions given by McGurrin in different cities of the country during the eighties were of the very highest educational importance. The most notable of these was the contest between McGurrin and Traub, decided at Cincinnati on July 25, 1888.

The modern typewriting contests are interesting mainly as demonstrations of the utmost capacity of the operator, but the contest between McGurrin and Traub had a far deeper significance. It was really a contest between two different systems of typing—the new and the old. Louis Traub was an instructor in typewriting and agent and expert operator of the leading double-keyboard machine of that day. Both in the keyboard used and the method

used, he stood in opposition to McGurrin. The conditions called for forty-five minutes writing from dictation, and forty-five from copy, unfamiliar matter being used. McGurrin won decisively on both tests, but the significant fact was that his speed increased three words per minute when writing from copy, while Traub's speed fell off twelve words per minute on the same test. The reason is obvious. McGurrin's eyes were always on the copy, while Traub was compelled to write an "eyeful" at a time. Traub was open to conviction and accepted the logic of the result without reserve. He subsequently became an expert touch operator of the shift-key machine.

The exhibitions of McGurrin and other self-taught touch typists of this early period served a useful purpose in demonstrating that the idea was feasible, but to make it practical for all typists was the task of the educator. The first business school to begin systematic instruction to pupils by the touch method, or the all-finger method as it was then called, was Longley's Shorthand and Typewriter Institute of Cincinnati. The credit for the introduction of this system belongs to Mrs. M. V. Longley, wife of Elias Longley, whose name is well known to the shorthand fraternity of America through his prominent association with the development of phonography. This was in 1881. In the following year her "Remington Typewriter Lessons" were published, the first printed system for teaching the all-finger method. The advertisement describes the system as "a series of lessons and exer-

cises—by a system of fingering entirely different from that of other authors and teachers"; a very conservative statement considering the radical departure it represented from the prevailing usage of the day.

The first typewriter man to interest himself in the system was H. V. Rowell, for many years manager of the Remington office at Boston, who is still living at an advanced age. It was a paper read by Mrs. Longley before the First Annual Congress of Shorthand Writers, held at Cincinnati in 1882, that gave Rowell his first inspiration on the subject, and from that time he became an ardent and constant advocate of the touch system. The first business educator who took up this method at Rowell's suggestion was W. E. Hickox who introduced it in his private shorthand school at Portland, Me. Hickox, who began to teach touch typing in 1882, was the second educator in America and the first in the East to adopt this method, but it was some years before he had any imitators. Rowell, however, continued ceaseless in his efforts, and in 1889 he interested B. J. Griffin of the Springfield Business School, Springfield, Mass. Griffin became a touch typewriting enthusiast. He introduced it in his school to the exclusion of all other methods, and the remarkable typing skill of some of his graduates soon produced a deep impression on other business educators. In the same year, 1889, Bates Torrey of Portland, Me., published "A Manual of Practical Typewriting." The word "touch" seems such a natural one as applied to this

method that it would seem almost futile to search for its originator, but, as a matter of fact, Bates Torrey was the first one to use it in a printed manual. We also note in this book a great advance in the point of view over Mrs. Longley's "Typewriter Lessons." Mrs. Longley's method was a genuine touch system in its results, but not in its main purpose, which was avowedly to secure an improved method of fingering. Seven years later the all-finger method had become simply a means to an end—the ability to write by touch.

The developments of the year 1889 set the ball rolling, and during the next few years many new "touch" manuals appeared and one school after another took it up until the touch method was firmly established in the East. The growth of the system in the West was due mainly to the efforts of another typewriter man, O. P. Judd, for many years manager of the Remington office in Omaha. Judd, writing in 1897, says that "Omaha has become the storm center of the commotion over the touch method of typewriting." Two educators of that city, Van Sant and Mosher, urged on by Judd, entered into a friendly competition, and the rival exhibitions given by their splendidly trained pupils soon spread the method far and wide.

Early in the year 1901 the Remingtons made a complete canvass of the schools of America to ascertain definitely the extent to which the touch system was then in use. It was found that half of the schools of the country had already begun instruction by the touch method and,

of the remainder, the great majority announced their intention of doing so with the beginning of the fall term. Very soon after, the old "peck and hunt" plan of teaching had disappeared entirely from the schools, and the old style operators have become fewer and fewer with each passing year until one of them in a present-day business office is almost a curiosity. The seeming impossibility of thirty-five years ago, when people watched McGurrin and wondered, has become the universal commonplace of today.

CHAPTER VII.

WIDENING THE FIELD

THE developments we have been considering cover only one phase of typewriter progress. The advent of the shift-key typewriter, of the automatic ribbon reverse, of visible writing, of the touch system, and finally of the quiet typewriter, have all been important advances in efficiency, or convenience, or general satisfaction in the performance of the older and more familiar typing tasks. Those improvements, however, the aim of which was to extend the actual scope and range of the writing machine belong, in the main, to a different chain of typewriter development.

