April 18, 1933. F. B. JAVERY 1,904,737

HOLDER FOR YARN PACKAGES

Filed May 6, 1931

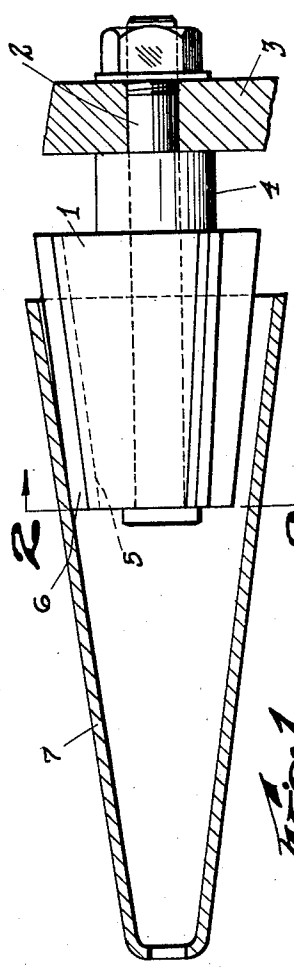


Fig. 1.

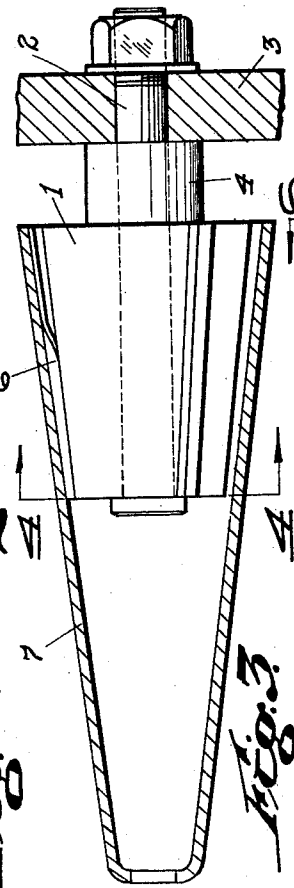


Fig. 3.

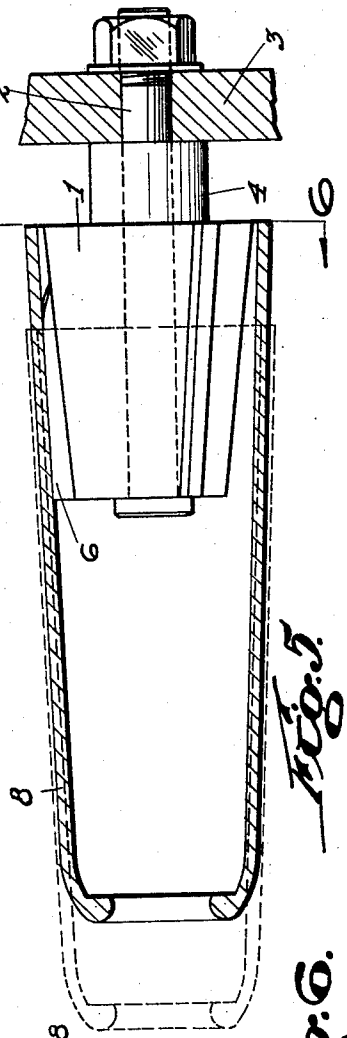


Fig. 5.

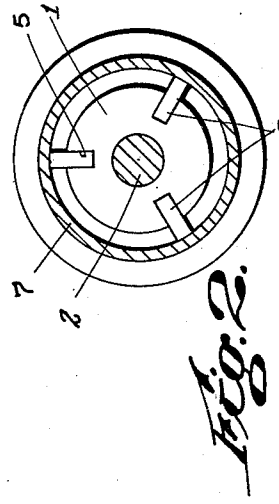


Fig. 2.

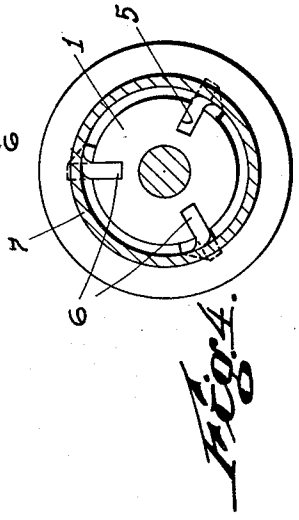


Fig. 4.

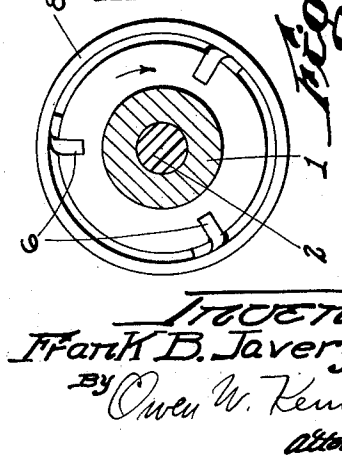


Fig. 6.

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UNITED STATES PATENT OFFICE

FRANK B. JAVERY, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WARP COMPRESSING MACHINE COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS

HOLDER FOR YARN PACKAGES

Application filed May 6, 1931. Serial No. 535,501.

The present invention relates to an improved holder for yarn packages of the type that are wound on suitable shells conical in form so that the filamentary material may be readily drawn off endwise from the packages.

In Patent No. 1,740,784 issued December 24, 1929 to A. L. Remington, there is shown and described a holder for yarn packages wound on conical shells, this holder being characterized by a conical body providing ribs of frictional material to engage the inner surfaces of the conical shells carrying the packages. In use, holders of the above described type are most effective only when the taper of the holder body is substantially the same as the taper of the conical shell supported thereon, and the object of the present invention is to provide an improved holder that is adapted to support package carrying shells having different tapers.

