Sept. 1, 1931. C. B. LAYFIELD 1,821,556

BOBBIN HOLDER OF YARN WINDING SPINDLES

Filed Sept. 23, 1927

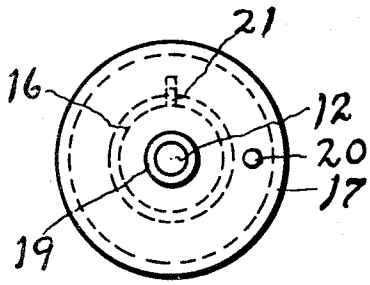


Fig. 3.

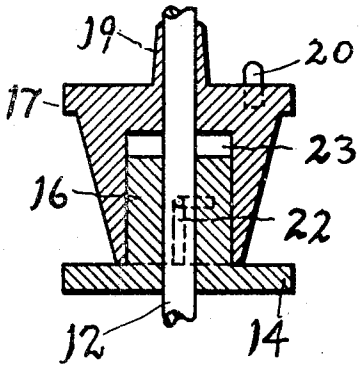


Fig. 2.

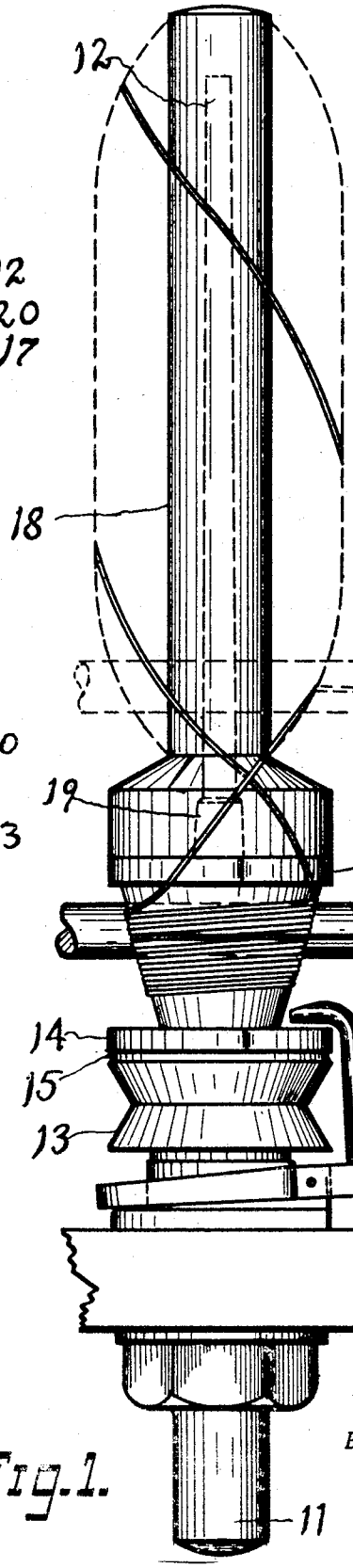


Fig. 1.

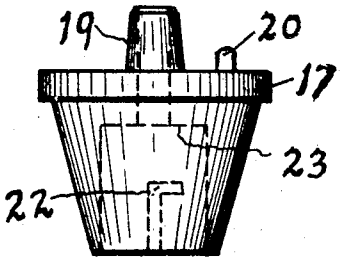


Fig. 5.

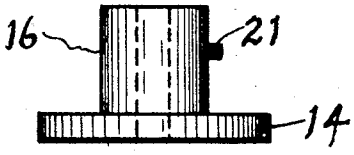


Fig. 4.

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UNITED STATES PATENT OFFICE

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BOBBIN HOLDER OF YARN WINDING SPINDLES

Application filed September 23, 1927. Serial No. 221,476.

This invention relates to bobbin holders designed for use with spindles of yarn winding machines; and the object is to provide for the ready removal of the accumulated yarn on the bobbin holder without the use of a yarn cutting instrument as is necessary with the present types of holders.

