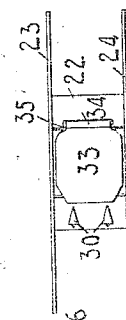
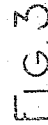
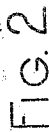


971,098.

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UNITED STATES PATENT OFFICE.

CLIO B. YAW, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

971,098.

Specification of Letters Patent.

Patented Sept. 27, 1910.

Application filed May 5, 1910. Serial No. 559,570.

To all whom it may concern:

Be it known that I, CLIO B. YAW, citizen of the United States, and resident of Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates principally to type-writing machines although it is also applicable to some other sorts of machines.

The principal object of the invention is to provide certain improvements in the ribbon spools, which improvements will be explained more in detail hereinafter.

My invention consists in certain features of construction and combinations and arrangements of parts, all of which will be fully set forth herein and particularly pointed out in the claims.

In the accompanying drawings: Figure 1 is a fragmentary side elevation, partly in section, of a typewriting machine having my invention embodied therein. Fig. 2 is a rear elevation of one of the ribbon spools with the reverser weight shown in position in the spool. Fig. 3 is a cross section of one of the ribbon spools on an enlarged scale. Fig. 4 shows the face of a bridge for an opening in the core of the spool.

My invention is here shown applied to a Remington front strike typewriter. This machine has corner posts 1 supporting a top plate 2 having a trough-like depressed part 3 in and over which the platen is situated. This platen is mounted in a carriage which is propelled by a spring drum as usual, and to said spring drum is geared a transverse driving shaft 4 which is journaled in hangers 5 of the top plate. There are two ribbon spools 6, one at either side of the machine, and each of said spools is mounted on the forward end of a shaft 7 which is journaled in hangers 8 depending from the top plate and provided with collars 9 to prevent endwise motion of said shaft. Each of said shafts has at its rear end a bevel gear 10 which is adapted to mesh with a bevel pinion on the driving shaft 4 and said shaft 4

is adapted to be shifted lengthwise to gear it to one or the other of the gears 10.

Provision is made in the machine for shifting the shaft 4 to reverse the direction of ribbon feed, this being done automatically by a reversing mechanism including a worm 12 just back of each of the shafts 7, which worm is adapted to be engaged by the rear end of a rod 13 which lies in a longitudinal slot in the shaft 7. The forward end of the rod 13 is bent outward, forming an arm 14 which passes through a hole in a plate like arm 15 which is pivoted at 16 on a block 17 which surrounds the shaft 7 and is secured to said shaft by a set screw 18. The arm 15 extends first at right angles to the shaft 7 and is thence bent toward the front of the machine as shown in Fig. 1 and has a weight 20 carried by its forward end, said weight being situated inside the ribbon spool where it is normally held up somewhat close to the shaft by the coils of ribbon. When the ribbon is exhausted from the spool the weight 20 drops through an opening 21 in the core or drum 22 of the spool and the resultant rocking of the arm 15 pushes the rod 13 toward the rear, the rear end of said rod engaging in the worm 12 which, by the continued rotation of the shaft 4, forces said shaft to move lengthwise to bring it into gear with the empty ribbon spool and out of gear with the full ribbon spool.

In addition to the core or drum 22 the ribbon spool comprises a rear flange 23 and a forward flange 24, said flanges being secured to the drum by means of ears 25 projecting from the drum through openings in the flanges and bent over to hold the flanges in place. The flange 24 has a central opening with two lugs 26 projecting into it and the flange 23 has a round opening. The spool is put onto the shaft from the front and the lugs 26 are received in suitable notches in the forward end of the shaft, these lugs limiting the motion of the spool toward the rear and also constraining the spool to turn with the shaft. The spool is secured in position by a milled-head screw

27 threaded into the end of the shaft. The flange 23 has an opening 28 which allows the weight 20 to enter the spool when the spool is put on the shaft and said opening is also of such dimensions as to admit of the weight dropping away when the ribbon is exhausted. The drum 22 has some points or hooks 30 struck out therefrom and bent back to secure to the drum either the end of the ribbon itself or the end of a piece of tape 31 to which the ribbon 32 is connected.

