(No Model.)

J. N. MASKELYNE, Jr.

TYPE WRITING MACHINE.

No. 484,035. Patented Oct. 11, 1892.

Fig. 3.

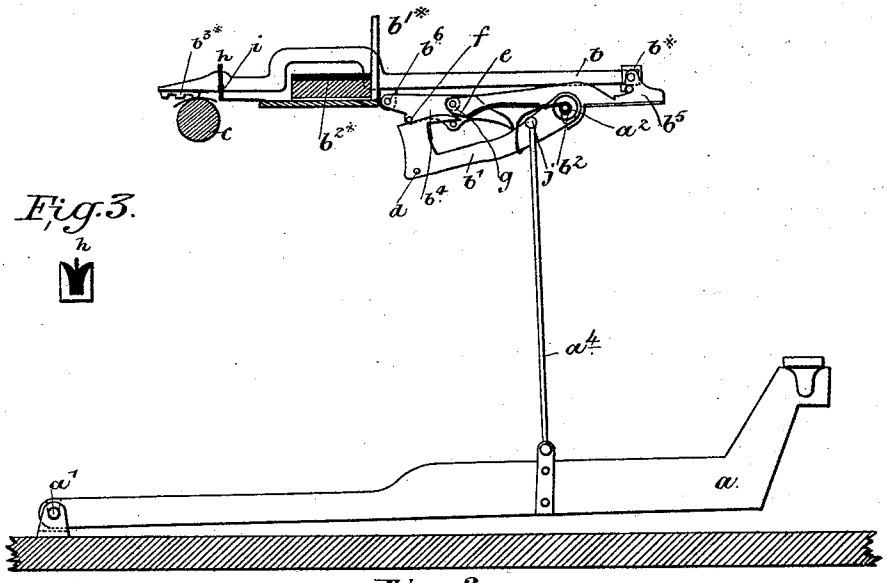

Fig 2.

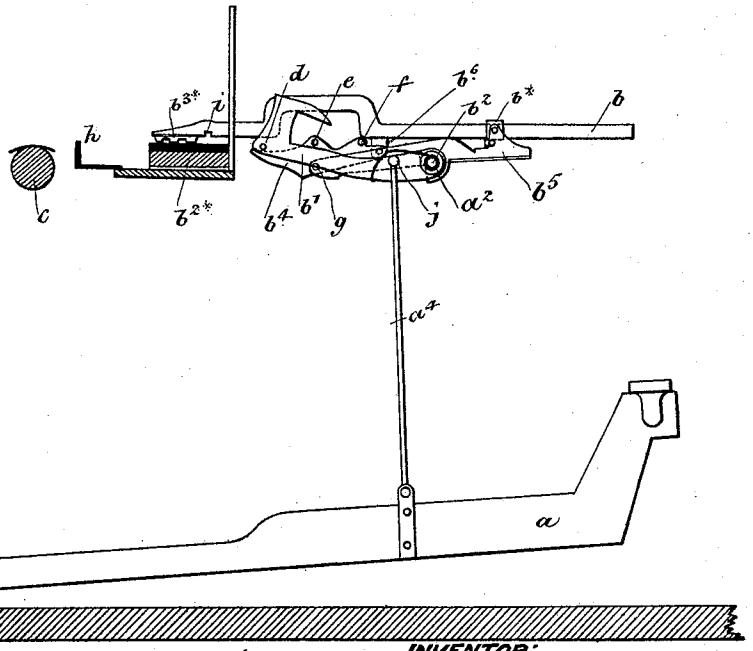

Fig 1.

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per Bowen & Behrens attys.

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UNITED STATES PATENT OFFICE.

JOHN NEVIL MASKELYNE, JR., OF LONDON, ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 484,035, dated October 11, 1892.

Application filed September 11, 1891. Serial No. 405,366. (No model.)

To all whom it may concern:

Be it known that I, JOHN NEVIL MASKELYNE, Jr., a subject of the Queen of Great Britain, residing at Egyptian Hall, Piccadilly, London, England, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the improvements of type-writing machines, and more particularly consists in improvements in the mechanism of the machine for which Letters Patent were granted to me and John Nevil Maskelyne, numbered 457,903, dated August 18, 1891. In said patent means were described for dispensing with the inking-ribbon which had in most machines then existing been an essential feature. There was described a series of levers and links which produced a peculiar jumping movement of the type-bar on depression of a key, moving the type-bar from an inking-pad upon which the type rested normally to the paper upon which the impression had to be made. After the impression was made the type was returned automatically to the inking-pad by the action of a spring placed under the keys or by a counter-weight. It is to this feature of said patent that the improvements herein described principally relate.

The principal objects which I have in view are, first, to simplify and thus cheapen the mechanism, and, secondly, to obtain a still freer and easier action of the keys which actuate the printing mechanism, which besides saving fatigue to the operator considerably reduces the wear of the machine. In said patent is fully described the preferred means adopted for spacing the letters; for printing at the will of the operator capitals, small letters, and numerals with a limited number of keys and type-rods; for providing for the required movement of the paper upon which the impression is desired to be made, and the same will be found to be fully and adequately described therein and to which I crave leave to refer. My invention may, however, be used in connection with other devices for effecting these objects.

