(No Model.)

G. T. BOWMAN.

BOBBIN HOLDER OR CLAMP.

No. 589,690. Patented Sept. 7, 1897.

Fig. 1.

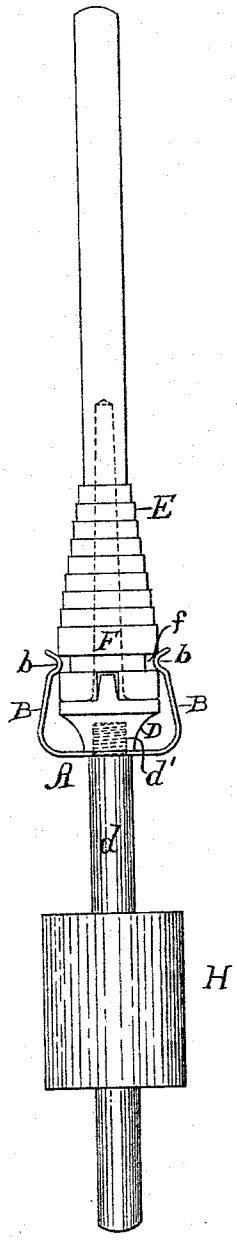


Fig. 3.

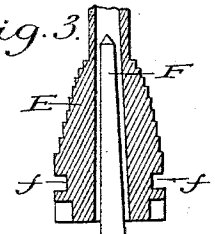
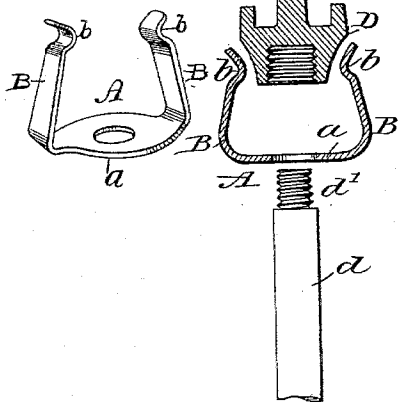


Fig. 2.



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BOBBIN HOLDER OR CLAMP.

SPECIFICATION forming part of Letters Patent No. 589,690, dated September 7, 1897.

Application filed June 12, 1894. Renewed May 4, 1897. Serial No. 635,077. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. BOWMAN, a citizen of the United States, residing at Philadelphia, (Frankford,) in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Bobbin Holders or Clamps, of which the following is a specification.

My present invention relates to a holder or clamp for the bobbins of so-called "horizontal" bobbin-winders, although it is applicable in whole or in part to other types of such machines.

The principal objects of my present invention are, first, to provide a simple, durable, efficient, reliable, and comparatively inexpensive device, holder, attachment, or clamp for not only preventing endwise play or wabbling movements of the bobbin in respect to its spindle, whereby waste of yarn, thread, or other material is obviated and accuracy and uniformity of winding insured, but also permitting of the ready, convenient, and rapid removal and application of the bobbin to and from the spindle, and, second, to so construct, arrange, and combine the various parts of the clamp, device, or holder as that it may be conveniently applied to such bobbins and spindles as are commonly employed in mills and factories without requiring any addition to or alterations or changes in such standard spindles and bobbins.

In my invention use is made of a clamp or holder comprising a base held between the sections of a spindle and provided with spring-arms adapted to engage a bobbin mounted on the spindle.

The nature, characteristic features, and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is an elevational view illustrating a bobbin clamp or holder embodying features of my invention in application to a spindle or bobbin. Fig. 2 is a perspective view illustrating the bobbin holder or clamp shown in Fig. 1, and Fig. 3 is a sectional view showing the parts detached.

In the drawings, D and *d* are the respective parts of a spindle, which are adapted for connection in the present instance by means of a screw *d'* or other type of dowel.

H is a pulley or wheel by means of which rotary motion is imparted to the spindle through the intervention of a belt, frictional driving-wheel, or other device.

D is a spindle-head provided with one or more projections or lugs adapted to take into corresponding recesses in the base of the bobbin E in order to impart rotary motion from the spindle thereto.

f is an annular groove which is commonly cut or otherwise formed around the base of all bobbins for use in mounting them in shuttles, as will be readily understood by those skilled in the art to which my invention appertains.

Having thus described and pointed out so many and such parts of a well-known and standard type of bobbin and spindle to which my invention is applicable, I will now proceed to describe the latter and also the manner in which it is combined with the above-mentioned parts.

A is a clamp or holder comprising a base *a*, perforated, as shown in Fig. 2, for the accommodation of the portion *d'* of the spindle. This base *a* is adapted to be held between the parts *d* and D of the spindle and is provided with integral upwardly and inwardly extending spring-arms B, adapted to engage the base of the bobbin E. For this purpose each of the arms B is provided with a shoulder *b*, stamped or otherwise formed thereon and adapted to take into the groove *f* of the bobbin E.

In use the part D of the spindle is detached from the part *d* thereof. The base *a* is mounted upon the part *d* of the spindle F by passing the threaded portion *d'* through the aperture of the base *a*, whereupon the part D is secured to place, as shown in Fig. 1. Under these circumstances the clamp or holder A is firmly attached to the spindle in such manner that the shoulders *b* of its arms B are adapted to take into the groove *f* of the bobbin E.

From the foregoing description it is obvious that my improved clamp or holder may be readily and rapidly applied to the spindle and bobbin by utilizing the ordinary features of construction thereof and without necessitat-

ing any changes in or additions to either of these parts.

The mode of operation of the hereinabove-described device is as follows: For the sake of a further description of my invention it will be assumed that the spindle *d* is rotated around a horizontal axis through the intervention of the pulley or wheel H in the ordinary and well-understood manner. The empty bobbin E may be readily applied to the portion F of the spindle by the simple operation of pushing the bobbin onto the latter until the lugs on the part D enter their corresponding recesses and until the shoulders *b* take into the annular recess *f*. Under these circumstances the arms B hold the bobbin E firmly up against the face of the spindle-head D, so that the bobbin E is not only held against movement in the direction of its length, but is also prevented from wabbling at its free end in respect to its axis of rotation. The absence of endwise play and freedom from wabbling movements is important for many reasons, among which the following may be mentioned: If the bobbin were afforded endwise play, it would become detached from the projections upon the spindle-head D and consequently would cease to rotate. In fact it has hitherto been customary in starting the bobbin to manually wind the thread or yarn not only onto the bobbin but also downward onto the spindle-head D in order to tie the bobbin to the spindle-head and thus prevent endwise play of the former. However, this resulted in the waste of considerable yarn or thread. Moreover, under such circumstances the free end of the bobbin wabbles slightly in respect to its axis of rotation because the thread did not tie the bobbin firmly to the spindle-head D, and this wabbling motion of the bobbin resulted in uneven or, as it is sometimes called, "lumpy" winding, which in the subsequent use of the thread or yarn, for example, in a shuttle resulted in breakage and waste.

It will be obvious to those skilled in the art to which my invention appertains that modifications may be made in details without departing from the spirit thereof. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove set forth and illustrated in the drawings; but,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination a two-part spindle having its respective parts detachably connected and whereof one is internally threaded and whereof the other is provided with a screw end adapted to engage the internally-screw-threaded portion of the first-mentioned part; and a clamp or holder comprising a base perforated for the passage of said screw end and held between the respective parts of the spindle and having spring-arms carried by its base, substantially as and for the purposes set forth.

In testimony whereof I have hereunto signed my name.

GEO. T. BOWMAN.

Witnesses:
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