July 12, 1960 M. E. PETERSON 2,944,760

PENDULOUS ROTARY BOBBIN HOLDER

Filed April 22, 1957

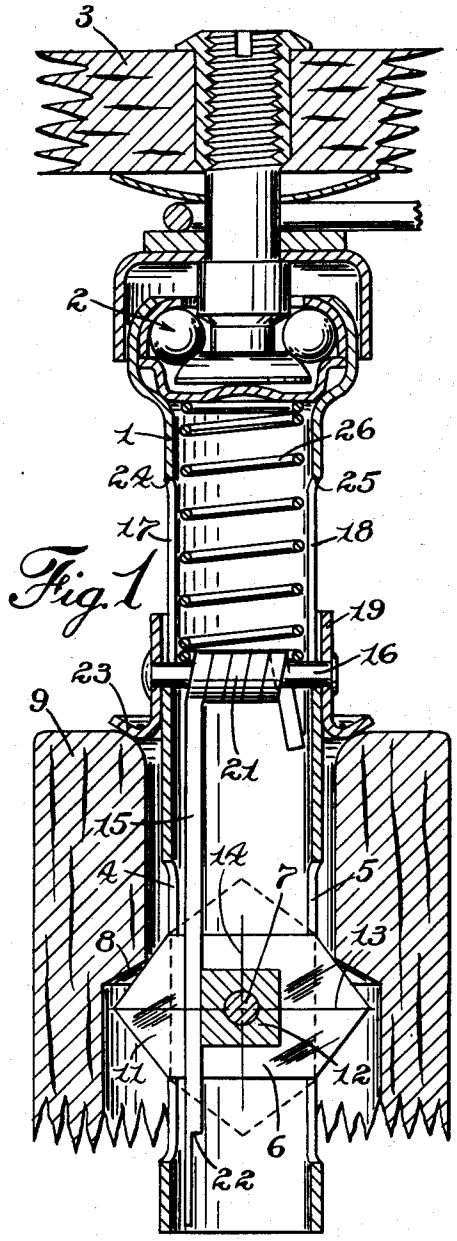


Fig. 1

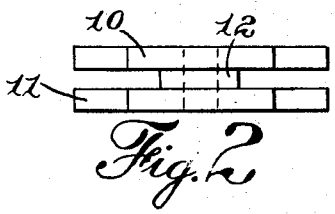


Fig. 2

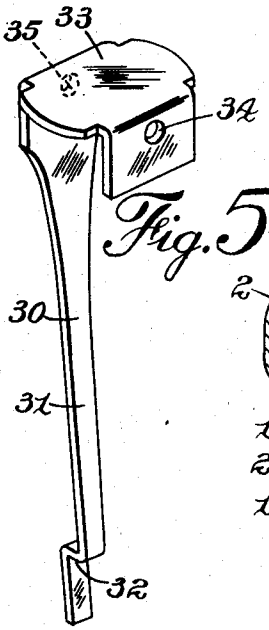


Fig. 5

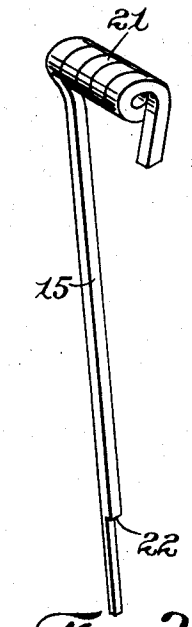


Fig. 3

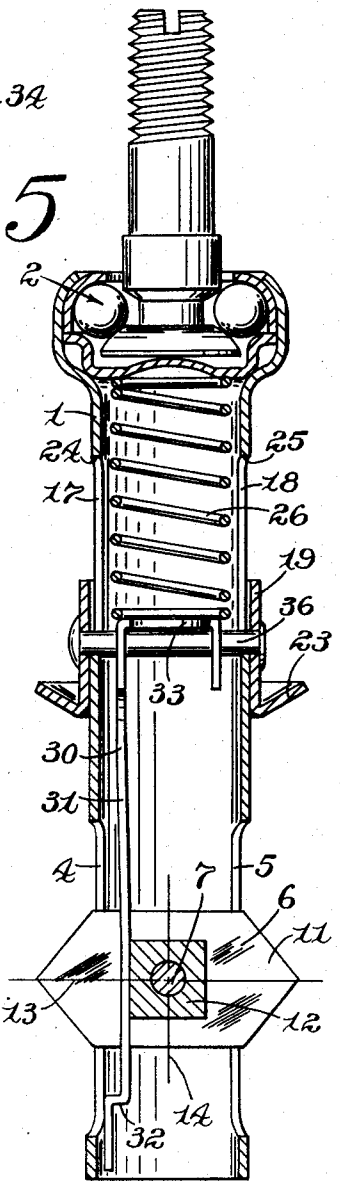


Fig. 4

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PENDULOUS ROTARY BOBBIN HOLDER

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2 Claims. (Cl. 242—130.2)

The present invention relates to a pendulous rotary bobbin holder and more particularly to a bobbin holder of this type using an automatically operated means to releasably support a hollow bobbin on the holder.

It is an object of the present invention to provide a novel bobbin holder of this type which is effective and reliable in operation and simple and economical in construction.

It is another object to provide such a device incorporating a rotatable oblong latch for making releasable attachment to the interior of the hollow bobbin.

It is another object to provide such a device in which the latch is automatically indexed into and out of operative position incident to the operation of applying and removing the bobbin from the holder.

