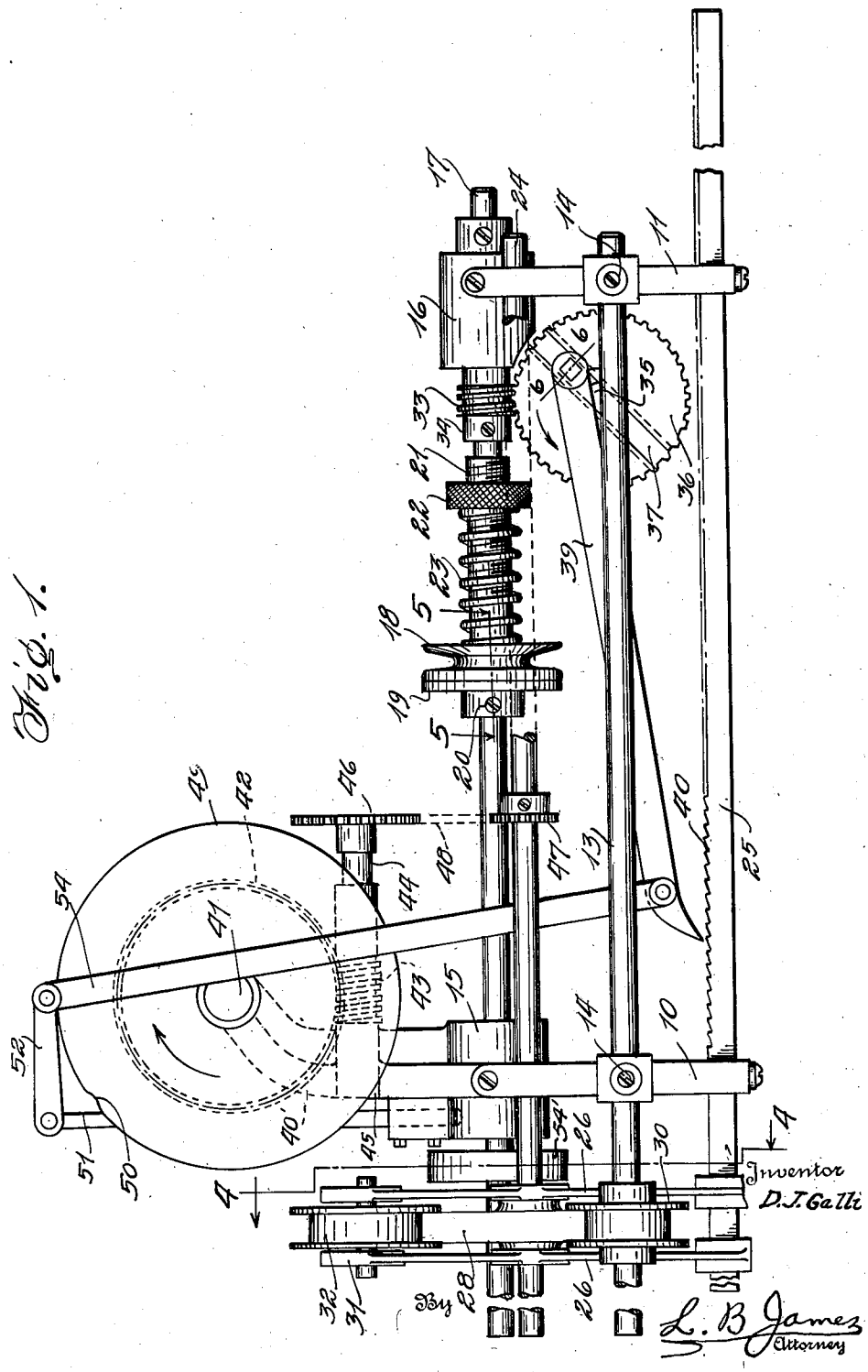
Dec. 9, 1941. D. J. GALLI 2,265,898

RIBBON WINDER

Filed Jan. 16, 1941 3 Sheets-Sheet 1



Dec. 9, 1941. D. J. GALLI 2,265,898

RIBBON WINDER

Filed Jan. 16, 1941 3 Sheets-Sheet 2

Fig. 2.

