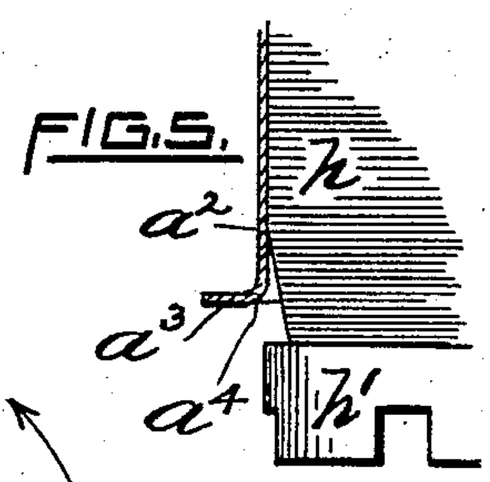
No. 860,690. PATENTED JULY 23, 1907.

J. PEARSON.

BOBBIN HOLDER.

APPLICATION FILED FEB. 6, 1906.

FIG. 5.



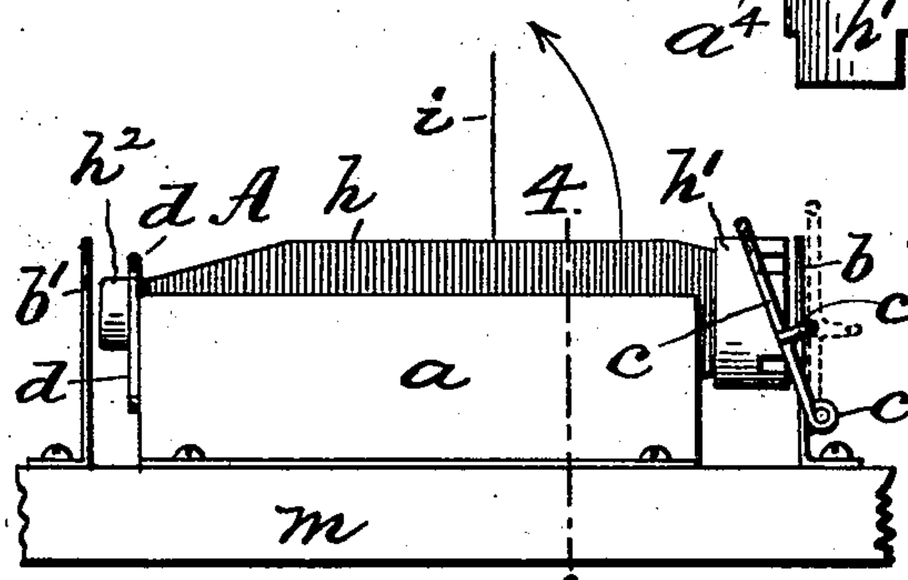


FIG. 1.

