

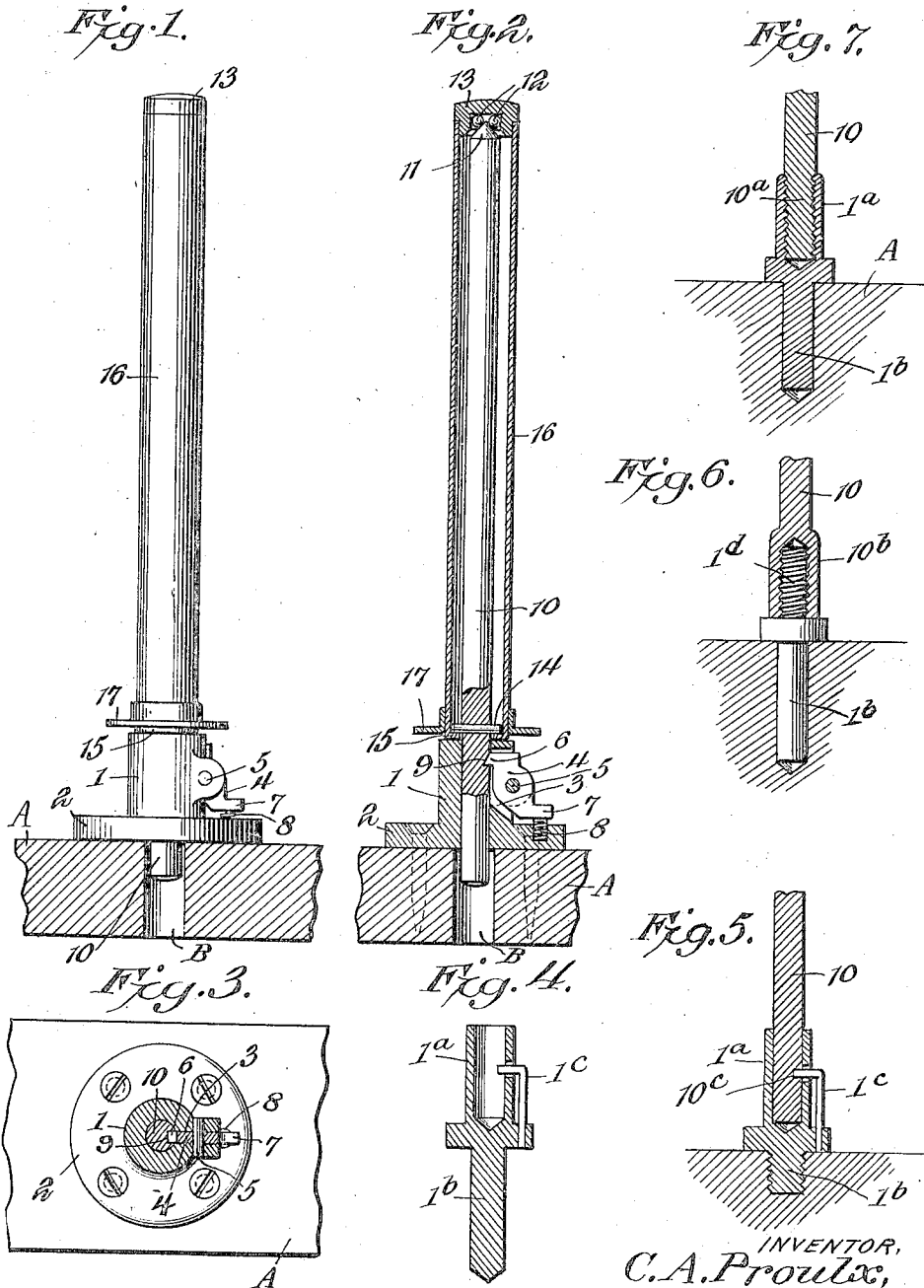
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SPINDLE

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UNITED STATES PATENT OFFICE.

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SPINDLE.

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To all whom it may concern:

Be it known that I, CHARLES A. PROULX, a citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Spindles, of which the following is a specification.

My present invention pertains to bobbin holders or pegs such as are used in connection with twisting and spinning machines, and it has for one of its objects the provision of means whereby winding and unwinding of yarn will be done in an even and steady manner and thus prevent the liability of the yarn breaking during such operation.