During the first twenty-five years of its history, the time-saving service of the typewriter was confined almost entirely to straight, line-by-line writing, with its practical applications, such as letter writing, manuscript writing, and the like. So long as these fields remained unconquered there was little incentive or opportunity to think of anything else. Thus the great fields of form, tabular and statistical writing remained for many years beyond the reach of the writing machine. The reason, of course, from the mechanical standpoint, lay in the lack of any mechanism for the instantaneous setting of the carriage

at any desired writing point. Whenever the nature of the work required these carriage settings with great frequency, the slow method of hand setting consumed all the time that could be saved in the actual typing. However, as time went on, the opportunities for time saving in these special forms of writing became more and more evident. "If we have typewritten letters, why not typewritten bills and statements and vouchers and statistical forms of every kind? Why, in fact, use the pen at all except for signatures?" These questions were asked with greater and greater frequency. And in due time the typewriter builders gave the answer. The first decimal tabulator, known originally as the Gorin Tabulator, from the name of its inventor, appeared in 1898 as an attachment of the Remington Typewriter.

There is a special interest in the date of this invention, for it marks exactly the half-way point in the fifty years of typewriter history. The second quarter century of this period, which begins with the advent of the decimal tabulator, has seen the typewriter extend its range to every form of writing or combined writing and adding formerly done by the pen.

The Gorin Tabulator was exactly what its name implies—a *decimal* tabulator. It wrote columns of figures —anywhere on the page and as many as the page would hold—with the same speed as ordinary, line-by-line writing. The decimal tabulator brought the carriage instantly to the exact point in every column where the next line of

writing began, whether units, tens, hundreds or millions, as illustrated in the following example:

340721	5	3 721 55
856	29	8 06
7382	767	952 77
94006	9 763	85
73	86 573	95 00
2099	142 345	48 050 66
9282384650	4 356 758	1 396 722 00
5857205	67 954 678	500 800 00

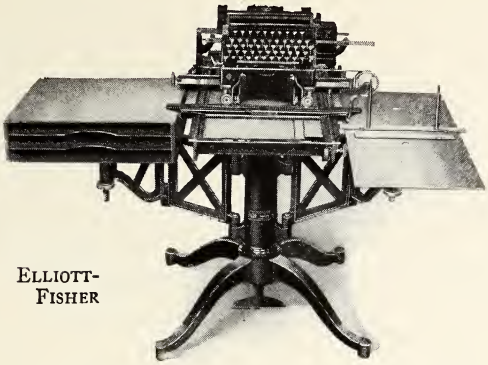
With the appearance of the first tabulator, the typewriter began to invade new fields which hitherto had been entirely beyond its reach. In some of the Old World countries the decimal tabulator actually took the lead in blazing a path for the writing machine. In these countries there survived for many years a certain prejudice against the typewritten letter, but this prejudice did not extend to form and tabular work, and the first machines purchased by countless business houses in England, France, Italy and elsewhere were tabulating typewriters. This seems like a reversal of the natural order, but the final result was the same. The typewriter, once introduced, soon came into use for every kind of writing.

The decimal tabulator is a notable example of how one idea leads to another. During the years immediately preceding its appearance there had been happenings in other branches of the office appliance field. The idea of clerical labor saving, embodied in the first typewriter, had given birth to a varied industry, and among other

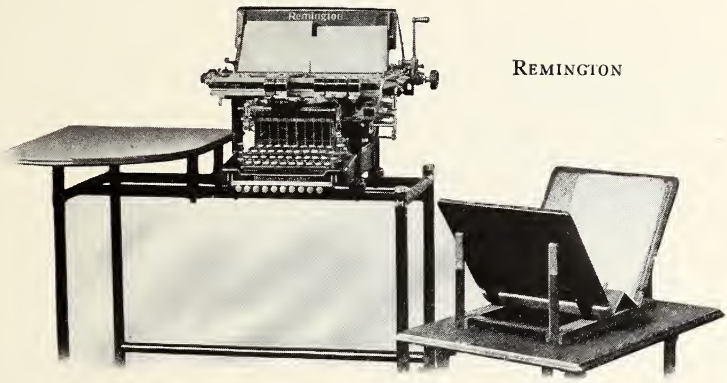
new inventions, had produced the adding machine. The first adding machines, however, carried no printing mechanism, and so long as typewriters were also lacking in a tabulating mechanism, the fields of the two machines lay entirely apart. In the early nineties, however, the Burroughs machine, which listed figures in a column as added, began to find a market. Soon after came the first tabulating typewriter, and it was soon recognized that each of these machines represented a partial approach to the field of the other. The question then arose: "Since the typewriter now writes figures in columns, why not build one that will add these columns as written? In other words, why not build an *adding typewriter?*" In due time the adding typewriter came, to be followed later by the typewriter-accounting or bookkeeping machine.

Prominent among machines of this type are the Elliott-Fisher, which has a flat writing bed or platen, the Remington, which introduced the feature of automatic subtraction, and the Underwood, which is electrically operated. The earlier adding typewriters added in vertical columns only, but soon a cross-adding mechanism was added, and the two acts of vertical and cross computation are performed in one operation.

