

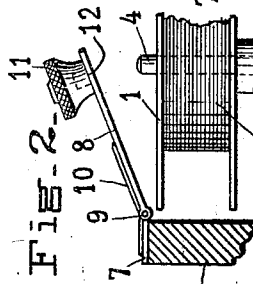
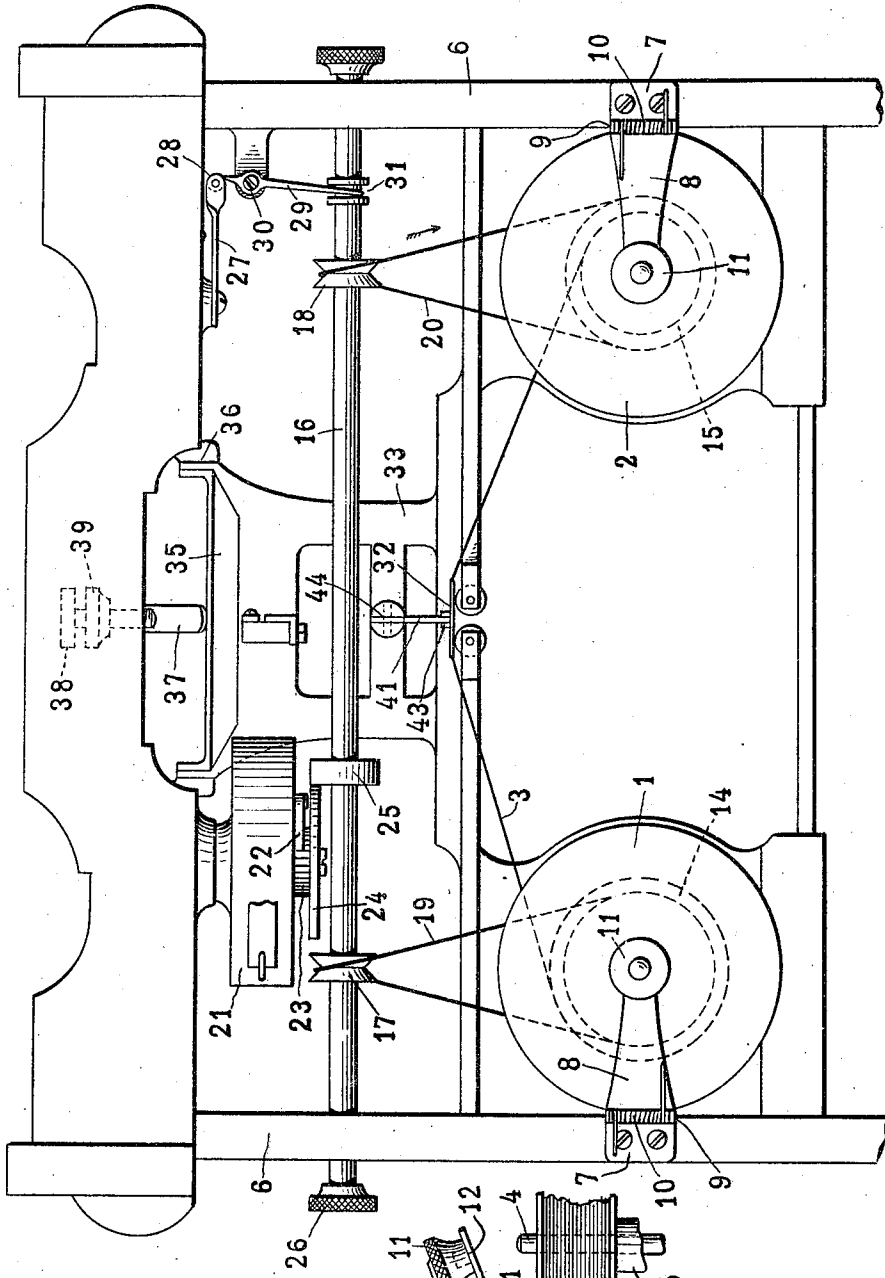
J. ALEXANDER.  
 TYPE WRITING MACHINE RIBBON OPERATING MECHANISM.  
 APPLICATION FILED FEB. 16, 1911.

1,046,711.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.

