

M. OMALIA.  
SPINDLE LOCK.

APPLICATION FILED AUG. 16, 1910.

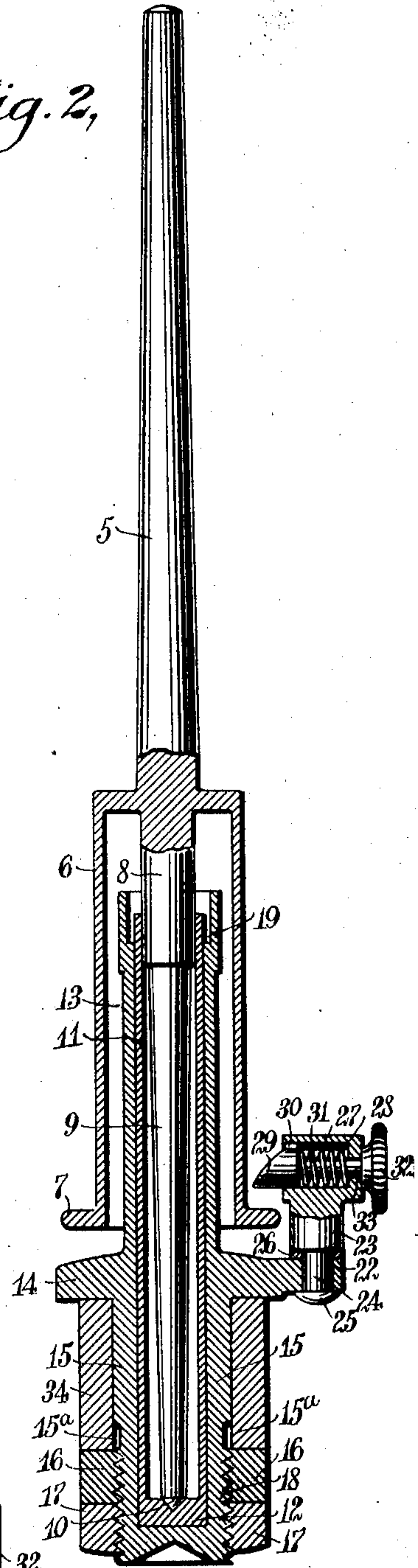