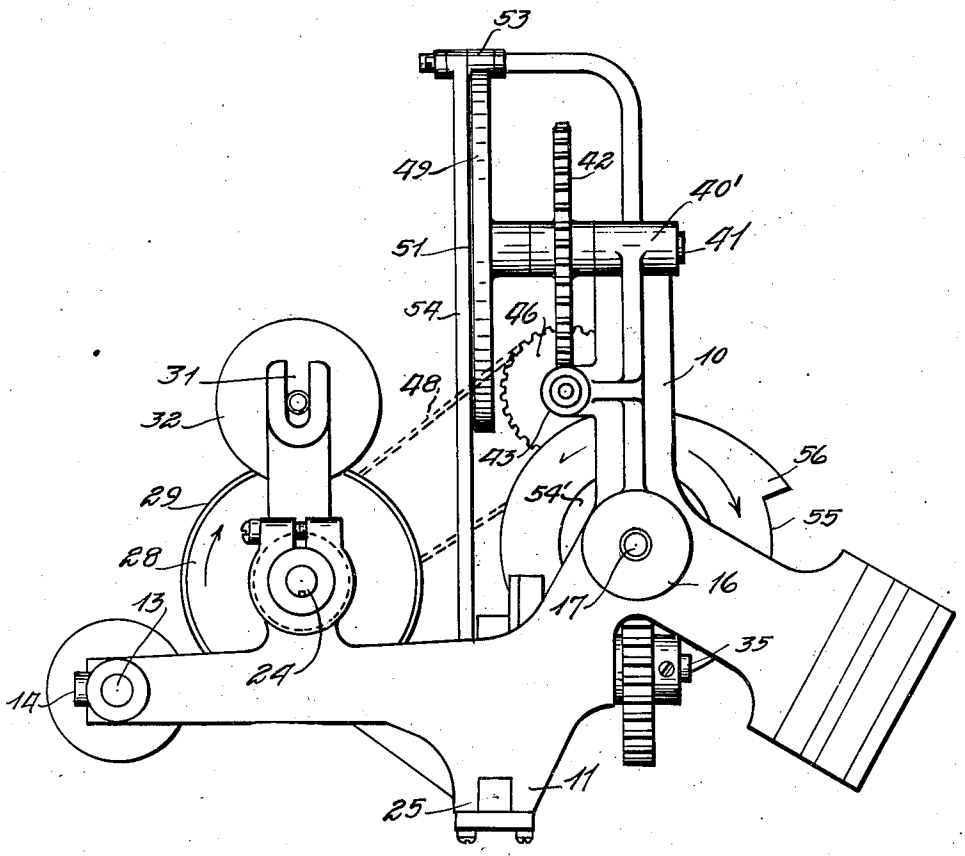
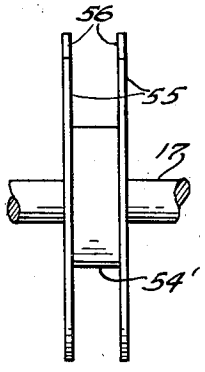


Fig. 7.



Inventor
D. J. Galli

By L. B. James
Attorney

Dec. 9, 1941. D. J. GALLI 2,265,898

RIBBON WINDER

Filed Jan. 16, 1941 3 Sheets-Sheet 3

Fig. 3.

