2 Sheets—Sheet 1.

B. A. BROOKS.

Type-Writing Machine.

No. 202,923. Patented April 30, 1878.

Fig. 1.

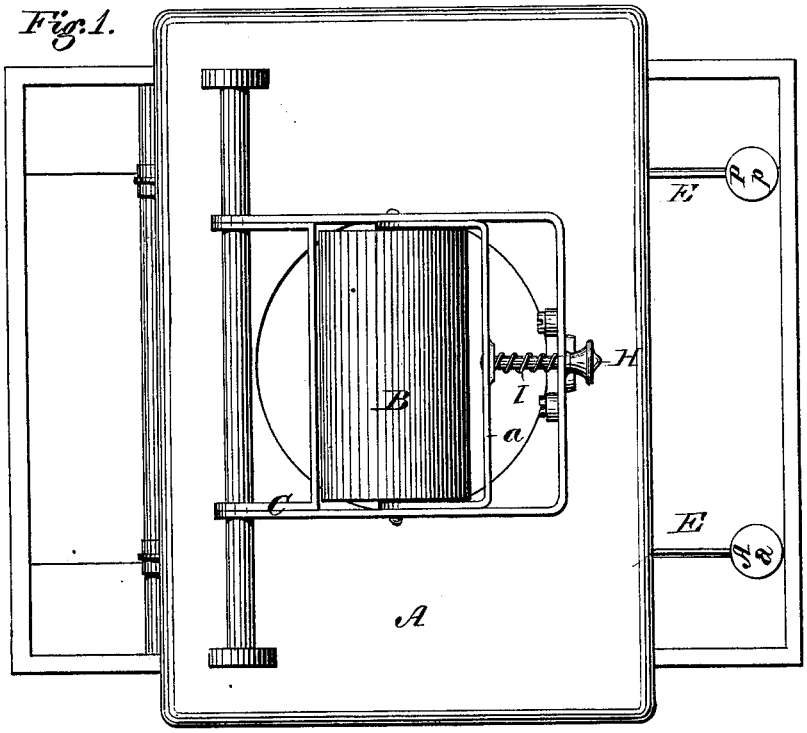
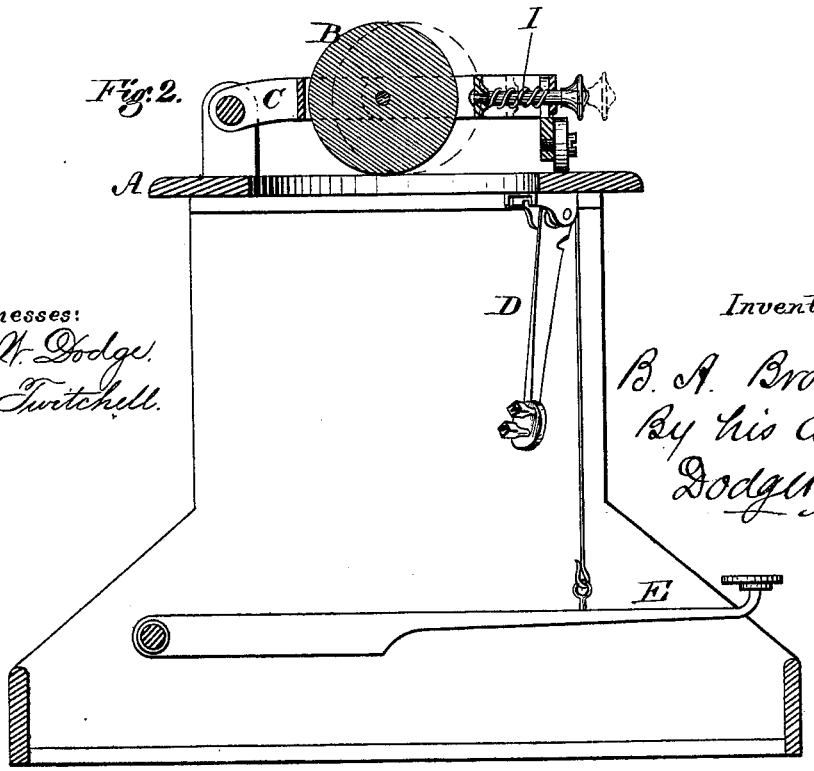


Fig. 2.



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2 Sheets—Sheet 2.

B. A. BROOKS.

Type-Writing Machine.

No. 202,923. Patented April 30, 1878.

Fig. 3.

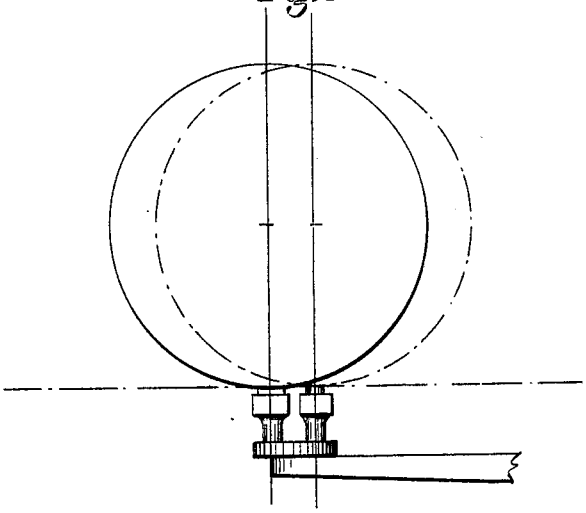
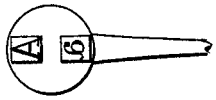


Fig. 4.



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UNITED STATES PATENT OFFICE.

BYRON A. BROOKS, OF NEW YORK, N. Y.