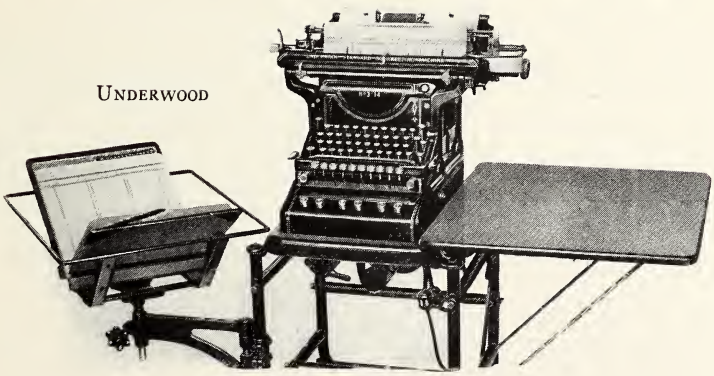
The accounting machine completed the application of the typewriter to every form of business writing, including combined writing and adding. In the latter field the advantages it offers are those of the typewriter intensified. The combination of two tasks—writing and adding—in



ELLIOTT-FISHER



REMINGTON



UNDERWOOD

TYPES OF PRESENT DAY TYPEWRITER-ACCOUNTING MACHINES

one, eliminates the separate adding and the separate adding cost. A further advantage is the error-proofing of every task, the machine furnishing its own checks against possible mistakes by the operator. To the business man these advantages are decisive. The typewritten bill is now about as universal as the typewritten letter, so also is the typewritten statement, and the old-fashioned bound and pen-written ledgers are fast giving place to the modern card ledger, kept on the bookkeeping machine. The same applies to every conceivable kind of combined typing and adding in every line of business. The pen has not entirely disappeared from these fields as yet, but it is going, and its final departure is as clearly indicated as anything in the book of fate.

While the typewriter has been completing its conquest of the entire field of business writing, there has been another development at what we may call the opposite end of the scale. The machine is now demonstrating its time-saving utility not alone for business writing but for all writing. The use of the machine for every kind of personal writing was clearly forecast by its original builders, as the first typewriter catalogue plainly proves. Indeed this was clearer to them than the general business uses. Many years were to elapse, however, before the employment of the typewriter became general outside of the business field, and then it came about through the development of a new type of machine, especially designed for the owner's personal use. The portable typewriter,

REMINGTON

CORONA

UNDERWOOD

TYPES OF PRESENT DAY PORTABLE MACHINES

small, light, compact, convenient, and easy to carry anywhere in its traveling case, proved to be the type of machine desired by the personal user. The earliest of the portables was the small Blickensderfer, a type-wheel machine. The first type-bar portable machine to attract wide notice was the Corona, which dates from the year 1912. Today there are a number of these machines, including the portable Remington, Underwood, Hammond, Gourland and others, two of these, the Remington and Gourland, with keyboards like those on the big machines. The rapid progress of the portable in its own field points clearly to the time when the use of the typewriter for every kind of writing will be nearly universal.

The accounting machine and the portable, different as they are in nearly every way, have one point in common. Both have contributed to what we may call the *intensive* use of the writing machine. One other development, which concerns its *extensive* use, will close the list.

We have already spoken of the world-wide use of the writing machine. This is not a mere figure of speech; it is a literal statement of fact. There is no article of commerce in the world more universal in its distribution. Everywhere on earth today, where man is found with the ability to read and write, there will be found the omnipresent typewriter.

It is hard for the imagination to visualize this universal fact. A map of the world does not help much. Perhaps a photograph gallery of all the types of people of all the

"TO SAVE TIME IS TO LENGTHEN LIFE"

Typewritten in 84 Languages

English—	To save time is to lengthen life.
French—	Gagner du temps, c'est prolonger la vie.
Portuguese—	Economisar tempo é alargar a vida.
Hungarian—	Takarékoskodj az idővel, meghosszabitod az életed.
Polish—	Kto czas oszczędza - przedłuża sobie życie.
Basque—	Demboraren irabaztia, biciaren luçatzia da.
Catalan—	Economizar tèmps es allargar la vida.
Provençal—	Temps gagna fa longo vido.
Breton—	Hastenn ar vuez ho c'honi amzer.
Irish—	Is Ionann Am-Coigilt agus Seagal-buanad.
Gaelic—	Faid saoghail is seadh do re chuir a b-feidhm.
Welsh—	Mae arbed amser yn estyn oes.
Manx—	Dy hauail traa te jannoo bea ny sleurey.
Flemish—	Tijd besparen is leven verlengen.
Frisian—	Tüd besparje is libjen verlenge.
Icelandic—	Að spara tíma er að lengja lifið.
Bohemian—	Úspora času jest prodlouženim života.
Roumanian—	A economisi timp este a prelungi viaţa.
Slovenian—	Varčevanje s časom, je daljšanje življenja.
Slovak—	Ušporuvat čas je prodluhit života.
Esthonian—	Jôudsam tôô on elu pidkendus.
Lettish—	Laiku taupot - pagarina dzivibu.
Lithuanian—	Užčēdyjimas laiko ilgina amžį.
Croatian—	Tko vrijeme štedi, taj produžuje život.
Spaniolish—	Economia di tiempu, alarga la vida.
Servian—	Тко вријеме штели, тај иродужује живот.
Ruthenian—	Цѣнити часъ, то довше жите.
Bulgarian—	Спест ваниеяврѫме е увеличавание живота.

nations that follow typing as a profession would convey a better idea. But fortunately a still better method of visualization is at our command. Some years ago a linguistic genius conceived the idea of collecting typewritten translations of the motto *"To save time is to lengthen life,"* in all the languages of the world. The collection, which had grown when published to eighty-four languages, is here presented. Truly a remarkable evidence of the way in which a writing machine produced in the village of Ilion has conquered the world.

