

(No Model.)

A. DENSMORE.
TYPE WRITING MACHINE.

No. 493,255.

Patented Mar. 14, 1893.

Fig. 1.

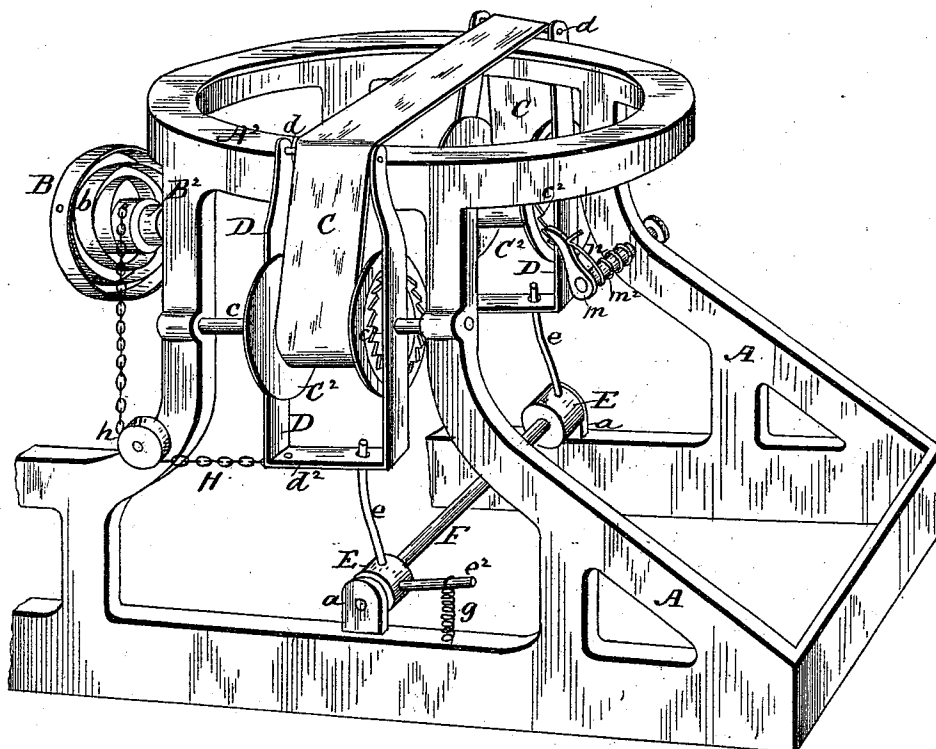
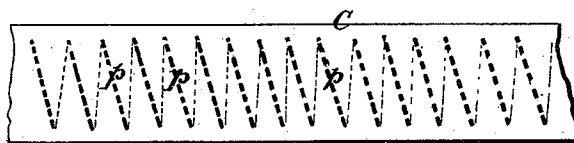


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 493,255, dated March 14, 1893.

Application filed August 19, 1892. Serial No. 443,516. (No model.)

To all whom it may concern:

Be it known that I, AMOS DENSMORE, a citizen of the United States, residing at New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to type writing machines in which an inked ribbon is used to transfer the impression of the types onto the paper; and the object of my improvement is to produce a simple and inexpensive mechanism to give to the ribbon a fore and aft movement at the time the paper carriage is moved by the operator toward the right hand side of the machine to begin a new line; and a combined fore and aft and longitudinal, or a diagonal movement to said ribbon while a line is written with the machine. Said improvement was shown and described but with insufficient clearness in an application filed by me in the United States Patent Office October 13, 1891, which application is now canceled.

In the accompanying drawings Figure 1 represents in perspective a portion of the frame of a type writing machine provided with a ribbon operating mechanism constructed in accordance with my invention. Fig. 2. is top view of a portion of the inked ribbon showing diagrammatically the diagonal impression lines substantially followed by the types of the type bars.

In said drawings A represents the frame which may be of any suitable form, and A² the top ring thereof to which the type-bar hangers are generally secured. From the rear of the frame project a horizontal stud upon which is mounted a hollow pulley B which contains as usual a coiled spring B¹ to propel the paper carriage in one direction by means of a strap having one end attached to the periphery of said pulley B, and the other end to said carriage, but said strap and carriage are not shown in the drawings.

The inking ribbon C, has its ends secured to, and coiled upon spools C² that may be provided with the usual friction devices. Said spools are mounted upon light horizontal

shafts *c* carried by the frame A; and said shafts may be provided with a small crank at one end as usual but I prefer to have them retained stationary.

Upon the shafts *c* are loosely mounted the sheet metal frames D that embrace the spools, and have their upper ends extended upward far enough to guide the ribbon over the type bar-hangers, the upper ends of each frame being connected together by a wire D over which the ribbon passes from one spool to the other. The horizontal lower portion D² of each frame D has a perforation to receive loosely therein the upper end of an arm E projecting upward from a hub E secured upon a horizontal rocking shaft F, that is loosely mounted in bearings A projecting from the frame of the machine. The hub E is also provided with a second arm E² that projects substantially horizontally therefrom, or at about a right angle to the arm E; and to the arm E² is secured one end of a retractile coiled spring G that has its other end secured to the frame. The tendency of this spring is to partly rotate the shaft F and advance the spool-carrying frames D and the inking ribbon toward the front of the machine. And while this is taking place, the spools are slightly rotated on their axis as usual, by the pawl M the point of which constantly bears against and is in engagement with a ratchet wheel C² secured to the front face of each spool C³. For this purpose the pawl M is pivoted upon a stud m² secured to the front portion of the frame of the machine within a short distance of the spool and a spring *n* pressing against the back of the pawl retains it in engagement with the ratchet wheel *c*². Therefore the combined advance while said ribbon slowly traverses the machine gives to said ribbon a diagonal movement over the impression-point of the types of the machine, substantially as shown by the heavy dotted line *p* in Fig. 2.

To pull the frame D toward the rear of the machine, one of said frames is connected to the hub B² of the spring pulley B by means of a cord or chain H having one end secured to said frame D, while the other end is attached to said hub B², but its middle portion passes around a guide-pulley *h* mounted upon a stud projecting from the side of the frame

A, so that one end of the chain H is nearly vertical but the end attached to the frame D is horizontal. By the above described means each time that the operator pulls the paper carriage toward the right hand side to begin to print a line the pulley B is rotated toward that side, the chain H is wound partly around the hub B² and the spool carrying frames and inked-ribbon are pulled toward the rear of the machine, in position to be pulled forward again by the spring g, and as the two frames D are connected together by the arms e and the horizontal shaft F, both ends of the ribbon are equally moved back and forth for every line printed on the machine.

Having now described my invention, I claim—

1. The combination of a type-writer frame having a ribbon-spool advancing-pawl pivoted to its front portion, the paper-carriage propelling-spring, the inking ribbon and spools, and their frames D with a chain con-

necting the latter to the carriage propelling spring and adapted to move the ribbon-frame toward the rear of the machine during the retraction of the carriage substantially as described.

2. The combination of a type-writer frame having a ribbon-spool advancing-pawl pivoted to its front portion, the paper-carriage propelling-spring, the inking ribbon spool, the ribbon guiding frames D, and chain connection with the carriage propelling spring for moving the ribbon-frame toward the rear of the machine during the retraction of the carriage the rock shaft F having arms connected with frames D, and an arm retracted by a spring substantially as described.

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

AMOS DENSMORE.

Witnesses:

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