

(No Model.)

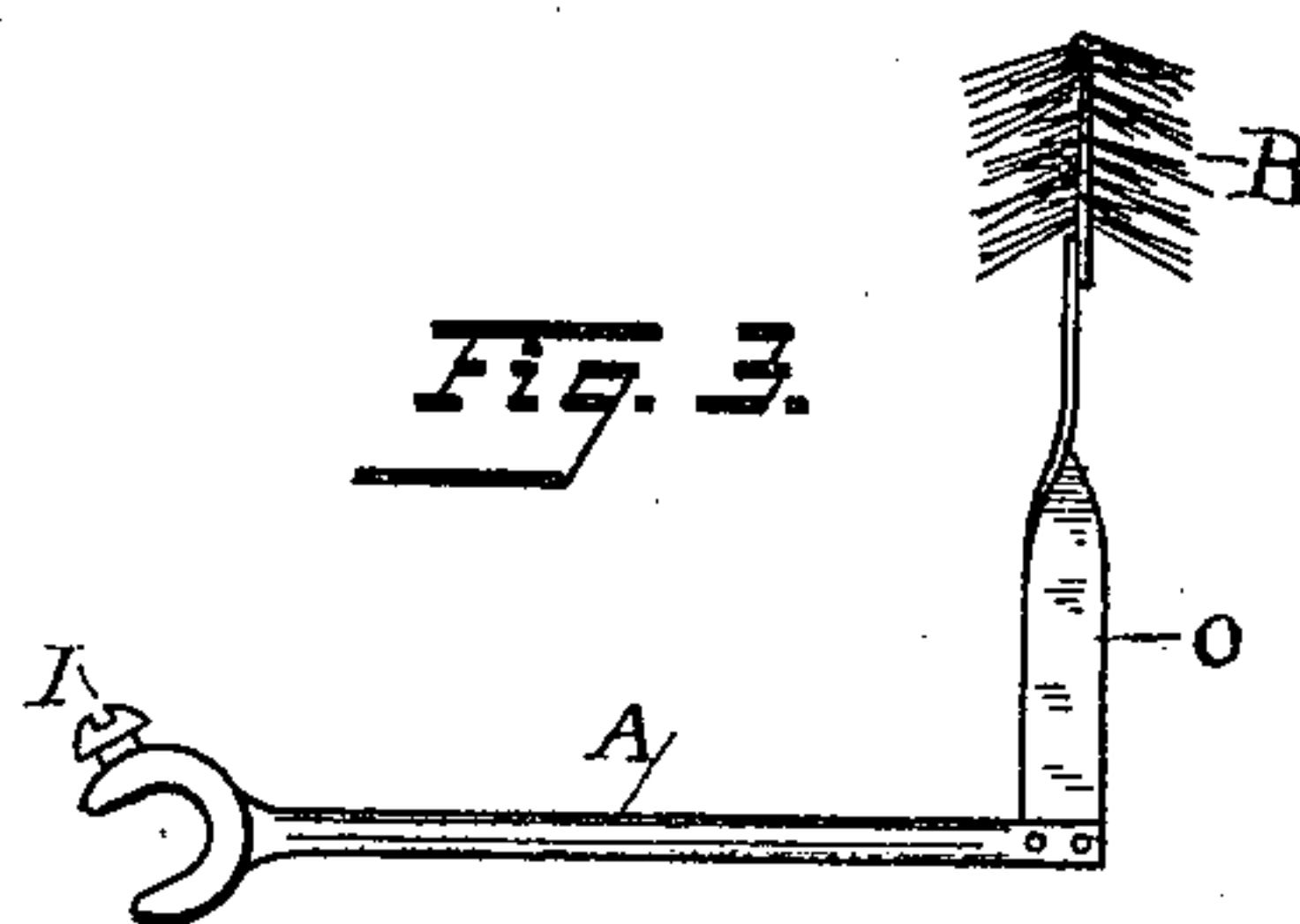