The ribbon is wound on the spools at the ribbon factory and it has been found that it bulges down into the opening 21 and makes it troublesome to put the spool on the machine, as the ribbon interferes with the insertion of the weight 20 into the spool. It is the principal object of my invention to overcome this difficulty. To this end I provide a bridge, door or gate 33 which may be of any suitable construction, but which as here shown consists of a piece of sheet metal bent into substantial conformity to the curvature of the drum 22, and having at one end an ear 34 bent into tubular form to constitute part of a hinge whereby the bridge is connected to the drum 22. The end of said drum at one side of the opening 21 has a slot cut therein parallel with the axis of the spool, and the ear 34 is bent round through said slot, the narrow strip 35 at the end of the drum constituting the stationary element of the hinge. The bridge 33 is of such length as that its free end 36 slightly overlaps the other edge of the opening 21. With this bridge in place, when the ribbon is wound on the spool, it cannot interfere with the insertion of the weight 20. When the ribbon is exhausted from the spool the bridge drops down to the position shown by broken lines in Fig. 3 and leaves the weight 20 free to fall to its reversing position. When the ribbon is rewound on the spool the bridge drops by its own weight by the turning of the spool into its closed position where it is held by the coils of ribbon.

It will be perceived that the spools are "rights" and "lefts." The construction is such that the distinction between the right spool and the left spool can be made entirely in the assembling of the spool. The ears 25 are placed symmetrically with reference to the opening 21. The spool shown in the drawing is a right-hand spool, but it could have been made into a left-hand spool by simply turning the drum 22 over so as to bring the hinge 34, 35 to the left of the opening 21 in Fig. 3, and the hooks 30 to the right of said opening. In other words, the flanges can be made up and the drums can be made up with the bridges hinged to them, and whether any given spool is a right-hand or left-hand spool will depend upon which

way the drum is turned when it is fastened to the flanges.

Various changes can be made in the details of construction and arrangement without departing from my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine having ribbon feeding and reversing mechanism, the combination of a shaft, a reverser weight mounted on said shaft and constituting part of the reversing mechanism, a ribbon spool mounted on said shaft and having a hollow core in which said weight is situated, and said core having an opening through which said weight is arranged to fall when the ribbon is exhausted from the spool, and a pivoted bridge over said opening and arranged to drop open when the ribbon is exhausted from the spool.

2. In a typewriting machine having ribbon feeding and reversing mechanism, the combination of a shaft, a reverser weight mounted on said shaft and constituting part of the reversing mechanism, and a ribbon spool mounted on said shaft and having a hollow core in which said weight is situated, said core having an opening and said spool having flanges one of which is apertured to admit said weight and to allow it to drop when the ribbon is exhausted from the spool, a bridge arranged normally to bridge or close said opening in said core and to drop out of the way of said weight when the ribbon is exhausted from the spool, and means independent of said bridge for attaching a ribbon to the spool.

3. In a typewriting machine having ribbon feeding and reversing mechanism, the combination of a shaft, a ribbon spool detachably mounted on said shaft and having flanges and a hollow core, a reverser weight mounted on an arm which is pivoted to said shaft and constituting part of the reversing mechanism, said core having an opening through which said weight can drop when the ribbon is exhausted from the spool and one of said flanges having an opening through which said weight is thrust when the spool is placed upon the shaft, and a bridge over said opening in the core and arranged to drop away when the ribbon is exhausted from the spool.

4. In a typewriting machine having ribbon feeding and reversing mechanism, the combination of a shaft, a reverser weight mounted on said shaft and constituting part of the reversing mechanism, a ribbon spool having two flanges and a hollow core or drum in which said weight is situated, said drum having an opening therein through which said weight can drop, means for fastening said flanges to said drum, and a

bridge hinged to said drum at one side of
said opening and arranged to span said
opening, said fastening means being so dis-
posed that, by turning said drum over in
the process of assembling, the bridge can be
reversed, the hinge of the bridge being
placed on one side of the opening for a
right-hand spool or on the other side of the
opening for a left-hand spool.

Signed at the borough of Manhattan, city 10
of New York, in the county of New York,
and State of New York this 3rd day of May
A. D. 1910.

CLIO B. YAW.

Witnesses:

E. M. WELLS,

CHARLES E. SMITH.