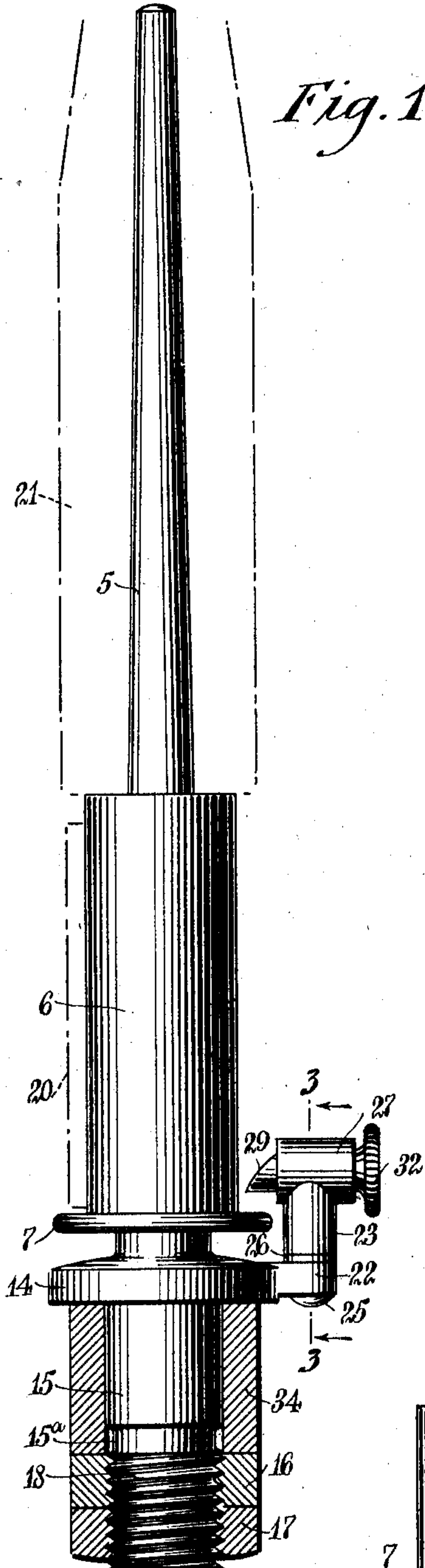
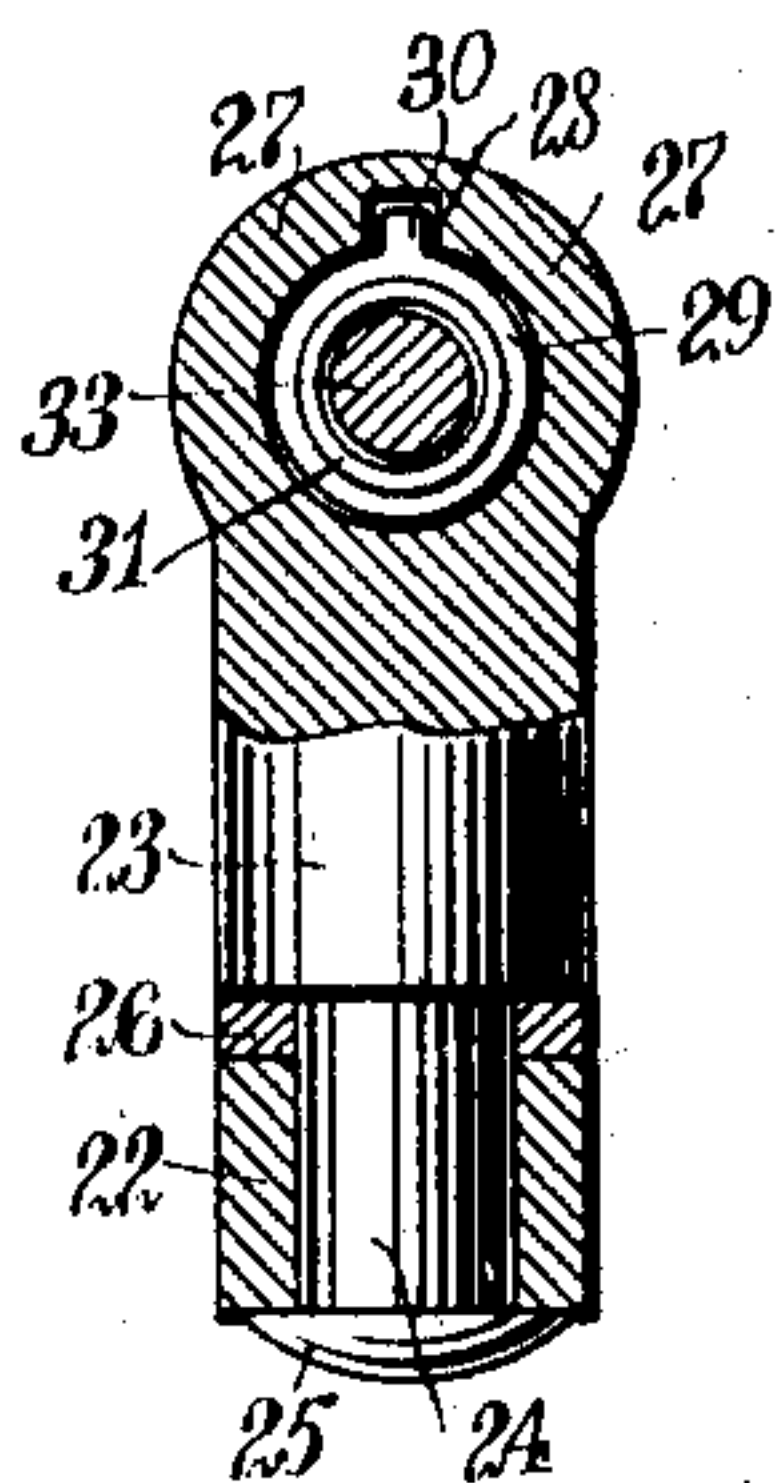
998,545.

