Feb. 28, 1939.

S. KILLIAN

2,148,819

SPINDLE AND BOBBIN

Filed May 13, 1937

2 Sheets-Sheet 1

Fig. 1.

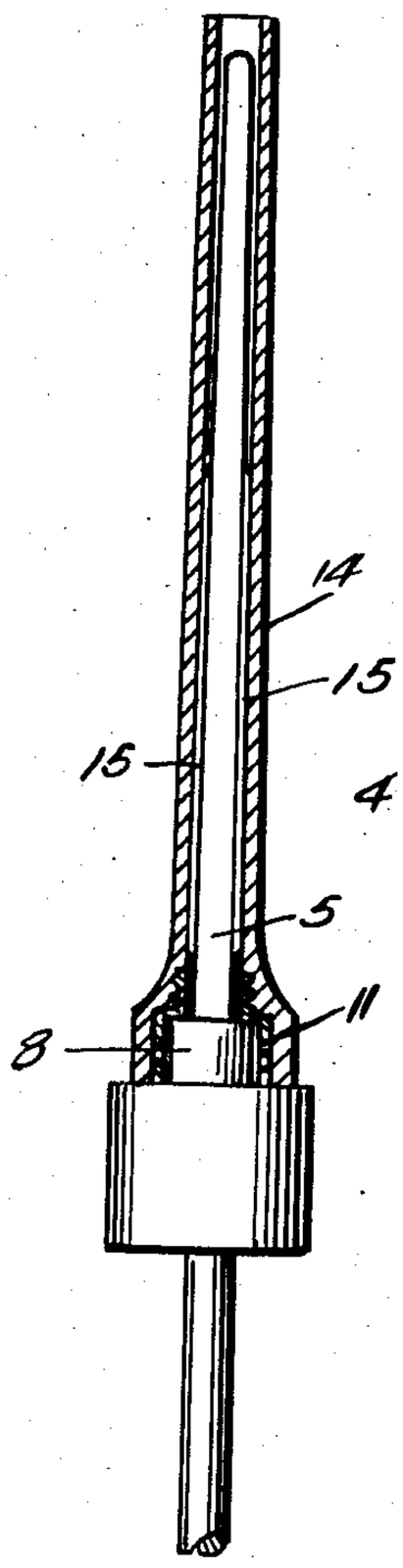

Fig. 2.

