

O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 6, 1910.

971,234.

Patented Sept. 27, 1910.

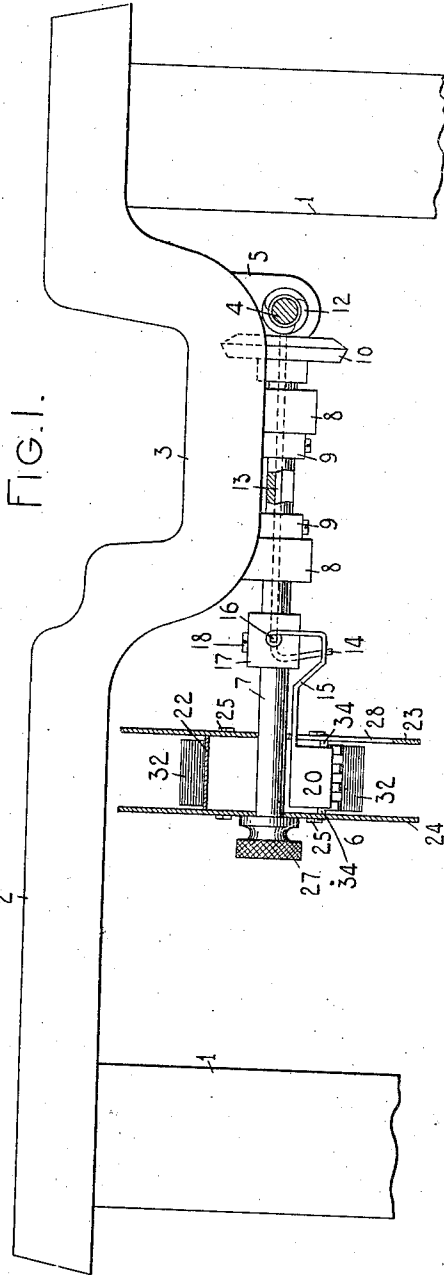


FIG. 1.

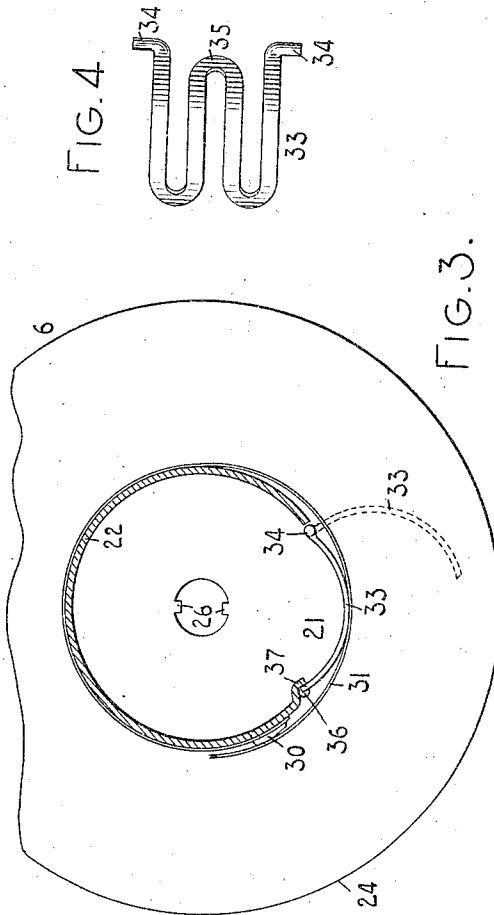


FIG. 3.

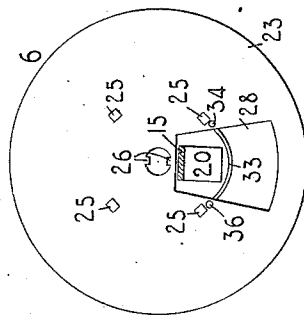


FIG. 2.

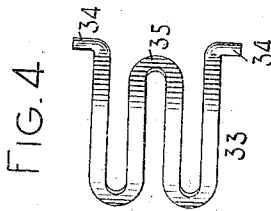


FIG. 4.

WITNESSES.

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OSCAR WOODWARD, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO REMINGTON TYPE-WRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

971,234.

Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed May 5, 1910. Serial No. 559,564.

To all whom it may concern:

Be it known that I, OSCAR WOODWARD, citizen of the United States, and resident of Montclair, in the county of Essex 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 is a face view 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 the 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 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 to which the ribbon 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. In order to overcome this difficulty, a bridge is provided to cover the opening 21, and to improve the construction, mounting and arrangement of this bridge is the principal object of the present invention.