FIG-1-



WITNESSES  
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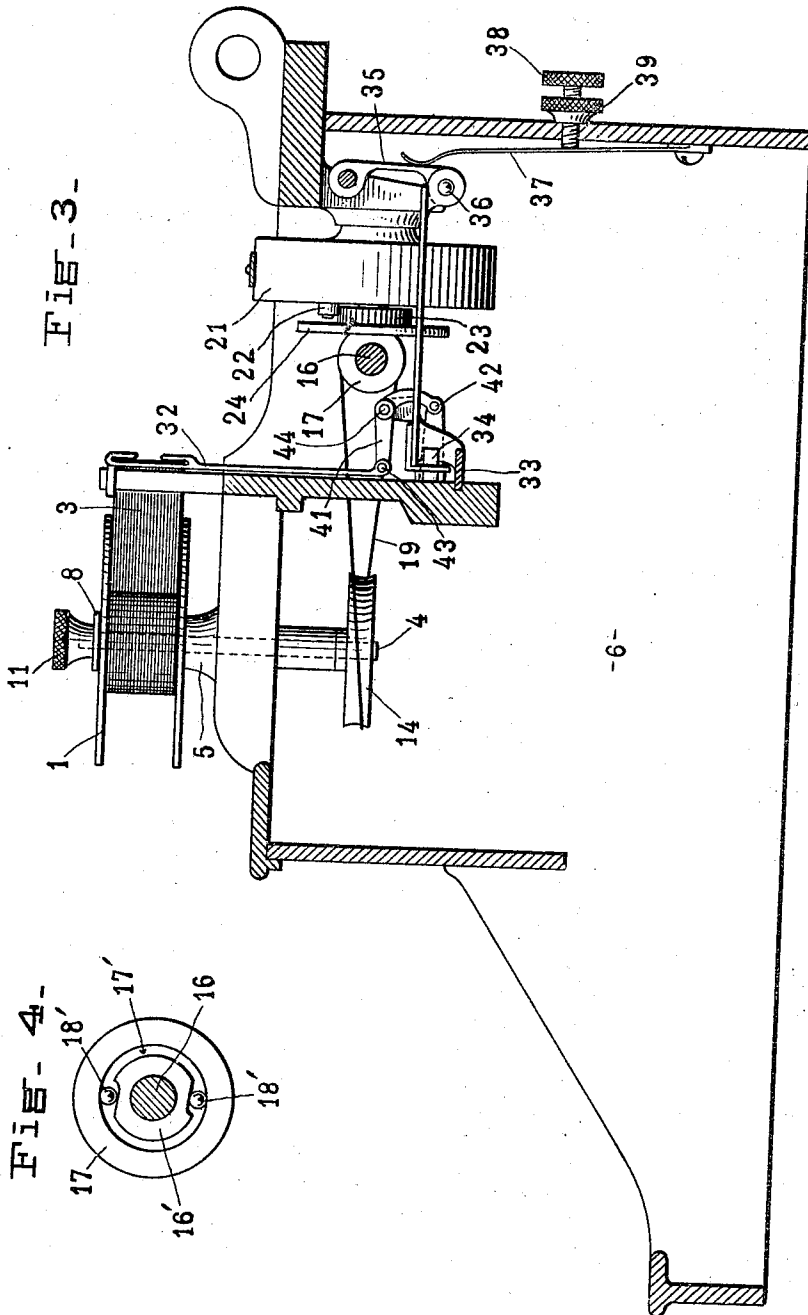
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2 SHEETS—SHEET 2.



-6-

WITNESSES

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# UNITED STATES PATENT OFFICE.

JESSE ALEXANDER, OF NEW YORK, N. Y., ASSIGNOR OF SIXTY-TWO ONE-HUNDREDTHS  
TO F. M. DA COSTA, OF ROCKVILLE CENTER, NEW YORK.

TYPE-WRITING-MACHINE RIBBON-OPERATING MECHANISM.

1,046,711.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed February 16, 1911. Serial No. 608,929.

*To all whom it may concern:*

Be it known that I, JESSE ALEXANDER, a citizen of the United States, and resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing-Machine Ribbon-Operating Mechanism, of which the following is a specification.

This invention relates to what are commonly termed typewriters and particularly the ribbon operating mechanism.

The object of my invention is to construct a simple, strong and durable ribbon operating mechanism that will wind the ribbon from spool to spool and means for feeding and shifting the same and especially the ribbon operating mechanism suitably adapted to a front stroke visible typewriting machine.

The invention contemplates the use of spring pressed arms for holding and retarding the ribbon spools, also the use of friction drive for the ribbon feed shafts and also the feeding of the ribbon by the action of the carriage feeding of the tension drum, and also shifting devices.

The principles are illustrated in the accompanying two sheets of drawings.

Figure 1, is a plan view of different parts of a machine which embody the improvements of my invention. Fig. 2, is a fragmentary vertical section and front elevation showing the arm for holding and retarding the left hand ribbon spool. Fig. 3, is a vertical longitudinal section showing the improvements of my invention. Fig. 4, is a transverse sectional view of a clutch connection.

The ribbon spools 1 and 2 are adapted to alternate winding and unwinding the ribbon 3. Each spool is mounted on the shaft such as 4 adapted to be rotated as will hereinafter be understood. Each spool is supported on a boss 5 adjacent one side 6 of the frame of the machine. The spool is held in place by means of a spring pressed arm construction which consists of a base plate 7 and the arm plate 8 hinged together at 9. A spring 10 wound around the hinge and having its ends engaging the parts 7 and 8 holds the arm part 8 down against the upper surface of the spool. I also prefer to provide a knob 11 having a recess 12 for engaging the upper end of the shaft

such as 4. The arm and adjacent parts are so proportioned as to produce some little friction and resistance to operation.

