(No Model.)

P. DEMING.

TYPE WRITING MACHINE.

No. 553,842. Patented Feb. 4, 1896.

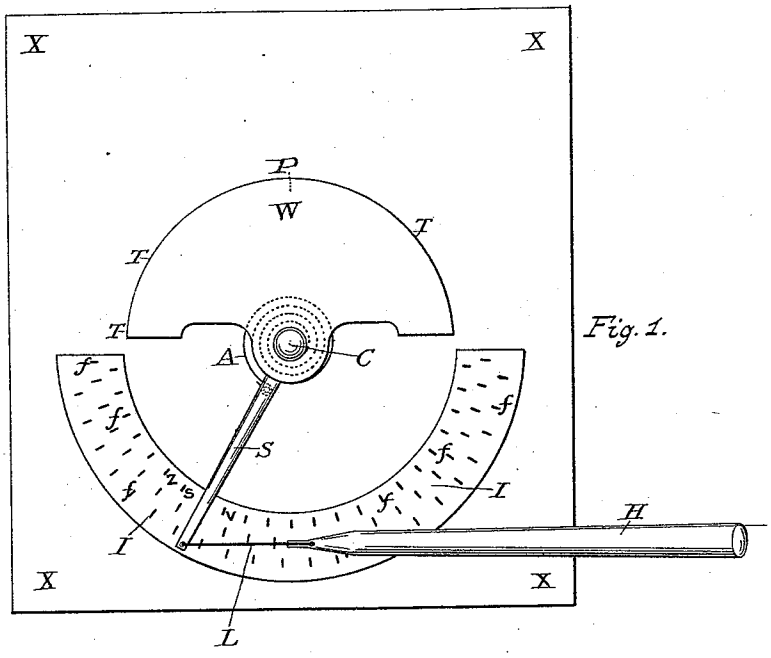

Fig. 1.

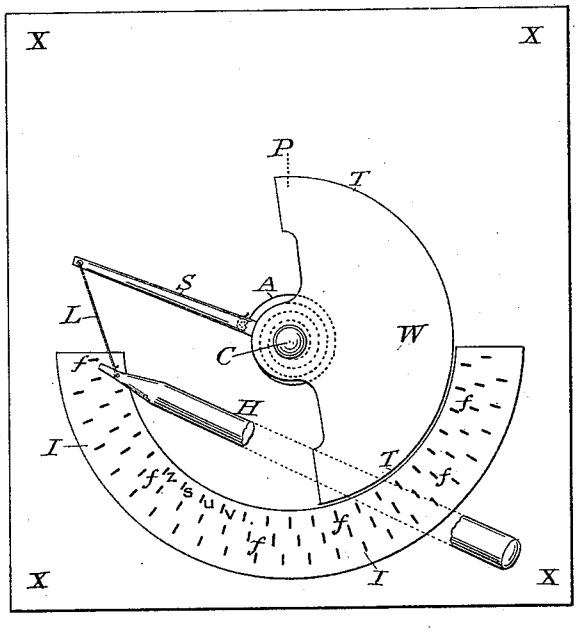

Fig. 2.

Witnesses Charles Seekins
A. Seekins Jr.

Philander Deming
Inventor.

UNITED STATES PATENT OFFICE.

PHILANDER DEMING, OF ALBANY, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 553,842, dated February 4, 1896.

Application filed January 5, 1894. Serial No. 495,803. (No model.)

To all whom it may concern:

Be it known that I, PHILANDER DEMING, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented a new and useful Improvement in Type-Writing Machines, of which the following is a specification.

My invention relates to that class of type-writers in which a type-wheel is turned by the hand and in which there is an index which guides the hand in bringing the desired letters in succession to the printing-point.

The object of my improvement is to render more rapid, definite, and easy the work of the hand in turning the wheel and stopping it at the right place for each character used in the writing. I do this by adding a spring which tends to rotate the wheel in one direction, a handpiece or "pen," so called, connected with the wheel by a ligament, whereby the hand pulls the wheel in the other direction, controlling the spring, and parallel rows of mechanically-defined stations in the index, which stations are successively engaged by the handpiece in stopping the wheel as required.

In the accompanying drawings, which are a part of this specification, Figures 1 and 2 show the same parts, and these parts are indicated by the same letters.

X is an index-plate, and I is the index itself on the plate.

