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PATENTED NOV. 21, 1905.

H. B. N. DISBROW.

RIBBON SPOOL ACTUATING DEVICE FOR TYPE WRITERS.

APPLICATION FILED APR. 14, 1904.

2 SHEETS—SHEET 1.

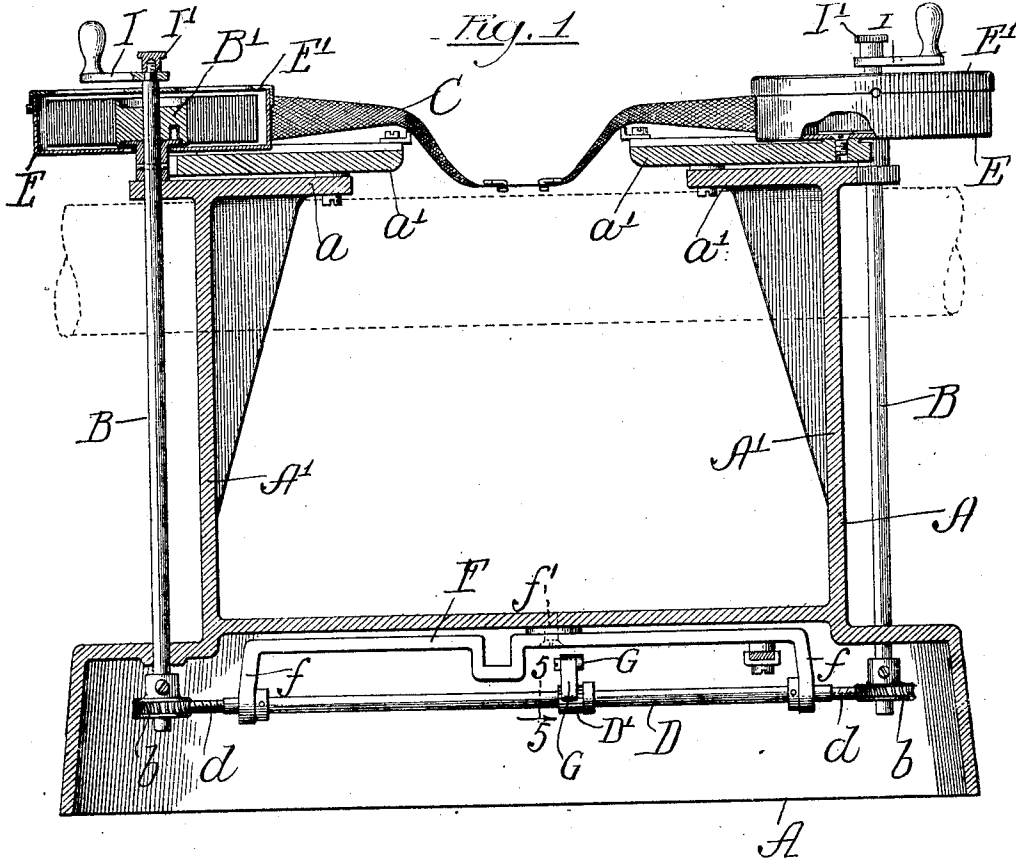
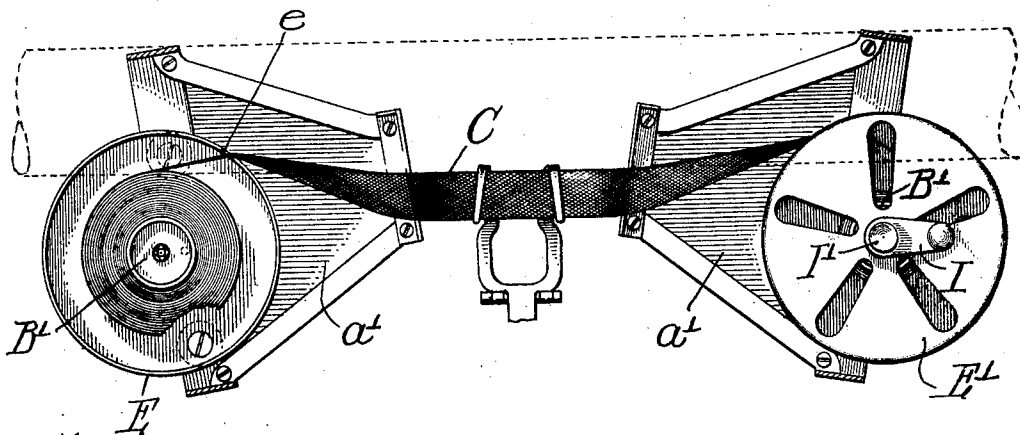


