

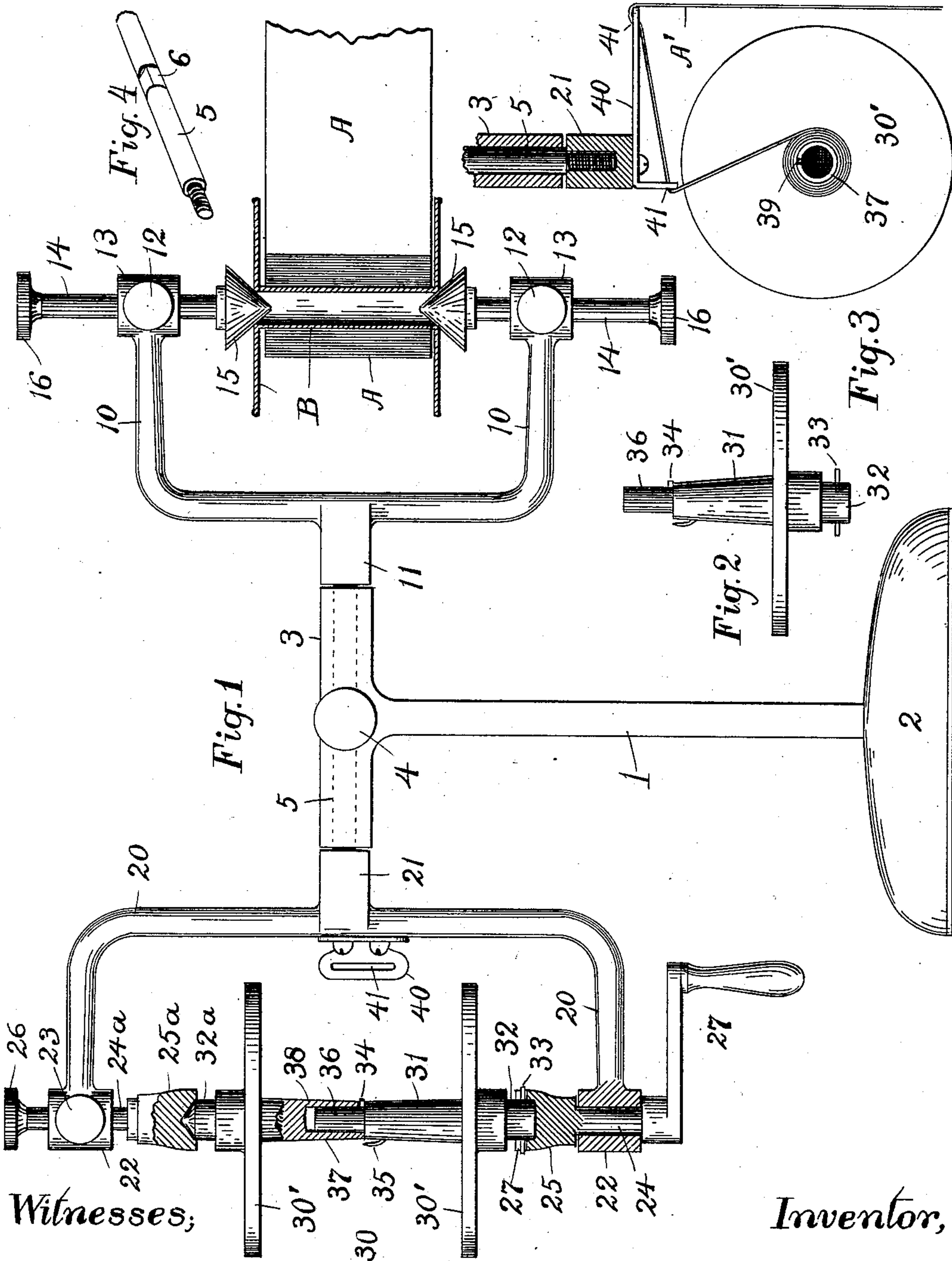
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W. A. HAYES.  
RIBBON WINDER.

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NO MODEL.



Witnesses;

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# UNITED STATES PATENT OFFICE.