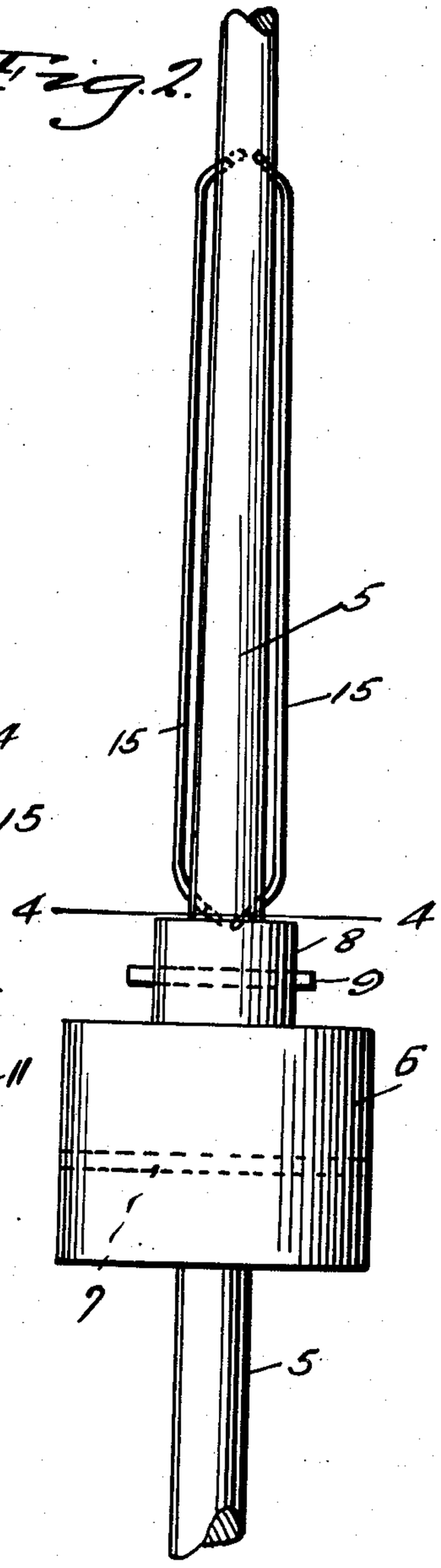

Fig. 3.

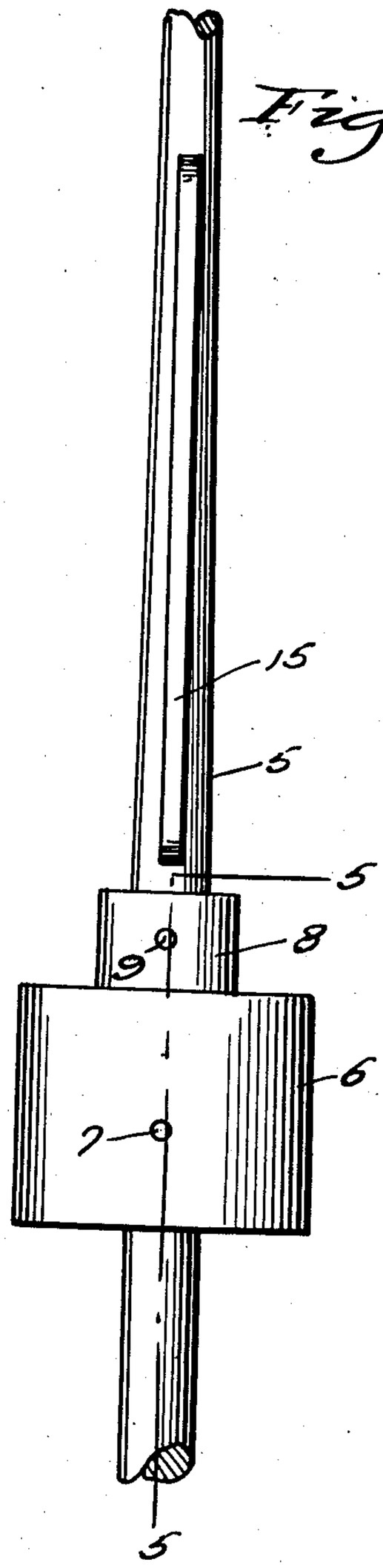

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Fig. 4.

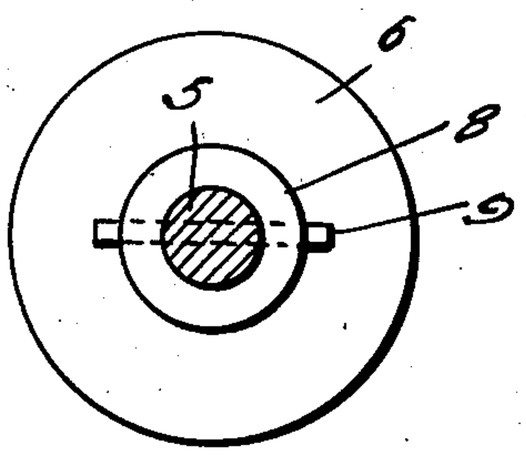


Fig. 5.