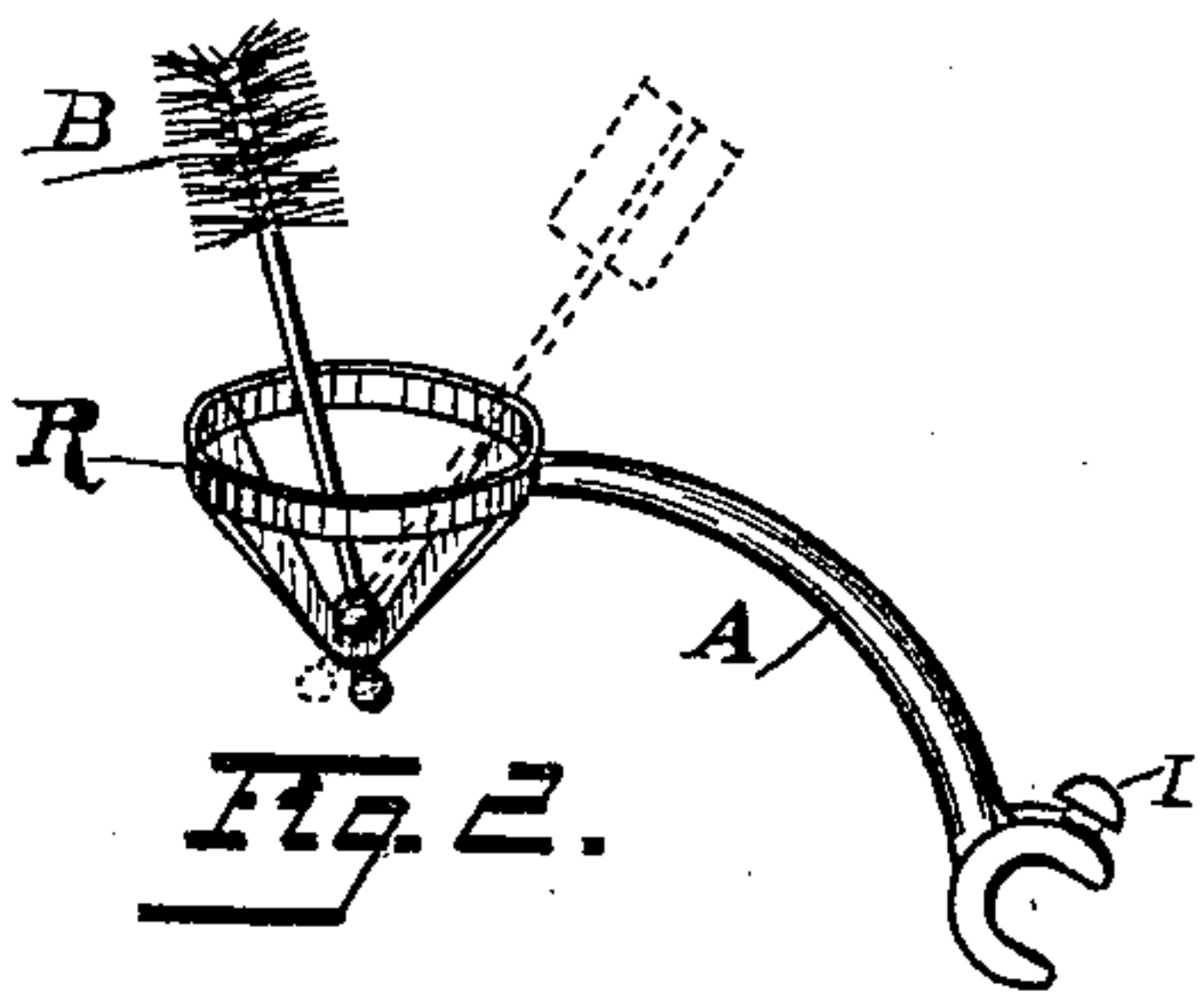
