

No. 661,114.

Patented Nov. 6, 1900.

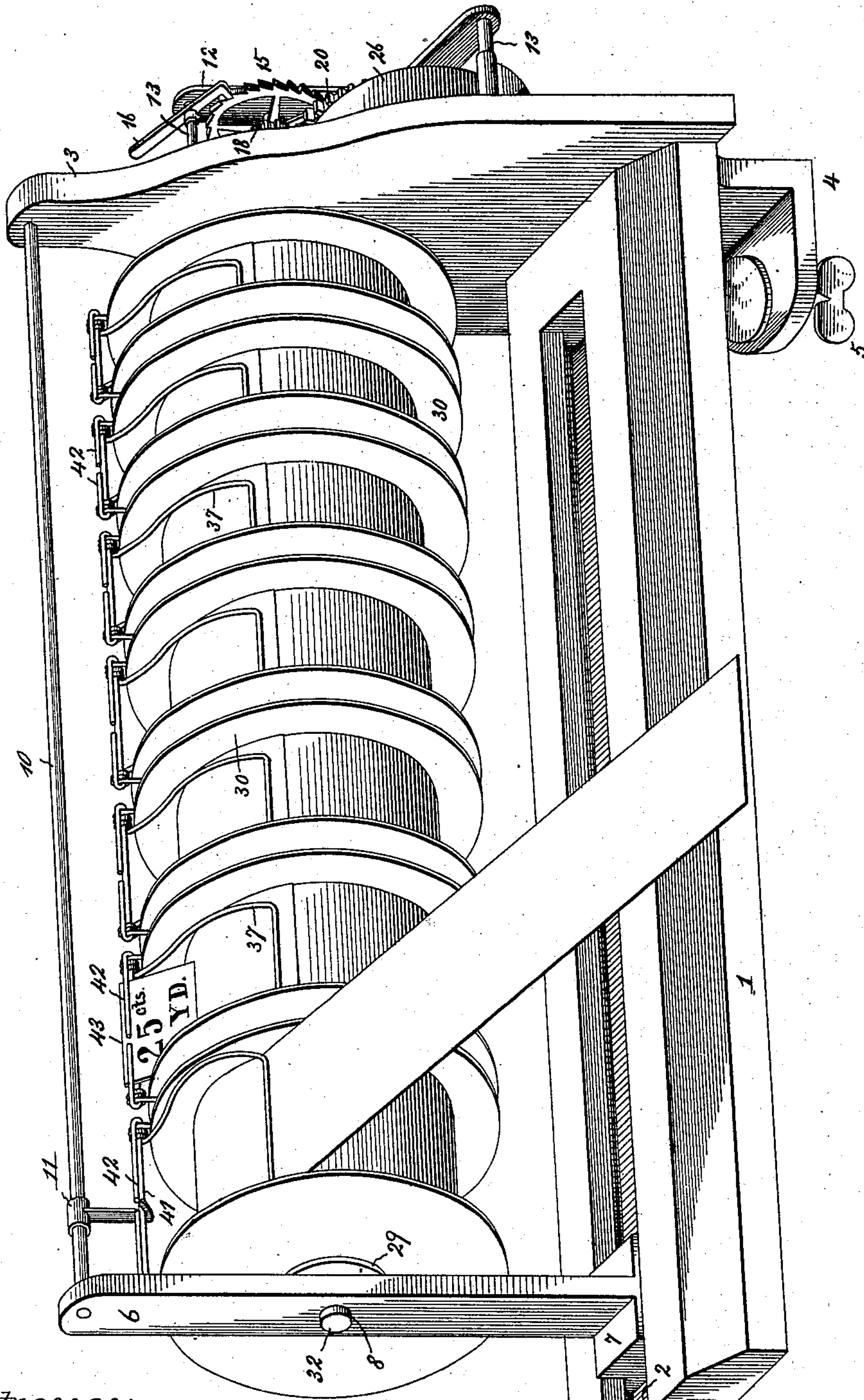
W. D. WILLIAMS.
RIBBON HOLDING AND WINDING DEVICE.

