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J. O. McKEAN

1,795,877

PACKAGE HOLDER

Filed April 9, 1929

Fig. 1.

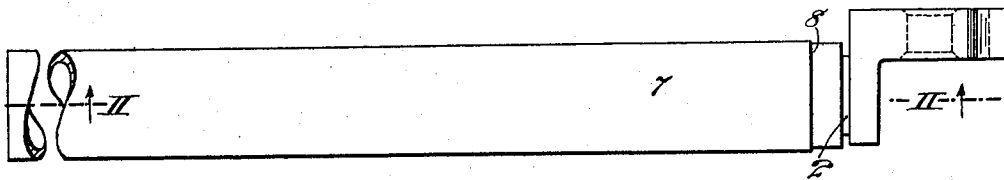


Fig. 2.

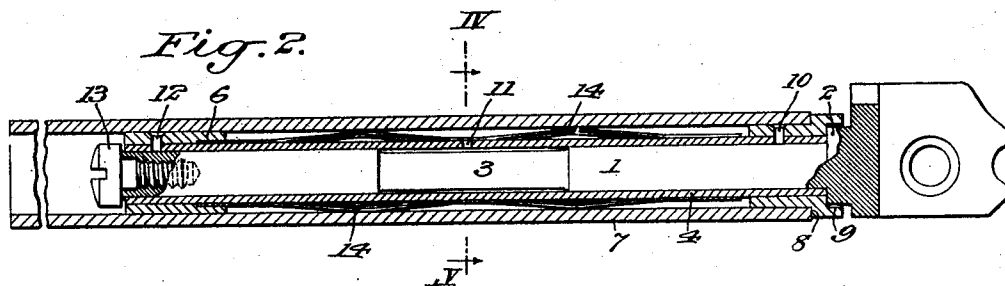


Fig. 3.

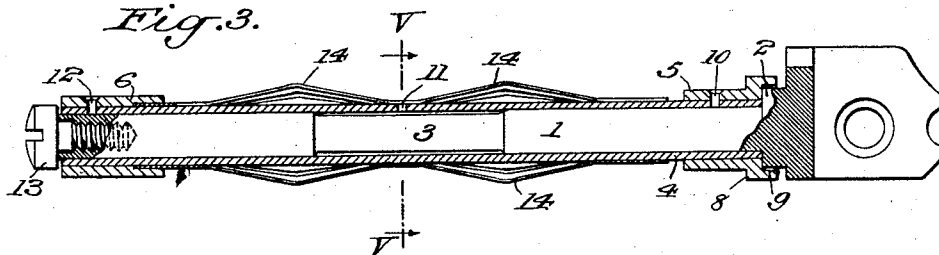


Fig. 4.

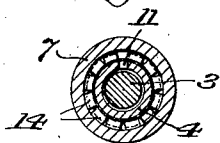
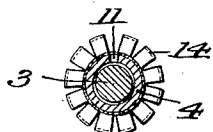


Fig. 5.



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PACKAGE HOLDER

Application filed April 9, 1929. Serial No. 353,800.

My invention comprises a package holder in which the package tube engaging spring is anchored to the rotary sleeve for preventing the displacement of the spring and in which the rotary sleeve is provided with end bushings for properly centering the package tube. My invention also comprises a device of the above character in which the inner end bushing of the rotary sleeve is stepped to form an end stop for the package tube and is also counterbored to overlap the shouldered inner end of the spindle so that yarn is prevented from becoming caught between the spindle and sleeve and thereby bind the sleeve.

A practical embodiment of my invention is represented in the accompanying drawings, in which:

Fig. 1 represents the package holder in side elevation with a package tube in position thereon;

Fig. 2 represents a longitudinal central section through the same, taken in the plane of the line II—II of Fig. 1, looking in the direction of the arrows;

Fig. 3 represents a similar section with the package tube removed;

Fig. 4 represents a cross section taken in the plane of the line IV—IV of Fig. 2, looking in the direction of the arrows, and

Fig. 5 represents a cross section taken in the plane of the line V—V of Fig. 3, looking in the direction of the arrows.

The holder spindle is denoted by 1 and it is shown as being provided with a shoulder 2 at its inner end. It also is shown as having a reduced intermediate portion 3 for the reception of a lubricant.