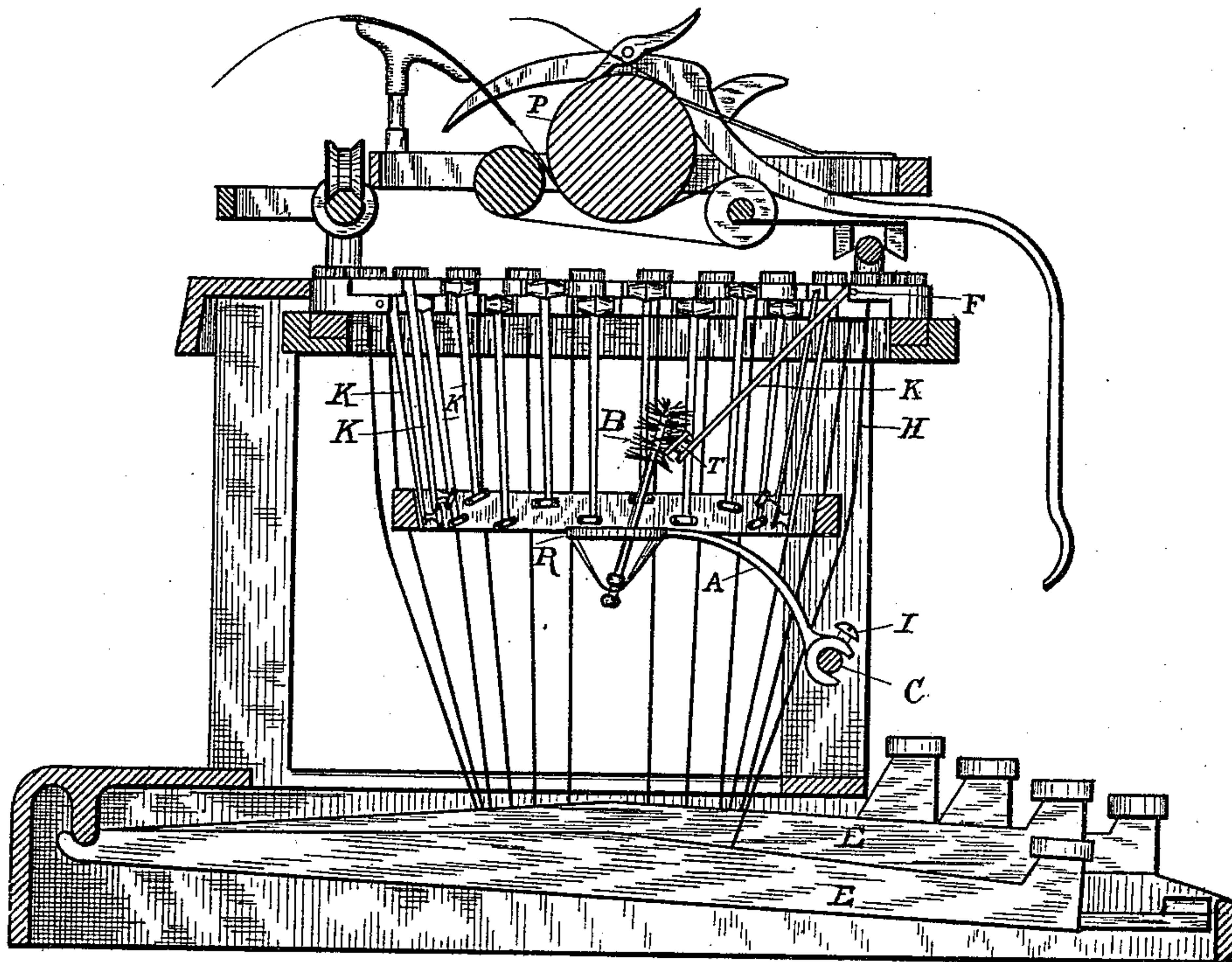
J. W. GIBBONEY.

