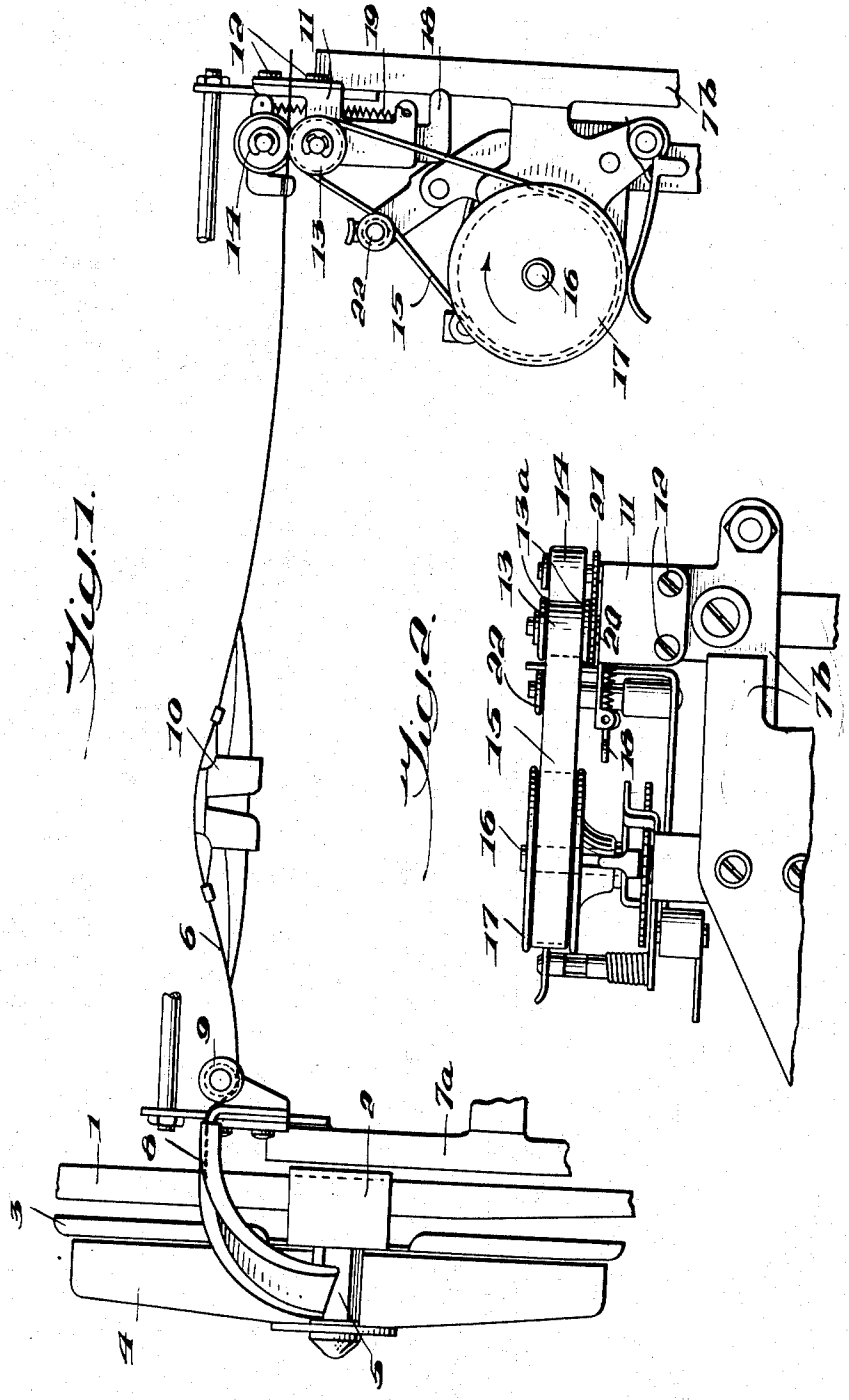
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TYPEWRITER CARBON PAPER RIBBON FEEDING DEVICE

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# TYPEWRITER CARBON PAPER RIBBON FEEDING DEVICE

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5 Claims. (Cl. 197—151)

This invention relates generally to a ribbon feeding device for typewriters, and more particularly to a feeding device for carbon paper ribbons which is actuated by the typewriter ribbon reversing mechanism. The invention is particularly characterized in that the carbon paper ribbon feeding device utilizes an endless rubber belt driven at one end by a pulley mounted on the shaft of the standard take-up reel and connected at the other end to a pair of gear-connected feed rolls disposed on a bracket of the typewriter frame.

In order to improve the appearance of the typewritten matter it has been proposed previously in office typewriters to use a ribbon of carbon paper rather than the standard textile typewriter ribbon. This carbon paper ribbon is designed for "single-use" application as distinguished from the repetitious use contemplated for textile ribbons. It is desired that devices for feeding the carbon ribbon be adapted for mounting on available typewriter models so that the conventional textile ribbon or the carbon paper ribbon can optionally be used in typing. The supply roll for the carbon paper ribbon is fastened laterally to the right or left side of the typewriter casing, and the standard carbon paper ribbon, led through the ribbon fork over a suitable guide mechanism, is fed by an actuating device disposed on the other side of the carriage casing, which actuating device cooperates with the ribbon reversing mechanism. The used carbon paper ribbon leaving the typewriter can either be cut off or re-spooled by means of a suitable supplemental mechanism.

