Jan. 6, 1953 C. K. DUNLAP 2,624,525

TEXTILE BOBBIN

Filed Dec. 29, 1948

Fig. 1

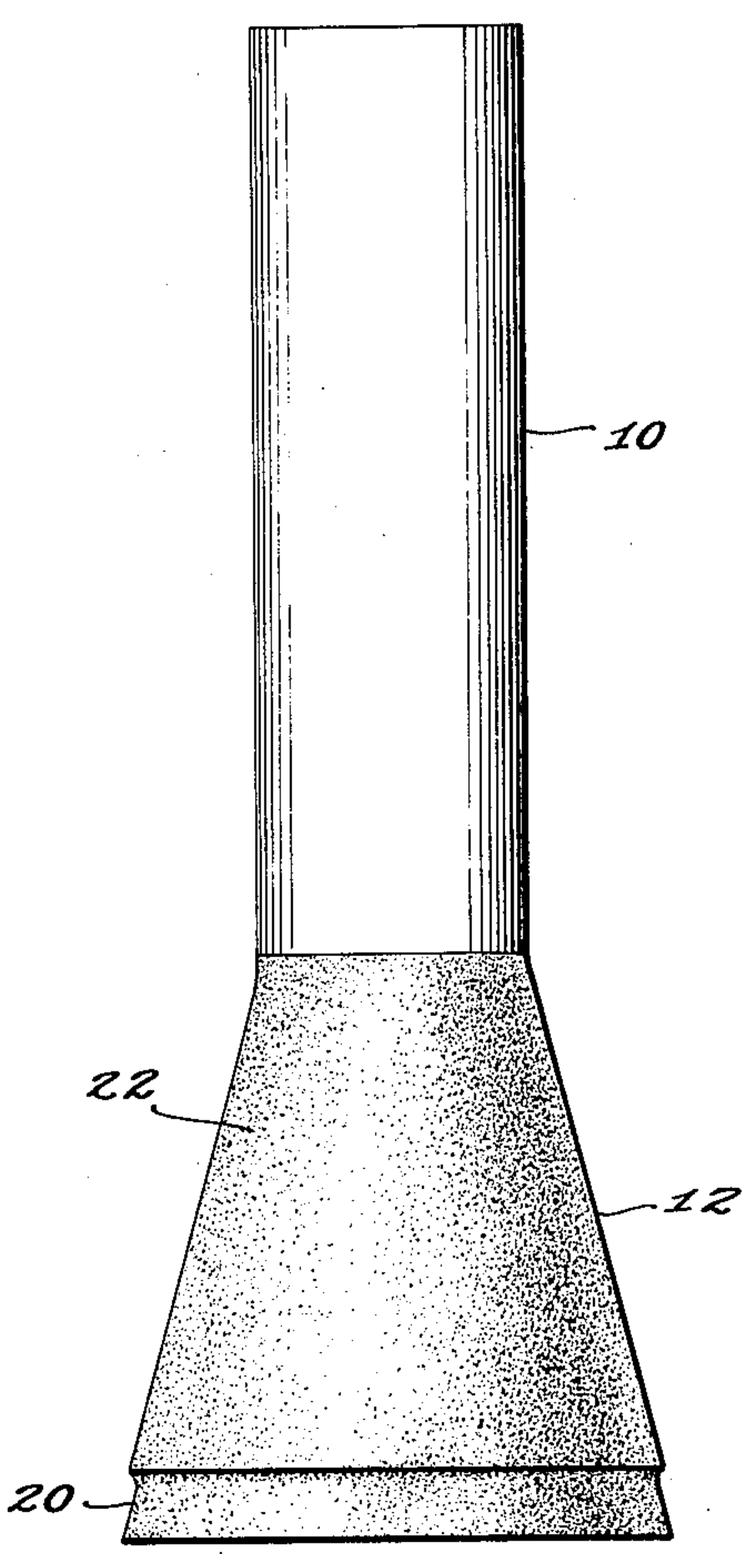


Fig. 3

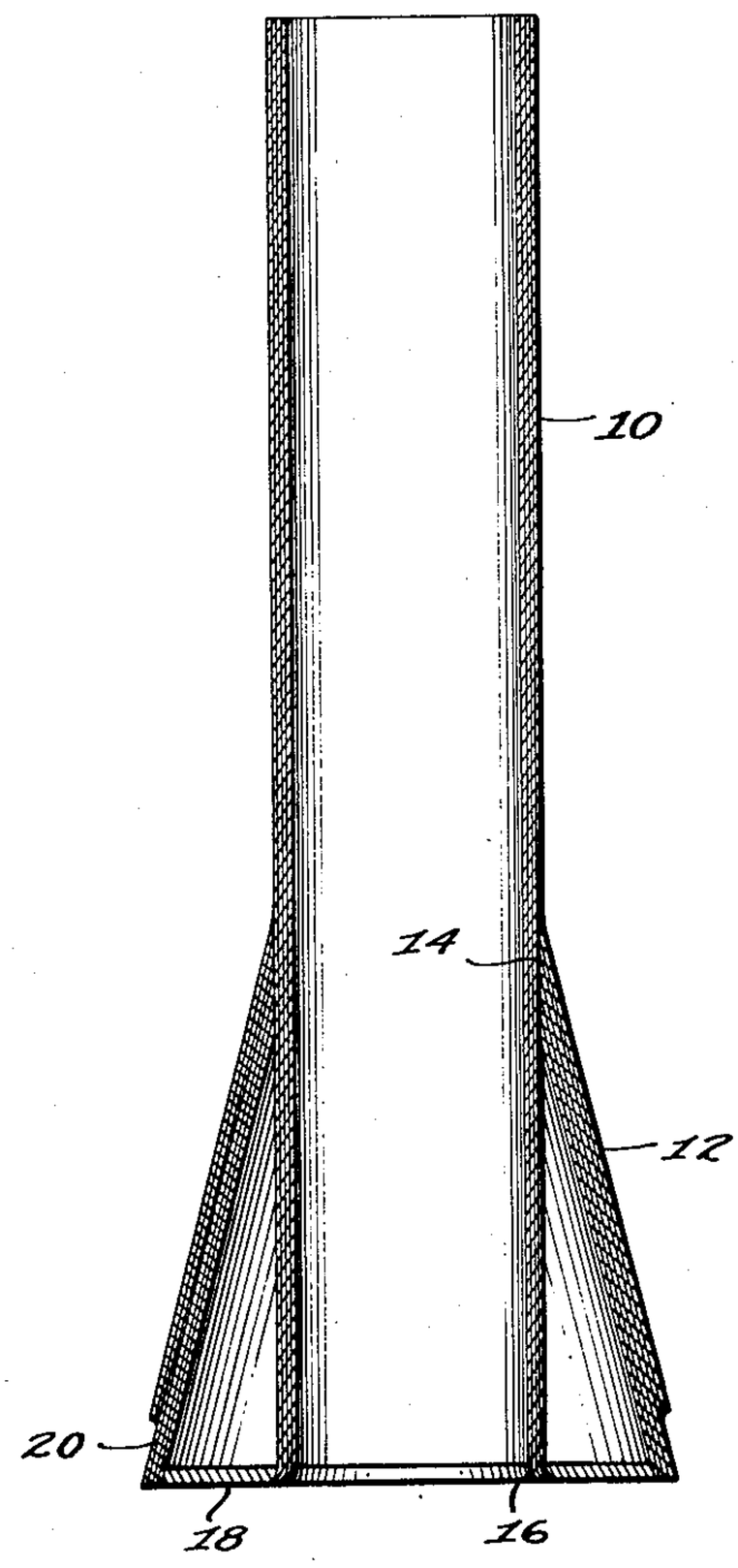
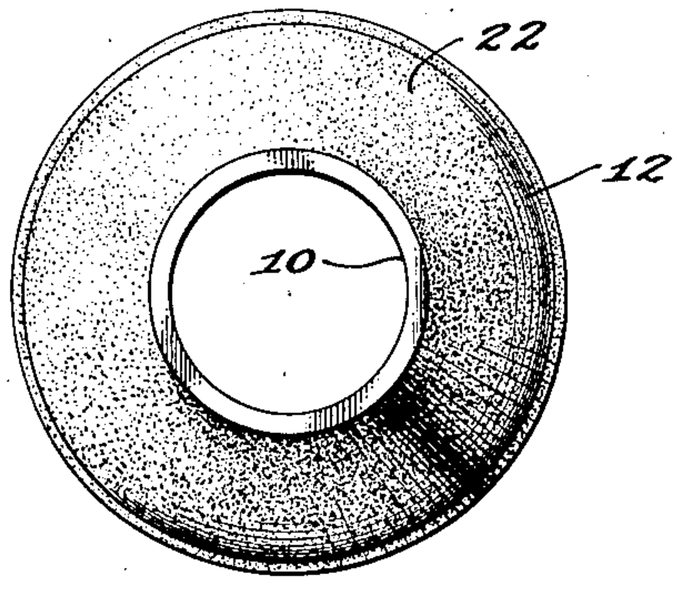


Fig. 2



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UNITED STATES PATENT OFFICE

2,624,525

TEXTILE BOBBIN

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3 Claims. (Cl. 242—122)

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This invention relates to textile bobbins adapted for use as supporting cores for yarn windings and the like.

Such bobbins or spools are used in large quantities in the textile industry as carriers for handling yarn in various processing operations. These bobbins or spools are predominantly formed of paper because of the cost advantage and light weight characteristics afforded by this material. A common type of bobbin, often referred to as a bottle bobbin, comprises a cylindrical barrel having a frusto-conical head secured thereon adjacent an end. If the barrel is fitted with a head at both ends the resulting carrier is usually referred to more specifically as a spool.

The heads for bobbins of this type are usually formed with cylindrical apertures closely fitting the cylindrical barrel and opening at the small end of the head in a feathered edge so that the shoulder left at the joint between the head and the barrel may be minimized to the fullest extent in order to avoid rolling and tangling of yarn windings laid on the bobbin at this point. At the best, however, a discernible shoulder remains at this joint, and substantial difficulty is encountered in maintaining this shoulder within acceptable limits when large scale production methods are employed in forming the bobbins.