AUTOMATIC TYPE CLEANER FOR TYPE WRITING MACHINES.

No. 438,618.

Patented Oct. 21, 1890.

Fig. 1.



Witnesses:

Edw. Thomson
And. Ekström

Inventor:

John W. Gibboney

UNITED STATES PATENT OFFICE.

JOHN W. GIBBONEY, OF LYNN, MASSACHUSETTS.

AUTOMATIC TYPE-CLEANER FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 438,618, dated October 21, 1890.

Application filed August 13, 1889. Serial No. 320,638. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. GIBBONEY, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Automatic Type-Cleaners for Type-Writing Machines, of which the following is a specification.

My invention is particularly applicable to type-writing machines in which the impressions of the different characters are produced by the impact of hard type—such as type characters of steel or other metal or of hard rubber, &c.—against the paper or material to be printed upon. Between the type character and the paper there may be interposed an inking-ribbon, such as is commonly employed, or in some cases the type may be inked by inking-pads brought into contact with their surfaces by any suitable means. The type characters in the printing operation are brought to the same point and may either be hung individually from type-levers or a number of the characters or all the characters may move together and to such a position as will bring the proper character in position to be printed.

My invention has for its object the keeping clean of the type characters and the removal therefrom of all dust, lint, superfluous ink, and gummy and other matter which may cling to the type-faces and blur the impression or make it indistinct.

My invention consists in a cleaning surface or brush arranged in a position to contact with or impinge against the type characters before they have reached the point of printing or the position where the impression is made, whereby the type characters are cleaned during their movement to the printing-point in the normal operation of the machine for printing.

My invention consists, further, in an improved support for and shape of the cleaning surface or brush, as will be hereinafter described. This cleaning-surface may be made of any suitable material for removing the deposits or collection of matter on the type characters, which deposits tend to blur the impressions and render them indistinct, such

matter usually consisting of lint or ink collected from the type-ribbon, of dust or gritty matter collected from the air, or too much ink taken from the inking-pads. I prefer to construct the cleaning-surface, which may be in the form of a brush, of bristles, although any material which will remove the dirt collected upon the type characters may be employed. In one form of my invention I construct a stationary brush made of bristles, against which the type characters impinge in their passage to printing. In other cases, as when the characters do not require cleaning every time they are used, I construct the brush so that it has a limited range of movement, and to this end it may be supported in any suitable manner.

I have shown in the drawings accompanying this specification sufficient portions of different type-writers to illustrate the application of my invention for cleaning type characters.

Figure 1 illustrates that form of my invention which is applicable to type-writers, in which the type characters are carried at the ends of levers. Fig. 2 shows the cleaning-brush of Fig. 1 by itself. Fig. 3 illustrates a modification of the means of supporting the brush of Fig. 1.

Fig. 1 represents the essential parts of a type-writer constructed with the type characters at the end of levers, as in the Remington and caligraph machines, necessary to illustrate my invention. K K, &c., are the key-levers, fulcrumed at any suitable point, as F, to which levers are attached, as at H, the connection D to the type-bars E, the operation of the key throwing the type character against the roller P, as usual. Attached to any suitable stationary part of the type-writer, as the frame or a rod C, is a supporting-arm A, the outer end of which carries a cleaning-surface—such as a brush of bristles, of very fine wire, or of fibrous material—arranged in position to be engaged by the type character T in its passage to the point of printing and to remove from it all dirt, lint, gummy matter, or other foreign material, the presence of which when allowed to accumulate causes an indistinct and blurred impression on the paper. The brush B, Fig. 1, is shown as sup-

ported loosely at its outer end, so that it is free to move in any direction when struck by the type; but its movement toward a horizontal position is limited by the ring R. I prefer to construct this ring of such diameter or to place it in such position that the brush B cannot rest against the type-faces, but at a short distance therefrom, as otherwise it might sometimes get back of the type-bar, where it would be caught and retained, thus preventing the proper operation of the machine. In this form of my invention the type characters do not impinge or contact with the brush B every time they are operated, but frequently enough to remove all foreign matter from them and to keep them clean.