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## RIBBON-WINDER.

SPECIFICATION forming part of Letters Patent No. 720,141, dated February 10, 1903.

Application filed September 13, 1902. Serial No. 123,201. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER A. HAYES, a citizen of the United States, and a resident of Somerville, in the county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Ribbon-Winders, of which the following is a full, clear, and exact description.

My invention is in the line of devices for aiding in the removal of type-writer ribbons from and applying the same to type-writers of any style.

Referring to the drawings forming part of this specification, Figure 1 is a side elevation of my complete device, parts thereof being shown in section. Fig. 2 is a side view of a section of my detachable spool for winding the ribbon. Fig. 3 is a detail view in section showing the means whereby the same spool is adapted for receiving ribbons of the narrowest form, and Fig. 4 is a perspective view of a portion of the spindle supporting the operating parts.

My device is designed to be stood upon a table or other support beside the type-writer from which the old ribbon is to be removed and a new one substituted. For this purpose a heavy base 2 is provided, from which rises the T-standard 1. Within the T-arms 3 of this standard is revolubly located the spindle 5, upon the ends of which are fixed the operating parts. A set-screw 4, abutting against the squared section 6 of said spindle, holds the latter at any one of four angles of adjustment, as will be hereinafter set forth.

The operating parts of my device consist of the spool-holder, by means of which the new ribbon and spool as received from the manufacturers can be revolubly supported while the ribbon is being transferred therefrom to the type-writer reel, and the detachable spool, by means of which the old ribbon can be unwound from the type-writer. The first of said two parts comprises the arms 10, rigidly projecting from the hub 11, which is fixed upon an end of said spindle 5, and the conical centers 15, having stems 14, slidable in the bosses 13, formed at the extremities of said arms 10. Thumb-pieces 16 and set-screws 12 permit of said centers being adjusted with relation to each other, either close together to adapt them for narrow spools or

farther apart to fit larger spools, while the enlarged diameters of said cones or centers enable them to fit any spool no matter how small or how large its axial opening may be. In Fig. 1 I show an average-sized spool B, with its ribbon A represented as being unwound therefrom, the spool and wound part of the ribbon being in section. Upon the opposite end of the spindle 5 is fixed the hub 21, having arms 20 projecting therefrom and bosses 22 at the ends of said arms. In one of said bosses is revolubly supported a short shaft 24, carrying the socket 25 at its inner end and the crank 27 at its outer end. In the other boss 22 is a stem 24<sup>a</sup>, held in place by a set-screw 23 and carrying at its inner end a socket 25<sup>a</sup>, a thumb-piece 26 being provided for slidably moving said stem and socket. Between and carried in said sockets are the shaft ends 32<sup>a</sup> and 32 of the spool, composed of the heads 30' and shaft-sections 31 37. To enable said crank 27 to turn this spool, the shaft end 32 is formed with or provided with the pins 33, fitting in terminal notches in the socket 25, the opposing shaft end 32<sup>a</sup> being simply bluntly conical and fitting in a corresponding recess in said socket 25<sup>a</sup>. One of the shaft-sections 31 is provided with a short sharp-pointed pin 35, bent to extend parallel with the axis of the spool and close to the surface of the shaft-section, but away from head 30'. By catching the end of a ribbon upon this pin-point and turning the crank 27 such ribbon can be easily and quickly wound upon the spool 30. When all the ribbon has been thus wound upon this spool and unwound from a type-writer, the next difficulty to be overcome is that of removing such ribbon from this spool and dropping it into the waste-paper basket without soiling the fingers or taking considerable time. I accomplish this as follows: The spool 30 has its shaft in two sections 31 37, telescopically held together by means of the pintle 36, fitting within the opening 38. A small radial pin 34, entering the notch 39, the pin projecting from the pintle 36 and the notch being in the end of the apertured shaft-section 37, (see Fig. 3,) causes both spool parts to revolve together. It will also be noticed that both shaft-sections taper somewhat to their point of juncture.