The invention has for another object the provision of supports therefor and means for locking or securing the peg or holder in proper position on the frame or support of the machine.

Other objects and characteristic features of the invention will be fully understood from the following description and claims when the same are read in connection with the drawings accompanying and forming part of this specification, in which:—

Figure 1 is a side elevation of the preferred embodiment of my bobbin-holder.

Figure 2 is a longitudinal section thereof.

Figure 3 is a top plan view of the preferred form of locking means for the holder support.

Figure 4 is a modified form of locking means.

Figures 5, 6 and 7 are various forms of bases that I employ to support the holder on the frame of the machine.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

The base A or frame is provided with an opening B and screwed or otherwise secured to the base or frame is a support 1 having a base portion 2. The support 1 is provided on its surface with a channel 3 and the support terminates in ears or wings that receive and hold a dog or keep 4. This dog 4 is fulcrumed to the ears by means of the pin or bolt 5 and on its inner end the dog is provided with a pawl 6 that enters a groove 9 provided in the spindle 10 as shown in Figure 2. This arrangement assures stationary support of the spindle 10 on the base or frame A.

At its lower or outer end the dog 4 is

provided with the portion 7 that is placed under tension by means of the spring 8 that is arranged in the portion 2 of the support 1.

The spindle 10 is tapered at its upper end as indicated by 11 and surrounding the spindle 10 is a column 16 having the base or cap 17 that may be formed integral on the column or separate as shown. At its lower end the column 16 is provided with the portion 15 that bears against a pin or stop 14. This stop may be formed integral on the column when desired.

Pressed, threaded or otherwise secured on the upper end of the tube or column 16 is a cap 13 that is machined interiorly to form a ball race for the anti-friction balls 12.

It will be seen from the foregoing that the spindle described may be quickly and easily locked on the base 1 and prevented from casual displacement from the base. Moreover, the bobbin-holder 16 may be as readily secured on the spindle and because of the machined interior of the cap 13 the anti-friction balls will be retained in proper position when the tube is removed from the spindle, and when properly positioned on the spindle the tube will assure steady and easily rotatable operation of the bobbin.

In Figures 4 and 5 I illustrate a modified form of spindle locking means that comprises a collar 1^a and stem 1^b that takes into the frame. This collar is provided with an aperture that registers with an aperture 10^c in the spindle 10. This registration is brought about by turning the spindle until it is in line with the aperture of the collar 1^a. A locking collar 1^c is arranged on the support 1^b and enters the apertures of the collar and spindle to prevent rotation of the spindle.

In Figures 6 and 7 I illustrate modified forms of spindle end and supports. These comprise the spindle 10 (Figure 6) that is bored at its lower end 10^b and threaded to receive the threads 1^d of the base 1^b. The base 1^b may be of various sizes to snugly fit apertures in the frame.

In Figure 7, I illustrate still another form of support and spindle, comprising the exteriorly threaded portion 10^a of spindle 10 and the interiorly bored and threaded portion 1^a of the base 1^b. Like the base of Figure 6 this base may also be of various sizes.

It will be readily seen that all of the bases

and the locking means and spindles are applicable to the ready working of the tube or bobbin-holder 16.

The construction illustrated and described constitute devices that overcome many of the objections present in corresponding inventions, but because of their simple and inexpensive constructions assure long life and economic operation of machinery equipped with the invention.

Having described my invention, what I claim and desire to secure by Letters-Patent is:—

1. In means for the purpose set forth, the combination of a frame, a support arranged on the frame, a spindle arranged in the frame and support, a dog mounted on the support, a detent formed on the spindle to receive the pawl of the dog, a spring for placing the dog under tension, a casing surrounding the spindle, a collar secured to the lower end of the casing, a cap interiorly machined and arranged on the casing and

anti-friction means arranged in the cap and bearing on the spindle.

2. In means for the purpose set forth, the combination of a frame having an opening therein, a support secured on the frame, and having an opening that registers with the opening of the frame, a spindle having one end arranged in the aperture of the frame and support, locking means arranged on the support and spindle for retaining the spindle on the support, a casing adjacent the spindle, a collar secured to the casing, a cap arranged on the casing and anti-friction means arranged in the cap and bearing on the spindle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES A. PROULX.

Witnesses:

ALBERT E. GRAHAM,
OSCAR W. HULTGREN.