Patented July 18, 1911.

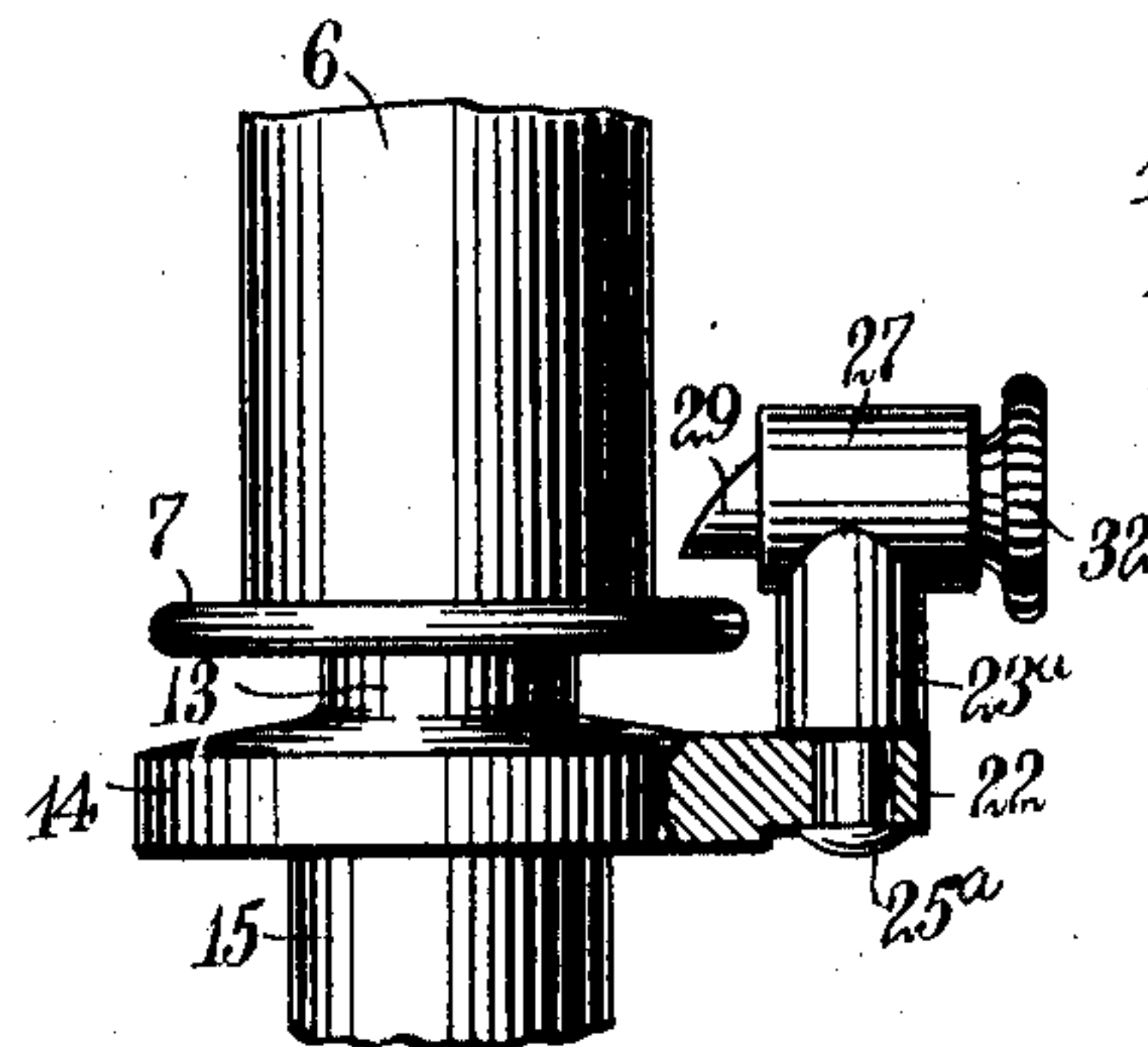
*Fig. 1,*

*Fig. 2,*

*Fig. 3,*



*Fig. 4,*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MATTHEW OMALIA, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO DAVID M. REYNOLDS AND JOHN REYNOLDS, ONE-SIXTH TO JAMES FRANCIS SALTRY, AND ONE-SIXTH TO WILLIAM NATHANIEL BROOKS, ALL OF SCRANTON, PENNSYLVANIA.

## SPINDLE-LOCK.

998,545.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed August 16, 1910. Serial No. 577,386.

*To all whom it may concern:*

Be it known that I, MATTHEW OMALIA, a citizen of the United States, and a resident of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented a new and Improved Spindle-Lock, of which the following is a full, clear, and exact description.

My invention relates to spindle locks, my more particular purpose being to provide an improved lock for preventing the removal of a spindle, such, for instance, as is commonly employed in factory work, from its mounting, yet allowing the spindle all the freedom of motion which it now has, and also permitting the removal of the spindle when the operator sees proper to release the lock.

As is well known in this art, there are many looms, weaving machines and the like, employing power driven spindles for wrapping thread upon spools and bobbins, and it is desirable that the spindle shall be easily removable from its mountings at the will of the operator, but shall not be so easily removed as to lead to the accidental disarrangement of the parts and to the removal of the spindle at a time when the operator has no intention of removing it. In many instances well known in the art, the spindle is provided with a wide pulley of small diameter mounted rigidly upon it, or even integral with it. I provide in close proximity to this pulley, a latch for engaging the pulley and preventing the removal of the spindle except when, under control of the operator, the latch is actuated in order to effect the release of the pulley.