Fig. 2



Witnesses:

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Inventor:

Harry B. N. Disbrow

By Poole & Brown

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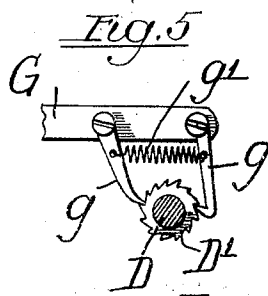
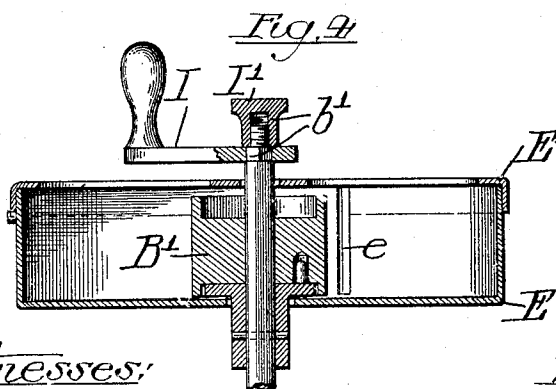
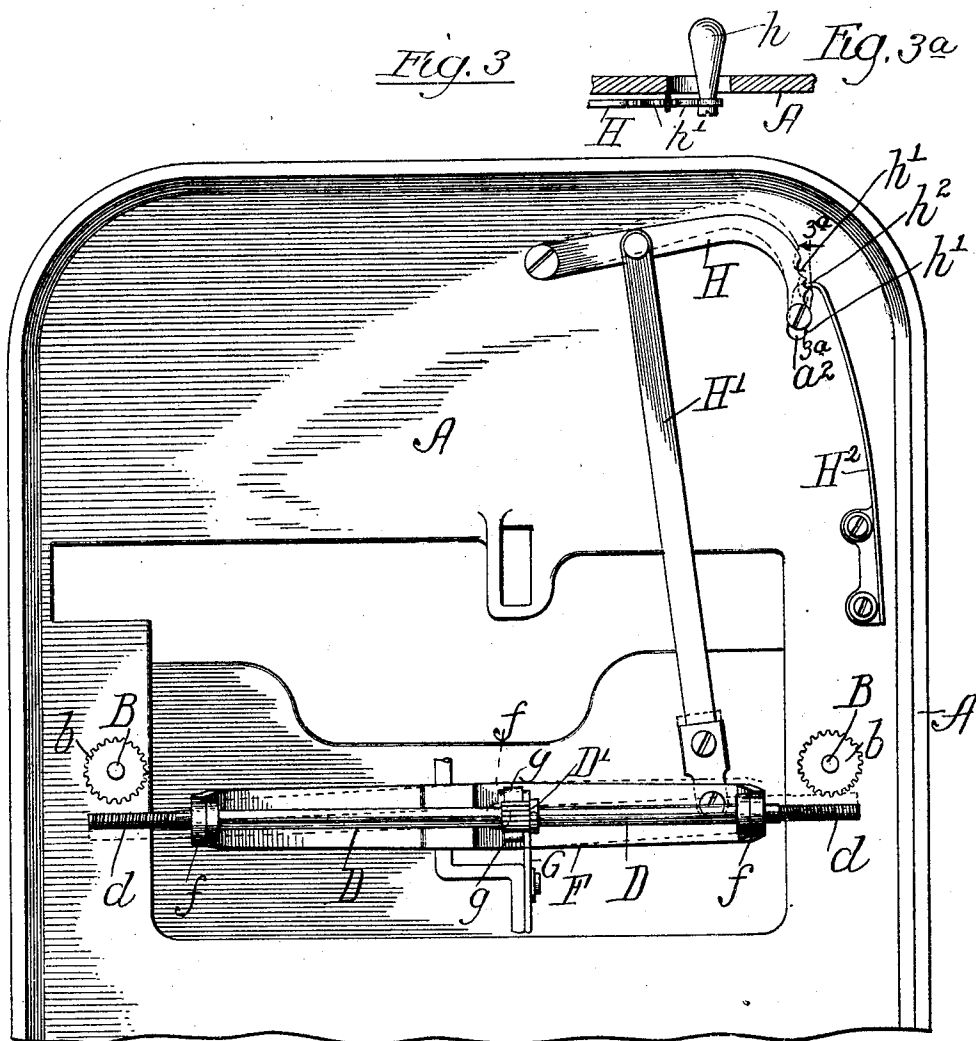
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Witnesses:
H. B. N. Disbrow
W. H. Hall

Inventor:
Harry B. N. Disbrow
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UNITED STATES PATENT OFFICE.