W is the type-wheel, which is in this instance a segment.

S is the handle or spoke of the wheel or segment.

C is the center post on which the wheel turns. This post is set in the plate X.

P is the printing-point.

f f f are the stations in the index. These may be frets or posts. They must be mechanically-defined stations and not mere marks. Each character to be printed has its own fret, and each fret has the character which belongs to it marked adjacent to it.

z s u v are letters shown as marked upon the index adjacent to the frets to which they respectively belong. It is to be noticed that these frets are placed in rows like the keys on a type-writer keyboard.

H is a pen or handpiece whose point engages the frets when the machine is operated.

L is a cord, link, or ligament, which connects the spoke with the pen or handpiece.

A is a spring applied to the wheel. When the wheel is in its position of rest the spoke S is drawn by the pull of the spring A to the extreme left, as seen in Fig. 2.

To operate the machine the writer takes the pen in his right hand and draws to the right, against the pull of the spring A, until he has reached upon the index-plate the neighborhood of the character he requires. He then touches the index-plate with the pen at a point near to and at the right of the fret which belongs to that letter or character. The link attached near the point of his pen pulls all the while with the force of the spring A toward the left, and this combined with his manner of holding the pen causes the point of the pen to slide on the plate and strike the fret. The operator then has the letter—that is, the type—in position at the printing-point.

I will refer in illustration to "The World Typewriter," which is now well known. In that machine there is no spring to turn the type-wheel. The operator places the letter in position by touching the spoke directly with his right hand. He has no frets to aid him. He has the semi-circumference divided into about seventy divisions by mere marks on the index-plate—that is, when both upper and lower case letters are used. Each of these divisions is but little more than two degrees of an arc. The operator must place the spoke in this small division or fail to get the required letter, and he has no touch or feeling, but only sight, to guide him. The work is therefore slow and not agreeable. But the frets in my plan require no such exactness. A wide space is now offered to the touch, and there is a limit or conclusion which is felt. There is now abundant room between any fret and the one next to it in the same row. Touching anywhere in that wide space will result in bringing the point of the pen against the fret at the left of the space, and the letter or character the fret belongs to will then be in position to print. It is well to note that in operating the machine the top of the pen should incline to the right, as we hold an ordinary pen to draw a line with the back of it.

I do not improve the mechanism for printing and do not, therefore, present that. The printing in "The World Typewriter" is done with the left hand, and is a good illustration. In that machine there is a pin and hole for each letter or character, which locks the wheel to secure accuracy in printing. This I find by experience need not be changed if my plan for turning the wheel is applied to "The World Typewriter;" but there is less need of lockage with my plan. Exactness of construction and care in operating might perhaps dispense with it.

I find it well to have the frets about one-sixteenth of an inch high and to attach the link to the pen but little more than one-sixteenth of an inch from its point. I find hard rubber to be good material for the pen. The link may be merely a bit of cord or a small chain or one link or any ligament.

There are grave defects in the holes, indentations and slots heretofore used in the index. I limit myself to substantially the posts and frets. They are, so far as I am aware, new, and they remedy the defects. I limit myself still further to the posts and frets used with the horizontal draft.

One defect of the holes, identations and slots is the necessary lockage of them with the point of the pen or style and the accuracy their use requires in the position given to the point. There must be a lock of the point with the hole or bottom of the slot. The variation of the fortieth of an inch in the position of the point will be a gross error in giving position to the type if not corrected; but with the post there is no such process of lockage but merely a slide, and no such accuracy is required. If the point happens to glance from the index-plate and strikes the post at the middle or top instead of at the bottom, it is apparent that the position of the type will be practically the same because the cord is substantially at right angles with the post. It is apparent that there is room for lateral variation also. This freedom of the point is a great advantage, for the locking or unlocking thereof in holes or slots is slow and toilsome.

I claim as new and desire to secure by Letters Patent—

In a type-writing machine, the combination of a spring-actuated revoluble type-bearing segment, a style and horizontally-movable connecting-link to rotate the segment in opposition to the pull of the spring, and an index-plate having vertical flat-sided posts arranged thereon at intervals, the type-segment adapted to be positioned or regulated by placing the point of the style against the sides of the posts, all substantially as described.

PHILANDER DEMING.

Witnesses:
MARVIN L. ROWE,
JOHN S. WOLFE.