

No. 848,013.

PATENTED MAR. 26, 1907.

R. H. COOK.
STOP MECHANISM FOR BOBBINS.
APPLICATION FILED MAR. 15, 1906.

Fig. 1.

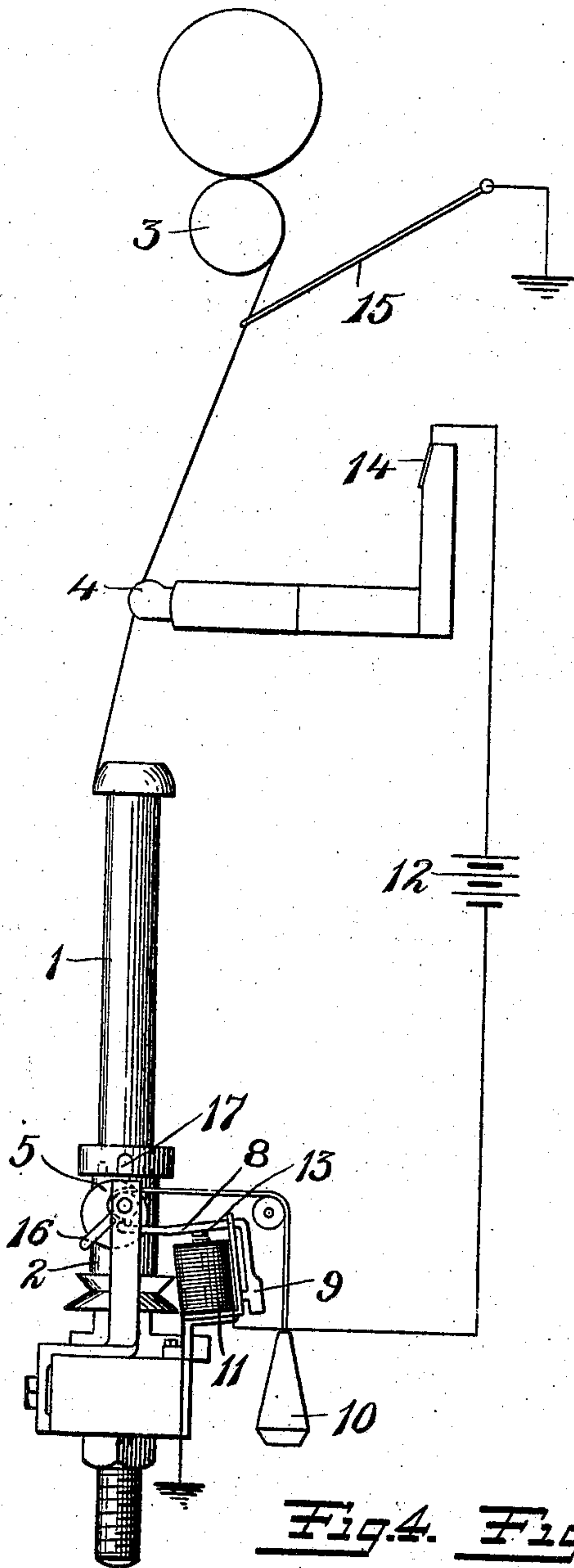


Fig. 2.

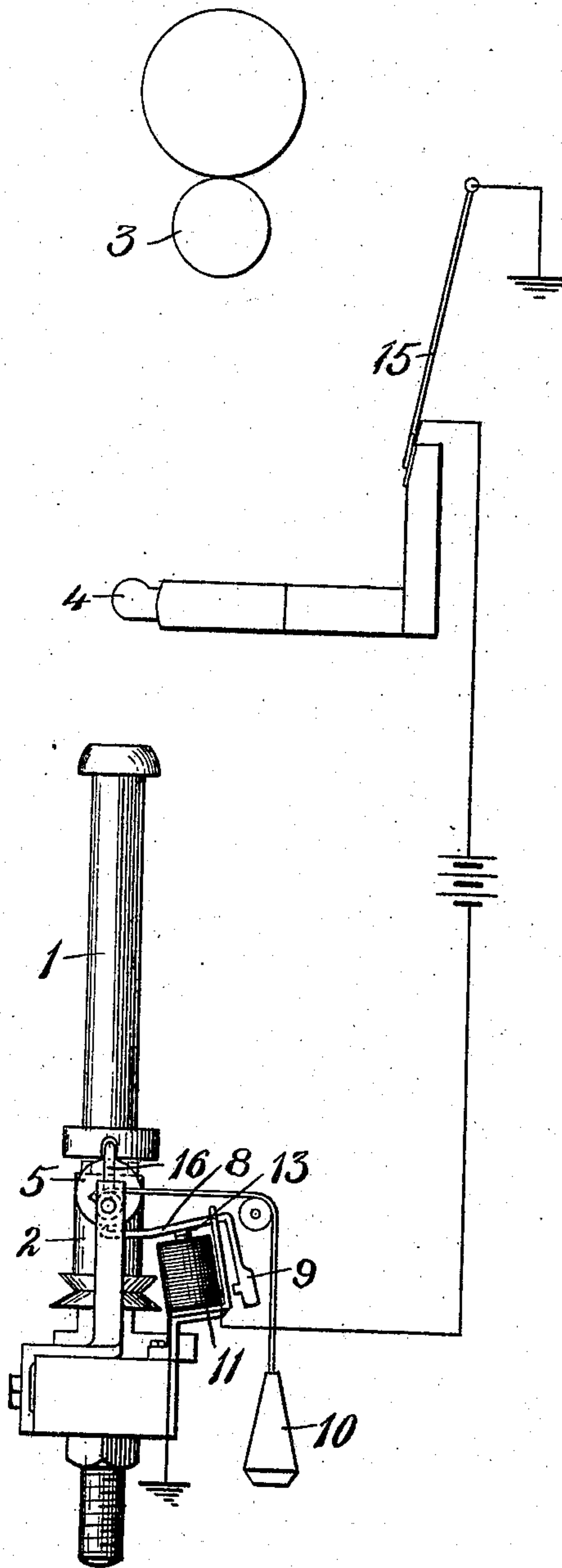
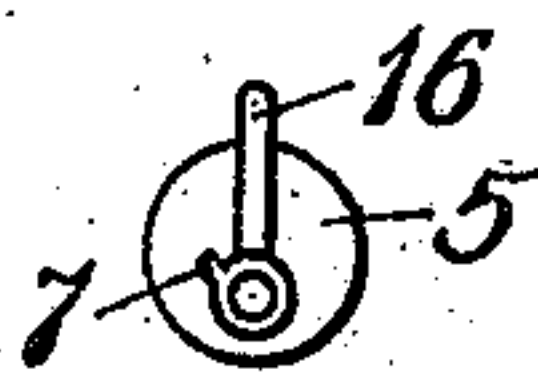
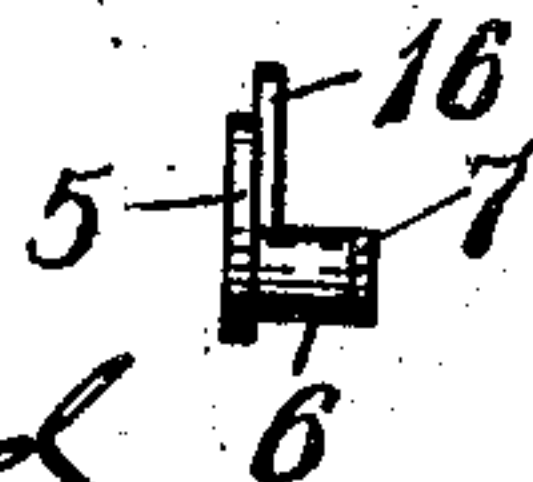


