

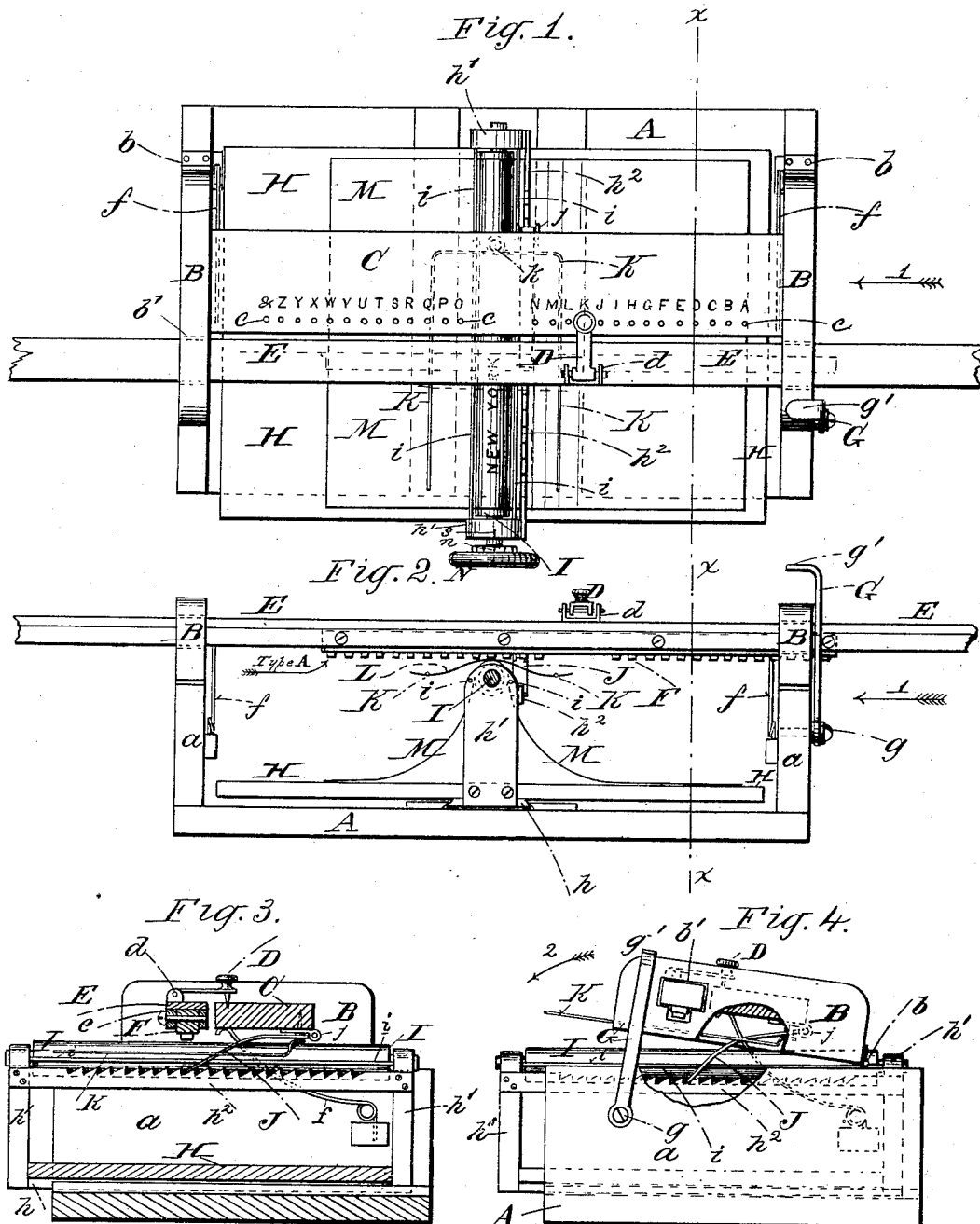
(No Model.)

L. S. BURRIDGE & N. R. MARSHMAN.

TYPE WRITING MACHINE.