To remove the wound ribbon, all that is



necessary to do is to loosen the set-screw 23, slide the socket 25<sup>a</sup> away from the shaft end 32<sup>a</sup>, withdraw the spool complete, then pull the shaft-section 37 away from its companion 5 and out from the coil of ribbon, turn the spool-head 30' with its shaft-section pointing downward and over a waste-paper basket or other receptacle, and if the ribbon does not drop off poke it off with the end of the other shaft-section 37. The taper of the shaft-sections renders this removal of the ribbon very easy, while the direction of the bent pin 35 causes the ribbon to readily disengage itself therefrom.

For type-writers whose ribbons are located edge up I have the spindle 5, secured to carry the spools with their axes vertical, as shown in Fig. 1; but in case the ribbons lie in a horizontal plane then the set-screw 4 is loosened, the parts turned through an arc of ninety degrees, and the set-screw set up. To facilitate this adjustment, I square the shaft 5 at the point of its contact with the set-screw, as at 6, Fig. 4, so that the operator may waste no time in changing the angle of the parts, but turn it to somewhere near the position desired, and then set up the screw 4, the squared face 6 bringing the angle true.

For a wide ribbon substantially fitting between the spool-heads 30' there is no trouble in its winding all right; but in the case of narrow ribbons there is danger of the outer coils slipping off from the inner, and so making the winding much slower. To remedy this, I provide the L-shaped strip 40, having its arms one at right angles to the other, as shown in Fig. 3, with a guide-slot 41 in each end. The narrow ribbon A' being threaded through these guide-slots, as shown in Fig. 3, the ribbon is both accurately guided to the spool and in addition a sufficient tension is applied thereto to wind the ribbon so tightly as to overcome any tendency to dislodgment of the outer coils.

From the above description it is evident that the work of applying fresh ribbons to type-writers and removing the worn ones is made a most simple and expeditious one and one also in which there is absolutely no need of soiling the fingers.

While my apparatus is particularly designed for use in connection with type-writer machines, it is equally applicable for winding ribbon, tape whether of cloth or paper, and other forms of flexible material which it may be wished to coil up.

What I claim as my invention, and for which I desire Letters Patent, is as follows, to wit:

1. The combination with the base and vertical standard, of the spindle revolubly supported by the standard, the arms held by said

spindle, the conical centers having elongated stems slidable longitudinally in bearings at the ends of said arms, and set-screws for fixing said stems at any points of adjustment, substantially as described.

2. The combination with a suitable support, of the spindle held thereby, the hub fixed upon said spindle and having the two widely-separated arms each with a boss at its extremity; the conical centers having elongated stems slidable in said bosses, and thumb-pieces at the outer ends of said stems, set-screws turning in said bosses and setting against said stems, and means for fixing said spindle at various points of angular adjustment, substantially as described.

3. The spool comprising the two heads having each a shaft-section separably held by the other and tapering toward such point of engagement, in combination with means for supporting and revolving the outer ends of the shaft-sections, substantially as described.

4. The combination with the spool comprising the two heads and the shaft-sections telescopically united, and the pointed pin projecting from one of said shaft-sections and bent parallel with the axis thereof with its point away from the head connected with its shaft-section; of means supporting, pressing together and turning said shafts, substantially as described.

5. The combination with the supporting-arms, of the socket carried by each, one of which sockets is formed with a diametrical notch and means of rotation, and the other of which is adjustable toward and from the first; and the spool comprising the two heads and the telescopically-united shaft-sections made to rotate in unison by a notch in one receiving a pin from the other; said shaft-sections tapering centrally, and their outer ends fitting in said sockets, the end within the rotatable socket being provided with a pin entering said diametrical notch, substantially as described.

6. In a means for applying ribbons to and removing them from type-writing machines, the combination of a heavy base, a standard rising vertically therefrom, a pair of arms at opposite points from the upper end of said standard, spool-supporting devices held by one of said pair of arms, and a spool and turning devices therefor supported by the other of said pair of arms, substantially as described.

In testimony that I claim the foregoing invention I have hereunto set my hand this 11th day of September, 1902.

WALTER A. HAYES.

Witnesses:

A. B. UPHAM,  
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