(No Model.) 2 Sheets—Sheet 1.

E. TERRY.

TYPE WRITING MACHINE.

No. 565,148. Patented Aug. 4, 1896.

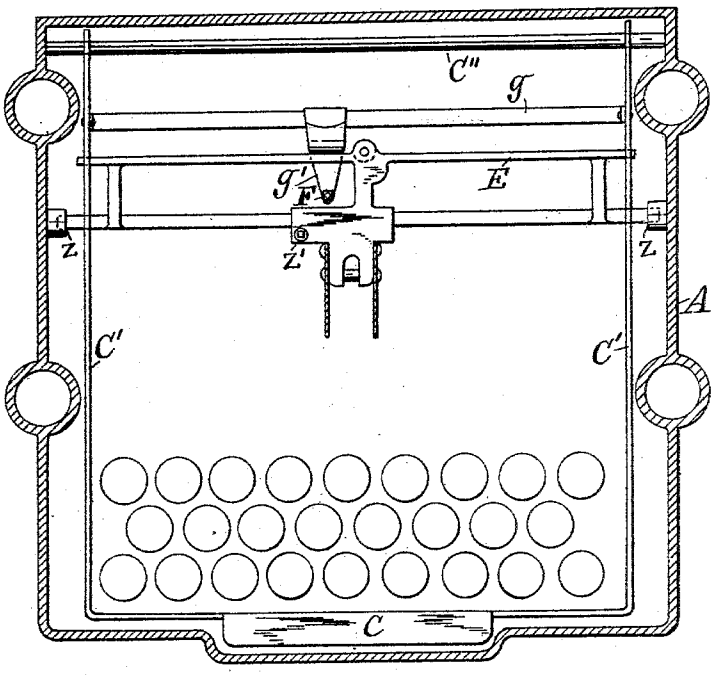

Fig. 1.

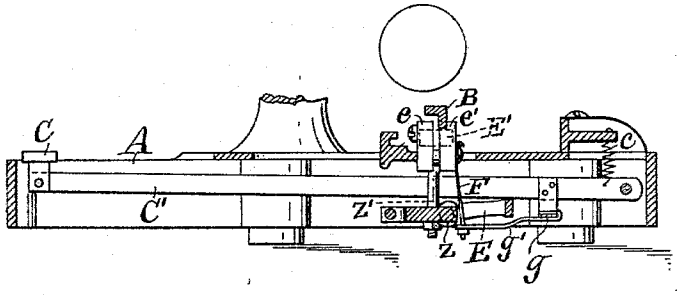

Fig. 2.

Witnesses:
Mark W. Dewey
R. S. Terry

Inventor.
Eugene Terry
by C. H. Driscoll
his Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

E. TERRY.

TYPE WRITING MACHINE.

No. 565,148. Patented Aug. 4, 1896.

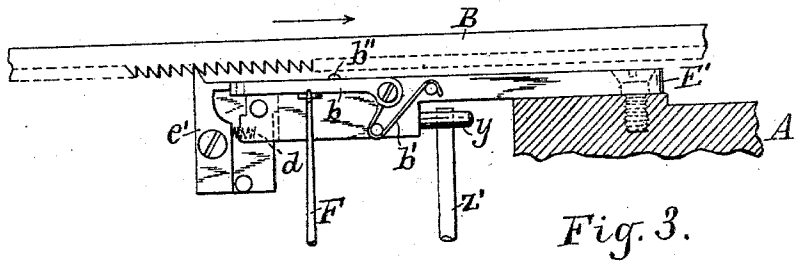

Fig. 3.

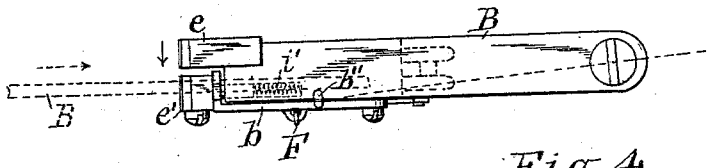

Fig. 4.

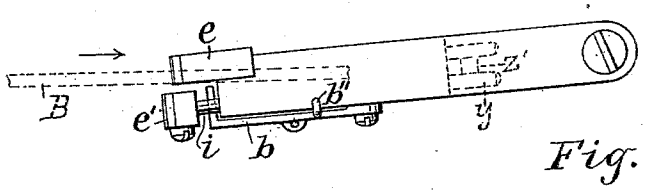

Fig. 5.

