Oct. 21, 1930. W. ST. PIERRE 1,779,019

BOBBIN CLUTCH ATTACHMENT FOR WHIRLS

Filed Oct. 17, 1928

Fig. 1.

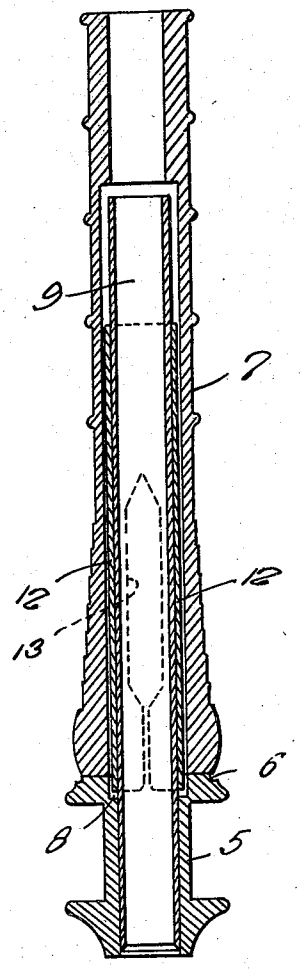
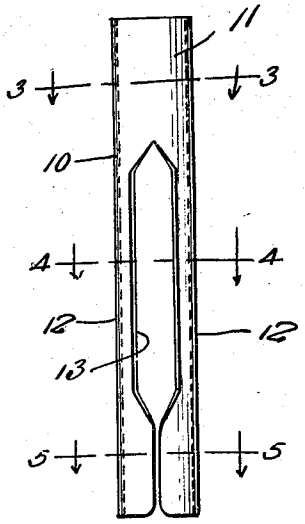


Fig. 2.



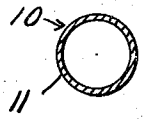


Fig. 3.

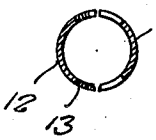
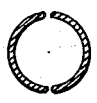


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE

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BOBBIN-CLUTCH ATTACHMENT FOR WHIRLS

Application filed October 17, 1928. Serial No. 313,061.

This invention relates to a bobbin clutch attachment for the whirls of spinning frames, wherein the whirl is of that type which is provided with a tube-spindle rigid with or permanently attached to the whirl base, as distinguished from that type wherein there is a separate tube or mandrel as shown in the U. S. Patent to Ashworth, No. 782,535, dated Feb. 14, 1905.

There are certain inherent difficulties or disadvantages connected with the use of a split tube or mandrel as disclosed in the abovementioned Ashworth patent. In the course of operation, yarn from the bobbin works inside the bobbin and into the spaces or slots between the legs of the tube, thereby ultimately binding the tube very firmly and preventing it from functioning properly, or even rotating. In addition to this, oil works up into the split tube and escapes between the legs of the latter onto the yarn and into the yarn box, causing added trouble.

The primary object of the present invention, therefore, is to provide an automatic centrifugal bobbin clutch attachment, for whirls having a rigid or permanent tube-spindle, whereby the above difficulties or disadvantages are overcome.

A further object is to provide a clutch attachment of the above character which is simple in construction, efficient in operation, economical to manufacture, and adapted for ready application to whirls of the type indicated, which are already in extensive use.

This invention consists in the novel construction of the attachment, and in the novel combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing, and claimed.

In the drawing:

Figure 1 is a central vertical section of a whirl and bobbin associated with a clutch attachment embodying the present invention.

Figure 2 is an elevational view of the clutch attachment; and

Figures 3, 4 and 5 are sections taken respectively on lines 3—3, 4—4, and 5—5 of Figure 2.

Referring more in detail to the drawing, 5 indicates a conventional form of whirl such as is now in extensive use, the same having the usual base 6 upon which the bobbin 7 is seated in operation and in which is formed the usual recess or shallow depression 8. The whirl has a rigid tube-spindle 9 on which the body of the whirl is shown as solidly cast.

In accordance with my invention there is provided a clutch attachment in the nature of a sleeve or ferrule 10 adapted to be slipped onto the tube-spindle 9 and of a size to have a snug frictional fit on the latter, said ferrule being of integral form at its upper end as at 11 and being split or divided longitudinally throughout its major lower portion to provide a pair of opposed spring legs 12 adapted to be parallel with and against the tube-spindle 9, except, when under the action of centrifugal force, they are caused to flex or bow outwardly into frictional clutching engagement with the bobbin 7. The bowing of the legs 12 is induced by positioning the lower ends thereof in the recess 8 and cutting away the material of the ferrule where split, as at 13, thereby reducing the width of the major upper portions of the legs 12 and increasing the flexibility and resiliency of such portions of the latter.

In operation upon a spinning frame, the springs legs are flexed outwardly by centrifugal force against the inner wall of the bobbin. The oil will simply flow upwardly into the tube-spindle, from whence it cannot escape onto the bobbin. Moreover, if the ferrule 10 should become bound to the bobbin, it will simply rotate with the latter around the tube-spindle and will not wrench the latter out of the whirl body 5.

Minor changes may be made without departing from the spirit and scope of the invention as claimed. It is obvious that the whirl is adapted for general use in cotton, wool, silk or other spinning.

What I claim as new is:

1. The combination with a spinning whirl provided with a rigid tube-spindle, of a centrifugal bobbin clutch embodying a ferrule adapted to have a frictional and rotatable fit over said tube spindle and partly split longitudinally to provide a pair of spring legs adapted to be flexed outwardly by centrifugal

force into clutching engagement with the inner wall of the bobbin, said legs being extended into a depression in the bobbin supporting base of the whirl and being of reduced width at their major upper portions.

2. A bobbin clutch attachment, for a spinning whirl having a rigid tube-spindle, comprising a ferrule adapted to be slipped onto and to rotatably fit upon said tube-spindle and partly split longitudinally with an enlarged cutaway portion to provide a pair of spring legs adapted to be flexed outwardly by centrifugal force into clutching engagement with the inner wall of the bobbin.

In testimony whereof I affix my signature.

WILLIAM ST. PIERRE.