With this object in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:—

Figure 1 is an elevation of a portion of a well known type of yarn winding machine showing a spindle and its bolster casing, my improved bobbin holder, and a bobbin with its yarn load, the latter in dotted lines. Figure 2 is an axial section of the bobbin holder in detachable connection with the friction collar. Figure 3 is a plan view of the same, Figure 4 is an elevation of the friction collar; and Figure 5 is an elevation of the bobbin holder.

Referring to the drawings, in which like numerals indicate corresponding parts wherever occurring, 10 represents a portion of the stationary rail of a yarn winding machine for supporting the bolster 11 in which the spindle 12 is rotatable. Above the rail and rigid with the spindle is the whirl 13, adapted to be positively driven by a band from a drum (not shown) in the usual manner. A collar 14 rotatable on the spindle is in frictional contact with the top of the whirl through a yielding pad 15 interposed between the collar and whirl. The collar is provided with a hub 16 to which the bobbin holder 17 is detachably secured and rotatable therewith. The bobbin 18, loosely mounted on the spindle, is detachably connected by suitable means to the top of the bobbin holder, the rotative movement of which depends upon the degree of friction existing between the whirl, the yielding pad and the friction collar.

The bobbin holder 17 consists of a circular body the upper end of which is enlarged forming a flange having a central tubular stud 19, which is adapted to fit into the base of the bobbin, and through which the spindle loosely passes. The holder and bobbin are detachably connected together by any suitable means, preferably by a pin 20 fixed to the flange and adapted to coact with a socket in the base of the bobbin. The lower portion of the holder is counterbored to slidably fit on the hub 16 of the friction collar and is detachably secured thereto by suitable means, preferably by a bayonet joint comprising a pin 21 fixedly positioned to the periphery of the hub 16 and coacting with a groove 22 cut in the surface of the counterbore 23 of the holder. The periphery of the lower portion of the holder is tapered downward from the underside of its flanged top thus facilitating the removal of yarn accumulated thereon from doffed bobbins.

In operation the spindle 12 is rotated independently of the bobbin by its whirl, and the friction collar 14 and the bobbin holder 17 thereon are rotated by friction between the yielding pad 15 and whirl upon which the friction collar rests, thereby maintaining the proper tension upon the yarn while being wound on the bobbin. After the bobbin has been filled and is ready for doffing, the traverse motion rod 24 with yarn guide 25 mounted thereon is at the top of the bobbin, and the operator then lowers the guide below the bobbin so that the yarn 26 is wound on the tapering surface of the hub of the bobbin holder, and the filled bobbin is removed and replaced by an empty one, so that a continuous strand of yarn is retained ready for repeating the operation upon the unfilled bobbin. The guide rod is then raised to guide the yarn to the lowest point of the yarn traverse on the new bobbin ready for commencing the operation of winding.

In course of time the tapered body of the bobbin holder becomes filled with yarn which accumulates thereon when the bobbins are doffed and to remove this yarn the operator detaches the bobbin holder from the hub of the friction collar, lifts the holder from the spindle and with his fingers easily pulls the bunch of yarn from its position on

the tapering body of the holder. By this construction less time is taken by the operator in removing the accumulated yarn than is now required in the use of a cutting instrument.

I claim:—

1. In a spindle, a blade, a whirl, a collar frictionally driven by said whirl, a bobbin holder supported on said collar and having a bobbin engaging top portion and a conical yarn receiving body portion tapering continuously downward to said collar, and means for detachably securing the collar and holder, said means being effective to lock said holder to said collar and to prevent axial separation of said parts.

2. In a spindle, a blade, a whirl, a collar frictionally driven by said whirl and having an upwardly projecting hub, a bobbin holder slidable on said blade and resting on said collar and recessed to receive the hub of said collar, said holder having a bobbin engaging top portion and a conical yarn receiving body portion tapering continuously downward to said collar, and means for detachably securing the hub of said collar and the recessed portion of said holder together, said means being effective to lock said holder to said collar and to prevent axial separation of said parts.

In testimony whereof, I have signed this specification.

CLYDE B. LAYFIELD.