The present invention provides an especially simple carbon paper ribbon device of this type, mountable on any typewriter model, wherein the carbon paper ribbon is led almost parallel to the platen without sharp deflections so that the danger of tearing due to excessive friction is eliminated. A further advantage of the mechanism of this invention consists in that the known ribbon reversing lever, governing the transport direction of the ribbon reversing device, is held by the rubber belt in such a way that the actuation of the carbon ribbon is always effected in a given direction.

Another advantage of the invention resides in the use of a pair of gear-connected feeding rollers driven by a rubber belt under control of the standard ribbon reversing lever, said rollers being urged together by resilient means to exert at desired pressure on the carbon paper ribbon. One of the rollers has flanges between which the other roller is fitted so that the carbon paper ribbon cannot move laterally from its position between the rollers.

The invention will be described in further detail and with reference to the accompanying drawing, in which:

Fig. 1 is a top plan view on the carbon paper ribbon feeding device with supply magazine; and

Fig. 2 is a side view of the actuating mechanism.

In the drawing:

On the lateral cover 1 of the typewriter, which per se is not illustrated in detail because it is conventional, there is removably fastened a standard carbon paper ribbon



reel 3 by means of elastic clamps 2, only one of which is visible in Fig. 1. The cover 4, attachable to the reel, is provided on its upper side with a slit 5 forming an outlet for the carbon paper ribbon 6. At the left sidewall 7a of the frame there is disposed a guide channel 8 with a roller 9 for guiding the carbon paper ribbon 6 into the vertical position. The carbon paper ribbon 6 is additionally guided through the ribbon fork 10 in the same way as in normal typewriter ribbon feeding arrangements.

On the other side of the typewriter there is disposed the inventive device for the feeding of the carbon paper ribbon 6. On the right side wall 7b of the frame there is rigidly fastened, as by means of screws 12, a bracket 11 upon which is mounted a pair of rollers 13, 14. Roller 13 is actuated by an endless rubber belt 15 driven by pulley 17 attached to the shaft 16 of the standard take-up reel. Roller 13 is provided at either side with flanges 13a between which rides the cooperating roller 14. The roller 14 is rotatably mounted on a slider member 18 which is slidably fulcrumed on the lower side of bracket 11. Between the strap 11 and the slider member 18, there is disposed a spring 19, which draws the slider member with the roller 14 against the upper surface of the carbon paper ribbon riding on the rubber belt 15 and insures a desired contact pressure. Rollers 13 and 14 are geared together by gears 20 and 21.

As known, the reversing levers 22 in the ribbon reversing mechanism serve to produce a change in the transport direction of the ribbon by the stroke applied to said lever 22 when the ribbon leaves the reel. According to the present invention, the rubber belt 15 is led along said lever 22 in such a way that the drive between pulley 17 and roller 13 is effected upon actuation of reversing lever 22, whereby the transport of the carbon paper ribbon proceeds smoothly in one direction.

The operation of the device is as follows:

The pulley 17, attached to the shaft of the standard take-up reel, rotates in a clockwise direction as shown by the arrow when the typewriter is in operation. Roller 13 will then be driven in a clockwise direction by rubber belt 15. Roller 14, which is elastically applied toward the roller 13, will rotate in a counter-clockwise direction due to the connection of gears 20, 21. The carbon paper ribbon 6 will be fed to the right by rollers 13 and 14, and will be withdrawn from the reel 3 through the ribbon fork 10 and the guide rail 8.

The mechanism of the instant invention permits an exchange of both motion directions so that the carbon paper ribbon can also move in a reverse direction. Only an exchange of the driving members and the reels would be required in such a case.

I claim:

1. In a typewriter having a ribbon fork, a take-up reel mechanism, and a ribbon reversing mechanism, a device for feeding carbon paper typewriter ribbon through the ribbon fork comprising a pair of feed rollers for driving the ribbon, gear means for connecting the feed rollers to each other, and an elastic belt driven by the take-up reel mechanism upon actuation of the ribbon reversing mechanism for driving one of the feed rollers.

2. A carbon paper typewriter ribbon feeding device as defined in claim 1 wherein one of said feed rollers has flanges on either side thereof and wherein the other feed roller is mounted at least partially within said flanges.

3. A carbon paper ribbon feeding device as defined in claim 2 wherein the ribbon reversing mechanism has a reversing lever and said elastic belt retains said lever in a position to maintain continuous feeding of the ribbon from the carbon paper ribbon reel through the ribbon fork.

4. A carbon paper ribbon feeding device as defined in claim 3 and further including spring means urging said feed rollers together.

5. A carbon paper ribbon feeding device as defined in claim 4 wherein said elastic belt is positioned around a portion of the periphery of the driven feed roller and the carbon paper ribbon is fed between the elastic belt on said driven feed roller and the other feed roller.



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