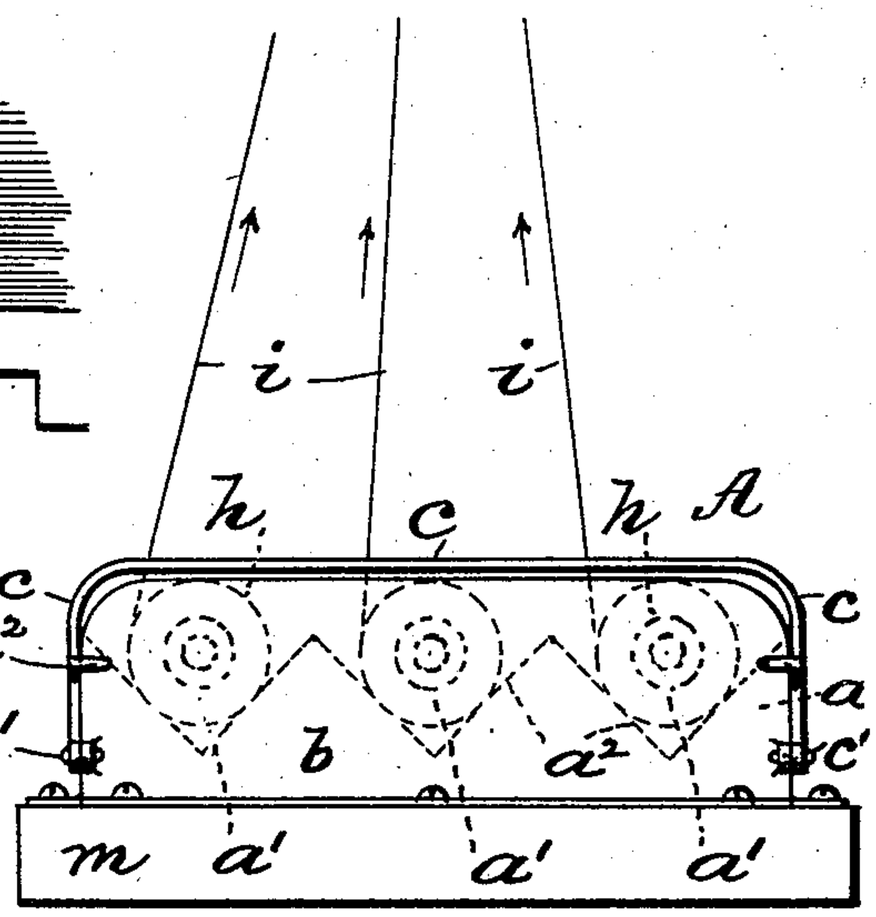


FIG. 2.

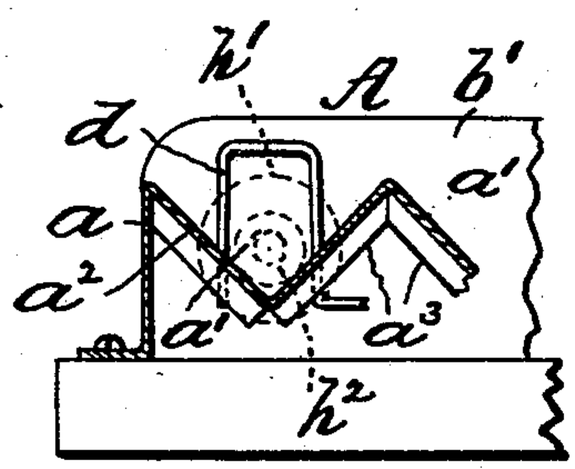


FIG. 4.

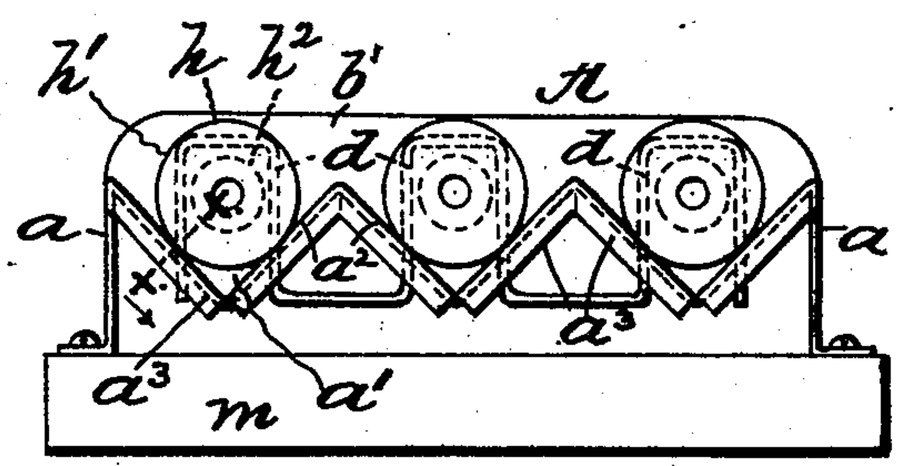


FIG. 3.

WITNESSES.

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BOBBIN-HOLDER.