Some may ask, "what language is Quoc-Ngu?" Quoc-Ngu is a Romanized version of a Chinese dialect, spoken in Anam, a division of French Indo-China. If the language is as strange as its name it must be a "tongue twister," and our typewritten sample shows that it *is* as strange—just about. Nevertheless a considerable number of typewriters are used today for writing Quoc-Ngu.

The purely Celtic languages form an interesting group. They are represented by five examples, Irish, Gaelic, Welsh, Breton and Manx. The typewritten sample shows the Romanized writing of the Irish or Erse language. Typewriters have also been sold to write Erse in the original character, the type having been specially cut for the purpose.

Six of the Philippine languages are represented, Tagalog, Pampango, Ilocano, Visayan, Bicol and Pangasinan. Here, indeed, is striking evidence of the heterogeneous population of these new American possessions. Equally

German— Zeit sparen heisst das Leben verlängern.
Italian— Risparmiando tempo prolungate la vita.
Latin— Parcere tempori vitam longiorem facit.
Swedish— Att vinna tid är att förlänga lifvet.
Danish— At spare Tid er at forlænge Livet.
Norwegian— At spare tid er at forlænge livet.
Finnish— Aikaa voittaessa, elämä pidentyy.
Maltese— Min jahdem fis, itaughal haghtu.
Albanian— Kur ngi bier mot ron shum.
Romanch— Spargner temp ais prolunger la vita.
Ido— Sparar tempo esas longigar la vivo.
Greek (Ancient)— Φείδεσθαι χρόνου ἐστὶ βίον μηκύνειν.
Greek (Modern)— Ἡ οἰκονομία τοῦ χρόνου εἶναι παράτασις τῆς ζωῆς.
Esperanto— Ŝpari tempon estas plilongigi la vivon.
Sioux— Wicoran yuptecana kin he wiconi yuhanske.
Winnebago— Wō shkännä lä kä lä kĭ cĭ gĭ shĭ,
wankshik hō ĭ nä nĭ gĭ sā lětch nä nä.
Aztec— Aquín àmo quixpoloa in cahuitl
quihuellaquilia inemiliz.
Ká taquick tiempo cu chokuactal á kimil.
Maya— Ti pinagtiped iti añget paatidduguen ni biag.
Ilocano— Magdaginot sa adlao, kay mao ang hataas ñga
Visayan— kinabuhi.
Bicol— Pag-imotan ang panahon pagpa-láwig nin buhay.
Pampango— Ing pamagarimuhan king panaun makakaba king bie.
Pangasinan— Say panagteper ed maong sa panahon so
macasuldon ed pan bilay.
Tagalog— Ang pag-aarimuhán sa panahón ay
nakapagpapahaba ñg buhay.
Sizulu— Lowo o gcina isikati sake u yena o nesikati
eside ukusandisa emhlabeni.
Sesotho— Ea sa senyeng linako tsa hae ke eena
ea phelang halelele lefatseng.
Sixosa— Ongaciti ixesha lake nguyena o nexesha
elide ukulandisa emhlabeni.
Setshangaan— A lavisaka shikati utomi wa yena
u tayengeteleka muhlabeni.

notable is the South African group in which five languages are represented, Sizulu, Sesotho, Sixosa, Setshangaan and Taal. Of these the first four are native Kafir dialects. Hollandsch or Dutch was in the old days of the Transvaal Republic the official language. Taal is the every-day language of the South African Dutchman, and is a conglomeration, principally of Hollandsch, with some English. English-speaking people who have never been in South Africa may be curious to know what mixed Dutch and English sounds like. The typewritten sample, however, can only show how it looks.

The languages of the American Indian are represented by only three examples, Sioux, Winnebago and Aztec. "To save time is to lengthen life" takes nineteen words to say in Winnebago. Evidently the moral of this motto was never applied very seriously by the Winnebago Indians. If it took them as long as that to say everything, it is perhaps no wonder that the Winnebagos are nearly all dead.

Many other languages in this extensive list are worth lingering over, but we must pass on to the most interesting feature of the collection, namely those languages that are written in non-Roman characters. In the languages we have thus far considered, the mechanical problem, from the typewriter standpoint, was an easy one. Where special accents are required, they are easily supplied by the simple expedient of using "dead," i. e., non-spacing keys. The adaptation of the typewriter, however, to write the non-Roman languages was in some instances a very dif-