No. 314,996.

Patented Apr. 7, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEE S. BURRIDGE AND NEWMAN R. MARSHMAN, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 314,996, dated April 7, 1885.

Application filed March 3, 1884. (No model.)

To all whom it may concern:

Be it known that we, LEE S. BURRIDGE and NEWMAN R. MARSHMAN, citizens of the United States, and residents of New York, in the county and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

Our invention relates to type-writing machines of that class in which the type-plate and letter-plate are carried upon hinged supports, so that in operating the machine both are caused to descend and ascend together.

The object of our invention is to provide a type-writer of such simple and inexpensive construction that it may be sold for a few dollars only, will contain but a few parts, will not be liable to get out of order, and that the use of it will serve as an instructive and pleasant pastime for young persons, besides enabling them to execute printed letters with sufficient rapidity to render the instrument useful, notwithstanding its cheapness and simplicity.

The invention consists in the peculiar combinations and the construction and arrangement of parts, hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 represents a top or plan view of a type-writer embodying our present invention. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical cross-section taken on the line *xx* of Figs. 1 and 2, and seen in the direction of arrows 1. Fig. 4 is an end elevation, partly broken out.

Upon end pieces, *a*, of a bottom plate, *A*, are attached by hinges *b* two side bars, *B*, between and to which latter is rigidly attached the letter-plate *C*, upon which the requisite letters and figures are arranged longitudinally in a single line, as shown in Fig. 1.

Opposite each letter of the plate *C* is a little recess or hollow, *c*, in which the point of the stylus is inserted to bring into alignment the letter on the type-plate corresponding to that letter on the letter-plate opposite which the point of the stylus has thus been inserted.

D is the stylus, and is hinged or pivoted between lugs *d* upon the bar or plate *E*, which carries on its lower surface the type. The type-plate *E* is fitted to slide in ways or guides

b' through the hinged side bars, *B*, in a position directly in front of and parallel with the letter-plate *C*. The row of type *F* is clamped in a groove or channel, *e*, in the under side of the plate *E*, or, if stereotyped, may be fastened in any other suitable manner.

The type are arranged in a line parallel with the letters on the plate *C*; but being inverted and on the under side of the bar or plate *E*, the letters are in reverse order, so that when the stylus is put opposite to the letter *A* to the right on the plate *C* the corresponding letter on the type-plate thereby brought in alignment is the last type to the left. (See Fig. 2.) The frame *B C* is raised automatically after being depressed, and is held normally in the raised position by a spring, *f*, at either end, and is prevented from being raised higher than the normal position by a hook or stop-bar, *G*, whose lower end is pivoted at *g* to one of the end frames *a*, while the other bent end, *g'*, serves as stop by contact with the upper surface of the hinged bar *B*.

When it is desired to remove or insert the paper or otherwise to gain access underneath the plate, the said pivoted bar *G* is swung out in the direction of the arrow 2, (see Fig. 4,) which allows the side bars, *B*, to be raised and thrown back. The paper is carried upon a platform, *H*, which is arranged to slide in one or more ways or grooves on the bottom plate, *A*, crosswise, or at right-angles to the letter-plate and type-plate, as before stated, the said platform *H* being provided with posts or up-rights *h'*. The said posts are arranged opposite to each other in about the center line of the platform *H*, and serve as bearings for the journals of a roller, *I*, upon which is supported that portion of the paper immediately to be printed on, and which we therefore call the "impression-roller." The paper is held down upon the impression-roller by means of two wires, *i*, which are fastened with their ends in the aforesaid posts *h'* in position to rest upon the two opposite sides of the roller a little above its horizontal diameter. The paper *M* being inserted between the said wires *i* and the roller *I*, is thus held by the said wires stretched upon the surface of the roller, leaving its upper surface as the line of impression.

