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 RIBBON SPOOL FOR TYPE WRITING MACHINES.
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983,180.

Patented Jan. 31, 1911.

Fig. 1.

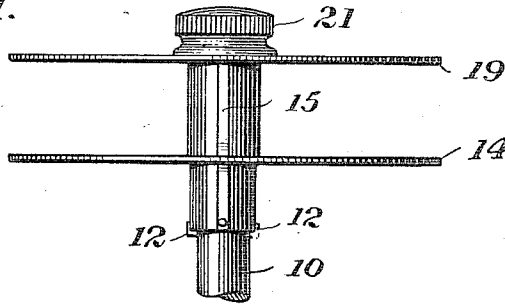


Fig. 2.

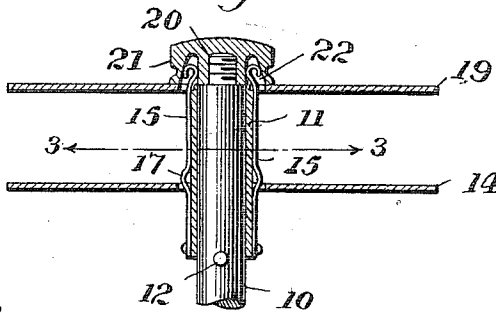


Fig. 3.

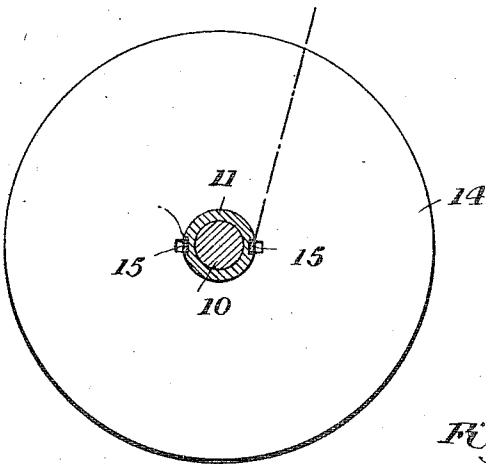


Fig. 4.

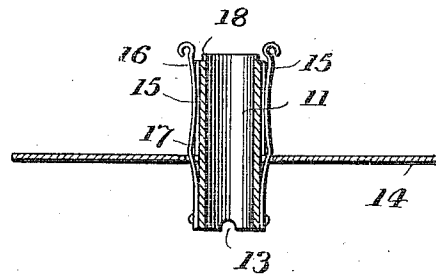
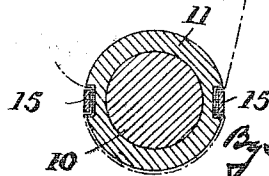


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK J. TANNER AND IWAN E. JONES, OF SCRANTON, PENNSYLVANIA, ASSIGNORS
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RIBBON-SPOOL FOR TYPE-WRITING MACHINES.

983,180.

Specification of Letters Patent.

Patented Jan. 31, 1911.

Application filed October 4, 1909. Serial No. 520,764.

To all whom it may concern:

Be it known that we, FRANK J. TANNER and IWAN E. JONES, citizens of the United States, and residents of Scranton, Lackawanna county, State of Pennsylvania, have invented certain new and useful Improvements in Ribbon-Spools for Type-Writing Machines, of which the following is a specification.

10 This invention relates to ribbon spools for typewriting machines and it comprises certain improvements which facilitate the removal and replacement of the ribbons in the spools.

15 The improvements will be described in detail in the following specification, reference being had to the accompanying drawing, in which,

Figure 1 is a side elevation of a spool embodying our invention; Fig. 2 is a vertical section through the same; Fig. 3 is a horizontal section on the line 3—3 of Fig. 2; Fig. 4 is a section similar to Fig. 2, parts being removed and the remaining parts being in condition to receive a new ribbon; Fig. 5 is an enlargement of a portion of Fig. 3.

Referring to the drawing, 10 indicates a ribbon spool shaft, which it will be understood, is driven by suitable mechanism for winding the ribbon and which may be released from its driving mechanism to permit the ribbon to unwind, in the usual manner. The core or hub 11 of the spool is cylindrical and removably fitted to the shaft. Means are provided for driving the spool from the shaft, the particular devices shown being one or more pins or studs 12 projecting from the shaft and coöperating with corresponding notches 13 in the hub 11. The lower spool head or flange 14 is preferably fixed to the hub 11, which hub is preferably smaller below the flange 14 than above it, thus providing a shoulder against which the flange 15 may fit.