Russian—	Сберегая время удлиняемь жизнь.
Spanish—	Economizar tiempo es alargar la vida.
Dutch—	Tyd uitwinnen is zyn leven verlengen.
Taal—	Tijd te spaar maakt gebruik langer.
Quoc=Ngu—	Lợi ngày giờ, bằng sống lâu năm.
Hawaiian—	Malama pono ana'ika manawa, He mea ia e hooloihi aku ai ike ola.
Maori—	E poto taima e ora roa.
Romanized Malay—	Me-niampurnakan waktu itu me-nambahi panjang umor.
Eskimo—	Uvdlunik aûngnertusârinek inûnertunarpok.
Hova—	Tsy maniany andro foana no manalava ny aina.
Arabic—	حفظ الوقت اطالة الحياة
Urdu—	وقت کا بچانا بڑھانا حیات کا ہی
Malay—	ميمرناكن وقتو ايت منمباهي فنجڠ عمر
Persian—	وقت رامحافظت نمایی عمرت درازباشد
Sart—	وقتنكزنى گمتسانكر عمرنكر ازايجاق
Tartar—	هركاه وقتى ملاحظه ايليهسن عمرون اوزون اولار
Turkish—	وقت قازانمق عمرى اوزاتمقدر
Sanskrit—	कालक्षेपवर्जनमायुष्प्रतरणम्
Hindi—	वख्त बचानेके मायने यह हय के जिंदगी बढाना।
Marawari—	समये का बचाना वुमर.का बढानाहै
Magadhi—	काल का बचाना है आयु का बढाना।
Marathi—	वेळ वांचविणें म्हणजे आयुष्य वाढविणें आहे
Hebrew—	חשבון הקצר הוא ארוכת החיים.
Yiddish—	צייט שפארען הייסט דאס לעבען פערלענגערן.
Armenian—	Պահպանելով ժամանակը երկարացնում ես կեանքը:
Karen—	ပမၤဝံၤတၢ်ဆိးမှ့ၢ်ပသူၣ်ထီၣ်ပမုၢ်နံၤၤမုၢ်သိလိၤ.
Burmese—	။ အချိန်မကုန်စေ အသက်တာ ရှည်စေလ ။
Japanese (Katakana)	ムタジカンチ ノバスハ イノチチ ノベスメリ

ficult mechanical problem. There are twenty-four languages in this list, written in no less than eight different characters, Russian, Hebrew, Greek, Armenian, Burmese, Hindi, Arabic and Japanese (Katakana).

The Russian group includes four languages, Russian, Servian, Ruthenian and Bulgarian. The character in which these languages are written is known as Cyrilian, an invention of St. Cyril in the ninth century, and is based on the Greek character, to which its resemblance will be noted. The languages written today in the Greek and Cyrilian characters correspond almost exactly to the present limits of the Orthodox Greek Church.

The use of the Arabic character also corresponds very nearly to the geographical limits of the Mohammedan religion. Seven languages written in this character are represented, Arabic, Turkish, Persian, Sart, Urdu, Malay and Tartar. Of all the languages now written on the typewriter, the Arabic group presented the gravest mechanical difficulties. The Arabic character, as written, is not subject to any of the usual rules. It has in its complete alphabet over one hundred individual characters; it writes backwards, i. e., from right to left; the characters are written on the line, above the line and below the line, and they are of various widths, requiring full spacing, half spacing and no spacing at all. Here indeed was a medley of problems well calculated to tax ingenuity to the limit, and the Arabic typewriter is a crowning triumph of mechanical skill.

The Hindu group shows the ancient Sanscrit and four modern Hindu vernacular languages written in the same character, which is known as Devanagari. These vernacular languages are Hindi, Marawari, Magadhi, and Marathi. The Hindu vernacular machines, especially the Marathi, are having a considerable sale today among the native princes and potentates of British India.

The Japanese (Katakana) sample is interesting mainly as a curiosity. It does not write the complete Japanese language—only the syllabic system known as Katakana. This is read from right to left in perpendicular columns. In order to write this character on the horizontal lines of the typewriter, the type are laid on their faces and, in reading, the lines are held in perpendicular position.

After reviewing this formidable list of eighty-four languages, the question naturally arises, "Are there any written languages that it does not include?" Yes, there are, and this collection of typewritten samples has steadily grown until it now includes more than 150 languages, while the number of different non-Roman characters now written on the typewriter has increased from eight to twenty. There are two important languages, however, which still lie outside the pale of the writing machine. These are the ideographic languages, Chinese and Japanese.

The ancient Japanese language was originally phonetic, but the syllabic signs are now commonly intermixed with ideographic characters of Chinese origin.

Chinese is a strange language. It has no alphabet or phonetic signs—only ideographs. These ideographs are literally word pictures, and there is a separate picture for every word. There are from 40,000 to 50,000 of these ideographs, and to write each one at a single stroke would require a typewriter with many thousands of keys. Can the problem ever be solved of writing this language on a practical typewriter? Some inventors claim they have already solved it. It seems hard to credit, but the typewriter developments of the past and present warn us not to call anything impossible that is demanded of the writing machine.

Meanwhile the Chinese and Japanese buy typewriters —thousands of them; not to write their own languages, of course, but other languages, usually English. And they are coming to use these machines, not alone for foreign correspondence, but for business correspondence among themselves. The time saving service of the typewriter is so great that they find it "worth another language." And this brings us to what many will regard as the most interesting of all the achievements of the typewriter. The steady growth of English as the commercial language of the Far East is a well known fact, and of all the influences that have caused this growth, one of the most important is the writing machine. Thus it may be said for the typewriter that it has not only facilitated the use of language but it has been no mean influence in determining the spread of language itself.

What is to be the future of this remarkable mechanism, which in fifty years has transformed the whole world of business, and has wrought such fundamental changes in our modern social order? As we pass the fiftieth milestone of typewriter history, it is natural, not only to review the past, but to think of all that time may hold in store. That the future of the typewriter will be wonderful, more wonderful than anything we have yet known, is certain, but what new forms it may assume is for no man to say, for the futility of such speculations has been demonstrated by all human experience.

