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R. H. COOK.
STOP MECHANISM FOR BOBBINS.
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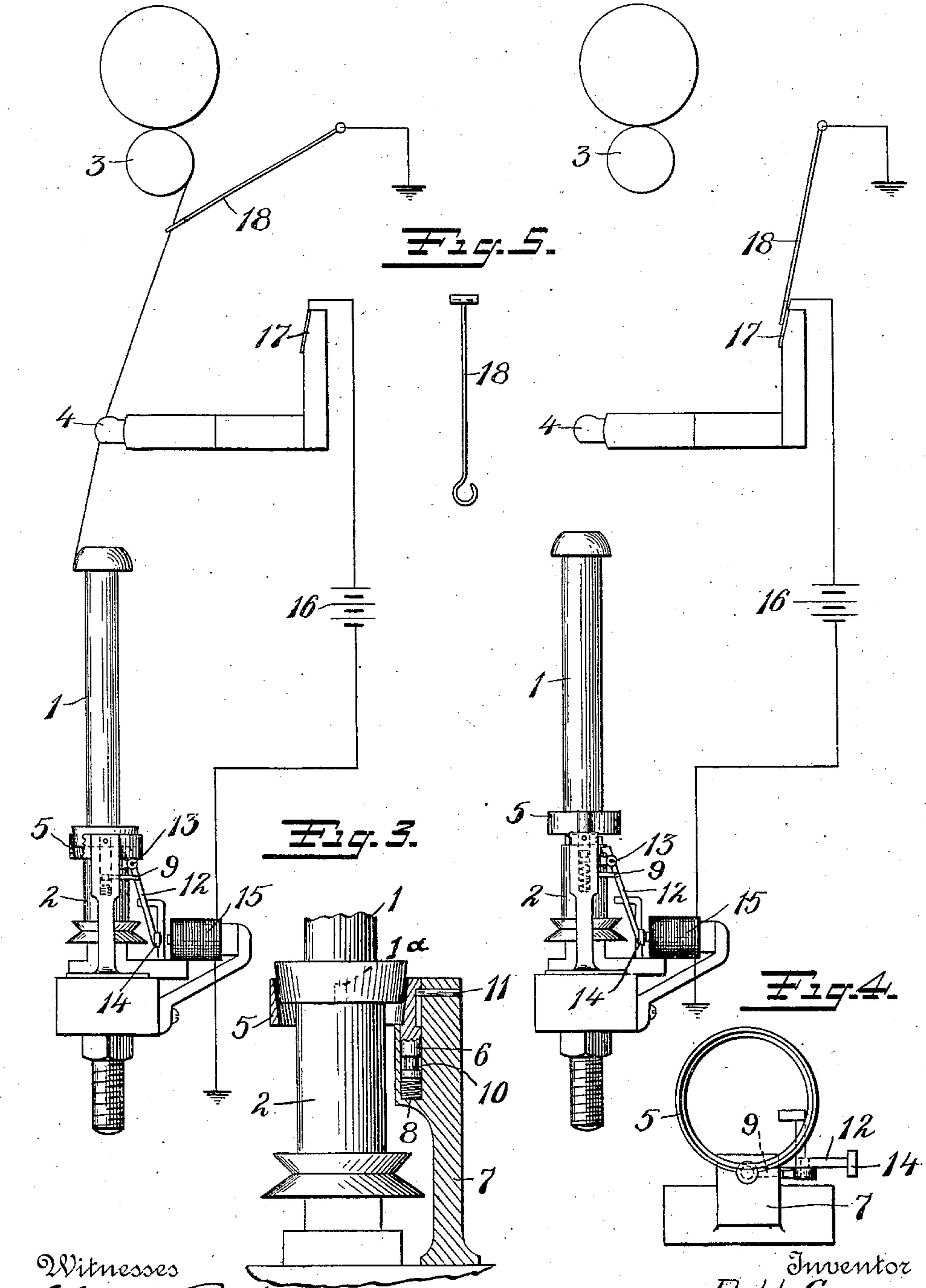
Fig. 1.

Fig. 2.

Fig. 5.

Fig. 3.

Fig. 4.



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STOP MECHANISM FOR BOBBINS.

No. 855,162.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD H. COOK, a citizen of the United States, residing at Fall River, Bristol county, Massachusetts, have invented certain new and useful Improvements in Stop Mechanism for Bobbins, of which the following is a full, clear, and exact description.

My invention relates to textile machinery, and particularly to a stop motion for the bobbins of twisting machines.

The object is to provide a simple, efficient, quick-acting device for stopping the winding bobbin when the yarn breaks.

