(No Model.)

E. M. HAMILTON.

TYPE WRITING MACHINE.

No. 357,921. Patented Feb. 15, 1887.

Fig. 1.

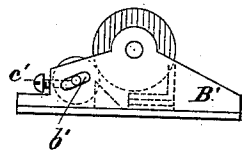


Fig. 2.

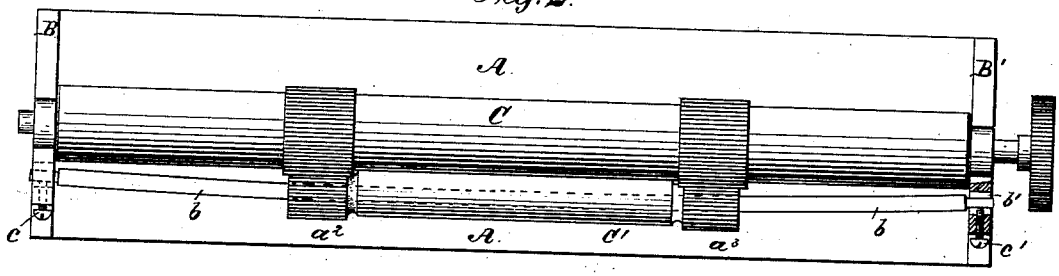
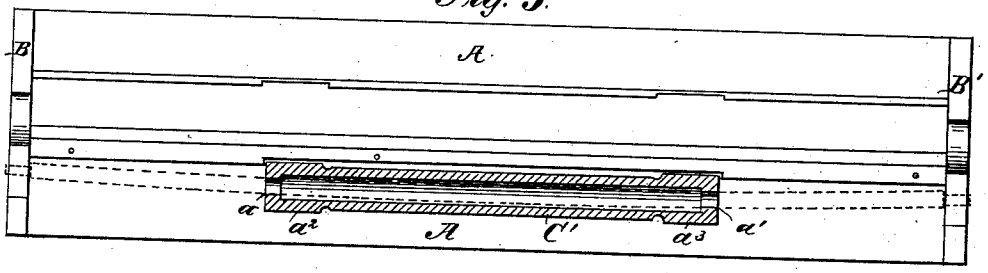


Fig. 3.



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UNITED STATES PATENT OFFICE.

EMERY M. HAMILTON, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 357,921, dated February 15, 1887.

Application filed December 6, 1886. Serial No. 220,847. (No model.)

To all whom it may concern:

Be it known that I, EMERY M. HAMILTON, of the city of New York, in the county and State of New York, and a citizen of the United States of America, have invented a new and useful Improvement in the Feed-Rollers of Type-Writing Machines, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same, in which—

Figure 1 is an end elevation of my feed-rollers and the frame in which they are mounted. Fig. 2 is a plan of the same, and Fig. 3 is a plan of the said frame with one of the rollers removed and the other shown in longitudinal section.

My invention relates to feed-rollers that are specially adapted to feed the paper in type-writing machines, but may be useful in other connections where a yielding pressure between the rollers is required; and it consists in the devices hereinafter described and claimed.

The frame in which the rolls are mounted, as adapted to a type-writing machine, consists of a plate, A, of sheet metal, preferably steel, provided at each end with a pillow-block, B B′, in which is journaled the roller C, and in which the ends of the axial bar of the roller C′ have their bearings. The roller C′ is a hollow cylinder provided with heads *a a′*, through which are apertures of smaller diameter than the interior of the body of the roller. This roller is placed on a rod or bar, *b*, also of smaller diameter than that of the interior of the roller C′, which passes through the roller, fitting loosely into the apertures in the heads *a a′*, thus permitting the roller to revolve freely on said rod. The ends of said rod rest in slotted openings in the pillow-blocks, (one of which is shown at *b′*, Fig. 1,) which permit a movement of the said rod to and from the roller C.

c and *c′* are set-screws fitted into screw-threaded apertures in the pillow-blocks B B′, the inner ends of which abut against the side of the rod *b*, near its ends. The rod *b* is of spring material, and the slotted holes *b′* permit its ends to be forced by means of the set-screws *c c′* toward the roller C, so as to press the rollers forcibly together, while the said rod acts as a spring to make the said pressure a yielding spring-pressure, regulated by the said set-screws. When the spring-pressure is thus applied the said rod will assume the form shown in Figs. 2 and 3—namely, that of a regular curve from end to end, the chambering of the cylinder C′ permitting the curve to continue through the cylinder.

It is necessary that the bearings in the heads *a a′* on the rod *b* should be some distance from the end bearings of the rod, in order to produce the spring action of the rod described. To this end the roller C′, as shown in the drawings, is made shorter than the roller C, in order to get the axial bearings of both of these rollers in the same pillow-blocks; but the roller C′ may extend in length to equal that of C, if desired, by chambering out the extended ends as the middle portion is chambered, leaving the bearings of the roller on the rod, where they are shown in the drawings, or at a suitable distance from the ends of the extended roller; or the roller C′ may be of equal length with the roller C, and the rod *b* may be extended to and have its end bearings in separate supports outside of the pillow-blocks. The rod C′ may be retained in its desired position on the rod by collars, pins, or screws on or in the rod at the end of the cylinder, or in any other suitable manner. With this construction the entire strain of the spring is taken by the pillow-blocks or end supports of the rod *b*, thus permitting the rest of the frame to be made slender and light, the stress of the spring having no tendency to warp or bend the frame. This is a feature of considerable importance in type-writing machines where these feed-rollers and the frame in which they are mounted form a part of the "carrier," which it is desirable to move with as little force as possible. Other advantages of my rollers and described connections are their extreme simplicity and cheapness, durability, and efficiency.

If preferred, the middle portion of the roller C′ may be cut away entirely, leaving two short rollers, a^2 a^3, of any suitable length of face and axial bearing.

What I claim as my invention, and desire to secure by Letters Patent, is—

The described feed-rollers, one of which is journaled to revolve in suitable bearings at its ends and the other mounted to revolve upon a spring axial rod, the ends of which rest in slotted bearings provided with set-screws to adjust and press the rollers together with a spring-pressure, as and for the purpose specified.

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Witnesses:
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