HARRY B. N. DISBROW, OF NEW YORK, N. Y., ASSIGNOR TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

RIBBON-SPOOL-ACTUATING DEVICE FOR TYPE-WRITERS.

No. 805,060.

Specification of Letters Patent.

Patented Nov. 21, 1905.

Application filed April 14, 1904. Serial No. 203,120.

To all whom it may concern:

Be it known that I, HARRY B. N. DISBROW, a citizen of the United States, residing in the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ribbon-Spool-Actuating Devices for Type-Writers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved ribbon-winding mechanism for type-writing machines; and the invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

A ribbon-winding mechanism embodying the invention embraces, in combination with two spool-shafts, to the upper ends of which the ribbon-spools are fitted and the lower ends of which are operatively connected with an automatic device for rotating the spool-shafts in both directions, a manually-operable winding device detachably fitted to the upper end of each spool-shaft for rotating the shafts when disconnected from the automatically-operated devices and adapted to be detached from the ribbon-spool shafts when spools are to be applied to or removed from the shafts.

Among the objects of the invention is to provide a simple winding attachment by which the ribbon may be wound upon and unwound from the shafts more rapidly than by the automatic mechanism and which may be applied to the ribbon-winding mechanism without interfering with the affixing and the removal of the ribbon-spools.

The invention is herein shown as applied to the Oliver type-writing machine, though it may be applied with some slight modifications to other type-writing machines.

As shown in the drawings, Figure 1 is a vertical section of the machine, taken through one of the ribbon-spools and showing the essential parts of the ribbon-winding mechanism and sufficient of the machine-frame to indicate its location thereon. Fig. 2 is a plan view of the principal parts shown in Fig. 1. Fig. 3 is a bottom plan view of the

ribbon-winding mechanism and the means for throwing the same into and out of operation. Fig. 3^a is a detail section taken on line 3^a 3^a of Fig. 3 and illustrating the manually-engaged part for reversing the ribbon-winding mechanism. Fig. 4 is an enlarged sectional view of one of the ribbon-spools and its casing, showing the manner of attaching the turning-crank thereto. Fig. 5 is a detail illustrating the manner of imparting automatic rotation to the spool-shafts.

As shown in the drawings, A designates the base, and A' A' vertical side members of the machine-frame, the latter formed at their upper ends to constitute a horizontal part *a*, forming a bearing for the upper ends of the ribbon-spool shafts and also a support for the plates *a'*, which support the type-bars.

The ribbon-winding mechanism consists, essentially, of two vertical rotative shafts B B, rotatively mounted in the base and the top part *a* of the standard, and to the upper end of which shafts are removably and non-rotatively attached in any suitable manner spools B' B', upon which the ribbon C is wound and unwound, and an automatically-rotated horizontal shaft D beneath the base of the machine and adapted for alternate operative connection at its ends with the lower ends of said spool-shafts. Said spools are usually contained in stationary cylindric casings E E, which are provided with removable top covers or lids E' E', and the ribbon-shafts extend through the bottom walls of the casings and said removable covers. The casings are provided in their cylindric walls with slots *e*, through which the ribbon C may pass into and from the casings.

The horizontal automatically-rotated shaft D is provided at its opposite ends with worms *d*, one made with a right-hand thread and the other with a left-hand thread and which are adapted to engage worm-wheels *b* at the lower ends of the spool-shafts B. When one of the worms is engaged with its gear-wheel, the other is discharged from its wheel, the shaft being adapted to rock horizontally about a vertical axis located at the longitudinal center of the shaft to effect this result, as will hereinafter more fully appear. With this construction rotation of the shaft always in one direction has the effect to rotate the spool-shafts alternately in opposite direc-

tions. When the shaft is arrested in an intermediate part of its longitudinal swing, both of the worms are disengaged from their gear-wheels b and the spool-shafts are free to be independently rotated. Said shaft D is mounted in the depending arms f of a horizontally-rocking frame F, which swings on a vertical screw f' , extending upwardly in the machine-base, as shown in dotted lines in Fig. 1, whereby upon rocking the frame horizontally either worm d may be engaged with its worm-wheel b or both worms may at the same time be freed from said wheels.