No. 860,690. Specification of Letters Patent. Patented July 23, 1907.

Application filed February 6, 1906. Serial No. 299,828.

To all whom it may concern:

Be it known that I, JAMES PEARSON, a citizen of the United States of America, and a resident of Central Falls, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Bobbin-Holders, of which the following is a specification.

My invention relates to improvements in bobbin-holders for spooling, doubling and warping machines, and it consists essentially of a sheet-metal body or member having a plurality of V-shaped parallel troughs or depressions adapted to freely receive and normally support the loaded bobbins when lying horizontally therein, a latch arranged to be swung over the larger ends of the bobbins to prevent them from rising from the V-shaped seats or supports, fixed guides through which the other or smaller ends of the bobbins extend, and laterally separated vertical plates or frame members for limiting the endwise movements of the bobbins, all as will be more fully hereinafter set forth and claimed.

Heretofore, in holders as usually made and of the class forming the subject of my present invention, the seat portions thereof were not self-centering in that they permitted considerable play of the bobbins in a lateral direction, this defect being more particularly noticeable when the major portion of the yarn-load or thread had been unwound or drawn off, the result being to materially increase the degree of working friction and thereby at the same time increasing the tension upon the yarn or thread, such tension being thus quite variable or uneven. Moreover, said former devices were comparatively expensive to manufacture.

The object I have in view is to produce an inexpensive bobbin-holder in which the objections or disadvantages above referred to are practically overcome or eliminated. By means of my invention the spoolers or winding machines are enabled to produce a greater percentage of useful work; the winding is effected with more uniformity or evenness because the bobbins run freer and with greater smoothness, and the attendant is enabled to introduce the filled bobbins into the holder and to remove them therefrom when empty with greater facility.

The device is well adapted to be employed where a single end or thread is wound onto the beam, as in warping, and also in cases where a plurality of ends leading from the bobbins are combined to form a single end or thread before the latter is wound onto the beam or large spool, as for example, in producing sewing-thread. The device may also be readily adapted for use when headless bobbins are employed. In cases where different sizes and lengths of bobbins are used the proportions of the holders are correspondingly varied.

In the accompanying drawings, Figure 1 illustrates a side elevation of my improved bobbin-holder, substantially as in use. Fig. 2 is a corresponding end view of the device, the same, as drawn, being adapted to prevent the bobbins from being accidentally unseated. Fig. 3 is a similar view, the front end frame being omitted. Fig. 4 is a partial transverse sectional view, taken on line 4 4 of Fig. 1, the bobbins being indicated by dotted lines, and Fig. 5 is a horizontal sectional view, enlarged, taken on line $x\,x$ of Fig. 3.

Again referring to the drawings, A designates my improved bobbin-holder complete, adapted when in use to be secured to any suitable or wooden base m, the latter being capable of supporting a number of the holders, and arranged with respect to the winding machine in any well-known or suitable way. The machine, however, not shown. As drawn, the bobbin-holder A is made of suitable sheet-metal, as tin. Its body portion a is bent and formed from one piece of stock, its two vertical side members are secured to the base m and having the intermediate portion corrugated to produce the three parallel horizontal V-shaped seats or holders proper a^1, the included angle between the inclined sides a^2 being say 90°. I prefer to make the length of the bobbin-supporting seats or troughs a^1 equal to or slightly less than the length of the yarn-load of the filled bobbin.

At the front and rear ends of the body a are located fixed upright end frames or plates b and b^1, respectively. These latter are made of sheet-metal and are secured to the base m, the distance between them being slightly greater than the extreme length of the bobbin itself, see Fig. 1. Since the base or enlarged portion h^1 of a bobbin is usually longer than the unfilled or plain portion of the opposite end h^2, therefore the space between the front frame b and the adjacent end of the holder a is correspondingly greater than that between the back end and its plate b^1, all as clearly shown in Fig. 1.