On the mechanical side such forecasts are obviously impossible. The most farseeing typewriter man of today knows that the mechanical progress of the next fifty years is a sealed book to him—even as the history we have just recorded was a sealed book to the pioneers of 1873. Even on the side of its application to human needs, it is hard to forecast the future progress of a machine, the use of which is already so nearly universal. We know, however, that this fact does not impose any limits on future development. Even if the reign of the typewriter today were complete and absolute, and the pen had become as obsolete as the stylus, there would still be new worlds for the writing machine to conquer. The need which first called the typewriter into being, the problem of clerical time and labor saving, is always with us; it changes its form, but never its essence. The enormous time-saving the machine has already achieved is only the promise of more

time-saving, and when every writing task has been annexed by the typewriter, it will be more than ever its mission to perform these tasks with ever increasing efficiency, increasing accuracy, and increasing speed.

Only in one phase do the new developments of the present give a clear indication of what the future has in store. The rapid growth in the personal and home use of the typewriter, following the advent of the portable machines, is revealing to many thousands a quality of the machine, long known but never before aggressively exploited, namely, its incomparable value as an educational implement. We do not mean commercial education, for in this field the typewriter established its reign many years ago. We mean the education of the child in reading, writing, spelling, and, as he grows older, in all the fundamentals of language composition. There are two reasons for this value. One is the delight of the child in the machine itself, the use of which provides a vehicle for his creative instinct. The other is the perfection of form in the typed words and sentences, which present attainable standards to the child from the very outset of his efforts. The extraordinary results obtained by the typewriter in this field are attested by educators and by parents without number, and the progress of such recent "wonder children" as Winifred Stoner and Willmore Kendall is directly attributed to their early and continuous use of the writing machine.

It is interesting to know that, among the founders of

the business, that man of vision, William O. Wyckoff, foresaw these results, and his letters to Earle, written in the late seventies, to which we have already referred, urge strongly the sale of machines in the home for educational use. Wyckoff was fifty years ahead of his time, and it has remained for the portable machine of our day to spread this great message. It may be a long time yet before the use of the typewriter is established in the elementary schools, as an educational implement as necessary as charts and blackboards, but in the home this service has already begun and will be extended with every passing year.

CHAPTER VIII.

HOW WOMEN ACHIEVED ECONOMIC EMANCIPATION THROUGH THE WRITING MACHINE

THE greatest of all the triumphs of the typewriter, greater even than its influence on business or education or language, is the transformation it has wrought in our whole social order.

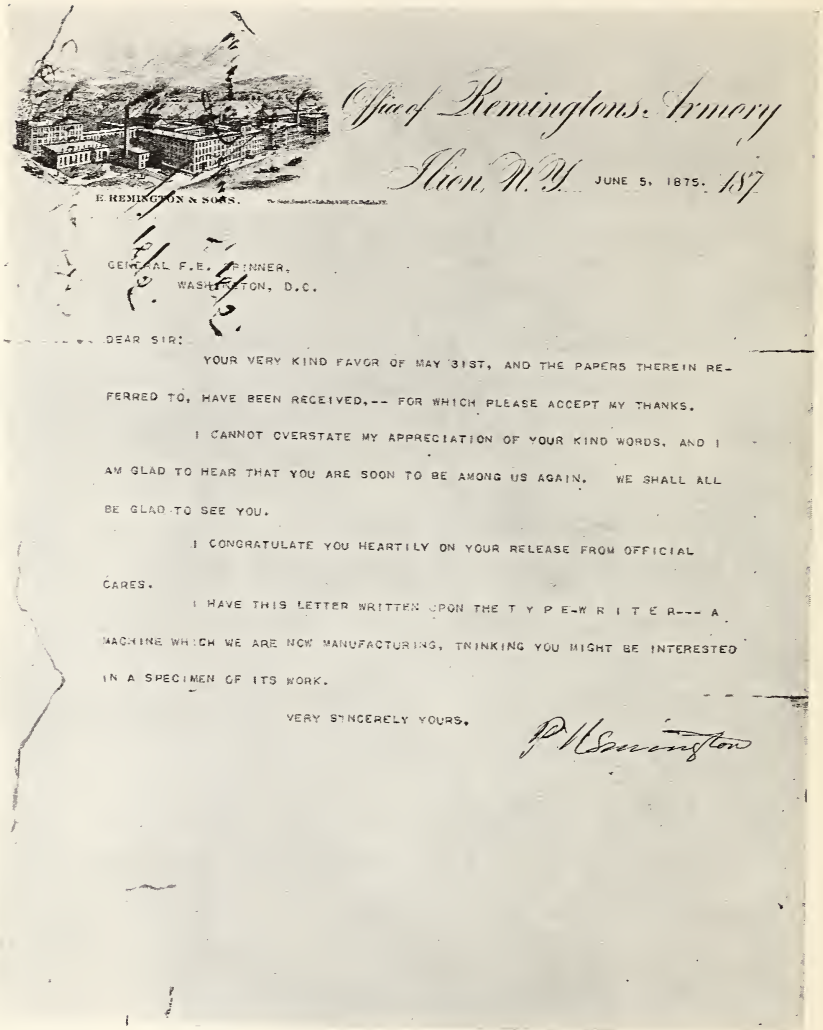
This is a phase of typewriter influence which even today is far too little understood. The fact that the writing machine has freed the world from pen slavery is itself a triumph so vast and palpable that it rivets attention, almost to the exclusion of anything else. This is not because the facts are obscure concerning other phases of typewriter influence. That it was the writing machine which opened to women the doors of business life is so well known that the mere mention of it sounds like a commonplace. But few indeed have considered the real importance of this fact in its relation to human society.