Two ribbon clamping springs 15 are fastened to the hub 11 at their lower ends, below the flange 14, and their upper portions lie in longitudinal slots in the outer portions of the hub. These springs are utilized to clamp the ribbon to the hub and to secure proper clamping action. It is preferable that they be curved outwardly at the upper and lower flanges of the spool, as shown at

16 and 17, when not under compression. 55 This curvature causes the middle portions of the springs to bind tightly on the ribbon when the springs are locked in operative position, in a manner to be presently explained.

The core 11 is preferably provided with 60 a shoulder 18 on its upper end to receive the upper head or flange 19 of the spool and the upper flange has a circular opening adapted to fit the reduced portion of the core above the shoulder and also two radial notches 65 through which the upper ends of the springs 15 pass. The upper end of the shaft 10, above the flange 19, is reduced and threaded, as at 20, and a cap 21 is adapted to screw on to the threaded extension of the shaft 70 and clamp the upper spool head or flange tightly on the shaft. The thumb nut 21 is provided with an annular groove 22 in its lower face, the outer wall of which is inclined outwardly and downwardly and 75 serves as a cam to draw the springs 15 radially inward when the cap or nut 21 is screwed on the shaft.

The operation of removing a ribbon from the spool and replacing it is as follows: It 80 will be understood that the innermost coil of the ribbon passes under the springs 15 and is pressed by the springs into the grooves in the core, as shown in Figs. 3 and 5, thus securely connecting the ribbon to the 85 core. By unscrewing the cap 21, the tension on the springs is released and the upper spool flange or head is also released so that it may be removed. On removing the cap and the upper flange the spool will be in 90 the condition shown in Fig. 4, and the ribbon may be readily removed and a new one inserted, the inner coil of the new ribbon being passed under the springs 15. The upper flange and the cap are then replaced 95 and the screwing down of the cap will cause the flange to be locked on the spool and the springs to press the inner coil of the ribbon into the grooves in the hubs, which completes the operation of attaching the ribbon 100 to the spool. The ribbon may be then wound upon the spool in the usual manner. For convenience in removing and replacing the ribbon the spool or core carrying the lower flange and springs may be removed if de- 105 sired.

It will be noted that the thumb nut 21 holds the spool hub in engagement with the

pin or projection 12 on the shaft, in addition to its other functions above described.

Having described our invention what we claim and desire to secure by Letters-Patent is,

1. In a typewriting machine, the combination with a ribbon spool shaft, of a spool hub removably seated on the shaft, means for turning the hub with the shaft, a device for clamping the ribbon to the hub, means mounted on the shaft for operating said device to clamp and unclamp the ribbon, and suitable flanges mounted on said hub.

2. In a typewriting machine, the combination with a ribbon spool shaft, of an externally grooved hub adapted to seat on said shaft, means for turning the hub with the shaft, a spring attached to the hub and adapted to seat in the groove to clamp a ribbon therein, a lower spool flange permanently secured to the hub, and an upper flange removably secured to the hub.

3. In a typewriting machine, the combination with a ribbon spool shaft, of an externally grooved hub adapted to seat on said shaft, means for turning the hub with the shaft, a spring attached to the hub and adapted to seat in the groove to clamp a ribbon therein, a lower spool flange permanently secured to the hub, an upper flange removably secured to the hub, and a common means for securing the upper flange to the hub and operating the clamping spring.

4. In a typewriting machine, the combination with a ribbon spool shaft, of an externally grooved hub adapted to seat on said shaft, means for turning the hub with the shaft, a spring attached to the hub and adapted to seat in the groove to clamp a ribbon therein, a lower spool flange perma-

nently secured to the hub, an upper flange removably secured to the hub, and a nut removably secured to the shaft, said nut being adapted to clamp the upper flange on the spool and having a cam surface adapted to press the clamping spring into its groove.

5. In a typewriting machine, the combination with a ribbon spool shaft, of an externally grooved hub adapted to seat on said shaft, means for turning the hub with the shaft, a spring attached to the hub and adapted to seat in the groove to clamp a ribbon therein, a lower spool flange permanently secured to the hub, an upper flange removably secured to the hub, said shaft having a threaded portion extending above the hub, and a nut fitting said threaded extension, the said nut being adapted to clamp the upper flange upon the hub and having an annular groove in its under surface adapted to move the clamping spring radially inward against the hub.

6. In a typewriting machine, the combination with a ribbon spool shaft, of a spool having a cylindrical hub adapted to fit on said shaft, and having a notch formed in one end, a shoulder or projection on the shaft which engages the notch in the end of the spool hub, a reduced threaded portion on the end of the shaft, and a nut fitting said threaded portion and adapted to hold the spool in engagement with said shoulder or projection.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK J. TANNER.
IWAN E. JONES.

Witnesses:

FRANK LAMBADER,
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