IMPROVEMENT IN TYPE-WRITING MACHINES.

Specification forming part of Letters Patent No. **202,923**, dated April 30, 1878; application filed December 30, 1875.

To all whom it may concern:

Be it known that I, BYRON A. BROOKS, of New York, in the county of New York and State of New York, have invented certain Improvements in Type-Writing Machines, of which the following is a specification:

The main object of my invention is to produce a machine which, without having duplicate keys and type-bars, will print both capital and small letters, so that the depression of each key will cause the printing of an upper or lower case letter, as may be desired. The improvements are, however, applicable for printing any other two characters by one key.

The invention consists in the combination of type-bars, each having two or more letters or characters, with a vibratory platen, which may be adjusted instantly to receive the impression of either letter required.

It is obvious that the construction and arrangement of the details may be varied without departing from the limits of my invention, which covers, broadly, the idea of combining, in such manner as to have a vibratory movement in relation to each other, a platen and a series of type-bars, each of which carries an upper and a lower case letter, so that by means of the one key either character may be printed at will.

In the accompanying drawings I have shown the construction which I consider the best, a rotary platen, such as now used in machines in the market, being arranged to vibrate in its supporting-frame.

Figure 1 represents a top-plan view of my machine; Fig. 2, a vertical cross-section of the same; Fig. 3, a diagram, illustrating the relation of the type-bar and platen and the movement of the latter; Fig. 4, a face or plan view of the end of the type-bar.

A represents the frame of the machine; B, the cylindrical platen, mounted in a sliding frame, C, and arranged to rotate and to move endwise, as usual, in order to give the required movement to the paper; D, the type-bars, pivoted to the under side of the frame, around an opening therein, and arranged to strike at a common point or center, as usual; and E, the keys or finger-pieces, connected one with each bar, for the purpose of operating the same, the above parts being all constructed and arranged in the same general manner as usual, and provided with the usual details and adjuncts well known to those familiar with this class of machines. The type-bars, however, instead of being provided, as usual, with a single type or letter, are each provided with two, one a capital and the other the corresponding small letter, as clearly shown in Figs. 2, 3, and 4, the two being arranged side by side, and in such relation to the platen as to strike it at right angles to its transverse direction. The platen, instead of having fixed bearings in the frame C, is mounted in a secondary inside frame, *a*, arranged to slide forward and backward in the frame C, so that by moving it to and fro the platen may be brought over and caused to receive the impression from the one or the other of the two type on each type-bar, as is clearly represented by Fig. 2. When the frame and roller are in one position the machine will print capitals, and when they are in the other position it will print small letters.

A handle, H, is connected with the roller-frame for the purpose of drawing it forward, and a spiral spring, I, arranged to push it backward, the latter being the position in which it ordinarily stands, and in which it causes the printing of small or lower-case letters.

It is obvious that, if desired, the spring I may be omitted, and the rod H alone used; or that, instead of the rod H, a lever or other equivalent device may be arranged, to be operated by the hand or foot to vibrate the platen.

When the machine is in operation the spring holds the roller back, and the manipulation of the keys causes the printing of the small-body letters in the usual manner; and then, when the capitals are required, the roller is simply drawn forward, and the same keys depressed as for the printing of the corresponding small letters. Thus it will be seen that without duplicating the keys or type-bars, at a trifling expense, without increasing perceptibly the complication of the parts, and without increasing the bulk of the machine, I adapt it for printing both styles of letters, as may be required.

It is obvious that the manner of moving the platen may be varied; that, instead of moving the platen, the entire series of type-bars may be moved; and also that, instead of having the large and small letters on each bar, two or more characters of any other kind may be used.

I am aware that a vibrating platen has before been described, and also that type-bars are shown in connection therewith having several letters thereon; but in such case the letters were all of one kind—that is, all upper-case letters; and, moreover, said type-bars, instead of being arranged to strike or print at a common center, were arranged to print side by side at different points, thereby necessitating a complicated and irregular movement of the platen back and forth along the line of printing, in order to print the letters in their usual or proper positions. In that case the object was to print a single alphabet with a reduced number of keys, while the object of my invention is to print two or more alphabets or sets of characters with a single set of keys of the usual number.

I am aware that swinging type-bars, a hinged sliding paper-carriage, and mechanism for feeding the carriage and for advancing the paper thereon have been hitherto employed in machines of this class, and therefore I disclaim said features, and all other features shown in the drawings except such as are distinctly claimed.

Having thus described my invention, what I claim is—

1. A type-bar, for use in a type-writing machine, carrying an upper and a lower case letter, substantially as and for the purpose set forth.

2. The combination, in a type-writer, of a type-bar carrying an upper and a lower case letter with a platen arranged to vibrate in a line transverse to the line of printing, whereby either of said letters may be printed in line at will, substantially as described.

3. The combination of a series of type-bars carrying upper and lower case letters, the letters of each set being arranged to strike or print at a common center, with a platen arranged to vibrate transversely to the line of printing, as set forth.

4. The combination of a series of type-bars, each provided with an upper and lower case letter, with a series of keys for operating the same, and a platen arranged to move in line with the printing, and also at right angles thereto, substantially as described.

5. The sliding frame C, having the transversely-sliding frame *a*, with the platen B mounted therein, and provided with the rod H or equivalent device, for controlling the transverse movements of the platen, substantially as described.

6. In a type-writing machine, the combination of a swinging type-bar mounted on a fixed pivot, and carrying an upper and a lower case type, with a movable platen, arranged so that it may be adjusted to receive at a given point the impression of either one of said types at will, substantially as shown.

BYRON A. BROOKS.

Witnesses:
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