The movement that we know by the name of "feminism" is undoubtedly the most significant and important social evolution of our time. The aims and aspirations behind this great movement need not detain us. Suffice it is to say that, like all great social movements, its cause

and its aim have been primarily economic. What is known as "sex-emancipation" might almost be translated to read "economic emancipation"; at any rate it could only be attained through one means, namely, equal economic opportunity, and such opportunity could never have been won by mere statute or enactment. Before the aims of "feminism" could be achieved it was necessary that women should find and make this opportunity, and they found it in the writing machine.

We have described the transformation of the whole business world since the invention of the writing machine. Equally revolutionary, and facilitated by the same agency, has been the transformation in the economic status of women during the same period. The business office of 1873 seems no more remote from the present than the economic restrictions imposed on the women of fifty years ago. It might almost be said that no real career was possible for her outside of the home. Such opportunities for gainful occupation as did exist were usually for the untrained and uneducated, in shops, factories, domestic service and the like. In only two other callings had they made themselves indispensable, that of school teaching and nursing, and all the openings in this and a few minor occupations could do little more than utilize a fraction of intelligent womanhood. They furnished no adequate basis for true and general economic freedom.

Obviously it was the business world, and that alone, which could furnish women with the opportunity for real



Office of Remingtons Armory

Ilion, N.Y. JUNE 5, 1875. 187

E. REMINGTON & SONS.

GENERAL F.E. SPINNER,
WASHINGTON, D.C.

DEAR SIR:

YOUR VERY KIND FAVOR OF MAY 31ST, AND THE PAPERS THEREIN REFERRED TO, HAVE BEEN RECEIVED,-- FOR WHICH PLEASE ACCEPT MY THANKS.

I CANNOT OVERSTATE MY APPRECIATION OF YOUR KIND WORDS, AND I AM GLAD TO HEAR THAT YOU ARE SOON TO BE AMONG US AGAIN. WE SHALL ALL BE GLAD TO SEE YOU.

I CONGRATULATE YOU HEARTILY ON YOUR RELEASE FROM OFFICIAL CARES.

I HAVE THIS LETTER WRITTEN UPON THE T Y P E-W R I T E R--- A MACHINE WHICH WE ARE NOW MANUFACTURING, THINKING YOU MIGHT BE INTERESTED IN A SPECIMEN OF ITS WORK.

VERY SINCERELY YOURS,

P. Remington

LETTER FROM PHILO REMINGTON TO GENERAL FRANCIS E. SPINNER, WRITTEN JUNE 5, 1875, ON ONE OF THE FIRST TYPEWRITERS. ORIGINAL IN REMINGTON HISTORICAL COLLECTION.

STATUE OF GENERAL FRANCIS E. SPINNER AT HERKIMER, N. Y., ERECTED BY THE WOMEN OF THE DEPARTMENTS OF THE GOVERNMENT. NOTE THE INSCRIPTION ON THE PEDESTAL.

emancipation, and so long as this door remained closed, there could be no hope of its attainment.

The prejudice which existed fifty years ago against the employment of women in a business office, or in clerical capacities of any kind, is something which in our day is hard to understand. It was blind and unreasoning, as prejudices usually are, but it was universal. How strong it was, and how unreasoning, was clearly shown in the one notable attempt to utilize the services of women in clerical work, which came before the advent of the typewriter.

It is a singular fact that this attempt was made by a native and life-long resident of Herkimer County, a forecast of the part that other native sons of Herkimer County were yet to play in the great work of sex emancipation.

This man was General Francis Elias Spinner, born in Mohawk, N. Y., a suburb of Ilion, and a close friend of Philo Remington. General Spinner was appointed Treasurer of the United States by President Lincoln on March 16, 1861, and continued to hold this office until June 30, 1875. When he took up his official duties at Washington, he found a condition similar to the one with which all of us were recently familiar during the Great War. The men had gone to war in such vast numbers that there was everywhere a scarcity of workers, and General Spinner conceived the idea of employing women as government clerks. This was a startling innovation in those days; nevertheless several hundred women were

appointed to government clerkships through his agency.

The grateful women of the time afterwards remembered General Spinner's efforts, and his statue, erected by the women of the Departments of the Government, now stands in Herkimer, N. Y. On the pedestal of this statue are General Spinner's words: "The fact that I was instrumental in introducing women to employment in the offices of the Government gives me more real satisfaction than all the other deeds of my life."

However, the unhappy experiences of many of these women showed how strong were the prejudices of the time. Grace Greenwood, the authoress, tells of a letter she received from one of them which says: "Would you work for nothing, board yourself, and be lied about?"