(Application filed Apr. 30, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:

H. C. Rodgers
W. R. Kisk

Inventor:

Wm. D. Williams

By Fischer & Thorpe
Attys

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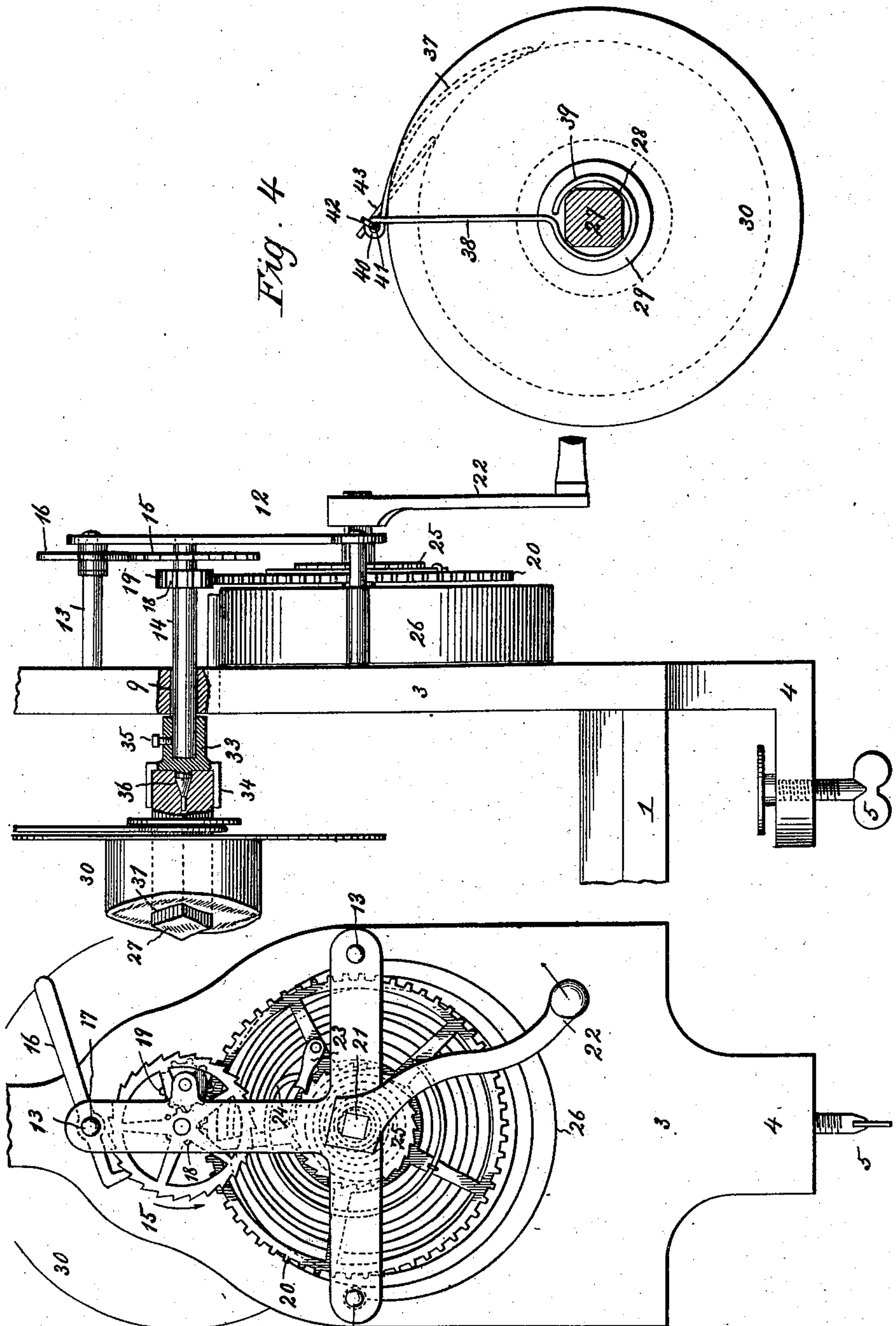
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2 Sheets—Sheet 2.



Witnesses:
H. C. Rodgers
W. R. Park

Inventor:
W. D. Williams
By Fischer & Thayer
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM D. WILLIAMS, OF WESTVILLE, INDIAN TERRITORY.

RIBBON HOLDING AND WINDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 661,114, dated November 6, 1900.

Application filed April 30, 1900. Serial No. 15,020 (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. WILLIAMS, a member of the Cherokee Nation, residing at Westville, Cherokee Nation, Indian Territory, have invented a new and useful Ribbon Winding and Holding Device, of which the following is a specification.