My invention further relates to means for mounting the latch in position and comprehends a special provision for supporting the latch by aid of a rivet; and after the rivet has been used, my invention comprehends means whereby the rivet may be headed up the second time.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a view partly in elevation and partly in section, showing my improved spindle lock complete; Fig. 2 is a view similar to Fig. 1, but showing more of the parts

in section; Fig. 3 is a detail section on the line 3—3 of Fig. 1, showing the sliding bolt and other parts, together forming the latch; and Fig. 4 is a fragmentary view, partly broken away and showing how the latch is mounted.

A spindle 5, having generally the form of a double-ended cone, is provided with a pulley 6, the latter being wide and of small diameter, thus having substantially a cylindrical form. This pulley is integral with the spindle and is provided with an annular flange 7, also integral. The spindle is further provided with a substantially cylindrical portion 8, the conical portion 9 of the spindle being integral with the portion last mentioned and extending out in the general diameter of the axis of the pulley 6. The conical portion 9 terminates in a tip 10.

A bearing sleeve 11 having generally a cylindrical form is provided with a closed end 12, the latter being provided centrally with a shallow pit in which the tip 10 rests. A head 14 of a general annular form is provided with a cylindrical portion 13 extending upwardly, and is further provided with a cylindrical stem 15. This stem is provided with a threaded portion 18 and with an oil groove 15<sup>a</sup>. A nut 16 is threaded internally and fitted upon the threaded portion of the stem 15. Another nut 17 is also threaded internally and fitted upon the lower portion of the stem. The nut 17 serves as a lock for holding the nut 16. The cylindrical portion 13 is provided with an oil groove 19. The pulley 6 is driven by aid of a belt 20 against which the pulley is pressed in a lateral direction, as hereinafter described. The bobbin is mounted upon the upper portion of the spindle and is indicated by broken lines at 21. The head 14 is provided with an eye 22 which supports a post 23, the latter having a stem 24 which is headed up or upset, and thus formed into a head 25. A washer 26 encircles the stem 24 and renders the post 23 slightly higher than would otherwise be the case.