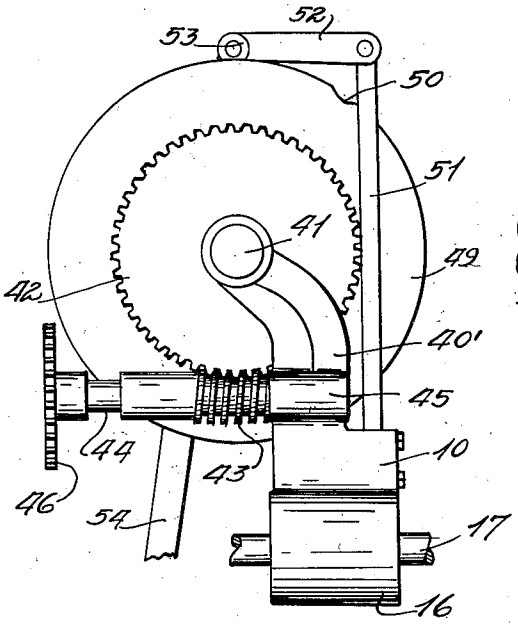


Fig. 5.

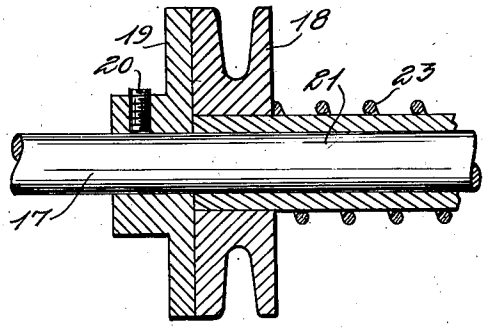


Fig. 4.

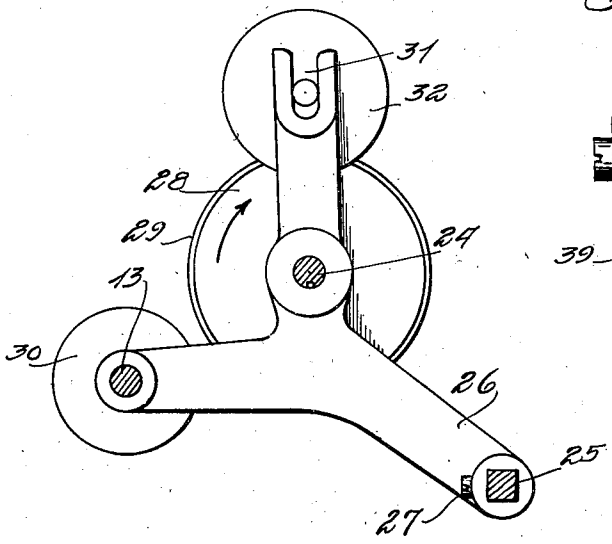
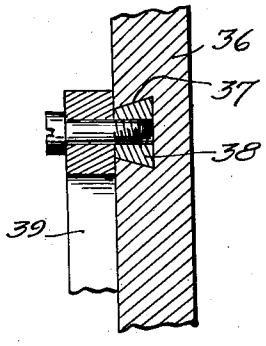


Fig. 6



Inventor

D. J. Galli

By L. B. James

Attorney

Patented Dec. 9, 1941

2,265,898

UNITED STATES PATENT OFFICE

2,265,898

RIBBON WINDER

Domenic J. Galli, Paterson, N. J.

Application January 16, 1941, Serial No. 374,745

8 Claims. (Cl. 242—55)

This invention relates to winding and reeling and has special reference to a ribbon winding machine.

It is common at present to wind a ribbon issuing from a calendaring machine on a single large wooden roller in a continuous roll which contains several times the length of ribbon to be dispensed as a unit. Thus, it may be desired to wind ribbons on spools each containing say 10 yards but the ribbon from the calendar will first be wound in a roll containing say 100 yards. This roll of 100 yards is next received from the first winder and taken to what is known as a blocking machine whereat the ribbon is wound on rolls or spools each containing ten yards. Such process requires considerable handling and entails expense.

It is the principal object of the present invention to provide a novel machine wherein the ribbon from the calendar is wound in measured lengths ready for dispensing.

A second important object of the invention is to provide a machine of this class wherein a number of winding rolls are arranged side by side and the ribbon being wound is automatically shifted from one to the other.

A third important object of the invention is to provide a machine for this purpose adapted to receive various widths of ribbon and provided with means whereby the shifting for different widths may be varied.