When forming packages of filamentary material having such widely differing characteristics as various grades of artificial silk of the rayon type, it has been found necessary to considerably vary the taper of the conical shells on which the packages are built, so that it is desirable to be able to support shells having different tapers on the same creel or package stand. According to the present invention, there is provided an improved holder for yarn packages that will frictionally support conical shells having a considerable variation in their taper, as will hereinafter more fully appear from the following description with reference to the accompanying drawing, in which:—

Fig. 1 is a vertical sectional view of a holder with an empty shell or cone about to be mounted thereon.

Fig. 2 is a transverse sectional view along the line 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a sectional view similar to Fig. 1, showing the cone fully mounted on the holder.

Fig. 4 is a transverse sectional view along the line 4—4 of Fig. 3 looking in the direction of the arrows.

Fig. 5 is a sectional view similar to Fig. 1, showing the mounting of a cone having a different taper from the cone shown in Fig. 1.

Fig. 6 is a transverse sectional view along the line 6—6 of Fig. 5, looking in the direction of the arrows.

Like reference characters refer to like parts in the different figures.

Referring first to Figs. 1 and 2, the holder comprises a frusto-conical body portion 1 of wood, or other suitable light material, through the axis of which extends a supporting spindle 2 projecting from a spindle rail 3. The body 1 provides an integral hub portion 4 of reduced diameter which serves to space the body from the face of the rail 3, for a purpose which will hereinafter appear. The body 1 further provides a number of grooves 5 extending along its conical surface, the grooves 5 being preferably equally spaced substantially 120° apart. As best shown in Fig. 2, each groove 5 receives a strip 6 of rubber firmly seated therein and secured by a suitable adhesive, with each rubber strip 6 projecting radially a considerable distance beyond the surface of the body 1.

As best shown in Fig. 1, a conical shell 7 is mounted on the holder, the shell surface on which filamentary material such as wood fibre possessing a frictional surface on which filamentary material may readily be wound. As shown, the taper of the shell 7 is slightly greater than that of the body 1 of the holder, so that when the shell 7 is placed loosely over the holder, the outer portions of the rubber strips 6 will first engage the inner surface of the shell, when the base of the cone is still removed from the base of the holder body, as indicated in dotted lines. Therefore, further movement of the cone along the axis of the holder is strongly opposed by the strips 6, and in order to fully position the shell 7 on the holder, it is necessary to impart a turning movement thereto. As previously pointed out, the rubber strips 6 project a considerable distance beyond the surface of the body 1, so that the turning of the shell causes the unsupported portions of the strips 6 to bend over in the direction of turning beginning at the smaller end of the body 1. As the turning

continues, the base of the shell finally coincides with the base of the body 1 with the distorted strips 6 serving to firmly engage the frictional material of the inner conical surface of the shell to hold the same securely in position. Obviously. the distortion of the strips will be greatest at the smaller end of the body 1, the distortion decreasing toward the larger end of the body, as shown in Fig. 4, in accordance with the difference in taper between the body and the surrounding cone.

Referring now to Figs. 5 and 6, there is shown the manner in which the holder is adapted to support a conical shell 8, in which the taper is less than the taper of the body 1. When such a shell 8 is positioned loosely on the holder, the rubber strips 6 will first enter freely into the open end of the shell until contact is made with the cone wall by those portions of the strips near the base of the body, as indicated in dotted lines. Obviously, the strips will resist further longitudinal movement of the shell so that final positioning of the same is accomplished by a turning movement. As this occurs, those portions of the strips adjacent the larger end of the body are bent over until the base of the cone substantially coincides with the base of the body 1, with the amount of bending of the strips decreasing toward the smaller end of the body, as indicated in Fig. 5.

It will be noted that the strips 6 project radially beyond the periphery of the holder 1 a distance greater than the thickness of said strips, thus said strips are sufficiently flexible to bend over into contact with the surface of the holder 1 and will project a substantial distance along the surface of the holder 1 between said holder and the sleeve mounted on said holder, as best shown in Fig. 6.

From the foregoing, it is apparent that by the present invention there is provided an extremely effective holder for supporting yarn packages wound on conical sleeves having different tapers. From a comparison between Figs. 3 and 5, it is evident that the strips 6 by reason of their ready deformation will securely hold cones of greater or less taper than the holder body 1, the strips themselves compensating for the variation of angle towards either end of the body. Consequently, a creel or package stand provided with package holders embodying the invention is adapted to handle yarns with different characteristics wound on cones of varying taper.

I claim,

1. In a device for holding yarn packages wound on conical shells, a spindle carrying a frusto-conical holder providing a series of longitudinally extending slots for receiving compressible strips projecting radially from said holder, with the thickness of said strips substantially less than the length which said strips project radially beyond said holder, whereby said strips frictionally engage the inside of a shell and yield peripherally of the holder in response to turning of the shell on the holder.

2. In a device for holding yarn packages wound on conical shells, a spindle carrying a frusto-conical holder providing a series of longitudinally extending slots for receiving rubber strips projecting radially from said holder, said strips being adapted to partially engage the inside of a shell having a different taper than that of said holder and being adapted to yield peripherally of the holder in response to a turning of said shell to engage said shell along their entire lengths.

FRANK B. JAVERY.

CERTIFICATE OF CORRECTION.

Patent No. 1,904,737. April 18, 1933.

FRANK B. JAVERY.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, line 78, strike out the words "surface on which filamentary" and insert instead "being formed of any suitable"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 23rd day of May, A. D. 1933.

M. J. Moore.
Acting Commissioner of Patents.

(Seal)