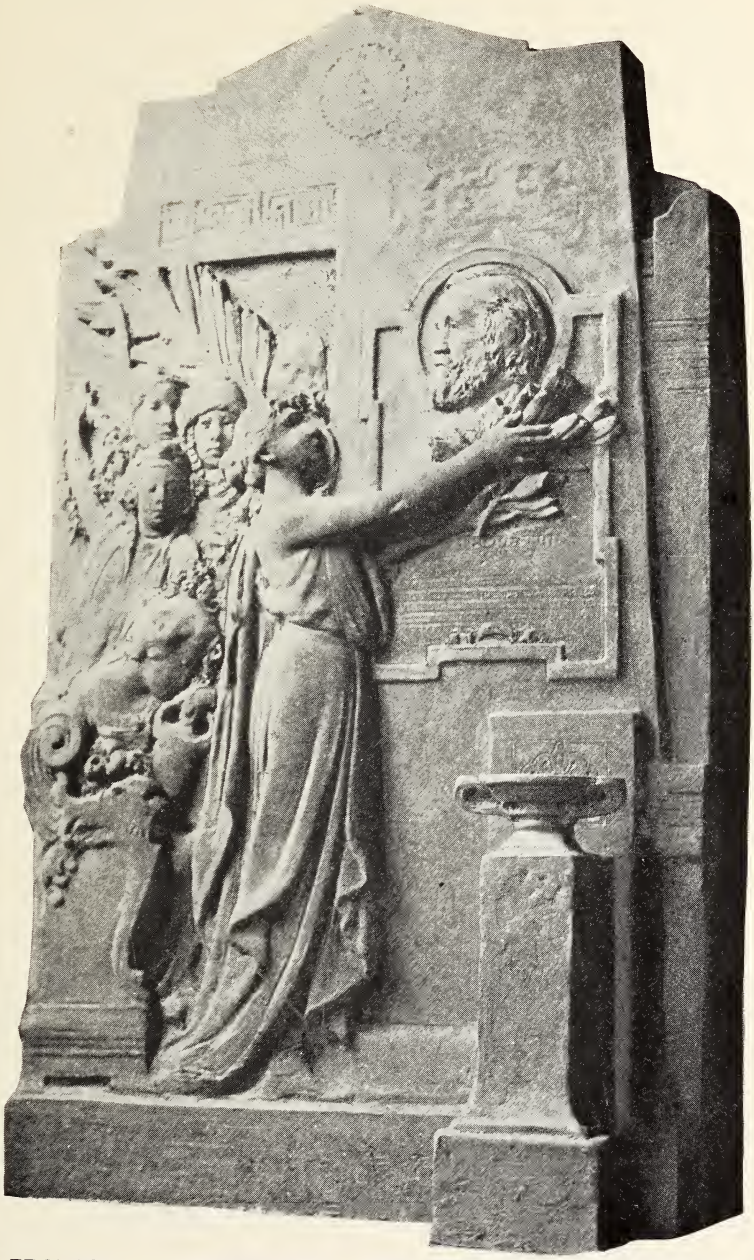
Such was the world's attitude fifty years ago concerning women's work. And then Herkimer County made another contribution to the cause of sex emancipation. A new and strange machine appeared, and it went to work, at first quietly and unobtrusively, but in the end triumphantly to break down these barriers of conservatism and prejudice.

Even at this day, many of us, though recognizing the facts, are puzzled to account for this amazing achievement of the writing machine. Yet there is no mystery about it, for it was all due to the operation of that law which is sure to break all barriers, the law of necessity and fitness. We have shown that the typewriter did more than save business time. It stimulated business activity,

and in time this activity reached the point where there were no longer men enough to perform all of the clerical tasks. The girl stenographer and typist came into business because she was needed, and with her coming the ancient barriers fell. The typist blazed the path by which other women entered every department of business. Economic emancipation was won and from this great triumph has resulted every other development of modern feminism. The suffrage, the winning of greater social freedom, the wider participation of women in every phase of public life, all these are children of the same parent. When economic freedom was won, everything was won, and all else followed, naturally and inevitably.

The feminist movement has had its leaders, many and prominent ones, but it is sometimes the one with no thought or consciousness of leadership who renders the greatest service. In the choice of some historic figure to symbolize this movement, who has a better claim than the man whose life and work created the great opportunity through which sex emancipation was achieved?

It is pleasing to know that the inventor of the typewriter lived to see the beginnings of this great movement and the knowledge of it gladdened his later years. Sholes died in Milwaukee on February 17, 1890, and for some years before his death he never rose from his bed. But though more dead than alive in body, his mind remained clear, unclouded and active to the very end. Mr. C. E. Weller tells of a private letter which relates the following



PROPOSED MONUMENT TO CHRISTOPHER LATHAM SHOLES.
See Pages 44-45.

incident which occurred shortly before his death, when a daughter-in-law remarked to him, "Father Sholes, what a wonderful thing you have done for the world." He replied, "I don't know about the world, but I do feel that I have done something for the women who have always had to work so hard. This will enable them more easily to earn a living."

In one of the last letters he ever wrote, Sholes says, "Whatever I may have felt in the early days of the value of the typewriter, it is obviously a blessing to mankind, and especially to womankind. I am glad I had something to do with it. I builded wiser than I knew, and the world has the benefit of it."

These farewell words of Sholes form a suitable close to this story. He rendered the world of womankind a great service, he lived long enough to know it, and he died contented and happy in that knowledge. His closing words show that he thought more of this achievement than of any other service rendered by his invention.

In this anniversary year of the writing machine it is fitting that our thoughts should turn to the simple, gentle, kindly, modest, lovable man, who in his lifetime neither sought nor obtained rewards or honors, and whose very name is little known today in the great world of business which he transformed with his invention, or to the millions of women who owe so much to his efforts.