With the above and other objects in view, as will be presently apparent, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings like characters of reference indicate like parts in the several views, and:

Figure 1 is a front elevation of a machine embodying this invention.

Figure 2 is an end view thereof.

Figure 3 is a detail showing a portion of the machine in rear elevation.

Figure 4 is a detail section on the line 4—4 of Figure 1.

Figure 5 is a detail section on the line 5—5 of Figure 1.

Figure 6 is a detail section on the line 6—6 of Figure 1.

Figure 7 is a fragmentary elevation showing one of the winding spools and certain disks used herein.

In the present embodiment of the invention there are provided brackets 10 and 11 by means of which the machine may be mounted on any suitable support as, for instance, a portion of the calendar or a separate stand, the support not being here shown. A shaft 13 extends through these brackets and is fixed therein by means of set screws 14 or the like. This shaft will preferably be termed hereafter a tie shaft since one of its functions is to hold the brackets 10 and 11 in properly spaced relation. The brackets 10 and 11 are provided with journal bosses 15 and 16 wherein is journalled a main or drive shaft 17. Revolvably mounted on the shaft 17 is a drive pulley 18 grooved to receive a suitable driving belt. One side of this pulley forms a friction disk and bears against a friction disk 19 mounted on the shaft 17 and held immovably thereon by a set screw 20. The shaft 17 has an enlarged and threaded sleeve 21 whereon is screwed a thumb nut 22. Surrounding the shaft 17 between the thumb nut and the pulley 18 is a coiled compression spring 23 which urges the pulley into frictional engagement with the disk 19, the nut 22 serving to adjust the tension of the spring 23 and thereby regulate the friction drive.

Also journalled in the brackets 10 and 11 is a measuring wheel shaft 24 the purpose of which will be presently explained.

A ratchet bar 25 of rectangular cross-section is slidably mounted in the brackets 10 and 11. Fixed on the bar 25 is a pair of frames 26 which are adjustably secured to the bar as by set screws 27 so that the frames may be set at suitable distances to correspond to the width of ribbon being wound. The frames 26 are slidably mounted on the shafts 13 and 24, said shaft 24 being journalled in the frames. Splined on the shaft 24 between the frames 26 is a standard measuring wheel 28 having a rubber or other non-slipping peripheral portion 29. Rotatably mounted on the shaft 13 between the frames 26 is a flanged guide wheel 30. The upper ends of the frames 26 are forked as at 31 and between these forked ends is a holding down wheel 32 which is permitted by the forked construction to rest solidly on the ribbon passing over the measuring roll thus preventing slipping of the ribbon. Obviously, the rolls 28, 30 and 32 are each of proper width for the ribbon being spooled and may be removed to have others substituted upon change of the ribbon width. On the shaft 17 is fixed a worm 33 which abuts against one side of the bearing 16 while a collar 34 is also fixed on this shaft on the opposite side of the bearing whereby lon-

gitudinal movement of the shaft 17 is prevented. On the bracket 11 is a lateral stub shaft 35 whereon is rotatably mounted a worm wheel 36 meshing with the worm 33 so that rotation of the measuring shaft 24 effects rotation of the worm wheel. Extending diametrically across one face of this worm wheel is an undercut slot 37 wherein is slidably mounted a block 38 adapted to be secured in any desired position in the slot 37. On the block 38 is pivoted a pawl arm 39 adapted when lowered to engage the ratchet teeth 40 of the bar 25. The adjustment of the block 38 in the slot 37 varies the stroke of the ratchet.

