June 16, 1936. C. E. CHAFFIN 2,044,207

PROTECTOR FOR THREAD PACKAGES

Filed Sept. 13, 1935

FIG. 2.

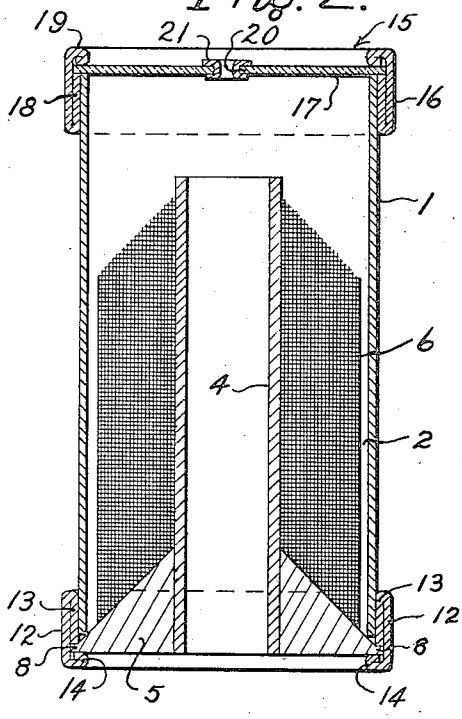



FIG. 1.

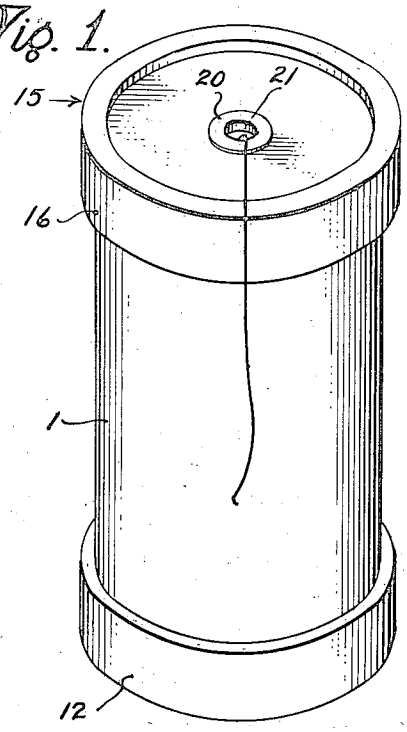



FIG. 3.

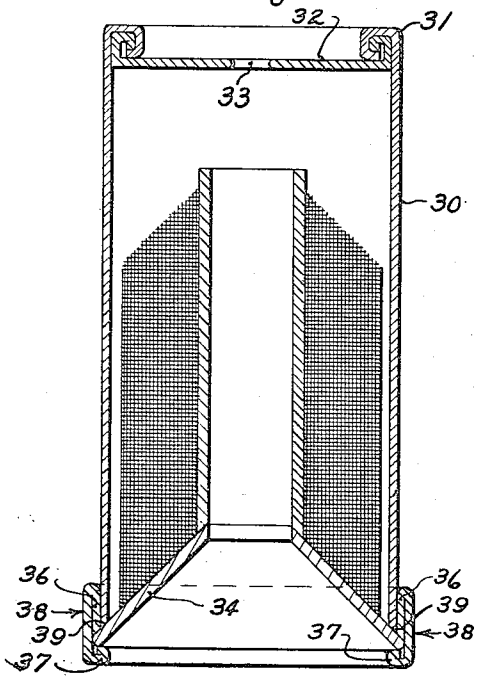
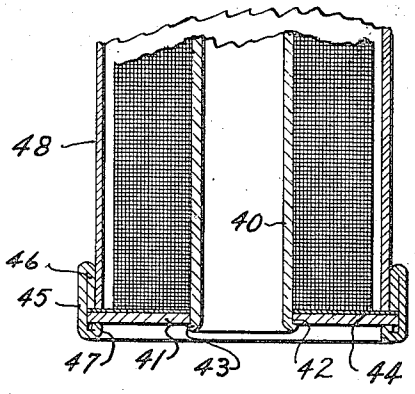



FIG. 4.