Further objects and advantages will be apparent from the following description taken in connection with the accompanying drawing in which:

Fig. 1 is a vertical, substantially mid-sectional view of a bobbin holder forming a preferred embodiment of the invention;

Fig. 2 is a detail of the latch member viewed from the the bottom in Fig. 1;

Fig. 3 is a detail in perspective of the elastic pawl member used for indexing the latch;

Fig. 4 is a view similar to Fig. 1 showing a modified form of pawl member; and

Fig. 5 is a detail in perspective of the pawl member illustrated in Fig. 4.

In Fig. 1 of the drawing there is illustrated a generally cylindrical hollow body member 1 which is rotatably suspended by a swivel bearing indicated generally by numeral 2 from a member such as a creel board 3 of a spinning frame or the like. The body 1 has a pair of diametrically arranged axially extending slots 4 and 5, and an oblong latch member 6 is pivotally supported on a horizontal axis in the body by suitable means such as a pin 7 fixedly mounted in the body in such position that when the major dimension of the latch 6 is horizontal as shown in solid lines in Fig. 1, the ends of the latch extend through said slots in position to engage an internal shoulder 8 in the bore of the bobbin 9.

As shown in Figs. 1 and 2 the latch member 6 consists of a pair of plates 10 and 11 of generally rectangular form having fixedly mounted between them a square ratchet element 12 which is so oriented with respect to the latch plates that its sides are parallel respectively to the major and minor center lines 13 and 14 of said plates.

Means for indexing the latch into and out of the positions where its major dimension is horizontal is provided comprising a vertically extending elastic pawl member 15 which is pivotally mounted on a pin 16 which traverses a pair of slots 17, 18 in the body of the holder and is rigidly connected at its ends to a collar member 19 slidably mounted on the exterior of said body member.

As shown in Figs. 1 and 3, the pawl member 15 is formed with a laterally extending head 21 formed by winding the upper end of the pawl member around the pin 16, and so oriented and arranged as to cause the shank of the pawl member 15 to be pressed against the adjacent side of the ratchet 12. Adjacent the lower end of the pawl 15 an actuating shoulder 22 is formed in position to engage the upper surface of the ratchet 12 and rotate the ratchet and latch member when the pawl 15 is vertically reciprocated.

In order to reciprocate said pawl incidental to the operation of applying and removing the bobbin from the holder, the collar 19 is provided with a flared flange 23 adapted to be engaged by the upper end of the bobbin 9 to cause the collar and pawl to be raised to a position where the shoulder 22 of the pawl is above the ratchet 12 when the bobbin is applied to the holder, the upward movement being limited by engagement of the pin 16 with the upper ends 24, 25 of slots 17, 18. Means for moving the collar downward as the bobbin is released by the operator is provided in the form of a compression spring 26 within the body 1 of the holder located between the bearing 2 and the pin 16, the downward movement of said pin being limited by the lower ends of the slots 17, 18.

In the operation of this embodiment of the invention, when the holder is idle, its latch 6 is oriented with its major dimension vertical as shown in dotted lines in Fig. 1. When a bobbin 9 is applied to the holder and moved upwardly, it carries the collar 19 and pawl 15 upwardly with it until the shoulder 22 of the pawl passes above the ratchet 12. When the operator permits the bobbin 9 to move downward by gravity, the collar 19 follows by virtue of the spring 26, and the shoulder 22 of the pawl engages the upper surface of the ratchet 12 and rotates the ratchet through 90° into the position shown in full lines in Fig. 1 so that the bobbin rests on the projecting ends of the latch.

When it is desired to remove the bobbin, its is moved upwardly on the holder by the operator to initiate a repetition of the indexing operation whereby the bobbin is permited to slide off the holder.

In Figs. 4 and 5 of the drawing a modified form of pawl is illustrated at 30 which is constructed as a stamping comprising a shank 31 having a shoulder 32 formed near its lower end, and a laterally extending head portion 33 fitting loosely in the interior of the body 1 of the holder and perforated as indicated at 34 and 35 to receive a pin 36 corresponding to the pin 16 in Fig. 1.

The remaining parts of this embodiment of the holder are the same as in the first embodiment and the operation is similar so that further description thereof is deemed unnecessary.

Although certain structure has been shown and described in detail it will be understood that changes may be made in the design and arrangement of the parts without departing from the spirit of the invention.

I claim:

1. A pendulous rotary support for hollow bobbins for spinning frames and the like comprising a generally cylindrical body adapted to enter loosely into a bobbin, means for rotatably suspending the body from a member of the spinning frame, said body having a pair of diametrically arranged axially extending slots, an oblong latch member pivoted in the body on a horizontal axis in position to project through said slots when its major dimension is horizontal; and means for indexing the latch into and out of its horizontal position including a square ratchet member on the latch having flat vertically extending sides, a pin diametrically arranged and slidably mounted in the body of the support with its axis perpendicular to the vertical plane containing the pivotal axis of said latch, a collar slidably mounted on the exterior of the body and rigidly connected to the pin; and a

vertically extending elastic pawl member having a journal bearing at its upper end on said pin, said pawl having a straight shank portion maintained by said bearing yieldingly pressed against a vertical flat side of the ratchet to urge the ratchet toward its indexed position, and said shank portion having a horizontal downwardly facing shoulder spaced from its lower end adapted to engage and index the ratchet on downward movement of the pawl, said pawl having a further straight portion below said shoulder engaging the ratchet to resist its rotation from indexed position when the pawl is raised.

2. A pendulous bobbin support as set forth in claim 1 in which the pawl is in the form of a rod of elastic material with its upper end wound around said pin to provide a laterally extending journal bearing holding the lower part of the pawl pressed against the adjacent side of the latch.

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