The bracket 10 carries an arm 40' wherein is journalled a shaft 41 having fixed thereon a worm wheel 42 which meshes with a worm 43 mounted on a shaft 44 journalled in a bearing 45 formed on the bracket 10. On the shafts 44 and 24 are sprockets 46 and 47 connected by a chain 48 so that, when the shaft 24 is rotated, the shaft 44 will likewise rotate. Fixed on the shaft 41 is a cam disk 49 having a notch 50 at one point in its periphery. An arm 51 is fixed to the bracket 10 and extends upward therefrom. Pivoted at one end to the upper end of the arm 51 is a rock arm 52 which carries at its free end a roller 53 riding on the periphery of the wheel 49 so as to drop into the notch 50 at the proper time. A link 54 connects the free end of the arm 52 with the pawl arm 39 and holds the pawl arm out of engagement with the ratchet teeth until the roller 53 drops into the notch 50.

At 54' is shown one of the winding spools, ten to twenty of which are carried on shaft 17. Also a separating and ribbon-transferring disk 55 having a hooking shoulder 56 is used between adjacent spools.

In operation a ribbon from the calendar is led as shown by the broken line R beneath the wheel 30, up and over measuring wheel 23 and onto the first of spools 54. At this time the bar 25 is positioned to the right in Figure 1. The machine is now started which winds the ribbon on the spool thus actuating the measuring shaft which in turn rotates the cam wheel 49 and the wheel 36. When the rotation of the wheel 49 is completed the pawl, then in its rearmost position, will drop to engage the ratchet bar and push the same to the left in Figure 1 to bring the measuring wheel in front of the next spool, the ribbon being transferred thereto by action of the disk 55.

The measuring shaft is preferably connected with a suitable form of registering or counting device but it is not deemed necessary here to show such device as the same forms no part of the present invention.

What is claimed is:

1. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, means to produce step-by-step movement of the sliding frame to position the sliding frame in front of the spools successively, and means to actuate said drive shaft.

2. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, means to produce step-by-step movement of the sliding frame to position the sliding frame in front of the spools successively, a friction drive for said drive shaft, and means to adjust the friction drive for varying frictional action.

3. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, a ratchet bar slidable through said brackets and carrying said sliding frame, a wheel driven from said drive shaft, a pawl member eccentrically pivoted on said wheel and engageable with said ratchet bar, means for controlling the engagement of the pawl with the ratchet bar, and means to actuate the drive shaft.

4. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, a ratchet bar slidable through said brackets and carrying said sliding frame, a wheel driven from said drive shaft, a pawl member eccentrically pivoted on said wheel and engageable with said ratchet bar, means for controlling the engagement of the pawl with the ratchet bar, a friction drive for said drive shaft, and means to adjust the friction drive for varying frictional action.

5. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, a measuring wheel carried by said sliding frame, means to produce step-by-step movement of the sliding frame to position the sliding frame in front of the spools successively, and means to actuate said drive shaft.

6. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, a measuring wheel carried by said sliding frame, means to produce step-by-step movement of the sliding frame to position the sliding frame in front of the spools successively, a friction drive for said drive shaft, and means to adjust the friction drive for varying frictional action.

7. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, a ratchet bar slidable through said brackets and carrying said sliding frame, a wheel driven from said drive shaft, a pawl member eccentrically pivoted on said wheel and engageable with said ratchet bar, a measuring wheel mounted in said sliding frame, a measuring shaft whereon said measuring wheel is splined, cam controlled means including a revolvable cam disk for controlling the engagement of the pawl member with the ratchet bar, an operative connection between the measuring shaft and cam disk, and means to actuate the drive shaft.

8. In a machine of the kind described, a main frame including a pair of brackets, a drive shaft journalled in said brackets, said drive shaft being adapted to carry a series of rotatable winding spools, a sliding frame carried by the main frame and mounted for movement parallel to said drive shaft, a ratchet bar slidable through said brackets and carrying said sliding frame, a wheel driven from said drive shaft, a pawl member eccentrically pivoted on said wheel and engageable with said ratchet bar, a measuring wheel mounted in said sliding frame, a measuring shaft whereon said measuring wheel is splined, cam controlled means including a revolvable cam disk for controlling the engagement of the pawl member with the ratchet bar, an operative connection between the measuring shaft and cam disk, a friction drive for said drive shaft, and means to adjust the friction drive for varying frictional action.

DOMENIC J. GALLI.