My invention relates to ribbon holding and winding devices; and my object is to produce a device of this character which supports one or more ribbon-spools in such manner that the ribbon may be unwound from one or more of said spools with convenience and despatch and which will automatically rewind all or any part of said ribbon.

The invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a perspective view of a ribbon holding and winding device embodying my invention. Fig. 2 is an end view of the same. Fig. 3 is a view partly in side elevation and partly in section. Fig. 4 is a cross-section of the spool-shaft, showing the spool thereon.

Referring to the drawings, where like reference-numerals designate corresponding parts, 1 designates the base of the device, the same being of suitable length and provided with an inverted-T groove 2 in its upper side extending from one end nearly to the other. At the closed end of said groove is erected a standard 3.

When the device is to be used upon a counter or equivalent support, an angle-bracket 4 is secured to depend from the closed end of the base, into which the edge of the counter is adapted to fit, and to clamp the device firmly in such position the bracket is provided with a set-screw 5, the upper end being adapted to impinge against the lower edge of the counter.

6 designates a standard erected upon a flanged block 7, fitted in a groove 2, and arranged to be adjustable therein toward or from the stationary standard 3, the distance between said standards being determined by the number of spools to be supported.

About midway its height standard 6 is provided with a journal-opening 8, and in longitudinal alinement therewith standard 3 is

provided with a journal-opening 9. Connecting the upper ends of said standards is a rod 10, corresponding in length by preference to the distance between the exterior sides of the standards, though it is obvious that a rod about equal in length to the base-board and extending slidingly through the upper end of standard 6 may be used, if desired. The former construction, however, presents the neater appearance. A hook 11 depends adjustably from rod 10 for a purpose which will hereinafter appear. A skeleton frame 12, of inverted-T shape, is secured by rods 13 to the outer side of standards 3 and is provided with a short shaft 14, projecting inwardly through and beyond the bearing-opening 9, hereinbefore referred to, (see Fig. 3,) and secured upon this shaft is a ratchet-wheel 15, engaged by a gravity-dog 16, pivoted, as at 17, on the rod connecting the stem of frame 12 with standard 3. Mounted rigidly on said shaft also is a small cog-wheel 18, which serves as a pinion, meshing with an idler 19, journaled on frame 12 and meshing in turn with a large cog-wheel 20, journaled on a short shaft 21, journaled in the frame and standard in any suitable manner, the outer end of said shaft being squared by preference to receive at times a crank-handle 22.

23 designates a pawl pivoted to wheel 20 and pressed by a spring 24, carried by said wheel into engagement with a ratchet-wheel 25, mounted rigidly on shaft 21, and mounted upon said shaft at the opposite side of wheel 20 from ratchet-wheel 25 is a large coil-spring 26, the inner end of said spring being secured to the shaft in any suitable manner and its outer end to one of the rods 13, connecting frame 12 with standard 3.

Assuming that the spring 26 has been partially wound by turning crank-handle 22 in the direction indicated by the adjacent arrow, Fig. 2, so as to provide a positive reserve force, as hereinafter explained, it will be noticed that the revolution of ratchet-wheel 15 in the direction indicated by the adjacent arrow will turn gear-wheel 20 in the direction indicated by the arrow adjacent to the handle, and consequently through the medium of spring-actuated pawl 23 and ratchet 25 additionally wind the spring, the dog 16 by engagement with ratchet-wheel 15 automatically preventing the unwinding of

the spring when the indicated movement of said ratchet-wheel ceases, so that to effect the partial unwinding of the shaft it is necessary to trip dog 16 and permit shaft 21 to turn the associated mechanism, though as a reserve force in the spring is desired it will always be advisable to release the gravity dog before the spring becomes totally unwound.