The improved bridge 33 consists of a wire having its two ends 34 bent off into line with one another to constitute pivots and the intermediate part 35 of the wire bent or folded into a suitable shape such as the zig-zag or M-shape shown, the several folds of the wire together giving a sufficient approximation to a flat and plate-like surface. This intermediate part of the wire after being bent or folded as shown in Fig. 4, is preferably flattened and bent into a curve or arch-shape as shown in Fig. 3. The pivotal ends 34 are preferably not flattened. Each of the flanges 23, 24 has two holes 36 formed therein, said holes being situated in the same circumference of a circle as the openings for the ears 25 and the round ends 34 of the bridge are pivoted in one pair of these holes. The core 22 is formed with a depressed part or lip 37 at the side of the opening 21 at which the free end of the bridge comes, and said free end of the bridge normally lies in this depressed part so as to make the bridge substantially flush with the core and to avoid any abrupt step at this point. Also, the pivot holes 36 are in line with the edge of the core for the same reason.

It will be noted that the spools are "rights" and "lefts". The right and left hand spools are assembled out of the same parts, however. To this end the openings for the ears 25 are arranged symmetrically with reference to the opening 21 so that the core can be either placed in position as shown in the drawings to constitute a right hand spool, or the core can be turned over to make a left hand spool, in which case the depressed lip 37 and the hooks 30 would come at the right hand side of the opening 21 in Fig. 3 instead of at the left hand side as shown. In case the core is thus reversed to make a left hand spool the bridge would be pivoted in the left hand pair of holes 36 instead of in the right hand pair as shown. It will be noted that this bridge is of very cheap construction; that it is pivoted with a round bearing in a round hole and therefore is not apt to bind in use; and that the bridge can be readily removed from the spool and inserted in an assembled spool by springing the two ends of the wire together so as to get them in between the two flanges of the spool and allowing the wire to expand to bring the pivotal ends 34 into the holes 36.

When this bridge is in place on the spool the coil of ribbon 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 by its own weight and leaves the weight 20 free to drop to its reversing position. When the ribbon is rewound on the spool the bridge drops by gravity into its closed position where it is held by the coils of ribbon.

My invention is in the nature of an improvement upon an invention previously made by Clio B. Yaw and set forth in his application for patent filed May 5th, 1910, Serial No. 559,570.

Various changes may be made without departing from the spirit and scope of the invention.

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

1. A bridge for a ribbon spool, consisting of a wire with its ends in line with each other to form round pivots and its intermediate part bent into zig-zag form and flattened.

2. A bridge for a ribbon spool, consisting of a wire bent into M-shape and with its ends bent off into line with each other to form pivots.

3. A bridge for a ribbon spool, consisting of a wire bent into M-shape and with its ends bent off into line with each other to form pivots and the M-shaped part bent into a curve or arch.

4. In a ribbon spool, the combination of two flanges, a core having an opening therein, and a bridge for said opening pivoted to said flanges, each flange having two pivot-holes, one at each side of said opening so that the bridge can be pivoted in one pair of holes for a left hand spool and in the other pair of holes for a right hand spool.

5. In a ribbon spool, the combination of two flanges, a core having an opening therein, and a bridge for said opening, said bridge made of wire bent into suitable shape and reversible so that it can be hinged at one side of said opening for a right-hand spool or at the other side of said opening for a left-hand spool.

6. In a ribbon spool, the combination of two flanges, a core having an opening therein, and a reversible bridge for said opening, means being provided for pivoting said bridge at either side of the opening for right and left hand spools.

7. In a ribbon spool, the combination of two flanges, a core having an opening therein, and a wire bridge pivoted in said flanges and arranged to span said opening, said core having a depression at one side of said opening for the reception of the free end of said bridge.

8. In a ribbon spool, the combination of

two flanges, a core having an opening therein, and a wire bridge pivoted in said flanges and arranged to span said opening, said core having a depression at one side of said opening for the reception of the free end of said bridge and said core and bridge being reversible in the process of manufacture so that right and left hand spools can be made up from the same parts.

9. In a ribbon spool, the combination of two flanges, each having a pivot hole therein, a core having an opening therein, and a wire bridge for said opening having the two ends of the wire bent outward to constitute pivots that pass through said holes, so that the wire can be sprung to bring its two ends closer together to insert the bridge in or remove it from the assembled spool.

10. In a ribbon spool, the combination of two flanges each having a pivot hole therein, a core having an opening therein, and a bridge for said opening, said bridge having parts projecting into said holes whereby said bridge is pivoted to said flanges, said core having a depressed part at one side of said opening to receive the free end of said bridge, and said holes being in line with

said core so that the bridge is substantially flush with the core.

11. In a ribbon spool, the combination of two flanges each having a pivot hole therein, a core having an opening therein, and a bridge for said opening, said bridge having integral parts projecting into said holes whereby said bridge is pivoted to said flanges.

12. In a ribbon spool, the combination of two flanges each having a pivot hole therein, a core having an opening therein, and a bridge for said opening, said bridge being of zig-zag form and having integral parts projecting into said opening whereby the bridge can be removed from the spool by springing the pivotal ends thereof closer together.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York this 4th day of May A. D. 1910.

OSCAR WOODWARD.

Witnesses:

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