(No Model.) 2 Sheets—Sheet 1.

W. B. SCHWARTZ.

TYPE WRITING MACHINE.

No. 566,232. Patented Aug. 18, 1896.

Fig. 1.

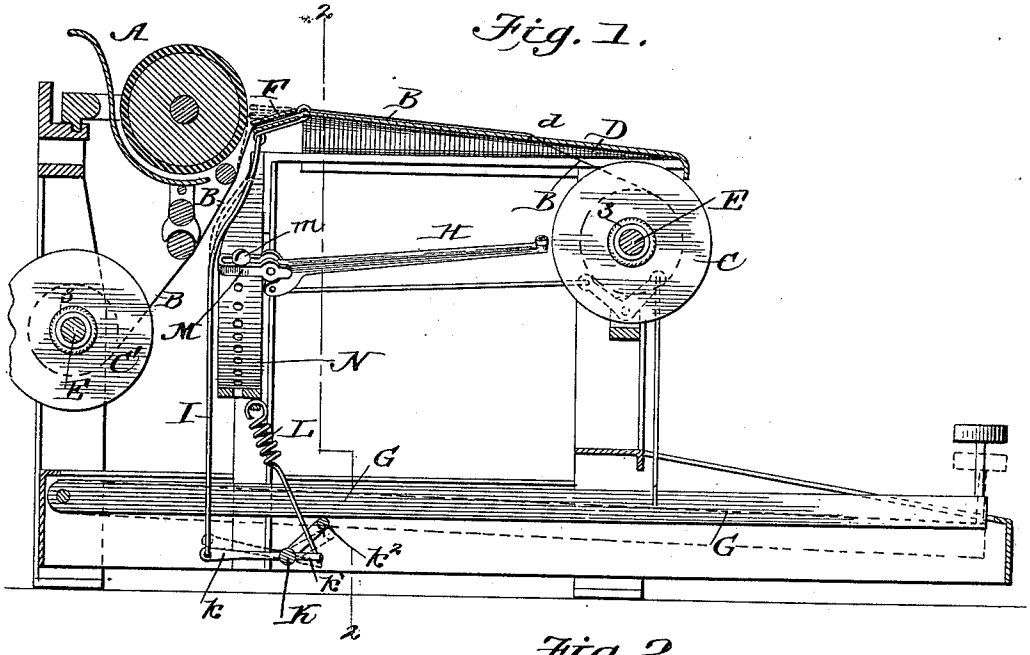
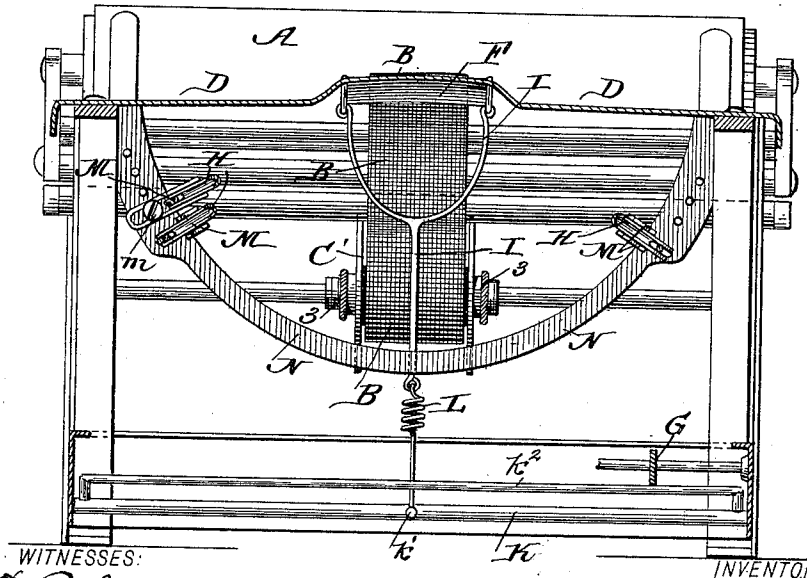


Fig. 2.



WITNESSES:

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Amos W. Hart

INVENTOR

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ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

W. B. SCHWARTZ.

TYPE WRITING MACHINE.

No. 566,232. Patented Aug. 18, 1896.

Fig. 3.

