WALTER LYTTON, OF CHICAGO, ILLINOIS.

RIBBON-WINDING MACHINE.

1,114,779.


To all whom it may concern:

Be it known that I, WALTER LYTTON, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Ribbon-Winding Machines, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to ribbon winding machines and contemplates a device adapted to supply typewriter ribbons upon the spool of typewriting machines in lengths suitable for use upon the particular machines to which the spools respectively pertain.

The object of the invention is to provide a machine which may be conveniently used in connection with the sale of typewriter ribbon material in lengths suitable for the production of a large number of ribbon lengths, the machine to be employed by the user as a container for the typewriter ribbon material and as a means for producing typewriter ribbons therefrom in suitable lengths wound upon the typewriter spool.

In the accompanying drawings Figure 1 is a side elevation of a machine embodying the features of improvement provided by the invention, some of the parts being broken away to show the internal construction; Fig. 2 is a plan view of the same with some of the parts broken away, and Figs. 3 and 4 are detail sectional views taken on the lines 3–3 and 4–4, respectively, of Fig. 2.

In carrying out the invention a drum 10 is preferably provided to serve as a container for a roll, as X, of ribbon material. This drum is desirably supported in an upright position. For this purpose a standard 11, having a base portion 12, and an upright portion 13 is conveniently provided. The drum is secured in position at one side of the upright portion 13 of the standard, as by being mounted upon a stationary mandrel 13, which extends through the standard and through the drum. The opposite ends of this mandrel preferably project beyond the standard and drum respectively.

The roll X of ribbon material is applied to the mandrel 14 within the drum 10 and the ribbon material is drawn from the roll through a slotted opening 15 in the wall of the drum. A guide roll 16 is desirably mounted adjacent the opening 15. As shown, this guide roll extends between and is rotatably mounted in a pair of brackets 17 which are fixed upon the outside of the drum. Preferably means are provided for arresting the turning of the roll X upon the mandrel 14. As shown, a pair of plates 18, 19 are rotatably mounted upon the mandrel, one at each side of the roll X. A bushing 20 serves to separate one of these plates from the adjacent side wall of the drum and a spring 21 reacts against the other plate. A pair of threaded ends 22, 23 running on the mandrel 14, and one serving as a lock nut for preventing the displacement of the other, provide an adjustable abutment for the spring 31.

When it is desired to produce a typewriter ribbon, the required length of material from the roll X is wound directly upon the spool, as Y, of the typewriter in which the ribbon is to be used. For this purpose a rotatable mandrel 24 is provided for receiving the spool Y and means are provided for turning the mandrel. A bracket arm 25 formed integrally with the upright portion 13 of the standard 11, conveniently serves for supporting the rotatable mandrel 24. As shown, this mandrel extends through and is journaled in the outer end of the bracket arm. A collar 26, and an eccentric 27 fixed upon the mandrel 24 at opposite sides of the brackets 25, serve for preventing axial displacement of the mandrel. In applying the spool Y to the mandrel 24, apertured circular disks, as 28 and 29, are threaded over the mandrel, one at each side of the spool, and a thumb nut 30 is run upon the mandrel for clamping the disks and spool against the collar 26. The size of the disks 28, 29, or one of them, may serve to indicate the size of the spool Y when the desired length of ribbon is wound thereon. For this purpose disks of different size may be employed in connection with the production of ribbons for different typewriters. In each case the disk will be marked with the name of the typewriter having ribbon spools which, when filled, are of uniform diameter with the disk.

A hand crank, as 31, is desirably employed for turning the mandrel 24. As shown, the hub, as 32, is rotatably mounted upon that end of the mandrel 14 which projects beyond the upstanding portion 13 of the standard 11 from the drum 10 and this hub portion of the crank has a beveled gear 33 formed integral with it. A second beveled gear 34 is mounted upon the mandrel 24. This last mentioned beveled gear is conveniently lo-
cated in the same plane with the beveled gear 33, as by being fixed upon that end of the mandrel 24 which is remote from the spool Y. A shaft 35, extends between the two beveled gears 33 and 34. Beveled pinions 36 and 37 are fixed upon the opposite ends of this shaft for meshing with the beveled gears 33 and 34, respectively. Journal bearings 38 and 39 secured against one side of the bracket arm 25, serve for supporting the shaft 35.

Mechanism for indicating that the mandrel 24 has been given the required number of turns to fill the spool Y is preferably provided. As shown, a ratchet wheel 40 is loosely mounted upon the mandrel 24 between the eccentric 37 and the beveled gear 34. This ratchet wheel desirably has a notched disk 41 formed rigidly with it. The disk and ratchet wheel are held in position upon the mandrel 24 by a collar 42 which is fixed upon the mandrel in front of the disk.