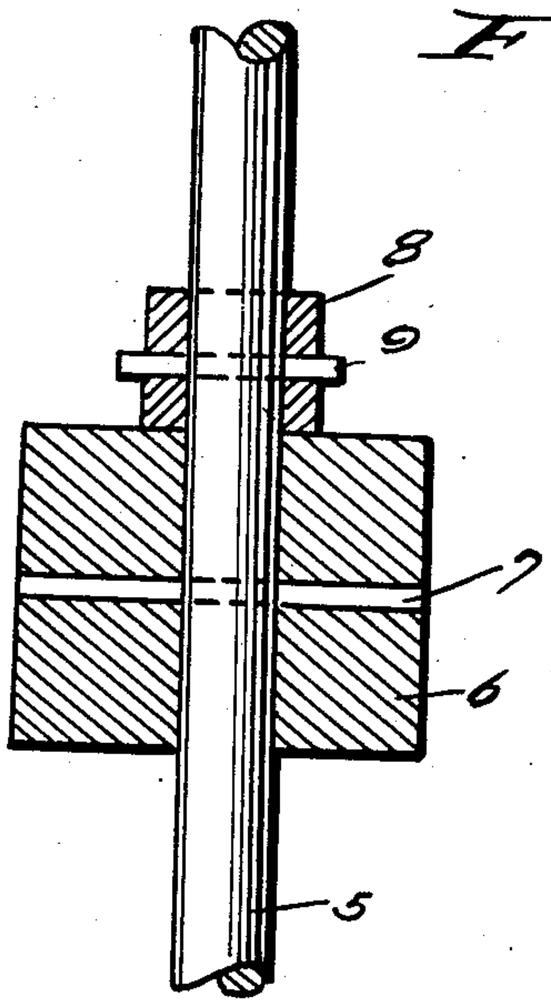


Fig. 6.

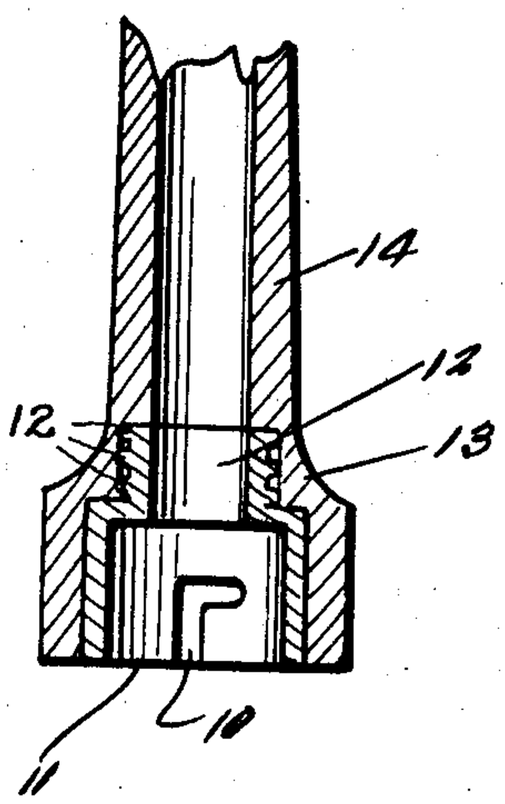
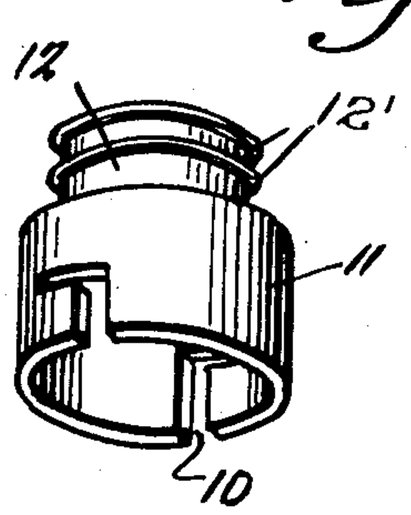


Fig. 7.



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UNITED STATES PATENT OFFICE

2,148,819

SPINDLE AND BOBBIN

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Application May 13, 1937, Serial No. 142,520

1 Claim. (Cl. 242—46.2)

This invention relates to new and useful improvements in spindles and bobbins, such as are used on winding machines.