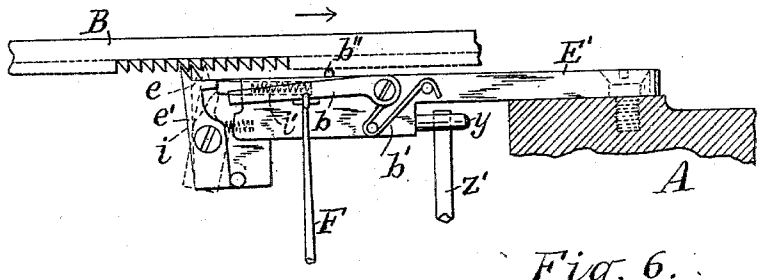

Fig. 6.

Witnesses:
Mark W. Dewey
R. S. Denny.

Inventor.
Eugene Terry
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EUGENE TERRY, OF ITHACA, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES H. DUELL, OF SYRACUSE, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 565,148, dated August 4, 1896.

Application filed May 11, 1895. Serial No. 548,934. (No model.)

To all whom it may concern:

Be it known that I, EUGENE TERRY, of Ithaca, in the county of Tompkins, in the State of New York, have invented new and useful Improvements in Type-Writing Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to type-writing machines, and the object is to provide a construction whereby the spaces between words may be made when the last letters of the words are made, thereby saving time.

It will be obvious that if the spaces between words are made without taking up time, a much greater speed may be attained with a type-writer, or, in other words, a greater number of words may be written in a given length of time.

My invention is applicable to that class of type-writing machines in which the successive depression and release of a series of key-levers vibrate and throw a series of types against an inked substance and the paper to be written on, and after each depression and release of any key, and while the type and key-lever are resuming their original position, move the paper a type-space distance and thus print or write one letter at a time.

My invention is shown as applied to a machine which has a paper-carriage, hung on a guide-rail and adapted to be moved transversely to the key-levers, as a "bar-lock" machine, but may be applied to other similar machines. The carriage is moved by a spring wheel and chain and reversed by hand, as usual, after a line has been written, or the carriage may be moved by any suitable and well-known means, as these things do not belong to my invention.

To this end my invention consists in the combination, in a type-writing machine, of the escapement-lever vibrating on a vertical axis at one end, and carrying a pair of detents, one being a shifting detent, the space-key mechanism connected to and operated by the space-key, a lever pivoted to the escapement-lever having its free end lying between the end of said lever and the shifting detent, and connected to the space-key mechanism and adapted to engage the shifting detent, a spring to raise the lever, a stop to limit its movement, and means to prevent the return of the lever to its raised position before the detent has moved a double distance; and my invention consists in certain other combinations of parts hereinafter described, and specifically set forth in the claims.

In the drawings, Figure 1 is a sectional plan view of a bar-lock type-writing machine. Fig. 2 is an incomplete vertical section of Fig. 1. Fig. 3 is a rear side elevation of a portion of the machine with my improvement thereon shown somewhat larger than full size in order to represent it clearly. Fig. 4 is a top plan view of the escapement-lever in its normal position. Fig. 5 is a view of the same lever when in its operative position, and Fig. 6 is a rear side view of the escapement-lever when in its operative position and also when the spacing mechanism has been operated.

Referring specifically to the drawings, A is the frame of the machine, and B is a portion of the rack of the carriage. (Not shown in the drawings.) This rack is usually pivoted or hinged so that it may be lifted from the feed pawls or detents at the end of each line, when the carriage is reversed. The unfeathered arrows in the different views show the direction of movement of the carriage-rack after the printing of each letter and the release of each key.

In Fig. 1 I have shown the keys, or several of them, for forming the letters, but their levers are omitted for the sake of clearness.

C is the spacing-key, and C′ C′ are its levers, which extend, as usual, from front to rear of the frame, where they are fulcrumed on a pivot C″. Springs *c* are shown extending upward from the levers to the frame A to return them to their normal position after being depressed.

E is the universal space-bar lying under all of the keys, so that it will be depressed by each one and move the escapement-lever E′ rearward, and when released will move the

said lever in the opposite direction to allow the paper-carriage, with its rack B, to move in the direction of the arrow, under the tension of its spring, one notch. The universal space-bar E is so connected with the escapement-lever E′, and the said lever with the detents *e* and *e′*, which are mounted on the free end of the lever E′, that both move together rearward, or toward the rear end of the machine, the bar E being pivoted in each side of the frame at *z* and provided with an arm *z′*, which engages the escapement-lever E′ between the pins *y* on the lower side thereof.