The teeth of the ratchet wheel 40 are preferably made equal in number to the number of turns of the mandrel 24 required to fill the spool Y with the length of ribbon required for use in the particular typewriter machine to which the spool pertains. Provision is accordingly made for turning the ratchet wheel 40 through an angular distance represented by the spacing of its teeth at each revolution of the mandrel.

As shown, a pawl arm 43, Fig. 4 is pivotally mounted on the bracket arm 25 adjacent the ratchet wheel 40. One end of this arm is bifurcated as indicated at 44, Fig. 4 to straddle the eccentric 37. The turning of the mandrel 24 accordingly serves to oscillate the pawl arm 43. That end of the pawl arm 43 which is remote from the eccentric 27 carries a spring pawl 45 which plays over the rim of the ratchet wheel 40.

The disk 41 preferably has a single notch 46. For indicating that the spool Y has been filled with ribbon a spring advanced stop arm 47 normally rides against the rim of the disk 41 and enters the notch 46 to arrest the operation of the machine when the disk has made a complete revolution. The stop arm 47 is conveniently supported by being slidingly mounted in a bearing block 48 which is secured against the side of the bracket arm 25 between the journal bearings 38 and 39. A spring 49, which is coiled about the stop arm 47 and acts between the bearing block 48 and a collar 50 mounted on the arm in front of the block, serves to advance the arm upon the rim of the disk 41 and to cause it to enter the notch 46 when the disk has made a complete revolution. The stop arm 47 preferably also extends through a vertically slotted opening 51 in the stem of the journal bearing 39.

This arrangement provides that when the forward end of the arm enters the notch 46, the momentum of the parts will cause the arm to be downwardly deflected before the machine is brought to rest. If now the forward end of the arm be withdrawn from engagement with the notch 46 by sliding the arm against the effort of the spring 49, the elasticity of the arm will cause its forward end to be raised out of alignment with the notch 46. The machine may thereupon be further operated even though the stop arm may have been released. Preferably a spring plunger, as 52, is added for the purpose of supplementing the elasticity of the arm to raise its forward end out of alignment with the notch 46. This spring plunger conveniently slides in a vertically extended slotted opening formed in that part of the journal bearing 39 which is immediately below the stop arm 47.

In the operation of the machine the roll X, of ribbon material, is caused to rotate upon the mandrel 14 and between the plates 18 and 19 by the withdrawal of ribbon material from the roll. The frictional resistance offered to the turning of the roll insures that the ribbon material will be tightly wound upon the spool Y. This frictional resistance may be adjusted as required by adjusting the tension of the spring 21 against the plate 19. The invention permits the user to be supplied with ribbon material in great lengths and to wind a ribbons length section of such material directly onto the spool of his own typewriter. Obviously, if typewriter spools of different size are to be applied to the mandrel 24, as also if a greater or less length of ribbon is to be wound upon the spool, the spacing of the teeth of the ratchet wheel 40, will be required to be changed. Ordinarily the user will be supplied with a plurality of ratchet wheels 40, having their ratchet teeth differently spaced, each wheel being so spaced as to be turned through one complete revolution when the mandrel 24 has been operated to cause the filling of the spool of some one of the several standard makes of typewriters.

I claim as my invention—

1. In combination, a drum having an open side and a slotted opening in its rim, a mandrel extending axially through the drum and adapted to rotatably receive a roll of typewriter ribbon material applied thereto through the open side of the drum and housed by the drum when so applied, means acting to resist the turning of the roll within the drum, a rotatable mandrel constructed to removably receive a typewriter spool, means for turning the said rotatable mandrel to wind the typewriter ribbon material on the spool from the said roll, the ribbon material passing through.
the said slotted opening in the rim of the drum, and means operated by the said rotating mandrel to indicate when the said rotatable mandrel has been so turned as to wind a predetermined length of ribbon on the spool.

2. In combination, a source of supply of typewriter ribbon material, a rotatable mandrel constructed to removably receive a typewriter spool, means for turning the mandrel to fill the spool with material received from the said source of supply, a notched disk turned by the mandrel, and a spring advanced plunger normally bearing upon the disk in the path of its notch, said plunger being adapted to elastically yield laterally in the direction of travel of that part of the disk with which it is engaged and means limiting the lateral yielding movement of the plunger in the said direction.

WALTER LYTON.

Witnesses:
CHARLES B. GILSON,
E. M. KLATCHER.

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