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BOBBIN HOLDER FOR SPINNING FRAMES AND THE LIKE

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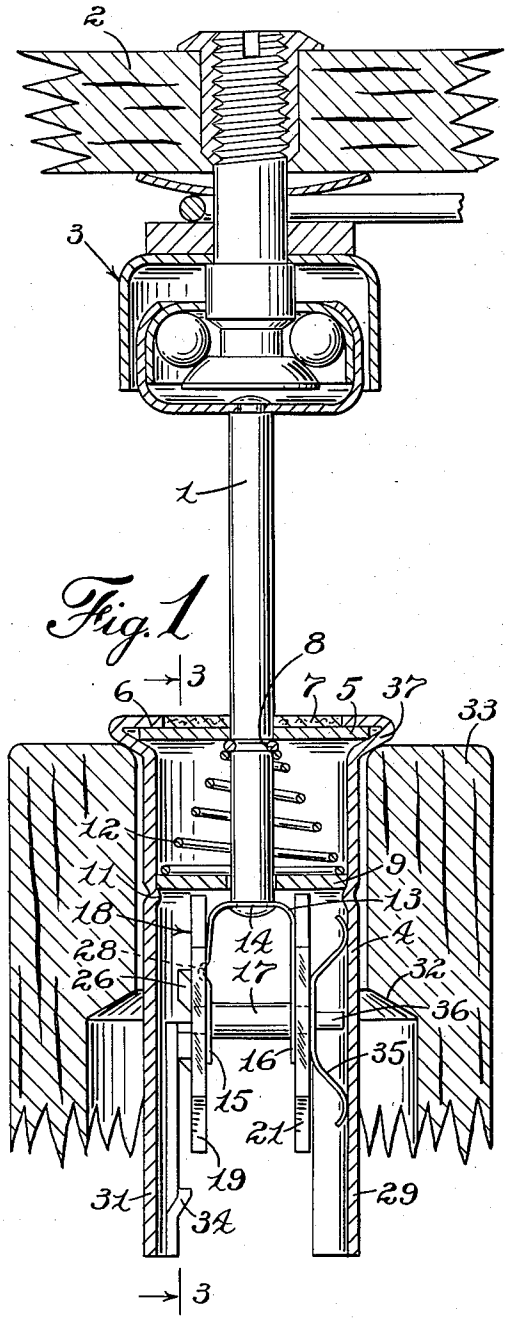


Fig. 1

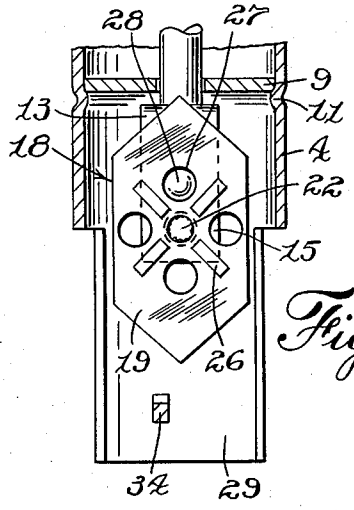


Fig. 3

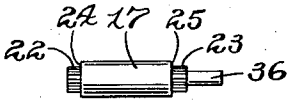


Fig. 4

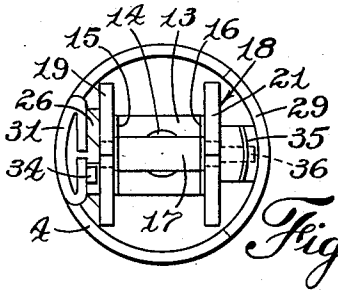


Fig. 2

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BOBBIN HOLDER FOR SPINNING FRAMES AND THE LIKE

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4 Claims. (Cl. 242—130.2)

The present invention relates to bobbin holders for spinning frames and the like, and more particularly to a pendulous hanger for attachment to a creel board or similar structure.

It is an object of the present invention to provide a novel bobbin holder which is simple and economical in construction, effective in operation, and adaptable to a considerable variation in the critical dimensions of the bobbin to be supported thereby.

It is another object to provide such a device which is particularly well protected from entry of lint or fly to the interior of 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 side elevation, partly broken away and in section, of a preferred embodiment of the invention;

Fig. 2 is a view of the bobbin holder looking up from below as seen in Fig. 1;

Fig. 3 is a section taken substantially on the line 3—3 of Fig. 1; and

Fig. 4 is a detail in side elevation of the mounting pin in the latch member.

In Fig. 1 of the drawing there is illustrated a hanger rod 1 which is rotatably suspended from a fixed support 2 such as the creel board of a spinning frame by means of a universal bearing of conventional structure indicated generally by numeral 3. A tubular body 4 is slidably mounted on the lower end of the hanger rod 1 by means of an upper ring or washer 5 which is crimped on the upper end of the body 4 as indicated at 6 and closely surrounds the rod 1, a packing 7 being preferably employed to form a seal for excluding lint or dust. The lowermost position of the body 4 with respect to the rod 1 is defined by a snap ring 8 seated in a groove in the rod 1 in position to act as an abutment for the washer 5.