To the rear end of member a are rigidly secured upright inverted U-shaped guides d of wire, arranged centrally with respect to the troughs, each guide having the top connection thereof located slightly above the said plain part h^2 of the normally filled or loaded bobbin. See also Fig. 3.

The front end plate b is provided with a readily actuated swinging latch member c, also of wire, the same as drawn is pivoted at c^1 to ears secured to or integral with the plate, see Figs. 1 and 2. The latch extends upwardly and horizontally and is adapted to swing inwardly past the top edge of the plate to a position above

but contiguous to the enlarged end h^1 of the filled bobbins, see Fig. 1. The latch extends transversely of the holder (Fig. 2) and is positioned with respect to all the bobbins simultaneously. Each upright member of the latch has a short bent arm c^2 arranged to engage the outer face of the plate b thus forming a stop for limiting the inward angular movement of the latch. The latter when in use prevents the bobbins from rising out of the seats a^1.

The two ends of the sheet-metal blank from which the body or holder proper a is formed may be bent downwardly at right angles, thereby forming strengthening flanges a^3, the point of junction being well-rounded, as at a^4, Fig. 5, to permit the thread to run without chafing.

In using my improved bobbin-holder, assuming the latch to be in the vertical position, indicated by dotted lines in Fig. 1, the attendant or operator readily and quickly introduces the small ends, h^2, of the filled bobbins h, while the latter are held at an angle, into the guides d until they engage the plate b^1, followed by dropping the bobbins into the self-centering V-shaped troughs or seats to rest upon the beveled sides a^2. After the holder has been thus filled or charged with the bobbins the locking-latch c is next swung into position over the headed ends of the bobbins until arrested by the stops c^2, thereby simultaneously securing the bobbins in place. The ends of the several threads or yarns i are next conducted to the winder, thus completing the operation. As the yarn is unwound from the bobbins the latter gradually descend in the respective troughs until the entire yarn-loads have been unwound. The dotted lines, Fig. 4, indicate the corresponding positions of the bobbins when empty. The empty bobbins are readily removed, see arrow direction Fig. 1, after swinging the latch rearwardly to the said dotted line position.

I claim as my invention and desire to secure by United States Letters Patent:—

1. As an improved article of manufacture, a bobbin-holder comprising a fixed seat forming an open bearing throughout its length for freely receiving and supporting therein the entire weight of the revoluble bobbin and its yarn-load, oppositely disposed fixed members for limiting the short endwise movement or play of the bobbin, a stationary guide arranged to receive an end of the bobbin and support it laterally while at the same time permitting it to move freely in a vertical direction, and a movable latch arranged with respect to the other end of the bobbin for maintaining the latter in the normal operative position.

2. As an improved article of manufacture, a bobbin-holder consisting of a sheet-metal body member having a plurality of horizontally arranged parallel V-shaped seats, a plate located adjacent to each end of said body member, stationary guides arranged centrally of said seats for receiving the smaller ends of the bobbins, and a single swinging latch adapted to maintain the several bobbins in the normal operative position, substantially as described.

3. In a device of the character described, the combination of the stationary sheet-metal body member a having a beveled or V-shaped seat for supporting a yarn-holding bobbin, a fixed guide d for one end of the bobbin, suitably disposed stationary front and rear end plates b and b^1, and a latch c arranged to be swung into and out of position with respect to the enlarged or driving-end of the bobbin, substantially as described.

4. In a device of the character described, the combination with the fixed bearing or member a provided with a V-shaped seat adapted to support therein the entire weight of the bobbin and its yarn-load, and front and rear end plates, b and b^1, of a swinging latch c pivoted to said front plate arranged to maintain the bobbin in the normal operative position with respect to said seat while at the same time permitting it to move upwardly a limited distance, and means for arresting the movement of the latch when the latter is properly positioned over the corresponding end of the bobbin, substantially as described.

Signed at Providence, R. I., this 3d day of February, 1906.

JAMES PEARSON.

Witnesses:
GEO. H. REMINGTON,
HENRY P. STONE.