This difficulty is obviated according to the present invention by investing bobbins of the above described type with a coating of discrete fibers adhesively secured on the head and extending slightly beyond the head over a circumferential portion of the barrel so that a continuous yarn supporting surface is presented at the joint between the head and barrel. In this manner, the shoulder left where the head joins the barrel may be obscured so that it is no longer a critical production factor, and the coating of discrete fibers moreover provides a winding surface on the head adapted to maintain the yarn windings against slippage.

A textile bobbin formed in this manner according to the present invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevation of a textile bobbin embodying the invention;

Fig. 2 is a top plan view; and,

Fig. 3 is a vertical section.

In the textile bobbin illustrated in the drawing, the bobbin barrel is indicated at 10 and the head of the bobbin at 12. The barrel 10 and the head 12 are shown in the drawing as having a laminated paper structure, although a molded structure might also be used and these elements might

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be formed of any other suitable material, such as plastic, if desired.

As shown best in Fig. 3 of the drawing, the bobbin head 12 is formed with a feathered, cylindrical, axial aperture 14 at its small end, which is proportioned to fit closely over the outer surface of the bobbin barrel 10 when the head 12 is assembled in place. Adhesive may be applied to secure the head 12 to the barrel 10 at this point, and the head 12 may conveniently be formed with the axial aperture 14 for assembly on the barrel 10 and set in place in the manner disclosed in my prior Patents Nos. 1,731,565 and 1,731,735; although in the present case the bobbin barrel 10 is preferably formed in a length sufficient to extend to the large bottom end of the head 12, so that it may be formed outwardly at its lower end as at 16 to engage a central aperture in a spacing disc 18 fitted in the large end of the head 12.

Where the bobbin head 12 is formed with a laminated paper structure as previously mentioned, it is also desirable to arrange this structure so that at least one of the outer plies terminates short of the large bottom end of the head 12 so as to form a circumferential shouldered portion 20 adjacent the large end of the head 12 for accommodating a tail leading to the yarn windings supported on the bobbin in the usual manner. Also, if desired, suitable slots or other openings (not shown) may be arranged at this large end of the head 12 for securing the free end of the tail so that it is readily accessible.

The textile bobbin illustrated in the drawing is further conditioned according to the present invention by a coating of discrete fibers as indicated at 22 adhesively secured on the head 12 and over a circumferential portion of the barrel 10 extending slightly beyond the head 12. By this means, a continuous yarn supporting surface is presented at the joint between the head 12 and the barrel 10, as previously mentioned, so that this joint is obscured and all difficulty with disposition of the yarn windings at this point is obviated. Also, the coating of discrete fibers 22 provides a smooth surface continuity at the shouldered portion adjacent the large end of the head 12, and further invests the head 12 with a winding surface which is nicely adapted for retaining yarn windings thereon against slippage. The coating of discrete fibers 22 may consist of cotton flock or the like as disclosed in my copending application, Serial No. 709,875, filed November 14, 1946, and may be applied as disclosed in detail in that application.

I claim:

1. A textile bobbin comprising a cylindrical barrel, a frustro-conical head secured on said barrel adjacent an end thereof, said head having a cylindrical aperture closely fitting the outer surface of said barrel, and a continuous coating of discrete fibers adhesively secured on said head and on said barrel over a circumferential portion of said barrel extending slightly beyond said head, whereby a continuous yarn supporting surface conforming to the shape of said head and barrel portion is presented by said fiber coating at the joint between said head and barrel and said fiber coating serves to condition said head for retaining yarn windings thereon against slippage and merges superficially with said barrel beyond said head.

2. A textile bobbin comprising a cylindrical barrel, a frustro-conical head secured on said barrel adjacent an end thereof, said head having a laminated structure in which at least one of the outer plies terminates short of the base of said head forming a circumferential shouldered portion adjacent said base for accommodating a tail leading to yarn windings supported on said bobbin, and said head being formed with a cylindrical aperture closely fitting the outer surface of said barrel, and an adhesively secured coating of discrete fibers on said head and extending slightly beyond said head over a circumferential portion of said barrel for retaining yarn windings on said head against slippage and for providing a smooth surface continuity at the shouldered portion on said head adjacent said base and at the joint between said head and said barrel.

3. A textile bobbin comprising a cylindrical barrel, and a frustro-conical head secured on said barrel adjacent an end thereof, said head being formed with a feathered, cylindrical, axial aperture at its small end proportioned to fit closely over the outer surface of said barrel, and said head and a circumferential portion of said barrel extending slightly beyond said head being invested with a continuous coating of discrete fibers adhesively secured thereto, whereby a continuous yarn supporting surface conforming to the shape of said head and barrel portion is presented at the joint between said head and barrel and said head is conditioned for retaining yarn windings thereon against slippage by said fiber coating, and which fiber coating merges with said barrel beyond said head without producing any surface irregularity to disturb the handling of yarn windings on said barrel.

CHARLES K. DUNLAP.

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The following references are of record in the file of this patent:

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