To lugs *j* upon the under side of the plate *C* is pivoted a pawl, *J*, whose free end engages

a ratchet-rack or toothed bar, h^2 , which is secured with its ends to the aforesaid posts h' . The said pawl and bar constitute our means of feeding the paper forward the proper distance to the space for the next letter printed. The depression of the plates C E causes the pawl to move the rack, and thereby the frame H and roller I, forward the space of one tooth, and the raising of the plates by the action of the springs f withdraws the pawl sufficiently to cause it to engage the next tooth on the rack. When on line on the paper M has been printed, the said paper is moved forward on the impression-roller the proper distance desired between the lines, the pawl J is lifted out of the rack, and the platform H pushed back or away from the operator until the forward end of the roller I is again in position under the type-plate to begin a new line. The wires i having a polished surface, and the roller I being of wood, or, preferably covered with rubber, and thus having a surface giving more friction than the wires, it is evident that in order to move the paper the distance between two lines it is only necessary to turn a knob, N, secured upon the forward-projecting end of the roller outside of the post h' , when the paper will move with the roller and slide against the wires i .

To facilitate the spacing of the lines, the knob N is provided with a series of marks, n , a distance apart according to the desired spacing between the lines, and the post h' opposite the knob is provided with a little pin, or merely a mark, s , opposite to which each successive mark n of the knob is brought to move the paper forward the desired distance for the next line. An ink-ribbon, L, is held between the type and paper by being threaded on a wire fork, K, which is pivoted at k to the under side of the letter-plate C, near its rear edge. The said fork serves as a simple and efficient feed for bringing into contact successive points or parts of the ink-ribbon when the letters begin to become dull as the ink is being used up. For this purpose the ink-ribbon in being applied is pushed upon the prongs of the fork inward to or near to its pivoted end, and as the ink is being worn off the fork is gradually moved horizontally upon its pivot k , to bring new portions of the ribbon in impression-contact, and when one strip of surface (circular, because of the movement around the pivot k) has been deprived of its ink the ribbon L is simply pulled out on the fork the distance corresponding to the width of one type, and so on until the ink has been used up.

From the previous description the operation of the machine is self-evident. The stylus D being raised on its pivot d and moved into the hole c opposite to the letter desired to be printed, is then simply depressed, carrying with it all the parts B C E, and making

an impression upon the paper on the impression-roller by the letter of the type-plate F corresponding to the letter opposite which the stylus has been placed. The downward movement, as before stated, at the same time moves the paper forward the proper distance between the letters by means of the aforesaid pawl and rack J h^2 . Those portions of the sheet M not supported on the impression-roller rest upon the platform H.

Instead of the roller I, a stationary bar may be used, and the paper pulled over the same the desired distance between the lines; but the roller I and knob N, as above described, are preferable.

We are aware of the United States Patent No. 144,450, English Patent 3,727, of 1883. and German Patent No. 21,564, and make no claim to anything shown therein as forming part of our invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a type-writer, the combination, with a letter-plate, C, and a support for the same constructed to hold and guide it always parallel to its normal position, of a type-plate, E, extending on each side of said support and arranged to slide in a line parallel with the line of letters upon the said plate C on guides firm with the said plate, a stylus, D, a paper-carrying impression device, as I, and means, substantially as described, for intermittently moving the said device at right angles to the letter and type plates by the downward movement of said plates, substantially as herein set forth.

2. The combination, with a letter-plate, C, secured to supports B, which have an oscillatory movement on fixed bearings, of a type-plate, E, fitted to slide in and through the said supports parallel with the said letter-plate, a stylus, D, hinged to the said type-plate, an impression device, substantially as described, arranged upon a support sliding at right angles to the said type-plate, and means, as J h^2 , for moving said impression device by depression of the type-plate, substantially as set forth.

3. In combination with a letter-plate and type-plate, C E, and impression bar or roller I of a type-writer, a wire fork, K, movable upon a pivot, k , for holding and adjusting the ink-ribbon, for the purpose specified.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 29th day of February, 1884.

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NEWMAN R. MARSHMAN.

Witnesses:

ROBT. W. MATTHEWS,
A. W. ALMQVIST.