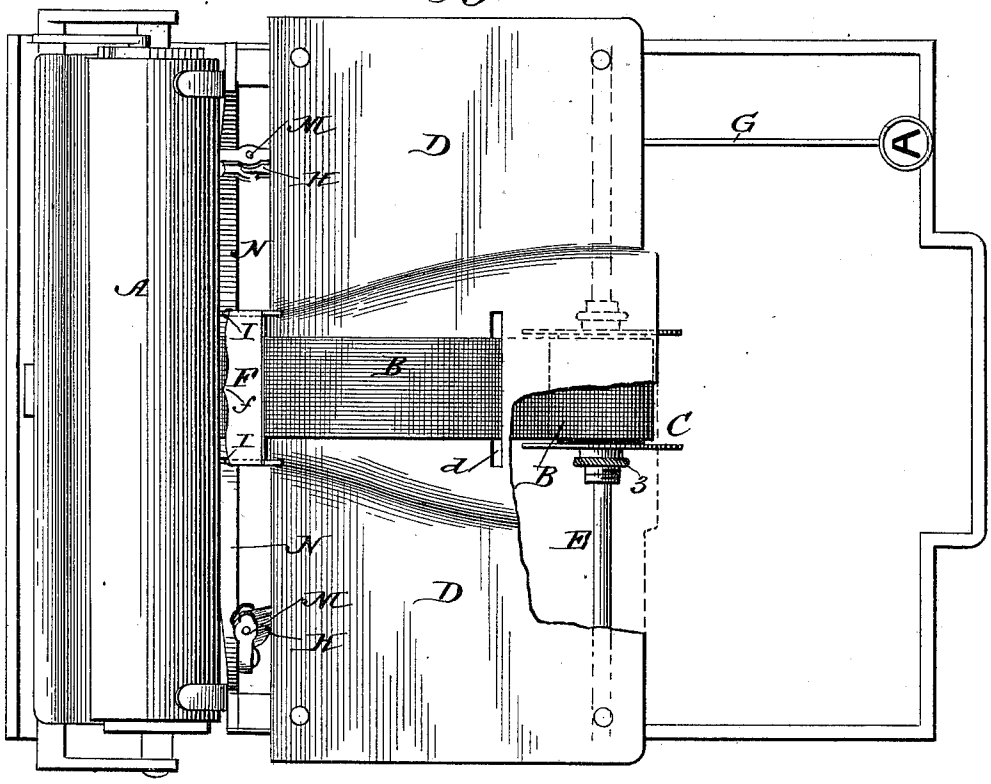


Fig. 4.

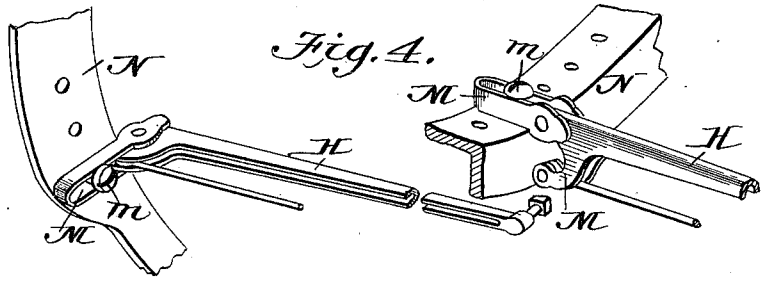
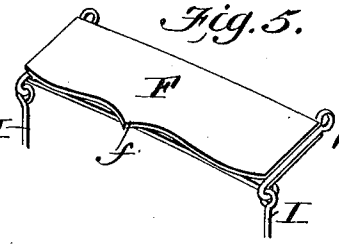


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM B. SCHWARTZ, OF INDIANAPOLIS, INDIANA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 566,232, dated August 18, 1896.

Application filed October 25, 1894. Serial No. 526,984. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. SCHWARTZ, a citizen of the United States, residing in Indianapolis, county of Marion, and State of Indiana, have invented an Improved Type-Writer, of which the following is a specification.

My invention is an improvement in that class of "visible" type-writers in which the ribbon is held in front of the platen and is stretched and carried close to or in contact with the platen at the moment a type-bar strikes upon it.

The invention is embodied in the construction, arrangement, and combination of parts, as hereinafter described and shown in accompanying drawings, (two sheets,) in which—

Figure 1 is a vertical central longitudinal section of the machine. Fig. 2 is a vertical transverse section on line 2 2 of Fig. 1. Fig. 3 is a plan view, a portion being broken away. Fig. 4 is a perspective view showing in detail the attachment of the type-bars to their support. Fig. 5 is a perspective view of the ribbon-guide.

The cylindrical platen A will in practice form an attachment of a carriage (not shown) and be adapted to shift right and left, as usual in type-writers of this class.

Instead of arranging the ribbon B as heretofore, it is wound on spools C C′, one of which, C, is arranged directly beneath the front of the flat top plate D of the machine, while the other, C′, is arranged below the platen A. These spools are mounted rotatably on suitable shafts or journals E, and are provided with a suitable device for preventing them rotating accidentally, but permitting them to be rotated manually when it is desired to take up the ribbon at either end, and thus shift it longitudinally. In this instance I show clamping-nuts *c*, Fig. 3, arranged on each side of each spool, and adjustable on a threaded tube or sleeve secured on the shafts E.

Intermediately of the spools C C′ the ribbon B passes from the upper spool C up through a slot *d* in the top plate D, and over a portion of the latter, through a tubular guide F, arranged at and hinged to the inner edge of the top plate D, whence it descends directly to the lower spool C′.