The detent *e* is fixed or substantially stationary upon the escapement-lever, but the detent *e′* is pivoted and acted upon by a small coil-spring *d*, so that when it is moved out of engagement with the rack, as shown in Figs. 5 and 6, said detent automatically moves to the left a distance of one notch in the rack, or to the position shown in said figures. When the key is released, the pivoted detent *e′* enters the notch to the left of the one occupied by the rigid detent *e*, and when the latter is entirely removed from the rack the tension of the carriage-spring (not shown) moves the carriage, with its rack, a distance of one notch to the right, which returns the pivoted detent *e′* to its normal position in line with detent *e*, or to the position the detents occupy in Figs. 3 and 4 of the drawings.

The above operation is common in ordinary type-writing machines of this class and for this reason need not be elaborated.

Now, in order to move the detent *e′* a distance of two notches to the right, when desired, as after the space-key has been depressed and while it is being released with the last letter of a word, I provide the following means: Extending horizontally and transversely across the machine below and beyond the range of downward movement of the key-levers and connected by its upwardly-extending ends to the space-key levers is a bar *g*. At or near the center of this bar *g* is an arm *g′*, which extends toward the front of the machine and is bent down below the universal bar E. Extending upward from the end of this arm *g′* is a rod F, which connects with a small lever *b* on the rear side of the escapement-lever E. The lever *b* is pivoted at one end to the escapement-lever and is provided with a spring *b′* to raise it after it has been depressed and a stop *b″* to keep it from rising too far. The free end of the said lever *b* is bent inward between the detent *e′* and the end of the escapement-lever E′, forming a right angle with the main portion of the lever and a stop for the detent *e′* when any of the keys are depressed without the space-key. When, however, the space-key is depressed with one of the other keys, as when the last letter of a word is made, the lever *b* is drawn down so that it no longer forms a stop for the detent, and when the keys are released and the detent passes again into the rack B the latter will move, with the detent, a double distance, or a distance of two teeth in the rack.

In order to prevent the return or retraction of the lever *b* before the detent has had time to move the required distance, or, in other words, in order that the said detent may not be hindered in its movement of two notches to the right, I provide a small bolt *i* and a spring *i′* in a bore or cavity in the end of the escapement-lever in such position that when the lever *b* is drawn down this bolt *i* will be forced out by its spring, above the end of the lever *b*, holding it in its depressed position until the detent *e′* is moved by the carriage-rack its full or complete distance which in turn forces the bolt within the bore, and allows the lever *b* to ascend upon the depression of the next key.

It will be obvious from the above that the depression of a letter-key throws in one space, the depression of the space-key alone or a letter-key and the space-key simultaneously throws in two spaces, and the depression of a letter-key and the space-key in succession throws in three spaces.

I do not desire to be limited to the precise means shown and described for accomplishing my invention, as it will be obvious that the details may be changed or modified without departing from my invention.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination of the escapement-lever vibrating on a vertical axis at one end, and carrying a pair of detents, one being a shifting detent, the space-key mechanism connected to and operated by the space-key, a lever pivoted to the escapement-lever having its free end lying between the end of said lever and the shifting detent and connected to the space-key mechanism and adapted to engage the shifting detent, a spring to raise the lever, a stop to limit its movement, and means to prevent the return of the lever to its raised position before the detent has moved a double distance, substantially as described and shown.

2. In a type-writing machine, the combination of the escapement-lever carrying a pair of detents, one being a shifting detent, the space-key mechanism connected to and operated by the space-key, a lever pivoted to the escapement-lever and connected to the space-key mechanism and adapted to engage the shifting detent, a spring to raise the lever, a stop to limit its movement, a longitudinally-movable bolt in the end of the escapement-lever and in the path of the shifting detent, and a spring to move the bolt, substantially as described and shown.

3. In a type-writing machine, the combination with the carriage-rack, the printing-keys, the space-key, the escapement-lever con-

nected to the keys, and a pair of detents carried on the free end of the escapement-lever, one of said detents being pivoted and adapted to engage the said rack, of a lever pivoted to one side of the escapement-lever and provided with a spring and stop, a rod connecting the space-key levers with the lever pivoted to the escapement-lever, a longitudinally-moving bolt in the free end of the escapement-lever and in the path of the said pivoted detent, and a coil-spring to move the bolt, as and for the purpose described.

In testimony whereof I have hereunto signed my name.

EUGENE TERRY. [L. S.]

Witnesses:

MARK W. DEWEY,

H. M. SEAMANS.