27 designates a shaft corresponding in length to the distance between the standards 3 and 6 and of rectangular configuration in cross-section, except at certain points, where the corners are rounded or curved, as at 28, on a line struck from the center of the shaft, washers 29 fitting upon the shaft coincident with said rounded corners, and between said washers are ribbon-carrying spools 30, the same having square openings 31, through which shaft 27 extends, the relation being such that all of the spools rotate simultaneously with the shaft. At one end the shaft terminates in a cylindrical extension 32, journaled in opening 8 of the sliding standard 6, and at its opposite end it fits in a socket 34 of a coupling 33, secured upon the inner end of shaft 14 by set-screw 35, the spool-shaft being centered in said socket, preferably by the centering-pin 36 of the coupling. Ribbon-retaining springs comprise the central or loop portion 37 to fit between the flanges of the spools and upon the ribbon thereon, and the pendent arms 38, arranged at the outer sides of the spools and terminating in circular coils 39, surrounding the spool-shaft coincident with the curved corners 28 in order that the shaft may rotate freely without affecting the position of said springs, the washers 29 holding the arms of the springs out of frictional contact with the spools to permit the latter to turn freely when the ribbon is being wound thereon. The upper ends of the loop and the arms of each spring are joined to the integrally-formed hinge-coils 40, whereby the loops 37 are caused to engage the ribbon on the spools with a yielding pressure.

A cross-bar 41, connecting the hinge-coils 40 of each ribbon-retaining spring, serves to stiffen the latter and hold a price-tag, which also serves, in conjunction with hook 11, hereinbefore referred to, to guard against the rotation of the ribbon-retaining springs with the supporting-shaft when rewinding ribbon upon the corresponding spool. This cross-bar consists, preferably, of a wire rod extending through said loops and having its ends doubled back, as at 42, upon the body portion and adapted to spring outward slightly to receive the price-tag 43, the lower end of the tag resting on the ribbon.

In practice, assuming that the parts are about as shown in Fig. 1, the salesman grasps the end of the ribbon and pulls it outward and measures and cuts off the quantity purchased in any suitable manner, the dog 16 automatically locking spring 26, and consequently the spools, from back rotation, as hereinbefore explained. In the above opera-

tion all of the spools turn with the shaft, the ribbon grasped, however, being the only one unwound. As more ribbon was necessarily unwound than was needed, the surplus is rewound upon the spool, as otherwise it would interfere with the unwinding or rewinding of any other ribbon by entanglement with some part of the device. To effect this rewinding operation, it is first necessary to cause the hook 11 to engage the cross-bar 41 of the corresponding ribbon-retaining spring, the light frictional pressure of the latter serving to rewind the ribbon tightly and neatly. The operator, retaining a grasp on the end of the ribbon to regulate the rewinding operation or, rather, arrest it at the proper point, trips and holds dog 16 out of engagement with ratchet-wheel 15 until spring 26 has unwound sufficiently to completely rewind the ribbon on the spool, it being understood, of course, that one revolution of gear-wheel 20 is equivalent to many of the spool and that the relative proportion of these parts is unimportant as regards this application. By the engagement of the hook hereinbefore mentioned with the cross-bar 41 the retaining-spring is prevented from turning with the spool; otherwise the revolution of the spool would cause the ribbon to wind over the retaining-spring and cross-bar instead of under said parts. In practice it will be advisable, perhaps, to have at least two of these hooks 11, as the salesman may pull out two ribbons at a time, and consequently must rewind them together. To do this, both retaining-springs must be held stationary for the reason above stated.

When the device is first set up, it is desirable to partially wind the spring to obtain a reserve power or force; otherwise the limited amount of rewinding of the spring effected by pulling out the ribbons would perhaps be insufficient to rewind them with sufficient positiveness and speed.

The repeated winding operation of the spring occasioned by selling ribbon from time to time would eventually wind the spring so tight that the device would become inoperative from the fact that each time the ribbon is pulled out and a quantity sold the winding operation is greater than the unwinding. This is avoided, however, by the salesman at intervals, and when the ribbon is all wound up, tripping dog 16, so as to permit the spring to inoperatively rotate the spool-shaft and unwind in the desired degree.

From the above description it will be apparent that I have produced a device for conveniently holding and turning ribbon-spools and winding ribbon thereon which is adjustable to accommodate a number of spools which may be displayed in a show-case or when provided with the bracket 4 and clamp 5, secured upon a counter or other suitable support, furthermore a device positive and reliable in operation and of simple, strong, durable, and cheap construction. It is to be

understood, furthermore, that various changes may be made in the form, proportion, detail construction, and arrangement of the parts without departing from the spirit and scope or sacrificing any of the advantages of the appended claims.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. A ribbon holding and winding device, comprising a suitable frame, a shaft journaled therein, ribbon-carrying spools fixed upon said shaft, a ribbon-retaining spring mounted on said shaft and engaging the ribbon between the flanges of the spool, means for winding the ribbon on the spools, and means to prevent the said spring from turning with the spool from which ribbon is unwound, substantially as described.