The principal object of the present invention is to provide a spindle and bobbin construction for a winding machine so constructed and arranged that the bobbin is connected with the spindle to rotate therewith while the silk from skeins is being wound on the bobbin and then when the bobbin is filled it is removed from the spindle and placed on a stationary spindle of a doubler machine on which the bobbin will rotate.

Another object of the invention is to provide means for tightly holding the bobbin on the rotating spindle of the winding machine so as to prevent the silk from running over the end of the bobbin and catching between the head of the spindle and the bobbin.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings,

Figure 1 represents a side elevational view of the assembled structure with the bobbin in longitudinal section,

Figure 2 is a fragmentary side elevational view of the spindle,

Figure 3 is another side elevational view of the spindle,

Figure 4 is a cross sectional view on the line 4—4 of Figure 2,

Figure 5 is a fragmentary longitudinal sectional view on the line 5—5 of Figure 3,

Figure 6 is a fragmentary longitudinal sectional view through the bobbin, and

Figure 7 is a perspective view of the bushing.

Referring to the drawings, wherein like numerals designate like parts, it can be seen that the numeral 5 represents the spindle shaft on which is the block 6 secured by the pin 7. Upon the block 7 and surrounding the shaft 5 is the collar 8, the pin 9 extending through the collar 8 and through the shaft 5 so that its ends protrude beyond the collar 8 to form trunnions for engagement into the bayonet slots 10 of the bushing 11. The bobbin 14 has a smooth bore terminating at its lower end in the enlarged part 13 of the bobbin, which large part is formed with a bore of much greater diameter than the bore of the major portion of the bobbin and the main part of the bushing 11 fits in this bore of the enlarged part of the bobbin and above this enlarged bore is a second bore of less diameter than the enlarged bore but of greater diameter than the bore of the major portion of the bobbin. This intermediate bore receives the neck 12 which is provided with the corrugations 12' to cause the neck to firmly engage the intermediate bore, as shown in Figure 6.

The spindle shaft 5 is provided with longitudinally extending spring members 15 which frictionally bear against the inside of the bobbin 14 as substantially shown in Figure 1.

As will be understood when the bobbin with the bushing therein is placed over the shaft or spindle 5 and positioned so that the ends of the pin 9 will engage the bayonet slots 10 in the bushing this fastens the bobbin to the spindle shaft so that the bobbin is held on the shaft in a tight manner to prevent the silk from running over the end of the bobbin and catching between the head of the spindle shaft and the bobbin. After the bobbin has been filled with silk, the bobbin is removed and placed over a stationary spindle of a doubler machine and by having the interior of the bobbin plain and free of projections the bobbin will rotate on the stationary spindle. As is understood two or more winder bobbins are wound on one bobbin of the doubling machine and as the spindles of these doubling machines are stationary the winder bobbins must rotate on said spindles. For that reason the hole or bore in the bobbin must be smooth.

Thus I have provided a bobbin having a smooth bore so that it can rotate on a stationary spindle of a doubling machine, with means for fastening the bobbin to the spindle shaft of a winding machine so that the bobbin will rotate with the spindle and will be held on the spindle in a tight manner so as to prevent the silk from running over the end of the bobbin and catching between the head of the spindles and the bobbin.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size, and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described the invention, what is claimed as new is:

A spindle and bobbin assembly for a winding machine comprising a spindle shaft, a head through which the shaft passes, means for connecting the head with the shaft, a collar of much less diameter than the head, said collar surrounding the spindle shaft and resting on the head, a pin passing through the collar and shaft with its ends projecting from the collar, a bobbin having an enlarged lower end having a large circular opening therein and a smaller circular open-

ing located above the first opening, a bushing having a neck, the bushing fitting in the large opening and the neck in the smaller opening, the lower end of the bushing being flush with the lower end of the bobbin and having bayonet slots therein, portions of which pass through the lower end of the bushing, said slots receiving the projecting end of the pin, the bore in the major portion of the bobbin and the bore of the neck being smooth and plain, whereby said bobbin will rotate on the stationary spindle of a doubling machine.

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