The aforesaid guide F (see Fig. 5) is a flat and short tube, whose width is considerably greater than the ribbon B and equal to that of the slot *d* in top plate D, for a purpose to be presently stated. It is located between the top plate D and platen A, being thus directly in front of the latter, and is vibrated vertically by mechanism connected with the key-levers G, (of which but one is shown), for the purpose of causing it to carry the ribbon B near the platen and also to stretch the same at the moment a type-bar H strikes. In such movement, when the guide F drops, it uncovers the letters or word printed in front of it on the paper held on the platen A, and thus the type-writer may inspect the work as it progresses. In other words, the words printed are thus visible to the operator at all times, save such one or more as may be momentarily obscured and covered by the guide F at the moment it rises to allow printing of a letter.

The slot *d* and guide F are made considerably longer than the width of the standard-size ribbon, to allow the latter to be shifted laterally, as required to expose a fresh portion of it to impacts of the type-bars. Such shifting or adjustment is effected by screwing the nuts *c* in one direction or the other, as required to force the spools C C′ to the right or left, as will be readily apparent.

The means for automatically raising the ribbon-guide F when a type-bar H strikes are as follows: A small rod or bar I extends down, Fig. 2, from the guide F to an arm *k*, that projects radially from a rock-shaft K, arranged transversely in the lower portion of the frame of the machine. A spiral spring L is connected with another arm *k*′ of said shaft, and thus tends to hold the ribbon-guide depressed, as shown by full lines, Fig. 1.

The rock-shaft K has a wing or arm k^2 projecting at an angle, Fig. 3, and with this all the key-levers G normally rest in contact, as shown. It will thus be apparent that when a key-lever G is depressed it will bear down the wing or arm k^2 and rotate the shaft K far enough to cause the rod I to push the ribbon-guide F upward, as shown by dotted lines, Fig. 1, so that it stretches the ribbon B upward and carries it close against the platen A at the moment a type-bar H strikes. The instant the key-lever G rises to its normal

position the ribbon-guide F resumes the position shown by full lines, Fig. 1.

The ribbon-guide F has a pointer *f*, which indicates where the next letter is to be located or the paper secured to the platen A, or to which point the carriage is to be moved and stopped to allow a correction to be made.

I dispense with a type-guide for the type-bars for securing alinement of printed letters and secure the type-bars to adjustable hangers M, secured to a pendent arc-bar N, Fig. 2. Said bar is hung just in front of the platen A.

In Fig. 4 I show the means for securing the hangers M to said arc-bar. The hangers M are slotted lengthwise and secured adjustably by means of a clamp-screw *m*, that enters the arc-bar N. This adaptation for adjustment of the hangers permits the type-bars H to be set at the precise point required to enable the letters or other characters to be printed always at the same point and therefore in perfect alinement.

It will be noted, Fig. 4, that the type-bars H are secured on the upper side or the front side of the arc-bar, according as they are connected with the type-bars of key-levers arranged in the middle portion or the outer or end portions of the arc-bar. It is more important that the ribbon-guide F be raised when the type-bars attached to the end portions of the arc-bar N strike than when the middle type-bars do, since the latter do not strike at a lateral angle like the outer ones, and hence it is of less consequence whether they strike the under side of the ribbon-guide F.

What I claim is—

1. In a type-writer, the combination, with the platen, and top plate, of a ribbon-guide hinged to the latter in front of said platen, as shown, its free end being in front of and adjacent to the platen, a series of key-levers, a rock-shaft arranged beneath the latter, transversely, and in normal contact with them, and a rod connecting the ribbon-guide and rock-shaft, as shown and described, whereby the depression of a key-lever rotates the rock-shaft, and elevates the free end of the ribbon-guide, while simultaneously operating a type-bar, as specified.

2. In a type-writer, the combination, with the top plate, the platen arranged in rear of the latter, and a ribbon-guide hinged to said top plate, and arranged with its longitudinal passage or opening at a right angle to the platen, its free end being adjacent to the latter, of the ribbon, or spools, arranged as shown, and a ribbon passing from the front spool over the top plate transversely, and through the guide, downward, in front of the platen, and means for vibrating the guide, substantially as shown and described.

3. In a type-writer, the combination, with a platen, of a ribbon-guide whose longitudinal opening or passage is at a right angle to the striking or contact surface of said platen, and which is hinged to a fixed support as shown, whereby its free end may vibrate vertically in front of the platen, a ribbon arranged in line with the opening of the guide, and passing through the same, and holders for the ribbon, one of which is arranged at a lower point than the platen, so that the ribbon passes downward from the guide, substantially as shown and described.

WILLIAM B. SCHWARTZ.

Witnesses:
GEO. MCHENRY,
BEV. H. PIERRODA.