(No Model.)

C. S. BOOTH.

TYPE WRITING MACHINE.

No. 457,757. Patented Aug. 11, 1891.

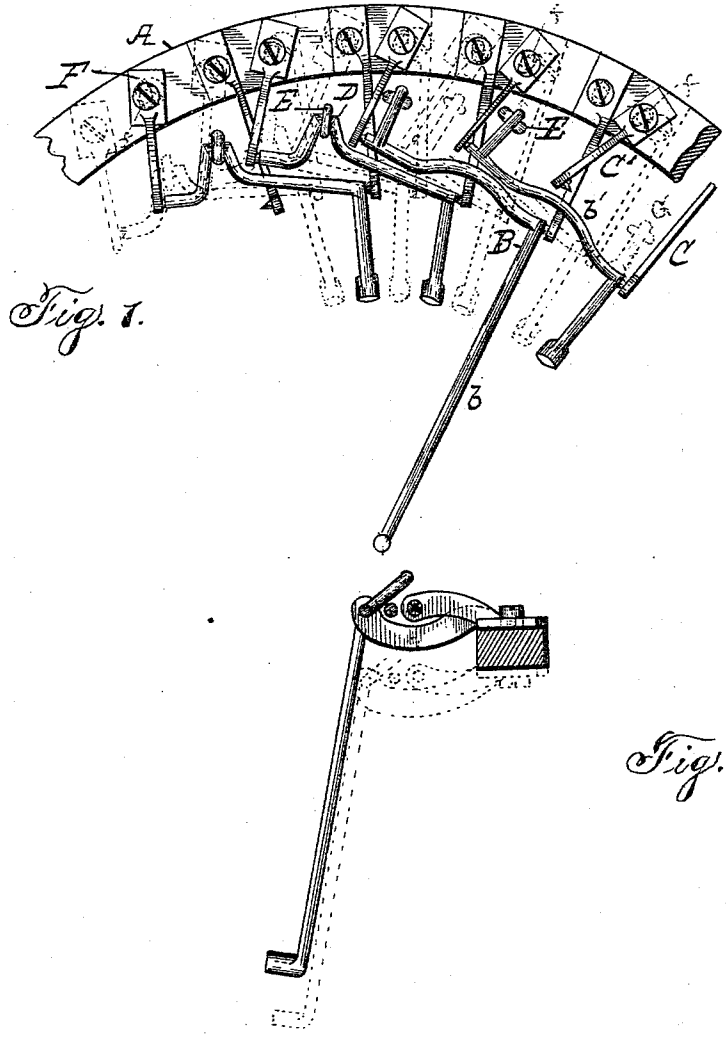


Fig. 1.

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,757, dated August 11, 1891.

Original application filed February 6, 1888, Serial No. 263,143. Divided and this application filed April 2, 1891. Serial No. 387,424. (No model.)

To all whom it may concern:

Be it known that I, CHRIS. S. BOOTH, a citizen of the United States, residing at Camp Point, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in that class of type-writing machines employing pivoted type-bars, and more particularly to the construction and arrangement of the type-bars and their supports; and the object is to produce a type-bar and supports therefor similar to the construction shown and described in my application filed February 6, 1888, Serial No. 263,143, wherein the type-bar and its pivotal support is of such a character and so arranged that the pivoted bearings of said type-bar are at some distance apart and its stem or body arranged obliquely to the pivot-bar thereof.

The present invention consists in mounting the type-bars in hangers or brackets adjustably secured to the type-bar-supporting bed or plate, and it also consists in so arranging the said brackets or hangers that long pivot-bars overlapping each other are obtained, whereby more perfect alignment is secured, as well as a greater number of type-bars in a given circle than has been heretofore obtained.

In the accompanying drawings, Figure 1 represents a top plan view of a portion of the type-bar-supporting ring or bed of a type-writing machine, illustrating several forms of type-bars and their supports; and Fig. 2 a side view of the type-bar and hangers or brackets, showing the supporting bed or plate and pivot-bar in vertical section.

The letter A indicates the bed or plate of a standard type-writing machine and serves as a support for the type-bars B. These bars comprise a type-bearing stem *b* and a pivot-bar *b'*, which is journaled or pivoted in hangers or brackets C C', adjustably secured to the bed or plate A. The pivot-bars *b'* are of such a shape that the pivotal line or axis about which the bars swing is substantially at a right angle to the type-bearing stem, or it may be oblique to said stem, as shown in the aforementioned application heretofore filed, of which this application is a division.

Two forms of pivot-bars are shown in Fig. 1, one form being bent within its length to form a crank or jerk lever D, while the other form is more direct and has the jerk-lever extending from it at or near its outer extremity. In each case a jerk-rod E connects the lever with the usual key-lever. In both forms the pivot-bars within their points of support are bent slightly out of axial line in order to pass the upturned end of the next adjacent hanger or bracket; but it will be observed that such construction does not in any way interfere with the successful operation of the type-bars. The pivot-bars may be mounted in the hangers or brackets by means of conical sockets in their ends, into which project the cone-tips made on the hangers or brackets; or these conditions may be reversed by cone-pointing the ends of the pivot-bars and socketing the hangers or brackets, or plain reduced journals on the ends of the pivot-bars, with the corresponding bearings made in the brackets, may be employed with good effect.