In order to maintain alignment of the body on the rod 1, a second washer 9 is seated against an internal rib 11 in the body 4 suitably spaced from the upper end of the body and having a bearing fit on the rod 1. A spring 12 bearing at its upper end against the abutment ring 8, and resting at its lower end on the lower washer 9 serves to normally maintain the body 4 in its lowermost position as shown in Fig. 1.

A yielding bearing and detent member 13 is rigidly mounted on the lower end of rod 1 is indicated at 14 and has depending arms 15 and 16 which are spaced from each other and have horizontally aligned openings near their lower ends forming bearings for a pin 17 (Fig. 4) rotatably carried thereby.

The pin 17 forms the pivotal support of a latch indicated generally by numeral 18 comprising a pair of generally rectangular or oblong plates 19, 21 which are maintained in spaced alignment by being pressed on to the knurled terminal portions 22, 23 of the pin 17 against the shoulders 24, 25.

As best shown in Figs. 1 and 3, the plate 19 is formed with four ratchet teeth 26 extending radially and spaced

at 90° from each other, and with four openings 27 intermediate said teeth which openings cooperate with a projection 28 on the arm 15 of the yielding bearing member 13 to provide a detent structure arranged to yieldingly resist rotation of the latch.

The body 4 of the bobbin holder is provided with downwardly extending projections 29, 31, the latter being preferably formed as shown in Fig. 2 by shearing a panel from opposite sides of the holder and bending the panels inwardly to form a flattened bearing surface. The latch member 18 is so positioned that when its major dimension is horizontal, its ends project beyond the body through the spaces formed by shearing out said panels, so as to engage an internal shoulder 32 in the bobbin 33 to be supported. When the latch is indexed through 90° however, as shown in Fig. 3, it does not extend beyond the confines of the body so that the bobbin may now be removed from the holder.

Means for cooperating with the teeth 26 on the latch 18 to index the latch into and out of operative position is provided in the form of a pawl member 34 which is struck up from the material of the extension 31 of the body in position to engage a tooth 26 of the latch and thereby rotate the latch when the body is raised on the rod 1 as permitted by the spring 12.

Means for yieldingly pressing the latch 18 against the extension 31 of the body 4 of the holder is provided in the form of a spring member 35 pivoted on the reduced end 36 of the pin 17 and bearing against the extension 29 of said body so as to prevent the latch 18 from twisting in the body 4, and to insure proper engagement of the pawl 34 with the ratchet teeth 26.

In operation, when the holder is idle, the latch 18 is oriented with its major dimension vertical as shown in Fig. 3. When it is desired to mount a bobbin on the holder it is pressed upwardly against the tapered upper end 37 of the body 4, moving said body upward on the rod 1 until the pawl 34 engages a tooth 26 of the ratchet and rotates the latch 18 to bring its major dimension horizontal with its ends projecting outward. When the bobbin is then released by the operator it moves down until its internal shoulder 32 rests on the projecting ends of the latch.

It will be understood that the movement of the body 4 as limited by the washers 5, 9 and snap ring 8 is such as to secure the desired action of the pawl and ratchet, the indexed position of the latch 18 being defined and yieldingly maintained by the engagement of the detent elements 27, 28.

During the downward movement of the body 4, the pawl 34 will pass over one of the ratchet teeth 26, the necessary lateral movement of the latch being permitted by flexure of the spring 35 as well as the yielding detent arm 15. It will be noted that this lateral movement of the latch tends to increase the pressure of the detent elements thus ensuring against backward rotation of the latch at this time.

When it is desired to remove the bobbin, it is merely necessary for the operator to repeat the upward movement of the body 4 on the rod 1 whereby the latch 18 is indexed to its inoperative position, thus permitting removal of the bobbin.

Although but one form of the invention has been shown and described in detail it will be understood that changes may be made in the precise form and arrangement of the parts without departing from the spirit of the invention.

I claim:

1. In a pendulous bobbin holder a hanger rod, means for rotatably suspending the rod from a fixed support, a laterally yielding bearing member fixed on the lower end of said rod, an oblong latch horizontally pivoted on

said bearing member and having ratchet teeth formed thereon, a tubular body mounted for vertical sliding movement on said rod, a pawl element extending inwardly from said body in position to engage the ratchet teeth, means for limiting the travel of the body on the hanger rod, said latch and yielding bearing member having cooperating detent means for yieldingly resisting rotary movement of the latch.

2. In a pendulous bobbin holder a hanger rod, means for rotatably suspending the rod from a fixed support, a laterally yielding bearing member fixed on the lower end of said rod, an oblong latch horizontally pivoted on said bearing member and having ratchet teeth formed thereon, a tubular body slidably mounted on the rod having slots through which the ends of said latch project when its major dimension is horizontal, a pawl element extending inwardly from said body in position to engage the ratchet teeth for indexing the latch to bring its major dimension into and out of horizontal position, and yielding means urging the latch laterally toward said pawl.

3. A bobbin holder as set forth in claim 2 in which said yielding bearing member is formed as a detent cooperating with the latch to resist its displacement from indexed position.

4. A bobbin holder as set forth in claim 2 including further means for guiding the tubular body and limiting its vertical movement on said rod, said guiding means also forming a seal for excluding lint and dust from the interior of the body, and spring means in the body for urging the body toward its lowermost position with respect to said rod.

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