In carrying out my invention the type-keys are supported at one end by the base plate or table upon which they are pivoted and near the other end by link-rods which are fixed upon one of the series of levers forming parts of the mechanism which actuates the type-rods, such lever being pivoted upon a fixed bracket to which the said mechanism is connected. The type-keys rise and fall between suitable guides and the type-rods pass between guides so arranged as to allow of the ends which carry the type rising through a space sufficient to allow of the tipping movement before mentioned. These guides also direct the rod during the advance movement, and in order to insure the type coming into contact with the paper at the exact spot to be impressed I also provide a V-shaped support, which is attached to the end of the plate upon which the inking-pad rests. The rods are returned into position by the action of a suitable spring, one end of which I prefer to coil round a projection from the fixed bracket, and I attach the other end to the said lever beyond the place where the attachment with the link-rod is made. The type-rods, as in the said patent, are set radially in a segment of a circle in order that the characters may be impressed at the exact position, the central rods having little or no inclination, while the rods at either side have more or less inclination, according to the distance at which they are placed from the central rods. This will be seen by looking at Figure 1 in the said patent. The portions of the said patent to which my improvements chiefly relate are more particularly shown by Figs. 6, 7, 6^a, 8, and 7^a, attached to the said patent, and in order that they may be readily compared I have retained as far as possible the letters used in the drawings and specification of said patent.

In the accompanying drawings, forming a part of this specification, Fig. 1 represents the mechanism in its normal position. Fig. 2 represents the mechanism in action, the key being depressed by the fingers of the operator and the type impressed upon the paper at the moment the return movement is about to take place; and Fig. 3 is a detail view of the type-bar-locking piece.

Similar letters indicate the respective parts in each of the aforesaid drawings.

The keys *a* are pivoted at *a'* and are sup-

ported at the pivot a' by the base-plate and by the link-rods a^4. The link-rods a^4 are attached at j to the hook-shaped lever b', which is pivoted to the fixed bracket b^5 at b^2.

d is a projection on the reverse side of the lever b'.

a^2 is a spring coiled round a bearing in which the pivot b^2 works, one end of which is secured to the bracket b^5 and the other end to the lever b' at any convenient position on the other side of the link-rod a^4.

b^4 is a lever pivoted at the points b^6 and g, having two projections f and e.

b is a type-rod, which works through a slotted piece b^* and through a series of rods b'^*. b^{2*} is the inking-pad, and b^{3*} the type.

c is the rubber roller over which the paper to be printed travels.

i is a recess in the type-rod b, and h is a V-shaped piece into which the type-rod falls at the recess i, thus locking the type-bar in both directions.

The action of the mechanism can be readily seen by looking at the drawings.

Fig. 1 represents the type-key a raised. The operator having placed his finger on the key, it is depressed and the link-rod a^4 draws down the lever b', which by means of the projection d depresses the tail end of the lever b^4 until the hooked end of b' comes into contact with the projection e on the lever b^4. The lever b', continuing to descend, turns the lever b^4 on the pivot g until the projection f on b^4 comes into contact with the top side of the hooked portion of the lever b, as shown in Fig. 2. In the meantime the type-rod b, being attached to the lever b^4, has been first raised from the inking-pad, the slotted piece b^* being pivoted on the bracket b^5, so as to allow of this movement, and then advanced through the guides b'^* until it falls into the V-piece h and the type b^{3*} prints the paper on the roller c. The return movement is effected by the coiled spring a^2 or by any other convenient means. The lever b', now being raised so as to return to its former position, bears upon the projection f and turns the lever b^4 in the reverse direction upon its pivot g, thus elevating the type-rod b from the paper and returning it through the guide-bars b'^* and the slotted piece b^* until the projection e meets with the lower portion of the lever b', which bears upon the latter projection, and thus continues the return movement until its completion.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I claim—

1. The combination, with a key, of a link-rod, a pivoted lever connected thereto and provided with operating projections, a type-rod, and an intermediate lever connected to the type-rod, pivoted to a stationary support and engaged by the projections of the first-named lever, substantially as described.

2. In a type-writing mechanism, the combination, with a type-rod, of a lever pivoted to the type-rod and to a fixed support and provided with two stops, substantially as described.

3. In a type-writing mechanism, the combination, with a key, a link-rod, and a hooked lever provided with a projection and pivoted to a fixed support, of a type-rod and a lever pivoted to the type-rod and to a fixed support and operated by the hooked lever, substantially as described.

4. The combination, with the pivoted guide, the stationary guides, and the V-shaped piece, of the type-rod provided with a recess, substantially as described.

Signed at No. 17 Gracechurch Street, in the city of London, England, this 22d day of August, 1891.

JOHN NEVIL MASKELYNE, JUNR.

Witnesses:
WALTER J. SKERTEN,
GEO. J. B. FRANKLIN.