The ribbon winding shafts at the bottom carry pulleys such as 14 and 15. The shifting shaft 16 and which may be termed the driver is rotatably mounted in the frame of the machine and carries the small grooved guide pulleys 17 and 18 which are connected to the pulleys 14 and 15 by the cords 19 and 20 respectively.

The tension drum for pulling the carriage from right to left of the machine is indicated at 21. This carries a spring pressed pawl 22 engaging the ratchet 23 which is mounted on the same axis as the winding drum 21 but free to rotate independently thereof. A friction disk 24 is attached to the ratchet 23 and in the position shown engages the friction disk 25 on the shaft 16. The ratchet and pawl are so arranged that when the carriage moves toward the right and the drum 21 is moved right handed as is common in this art that the pawl 22 slips freely over the teeth of the ratchet 23 but when the carriage is feeding toward the left by any suitable carriage feeding mechanism the pawl 22 causes the ratchet 23 and disk 24 to rotate left handed or anti-clockwise and thus rotates the disk 25 on shaft 16 also anti-clockwise when viewed from the right in Fig. 1. This drives the pulley 15 on the right hand ribbon shaft by means of the cord 20 which moves in the direction of the arrow in Fig. 1.

When the right hand spool is filled and it is desired to reverse the ribbon the shaft 16 is pushed to the right by pressure on the knob 26 until the pulley 17 engages the disk 24. The pulley then serves as a friction disk and will be rotated in the opposite direction from the previous operation of the disk 25. The ribbon will thus be wound upon the left hand spool. To assist in the shifting movement I provide a spring arm 27 carrying a roller 28. Lever 29 pivoted at 30 engages the roller 28 in the position shown in Fig. 1. The forward end of the lever 29 engages in the collar 31 so that as the rod 16 is shifted toward the right, the rear end of the lever 29 is snapped to the left of the roller 28 and is held there by the relative position of the parts.

To prevent interference in the proper

winding of the ribbon I prefer to provide the pulleys 17 and 18 with a suitable form of clutch such as shown in Fig. 4. The peripherally notched disk 16' on the shaft 16 is located inside of the pulley 17 leaving the race-way 17' for the balls 18'. When the shaft 16 rotates right handed the pulley 17 is rotated by the disk 24 but when the shaft rotates left handed the balls 18' fall into the recesses of the disk 16' and the pulley is not rotated.

Where the ribbon mechanism is applied to a machine for visible writing I prefer to provide a ribbon shifting rod 32 or guide for lifting the ribbon up to its proper position for printing and then retracting it. This is operated by means of the universal bar 33 which stands in the rear of the type bars (not shown). The universal bar is guided on the pin 34 at the front end and suspended at the rear end from the swinging link 35 to which it is pivoted at 36. The spring 37 presses against the link 35 and holds the universal bar in its forward position. This spring 37 may be adjusted by a set screw 38 which has a clamp nut 39. A lever 41 has one end pivoted at 42 to a stationary pivot, the other end is pivoted at 43 to the ribbon guide 32. The center of the lever 41 is pivoted at 44 to the universal bar and is movable therewith. The result is that when the universal bar is moved to the rear in the usual manner by the key and type bar mechanism (not shown), the pivot 44 of the lever 41 is moved rearwardly and the guide 32 is thus raised. When the universal bar is thrown forwardly by the spring 37 the guide 32 is thrown down-

wardly again so as to clear the ribbon from the printing position.

What I claim is:—

1. In a typewriting ribbon mechanism, two ribbon spool shafts, a laterally shiftable shaft, driving connections from said laterally shiftable shaft to said ribbon spool shafts, a disk for driving said laterally shiftable shaft in one direction or the other depending upon its lateral position, a collar carried by said laterally shiftable shaft, a pivoted lever having a long end engaging said collar and a spring arm having a roller, said lever having a short arm engaging said roller.
2. In a typewriter ribbon operating mechanism, ribbon winding shafts, winding pulleys thereon, a rotating shaft adapted to be laterally shifted, pulleys on said shaft, friction cords connecting said pulleys to the respective winding pulleys and means for rotating said shaft forward or backward.
3. In a typewriter ribbon operating mechanism, ribbon winding shafts, winding pulleys thereon, a rotating shaft, pulleys on said shaft, friction cords connecting said pulleys to the respective winding pulleys and means for rotating said shaft including a disconnecting clutch connection consisting of a friction driving disk and two friction disks on said shaft, said shaft being adapted to be laterally shifted for the purpose specified.

JESSE ALEXANDER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."