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## PROTECTOR FOR THREAD PACKAGES

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Application September 13, 1935, Serial No. 40,369

6 Claims. (Cl. 242—138)

This invention relates to a device for protecting thread packages of the type comprising a tubular core on which a body of thread is wound, one end of the core being provided with a base.

I am aware that various packaging devices have been proposed for this general purpose but such prior devices have been limited in their utility. One purpose of such devices is to protect the thread and core from damage during shipment. A further purpose is to protect the thread body when the spool has been placed on the spindle of a sewing machine and while the thread is being drawn from the spool.

To satisfy the requirements of various types of machines on which the spool is to be used it is necessary that the protecting device permit the thread to be lead from the package in either a vertical or horizontal direction. Furthermore in some instances protection of the thread when on the sewing machine is not desired, or is impracticable although protection during shipment is desired. In such cases it is advantageous to have a protecting device from which the spool may be completely removed, thus permitting use of the spool without hindrance from any protecting structure and also permitting return of the protecting device to the thread manufacturer for refilling. Sometimes the reverse may be true, that is, shipping facilities may not require protection of the spools during transportation but protection may be desired on the machines in which case greatest economy is secured by a protecting structure into which the user may insert a full spool as received from the factory after removing the depleted spool therefrom.

In whatever way the protector is used it is desirable that the protector permit easy inspection of the thread supply during the time the thread is being drawn from the spool and also permitting easy access to the thread body in case of breakage or other accident.

It is also desirable that the cost of the protectors be kept as low as possible not only from general motives of economy, regardless of the mode of use, but also because a minimum of handing may be secured if the cost can be reduced to the point where the protector may be used once and thrown away.

As far as I am aware, none of the prior art devices possess sufficient flexibility in use to secure all of these advantages.

It is the general object of my invention to provide a protecting structure for thread spools which will secure all of the advantages above pointed out.

In the accompanying drawing,

Fig. 1 is a perspective view of one form of protecting device made according to my invention;

Fig. 2 is a vertical sectional view of the device of Fig. 1;

Fig. 3 is a sectional view similar to Fig. 2 but showing a modified form of the device and also illustrating a different type of thread core; and

Fig. 4 is a fragmentary sectional view showing another modification.

Referring to Figs. 1 and 2, the body of the device is shown as comprising a cylinder 1, formed of cardboard or other suitable material, of diameter sufficient to receive the package of thread with sufficient clearance space 2 to permit unwinding of the thread. As shown in Fig. 2 the thread package comprises a tubular core 4 provided with a wooden base 5, and a body of thread 6 is wound around the core in any suitable manner. The edge of base 5 is formed with a flange portion 8. An annular band or ring 12, preferably formed of cardboard, having its upper edge folded inwardly on itself as indicated at 13 and having its lower edge crimped over to form an inwardly extending bead 14 engages the base 5 with flange 8 seated between the edge of the infolded portion 13 and bead 14, thus tightly but releasably holding the spool in the ring. The inner diameter of the ring 12 and the outer diameter of cylinder 1 are such that the lower portion of the cylinder engages tightly within the inturned portion of the band to hold the cylinder in position.

The upper end of the cylinder 1 is provided with a closure member 15 comprising an annular ring 16, similar to ring 12, provided with a disc 17 fitting between the infolded edge 18 of the ring and the crimped bead 19. The disc 17 is preferably made of transparent celluloid but may be formed of cardboard or other suitable material and is provided with a circular opening 20 in which a grommet 21 is set to present a smooth edge to the thread as the latter is drawn from the device. The grommet 21 may be omitted as shown in Fig. 3 where the cardboard or other material of which the disc is formed, is of a thickness and character to present a rounded edge to the thread.

If desired, the ring 12 or 16 may be pasted to the cylindrical body of the device, by the application of a silicate adhesive between the ring and

cylinder. The adhesion may be made only strong enough to prevent accidental displacement of the parts while permitting removal if desired. The tightness of fit given to the parts can be made sufficient to maintain them in assembled relation, without the use of adhesive.

The cylinder 1 is made of sufficient length as shown to provide ample clearance between the disc 17 and the top of the spool to give sufficient freedom of movement to the thread as it is drawn off.