At 27 is a sleeve which is provided internally with a splineway 28. A bolt head 29 is slidably mounted within the sleeve 27. A spiral spring 31 is mounted within the sleeve 27 and presses against the bolt head 29. A knob 32 is mounted upon a rod 33, the latter extending axially through the



spiral spring and being connected rigidly with the bolt head 29. The bolt head 29 carries a spline 30 which works slidably within the splineway 28.

- 5 When the device is originally assembled, the post 23, by virtue of the thickness of the washer 26, is practically a little taller than need be, and on this account the bolt head 29 is raised a little distance above the flange 7.
- 10 It may happen, however, that at some time afterward the post 23 is for some reason removed from its mounting. To do this the bolt head 25 is filed or cut away and the post 23 moved directly upward, being thereby detached. In order to mount the post
- 15 again upon the eye 22, the washer 26 is discarded and the post is mounted directly upon the eye 22 without the aid of the washer 26, as will be seen at 23<sup>a</sup> in Fig. 4.
- 20 The stem of the post being now headed up or upset at 25<sup>a</sup>, the latch is again in position though the bolt head 29 is now a little closer to the flange 7 than before. At 34 is an eye for supporting the spindle and
- 25 parts carried by it. This eye is integral with and is a part of a swinging arm which under the control of the operator may be moved in two directions for the purpose of pressing the pulley 6 into engagement with
- 30 the belt 20 and releasing the pulley from such engagement.

- The operation of my device is as follows: The post 23 and latch carried by it being mounted in position as described, the other
- 35 parts are assembled as indicated in Fig. 2. In order to mount the spindle in position, the conical portion 9 is inserted within the bearing sleeve 10 and the flange 7 of the pulley 6 is moved past the bolt head 29.
- 40 This bolt head being beveled, readily yields by compressing the spiral spring, and as soon as the flange has passed the bolt head the latter extends inwardly over the flange, as indicated in Figs. 1 and 2. The spindle
- 45 can not now be readily moved, for the reason that the flange can not readily move past the bolt head 29. Suppose, now, that the operator wishes to remove the spindle. The knob 32 is grasped by the fingers and
- 50 drawn outwardly, the tension of the spiral spring being slightly compressed. The

spindle being now grasped may be readily slipped upward, the flange 7 easily passing the bolt head 29. If the washer 26 (see Fig. 1) has been discarded (see Fig. 4) the action 55 of the latch is substantially the same as before, the only difference being that the bolt 29 is a little closer to the flange 7. The eye 34 is a part of and is carried by a swinging arm, this arm being moved at the will of 60 the operator in either of two directions in such manner as to bring the pulley 6 into and out of engagement with the belt 20.

With the apparatus arranged as above described, the operator may remove the spool 65 or bobbin 21, without making any particular examination of the spindle to ascertain if the latter is apt to become detached. The operator, knowing the character of the bolt head 29, can safely assume that the spindle 75 is not likely to become detached and may, therefore, merely pick off the bobbin or spool 21 without any waste of time due to further examination.

I do not limit myself to the use of any 75 particular material in the construction of the device above described. Neither do I limit myself to the particular shape or configuration given to any of the parts shown.

Having thus described my invention, I 80 claim as new and desire to secure by Letters Patent:

In a device of the class described, the combination with a head provided with an eye, and a spindle provided with a pulley having 85 a flange at its lower end, of a post mounted in the eye of the head and provided at its upper end with a sleeve having an internal splineway, a bolt mounted to slide in the sleeve and provided at one end with a head 90 having a beveled end and at the other end with a knob, said bolt head having a spline working in the splineway of the sleeve, and a spring surrounding the bolt in the said sleeve. 95

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATTHEW OMALIA.

Witnesses:

EDGAR A. JONES,  
GERTRUDE LOOMIS.