The sleeve which is rotatably mounted on the spindle 1 is denoted by 4 and it is provided with inner and outer end bushings 5 and 6, which bushings form centering end supports for the package tube 7 for ensuring an accurate winding on the same.

The inner end bushing 5 is provided with a shoulder 8 which forms an end stop for the package tube 7. This inner end bushing is also counterbored as shown at 9 for permitting the bushing to overlap the shouldered inner end of the spindle 1 for prevent-

ing the yarn from being caught between the spindle and the rotating sleeve thereon.

Holes 10, 11 and 12 may be provided for permitting the proper lubrication of the bearing surfaces between the sleeve and spindle.

The shouldered inner end of the spindle serves as an end stop for the rotary sleeve and the sleeve may be held in position on the spindle by means of a screw 13 threaded into the outer end of the spindle, the head of the screw overlapping the outer end of the sleeve and slightly spaced therefrom to permit the free rotary movement of the sleeve.

A laterally compressible longitudinally expansible tubular spring 14 of the double bulge balloon type surrounds the rotary sleeve 4 between the end bushings 5 and 6, which spring is anchored to the sleeve to prevent the displacement of the spring. In the present instance the spring is shown as anchored at its outer end to the sleeve by inserting the outer end of the spring between a portion of the bushing 6 and the sleeve and soldering the bushing and outer end of the spring to the sleeve, the portion between the bulged portions of the spring and also the inner end of the spring being slidable along the sleeve and the spring thereby extended as the bulged portions are compressed by the walls of the package tube as it is slid into position on the sleeve. The frictional engagement of the spring with the tube serves to hold the tube on the sleeve against unintentional displacement, the bushings at the ends of the sleeve serving to support the tube at its ends with the tube centered with respect to the axis of rotation of the sleeve on the spindle.

It will be seen that the novel features of the holder hereinabove pointed out and hereinafter claimed, produce a holder which is more efficient and accurate and one in which the parts will not readily become displaced under the severe usage to which these parts are subjected.

It is evident that various changes may be resorted to in the construction, form and arrangement of the several parts without departing from the spirit and scope of my in-

vention; hence, I do not wish to be limited to the particular embodiment herein shown and described, but

What I claim is:—

5 1. A package holder comprising a spindle, a sleeve rotatably mounted thereon and provided with inner and outer end bushings forming centering supports for the ends of the package tube and a package tube engaging, laterally compressible and longitudinally
10 expandible tubular spring of the balloon type surrounding the sleeve.

2. A package holder comprising a spindle, a sleeve rotatably mounted thereon and
15 provided with inner and outer end bushings forming centering supports for the ends of the package tube and a package tube engaging, laterally compressible and longitudinally expandible tubular spring of the balloon type surrounding the sleeve and anchored thereto.

3. A package holder comprising a spindle, a sleeve rotatably mounted thereon and provided with inner and outer end bushings forming centering supports for the ends of
25 the package tube and a package tube engaging, laterally compressible and longitudinally expandible tubular spring of the balloon type surrounding the sleeve and anchored at one end thereto.

4. A package holder comprising a spindle having a shouldered end, a sleeve rotatably mounted on the spindle and provided with inner and outer end bushings forming centering supports for the ends of the package
35 tube, the inner end bushing being shouldered to form an end stop for the tube and also being counterbored to overlap the shouldered inner end of the spindle and a package tube engaging, laterally compressible longitudinally expandible tubular spring of the
40 balloon type surrounding the sleeve.

5. A package holder comprising a spindle having a shouldered end, a sleeve rotatably mounted on the spindle and provided with inner and outer end bushings forming centering supports for the ends of the package tube, the inner end bushing being shouldered to form an end stop for the tube and
50 also being counterbored to overlap the shouldered inner end of the spindle and a package tube engaging, laterally compressible longitudinally expandible tubular spring of the balloon type surrounding the sleeve and
55 anchored thereto.

6. A package holder comprising a spindle having a shouldered end, a sleeve rotatably mounted on the spindle and provided with inner and outer end bushings forming centering supports for the ends of the package tube, the inner end bushing being shouldered to form an end stop for the tube and also being counterbored to overlap the shouldered inner end of the spindle and a package tube engaging, laterally compressible

longitudinally expandible tubular spring of the balloon type surrounding the sleeve and anchored at one end thereto.

In testimony, that I claim the foregoing as my invention, I have signed my name this 70 6th day of April, 1929.

JOHN O. McKEAN.

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