It will be seen that the loaded spool may be quickly and easily slipped into the bottom of the cylinder and locked in place by simply applying ring 12. The spool if desired may be removed from the device with equal ease by simply removing the ring 12 and of course this may be done either prior to use or after the thread has been exhausted. It will further be seen that access to the thread for inspection, or in case of breakage, may be had by simply removing the closure 15. It may also be noted that the device is flat at both ends which facilitates packing for shipment. The device may be formed of cardboard or other cheap materials and its construction permits manufacture of its parts by conventional automatic machinery so that its cost is well within the range which permits that it be used once and thrown away if that practice is desired.

It will thus be apparent that my construction provides all of the desired advantages earlier pointed out.

Various modifications may be made in the construction of the device without departing from the scope of my invention and it may be used with various types of spools. In Fig. 3 for example, is shown a different closure arrangement and a different type of spool. Referring to the latter figure, 30 designates the cylindrical body of the device, the upper end of which is crimped as at 31, directly over the edge of the closure disk 32 which is provided with a thread opening 33. In this figure the base 34 of the spool is shown as frustro-conical in form and its edge is shown as releasably held between inturned portion 36 and crimped bead 37 of the ring 38. The lower edge of cylinder 30 may be beveled as shown at 39 to fit the slope of the base 34. It will be obvious, however, that base 34 could be provided with a shoulder corresponding to shoulder 8 of Fig. 1, if desired.

In Fig. 4 is shown a different form of thread spool in which the thread is wound about a cardboard core 40 having a flat base 41 also of cardboard. The base 41 is formed with an opening 42 in which the lower end of the core is held by being upset as at 43. The base 41 is covered with a layer of felt 44 or the like, upon which the thread body rests. Ring 45 is similar in all respects to those previously described, the edge of base 41 engaging between the edge of inturned portion 46 and the lower beaded edge 47. Cylinder 48, provided with either of upper end closures above described, fits tightly within the inturned portion 46 of the ring.

I claim:

1. A protective device for a tubular thread package having a base, which comprises a tubular body member into which the thread package may be inserted, a clamping member fitting tightly over the lower end of the body member, and means carried by the clamping member to releasably clamp the edge portion of the package base against the lower edge of the body member.

2. A protective device for a tubular thread package having a base, which comprises a tubular body member into which the thread package may be inserted, a clamping member fitting tightly over the lower end of the body member and having means to releasably clamp the edge portion of the package base against the lower edge of the body member, and a flat closure for the upper end of the body member spaced a substantial distance above the upper end of the thread package and provided with an opening through which the thread may be drawn from the package.

3. A protective device for a tubular thread package having a base, which comprises a tubular body member into which the thread package may be inserted, a clamping member fitting tightly over the lower end of the body member and having means to releasably clamp the edge portion of the package base against the lower edge of the body member, and a flat topped closure member releasably secured over the upper end of the body member and provided with an opening through which the thread may be drawn from the package.

4. A protective device for a tubular thread package having a base, which comprises a tubular body member into which the thread package may be inserted, a band member provided on its lower edge with an inwardly extending bead, the upper portion of the band member adapted to fit tightly but removably over the lower end of the body member to releasably clamp the edge portion of the package base between the lower edge of the body member and said bead, and a flat closure for the upper end of the body member spaced a substantial distance above the upper end of the thread package and provided with an opening through which the thread may be drawn from the package.

5. A protective device for a tubular thread package having a base, which comprises a tubular body member into which the thread package may be inserted, a band member provided on its lower edge with an inwardly extending bead, the upper portion of the band member adapted to fit tightly but removably over the lower end of the body member to releasably clamp the edge portion of the package base between the lower edge of the body member and said bead, and a flat topped cap closure fitting tightly but removably over the upper end of the tubular body member and provided with an opening through which the thread may be drawn from the package, the opening in the closure being spaced a sufficient distance above the thread package to permit a free unwinding of the thread.

6. A protective device for a tubular thread package having a base, which comprises a tubular body member into which the thread package may be inserted, means to releasably clamp the base of the thread package to the bottom of the body member, and an apertured transparent closure member for the upper end of the body member.

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