The parts illustrated by full lines in the figures represent the preferred arrangement of a single bank of type-bars of either of the forms above described, while the dotted lines show the manner in which a double bank of type-bars may be arranged, when desired; but this construction is covered in application Serial No. 263,143.

The hangers or brackets are suitably and adjustably secured to the supporting bed or plate by means of screws F. In each case the long hanger C passes below the overlapping pivot-bar of the adjacent one and terminates in an upwardly-turned head, in which is journaled or pivoted one end of the pivot-bar. The short hanger C' at its outer end overhangs the hanger C; but these points of construction, however, are not material to the successful carrying out of my invention, which includes any construction and arrangement in which the pivot-bar is tangential to

a circle drawn around the central striking-point of the type-bars and overlaps or extends more or less beyond that of the next adjacent bar, so long as the bearing in the short hanger shall be in the same plane as that of the longer hanger, or so long as one pivotal end or bearing of each type-bar shall be farther removed from the common striking-point of the free end of the type-bars than the other.

It is obvious that the jerk-lever, instead of being located at or near the outer extremity of the pivot-bar, may be located directly opposite the stem or body of the type-bar, as shown by dotted lines G in Fig. 1, which arrangement causes the strain to be carried directly across the axis of the pivot-bar instead of transmitting it along the length of the same, as in other constructions.

In securing the brackets or hangers to the supporting bed or plate, the screw F passes through a slot *f* (shown by dotted lines) made in the foot or base of each hanger or bracket. This construction will permit of any adjustment of the hanger or bracket that may be required.

The arrangement for a double bank of type-bars is so clearly illustrated by dotted lines in the accompanying drawings that further explanation is rendered unnecessary, it being obvious that such an arrangement may be successfully carried out when desired.

While I have shown and described several forms in which my invention may be practiced, it is obvious that various modifications or alterations may be devised and operated without departing from the spirit of my invention or sacrificing the principle set forth in the claims.

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

1. In a type-writing machine, the combination, with a supporting bed or plate thereof, of a pair of adjustable hangers or brackets of unequal length, and a type-bar having one end bearing in the short hanger and the other end bearing in the long hanger, whereby the former will be farther removed from the common striking-point than the latter.

2. In a type-writing-machine, the combination, with a supporting bed or plate thereof, of a pair of overhanging brackets or bearing-supports of unequal length, and a type-bar pivoted in said pair of brackets, with one end in the short bracket and the other end in the long bracket, whereby one end of the type-bar shaft will be farther removed from the common striking-point than the other end.

3. In a type-writing machine, the combination, with a supporting bed or plate thereof, of a series of pairs of hangers or brackets, each pair of unequal length, and a series of type-bars, each bar having its pivotal ends journaled, respectively, in a long and short hanger or bracket, whereby the pivotal end in the short bracket will be farther removed from the common striking-point than the end in the long hanger or bracket.

4. In a type-writing machine, the combination, with a supporting bed or plate thereof, of a type-bar having its stem or body substantially at one side and mounted in a pair of hangers or brackets of unequal length, one pivotal end of said bar mounted in the short hanger and the other end in the long hanger, whereby one of said pivotal ends will be farther removed from the common striking-point than the other.

5. In a type-writing machine, the combination, with a supporting bed or plate thereof, of a type-bar having its stem or body substantially at one side and mounted in a pair of hangers or brackets of unequal length and so that each bearing end of the pivot-bar will be in the same horizontal plane but at different distances from the striking-point of the bar, substantially as described.

6. In a type-writing machine, the combination, with a supporting bed or plate thereof, of the type-bars having their stems or bodies substantially at one side, and the overhanging bearing-brackets adjustably secured to the bed or plate, substantially as specified.

7. In a type-writing machine, the combination, with a supporting bed or plate thereof, of the type-bars having their stems or bodies substantially at one side of the pivot-bar, the latter being bent out of axial line within the points of support, and the hangers or brackets in which the type-bars are supported, substantially as specified.

8. In a type-writing machine, the combination, with a supporting bed or plate thereof, of a type-bar having its pivot-bar bent out of axial line between its points of support and mounted in hangers or brackets of unequal length, so that each bearing end will be at different distances from the striking-point, substantially as specified.

9. In a type-writing machine, the combination, with a supporting bed or plate thereof, of the type-bars having their stems or bodies substantially at one side, hangers or brackets overhanging from the bed or plate and supporting the type-bars, the pivot-bars of which are bent out of axial line within the points of support, substantially as specified.

10. In a type-writing machine, the combination, with a supporting bed or plate thereof, of a type-bar having its pivot-bar bent out of axial line between its points of support and mounted in a pair of hangers or brackets, one of which hangers or brackets is shorter than the other, so that the bearing end of each will be in the same horizontal plane but at different distances from the striking-point, substantially as specified.

In testimony whereof I affix my signature in the presence of two witnesses.

CHRIS. S. BOOTH.

Witnesses:

E. E. B. SAWYER,

GEO. W. CYRUS.