20 2. A ribbon holding and winding device, comprising a suitable frame, a shaft journaled therein, ribbon-carrying spools fixed upon said shaft, a ribbon-retaining spring mounted on said shaft, and provided with a cross-bar, and a hook engaging said cross-bar to prevent the spring from turning with the spool when the ribbon is being wound upon the latter, substantially as described.

30 3. A ribbon holding and winding device, comprising a suitable frame, a shaft journaled therein, ribbon-carrying spools fixed upon said shaft, ribbon-retaining springs, comprising a loop pressed upon the ribbon between the spool-flanges, arms at opposite sides of the spool and encircling the shaft at their lower ends, and hinge-coils connecting the loop with the upper ends of said arms, a cross-bar connecting said hinge-coils, and a hook to engage said cross-bar, substantially as described.

40 4. A ribbon holding and winding device, comprising a suitable frame, a shaft journaled therein, one or more ribbon-carrying spools fixed upon said shaft, a ribbon-retaining spring mounted on the shaft, a cross-bar secured to said spring, consisting of a body portion and arms doubled back on the body portion to receive a price or equivalent tag, and a hook engaging said cross-bar, substantially as described.

50 5. A ribbon holding and winding device, comprising a base portion, a pair of standards thereon, relatively adjustable to vary the distance between them, a shaft journaled in said standards, one or more spools fixed upon said shaft, one or more ribbon-retaining springs mounted on the shaft, and means for preventing one or more of said ribbon-retaining springs from turning with the back rotation of the spools from which ribbon is unwound, substantially as described.

60 6. A ribbon holding and winding device, comprising a base portion, a pair of standards thereon, relatively adjustable to vary the distance between them, a shaft journaled in said standards, one or more spools fixed upon said shaft, a rod connecting said standards, an ad-

justable hook suspended from said rod, one or more ribbon-retaining springs mounted on the shaft, and a cross-bar carried by said springs and adapted to be engaged by said hook, substantially as described. 70

7. A ribbon holding and winding device, comprising a grooved base portion, a movable standard mounted upon and in said grooved base portion, a stationary standard at the opposite end of said base portion, a shaft journaled in said standards, one or more spools fixed upon said shaft, a rod connecting said standards, an adjustable hook suspended from said rod, one or more ribbon-retaining springs mounted on the shaft, and a cross-bar carried by said springs and adapted to be engaged by said hook, substantially as described. 80

8. A ribbon holding and winding device, comprising a base portion, a pair of standards thereon, relatively adjustable to vary the distance between them, a depending angle-bracket, a set-screw carried thereby, a shaft journaled in said standards, one or more spools fixed upon said shaft, a rod connecting said standards, an adjustable hook suspended from said rod, one or more ribbon-retaining springs mounted on the shaft, and a cross-bar carried by said springs and adapted to be engaged by said hook, substantially as described. 95

9. A ribbon holding and winding device, comprising a suitable frame, a shaft journaled therein, ribbon-carrying spools fixed upon said shaft, ribbon-retaining springs mounted on said shaft and engaging the ribbon between the flanges of the spool, a clockwork mechanism to wind the ribbon on the spool unwound, a pawl-and-ratchet mechanism to arrest such winding mechanism, and means to prevent the ribbon-retaining spring from turning with the spools from which ribbon is unwound, substantially as described. 100

10. A ribbon holding and winding device, comprising a suitable frame, a clockwork mechanism at one end of the frame and embodying a shaft, driven by the clockwork, projecting through the corresponding end of the frame, and a pawl-and-ratchet mechanism to prevent the unwinding of the clockwork-spring, a shaft journaled in the opposite end of the frame, a coupling mounted on the clockwork-shaft provided with a socket to receive the contiguous end of the shaft journaled in the other end of the frame, one or more ribbon-spools mounted on the last-mentioned shaft, a ribbon-retaining spring for each spool mounted on the shaft, and means to prevent said springs turning in rewinding ribbon upon the corresponding spools by the back rotation imparted to the latter by the clockwork mechanism, substantially as described. 110 115 120 125

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM D. WILLIAMS.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.