The frame F is rocked on its vertical axis to alternately connect and disconnect the same with or from the spool-shafts or to simultaneously disconnect both shafts to permit them to be rotated by the manually-operated devices by means constructed as follows: H designates a lever which is pivoted to the lower face of the base, near the front thereof, as clearly shown in Fig. 3, and is connected by a link H' with the frame F, said link being pivotally or loosely connected at both ends with said lever and frame, respectively. The lever H is provided at its end remote from its pivot with a knob h , which extends upwardly through a slot a^2 in the base, as more clearly shown in Fig. 3^a. A spring H², attached to the under side of the base and bearing at its free end against the lever H, acts to hold the lever in any position in which it is adjusted, and to insure maintenance of adjustment the lever is provided at its part engaged by the spring with a series of notches h' h^2 . Three notches are shown, the two outer notches h' of which are severally engaged with the spring at the time one or the other of the worms is engaged with its worm-wheel, while the intermediate notch h^2 is engaged with the spring at the time when both worms are out of engagement with said worm gear-wheels.

Rotary motion is imparted to the shaft d by means of two pawls g g , pivoted to a vertically-vibratory lever G and engaging the teeth on the opposite sides of a toothed wheel D', mounted non-rotatively on said shaft D. Said pawls are held engaged with the ratchet-wheel D' by means of a spring g' , connected with the pawls in a manner to draw the free ends thereof together. It is to be understood that the lever G is in some convenient manner connected with the line-spacing mechanism, so as to be operated at each depression of the space-bar; but such connection is not herein shown.

The means for manually winding the ribbon from one spool to the other, and which occurs when the ribbon-spool shafts are out of operative connection with the automatic winding mechanism, consists of two cranks I I, one detachably fixed to each of the ribbon-spool shafts above the removable covers E' of the spool-casings E. Said cranks, as

more clearly shown in Fig. 4, are provided at their inner ends with angular openings, which fit over reduced angular parts b' of the shafts, (or the parts may be otherwise constructed to provide a non-rotative engagement,) and the cranks are locked in position by means of nuts I', which have screw-threaded engagement with the extreme upper ends of the shafts and clamp or bind the cranks between the inner ends of said nuts and the shoulders on the shaft at the bases of the reduced parts thereof. The purpose of the cranks is to wind and unwind the ribbon more rapidly than can be effected by the automatic mechanism—as, for instance, if one end of the ribbon be a record-ribbon and the other a copying-ribbon and it is desired to change quickly from one to the other, the shaft D is disconnected from both spool-shafts and one or the other of the spool-shafts rotated through the medium of its crank.

When the spools are to be removed, the cranks I are first removed by unscrewing the nuts I', and thereafter the covers E' are removed from the casings E. The spools are now free to be removed and replaced by others carrying a fresh ribbon. After the spools are again in place the cranks are fitted to the shafts and the nuts turned down upon the same.

The construction described affords a convenient and ready means of attaching a crank to a ribbon-spool shaft of that type in which the ribbon-spool, as well as the cover for the casing, is slipped over the upper end of the shaft, and the construction is such that the cranks may be readily detached from the shaft when it is desired to remove the ribbon and ribbon-spools and does not in any manner interfere with the normal or usual function of the several parts.

I claim as my invention—

1. A ribbon-winding mechanism for type-writing machines comprising two rotative shafts, ribbon-spools adapted to be slipped over the upper ends of said shafts and having detachable interlocking engagement therewith, stationary casings within which said spools are contained, removable covers for the casings provided with central apertures, said shafts extending upwardly through the bottom walls of the casings and through said apertures in the covers, means for automatically rotating said shafts to wind the ribbon upon and unwind it from said spools, and cranks detachably connected with the upper ends of said shafts above said removable covers of the spool-casings.

2. A ribbon-winding mechanism for type-writing machines comprising two rotative shafts, ribbon-spools adapted to be slipped over the upper ends of said shafts and having detachable interlocking connection therewith, means for automatically rotating said shafts, stationary casings within which said spools

are contained, removable covers for the casings provided with central apertures, said shafts extending upwardly through the bottom walls of the casings and through the removable covers and having at their upper ends above said covers flat-sided and screw-threaded portions, cranks provided with openings fitting the flat-sided portions of the shafts and nuts engaging the screw-threaded portions of the shafts for holding the cranks on said shafts.

3. In a ribbon - winding mechanism for type-writing machines the combination with a rotative shaft, of a ribbon-spool having a central aperture to receive the shaft, said shaft and spool having interlocking parts by which the spool is held from turning on the

shaft, a stationary casing for the spool provided with a centrally-apertured bottom wall through which the shaft extends, a removable cover for the casing also provided with a central aperture through which the shaft extends at its upper end, and a crank removably attached to the said upper end of the shaft above the cover of the casing.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 6th day of April, A. D. 1904.

HARRY B. N. DISBROW.

Witnesses:

ANDREW F. VAN THUN, Jr.,
J. W. HARPER.