The drawings illustrate mechanism involving the principles of this present invention. Other forms of stop mechanism suitable for different forms of twisting machines are shown and claimed in my other applications. Figure 1 illustrates mechanism embodying my invention, with the parts in position for winding. Since the construction of the twister machine is well known, the parts not particularly involving my invention need be shown only diagrammatically. Fig. 2 is a similar view to Fig. 1, but showing the parts in the position which they would occupy when the mechanism stops the bobbin upon breaking of the yarn. Fig. 3 is a fragmentary enlarged view showing the mechanism for disengaging the bobbin from the driving spindle and stopping its rotation. Fig. 4 is a plan view of the stopping device and releasing mechanism. Fig. 5 is a detail view of an arm having a passage for the yarn.

The bobbin 1 is removably mounted upon a suitable driving spindle 2 in any well-known manner, such as by pins 1^a on the spindle engaging corresponding recesses in the under surface of the lower bobbin head and adapted to wind yarn which is guided by the usual roll 3 and stationary member 4.

5 is an annular member having a supporting member 6 in the form of a plunger projecting in a vertical recess in the support 7.

8 is a spring which tends to force the plunger and ring 5 upward.

9 is a bolt or latch normally projecting into the recess 10 in the plunger and holding the stop ring 5 down.

11 is a stop pin for limiting the upward movement of the plunger 6 and ring 5 when released by the latch 9.

The interior of the ring 5 and the exterior of the lower bobbin head are preferably tapered, so that when the ring moves upward it may not only secure a lifting engagement on the bobbin, but frictionally grip the lower head so as to stop the rotation when the bobbin is lifted free from the driving spindle.

12 is a lever to which the latch 9 is pivoted and which is itself freely pivoted at 13. The lower end of the lever carries the armature member 14 and the weight of the parts holds them in the position shown in Fig. 1.

15 is an electromagnet having one terminal connected to the battery 16 and the other terminal grounded on the frame of the machine. The other terminal of the battery is connected to the copper plate 17.

18 is a pivoted member having an eye or passage for the yarn which is being wound. This member is preferably formed of light copper wire and is electrically connected to the frame of the machine.

Normally the member 18 is held in the position shown in Fig. 1 by the tension of the yarn which is being wound. During such operation the battery circuit is, of course, open, and the magnet 15 deenergized. When for any reason the yarn breaks, the arm 18 is released and its lower end strikes against the contact 17, completing the circuit through the electromagnet. The energizing of the magnet draws the armature 14 over so as to release the latch 9 from the stop ring plunger 6. The spring 8 then forces the plunger and ring upward and disengages the bobbin from the driving spindle and substantially at the same time stops the rotation of the bobbin by its frictional engagement. This action is practically instantaneous, so that even though the end of the yarn should become badly soiled by whipping through the guides and around the twisting frame, there will be no opportunity for the soiled end to be lashed against the adjacent bobbin. The employment of the invention thus not only saves a large amount of yarn which would otherwise be soiled and wasted, but also saves the time of the operator which would be consumed in removing the soiled yarn from the bobbin on which the yarn had broken and the adjacent bobbin. The device is of such a nature that its parts may be applied to ordinary twisting frames without

interfering with their normal operation. The tension upon the yarn caused by the arm 18 is practically negligible, although a sufficient battery current may be employed to afford a powerful action to the stop releasing mechanism.

What I claim is:

1. A stop mechanism for a winding bobbin, comprising a spring-pressed ring for disengaging the bobbin from the driving spindle, provided with a depending post, a standard supporting and guiding said post; a latch member normally holding said ring free from the bobbin, and means for releasing said latch automatically upon the breaking of the yarn.

2. A stop mechanism for a winding bobbin, comprising a spring-pressed ring for disengaging the bobbin from the driving spindle, provided with a depending post, a standard supporting and guiding said post; a latch member normally holding said ring free from the bobbin, and electrically operated means for releasing said latch automatically upon the breaking of the yarn.

3. A stop motion for a winding bobbin,

comprising a lifting ring provided with a depending post, a standard supporting and guiding said post, a latch normally holding said ring disengaged from the bobbin, a pivoted lever carrying said latch, an armature carried by said lever, and electromagnetically operable means for retracting said armature and releasing said lifting means upon the breaking of the yarn.

4. A stop motion for a winding bobbin comprising a lifting ring adapted to engage the base of the bobbin, a post depending from said ring, a standard provided with a socket to support and guide said post, a spring between the base of said post and the bottom of said socket, a latch member normally holding said post in its depressed position, a pivoted lever carrying said latch, an armature carried by said lever, and electromagnetically operable means for retracting said armature and releasing said lifting means upon the breaking of the yarn.

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Witnesses:

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