While in Figs. 1 and 2 I have shown the brush B supported by a ball-and-socket joint, it may also sometimes be supported in other ways, one of which is shown in Fig. 3, in which the spring-support O is substituted for the first arrangement. The piece O may be a single piece of spring-wire or other elastic metal, or of several pieces twisted together; but I prefer to use a flat piece of steel wire, as shown, twisted so that it is free to bend in any direction. The bristles are also preferably all bent downward in this case, so that they will engage point on with the type in their passage to the printing-roller P, while when the type returns they bend aside easily.

I prefer to construct the brush-support so that the brush may be adjusted in position by a set-screw I or equivalent means, so that the amount of engagement between the brush and the type-faces is regulable.

I am aware that it has been proposed to apply a cleaning-ribbon to type characters arranged on the periphery of a rotatable disk, and also that brushes have been applied to the type characters as arranged at the ends of type bars or levers acting independently; but in the former case the cleaning-ribbon could not effect the result of dislodging grit and compacted matter held in the depressed portions of the type characters, and in the latter case it has been necessary to stop the work of printing in order to perform the cleaning operation. My invention differs radically from each of these cases in that I am enabled to continue the normal operation of the machine while the removal of such foreign matter retained in the depressed portions of the type characters is being accomplished. I do not therefore claim, broadly, a cleaning device applied to the type characters and in position to be struck by the type when the type-bars are actuated; but my invention consists in means for cleaning such type characters during their operation for actual normal printing, whereby the type characters are kept in continuous good working condition, as distinguished from the case of their becoming more or less clogged with dirt and requiring to be brought back to their former condition by the application at intervals and

between the times of printing of a cleaning device, and as distinguished from the use of a ribbon rubbing against the faces of the type characters, which cannot dislodge or remove foreign matter held in the depressed portions of the type characters.

What I claim is—

1. In a type-writer, the combination, with independently-movable type characters, of a brush placed in a position intermediate between the position of such type characters when at rest and their position of impact in printing, whereby such type characters are cleaned by engaging with said brush during the normal operation of the machine for printing.

2. In a type-writer, the combination, with the type-bars, of a yielding or elastically-supported brush placed in position to engage with the type characters, whereby the movement of said type-bars in the normal operation of the machine for printing effects the cleaning of the type characters continuously.

3. In a type-writer, in combination with the type-bars thereof, an adjustably-mounted brush adapted to remain permanently in position to engage with the type characters during their movement while normally used for printing, and whereby the type characters are cleaned according to their amount of use for printing.

4. In a type-writer, the combination, with the type-bars, of a brush with bristles extending toward the type characters, situated at a point between the position of rest of such type characters and their position of impact in printing, said brush having a limited range of movement and adapted to engage with the type characters during their movement to the printing-point while the machine is normally operated for printing.

5. A cleaning-brush for type-writers, mounted in position where it will engage with the type characters as carried on type-bars, and having its bristles placed at an angle, so that the type characters in their movement to the printing-point will strike the bristles end on and in their return movement to their position of rest will bend said bristles aside.

6. In a type-writer, the combination, with the type characters thereof, of a device with projecting flexible filaments—such as bristles or strips of elastic material—the outer end of said strips or bristles extending toward the type-faces and of such length as to penetrate the depressions in the type-faces, whereby they are adapted to dislodge or remove from said depressions or depressed portions of the type characters dirt or other foreign matter which has accumulated and which would blur the impressions, said cleaning device being placed in a position where the projecting ends will engage such type characters during their operation in normal printing.

7. In a type-writer, a cleaning-brush B, supported on a flat spring-carrier O, which spring-

carrier is twisted, so as to admit of flexion in various directions, as described.

5 8. A cleaning-brush for the type characters of type-writers, pivotally supported at one end, and means, such as a ring R, to limit its range of movement, as shown and described.

Signed at Lynn, in the county of Essex and Commonwealth of Massachusetts, this 31st day of July, A. D. 1889.

JOHN W. GIBBONEY.

Witnesses:

ELIHU THOMSON,
A. L. ROHRER.