Fig. 4. Fig. 3.



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STOP MECHANISM FOR BOBBINS.

No. 848,013.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed March 15, 1906. Serial No. 306,098.

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
5 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 stop mechanism
10 for bobbins of twisting-machines and the like.

In other applications of mine I have shown mechanically and electrically controlled mechanism for stopping the bobbin upon the breaking of the yarn which is being wound.
15 It is desirable to employ stop mechanism in twisting-machines where the yarn is liable to break occasionally. In ordinary machines not equipped with stop mechanism the broken end of the yarn is likely to catch up
20 dirt from the machine and lash, not only against the bobbin itself upon which the yarn is being wound, but against the adjacent bobbins, so that considerable yarn must be removed from all three bobbins, which of
25 course means waste and considerable labor. The different forms of mechanism shown in my other applications and in this are suitable for different types of twisting-machines and to different conditions.

30 The principles of my present invention are illustrated in the accompanying single sheet of drawings, which will be understood from reading the following specification in connection therewith.

35 Figure 1 illustrates those parts of a twisting-machine necessary for the understanding of my invention, the parts being shown in their normal position as if yarn were being wound. Fig. 2 is a similar view showing the
40 parts in the position which they would occupy upon the breaking of the yarn, the bobbin being disengaged from the driving-spindle. Fig. 3 is a detail end view of the mechanism for disengaging the bobbin from the
45 driving-spindle. Fig. 4 is a side view of the same.

The bobbin 1 is driven by the ordinary driving-spindle 2 and fed with yarn, which passes around the guide-roll 3 and through
50 the stationary guide 4.

5 is a cam having a hub 6.

7 is a projection from the hub normally en-

gaged by the pivoted latch 8. The rear end 9 of this latch is weighted, so as to hold the latch in engagement with the projection 7 on
55 the hub.

10 is a weight connected to the hub and tending to rotate the hub and cam by means of a cord wound around the hub. The rotation is normally prevented by the action of
60 the latch 8.

11 is an electromagnet having one terminal connected to the battery 12 and the other terminal grounded on the frame of the machine.
65

13 is an armature carried by the latch-lever 8.

14 is a stationary contact-plate connected to the battery 12.

15 is a pivoted arm member having an eye
70 or passage for the yarn. This arm is electrically connected to the frame of the machine or grounded. It should be obvious, however, that this arm might be electrically connected directly by wire to the terminal of
75 the electromagnet, which is shown grounded.

Under normal operation the tension of the yarn being wound holds the arm 15 from engagement with the contact-plate 14. When the yarn breaks, the arm 15 instantly falls
80 and completes the circuit through the electromagnet 11. The energizing of the magnet draws down the armature and releases the latch-lever 8 from the hub projection 7. The weight then rotates the hub and cam 5,
85 and the cam engaging beneath the bobbin-head lifts the bobbin and disengages it from the driving-spindle.

In order to positively prevent rotation of the bobbin after it has been disengaged from
90 the spindle, the hub is provided with a pin 16, which projects slightly beyond the cam, so that when the weight 10 is released the cam lifts the bobbin until the bottom thereof is engaged by the pin 16. The bobbin con-
95 tinues to rotate until the notch 17 in the under side of the lower bobbin-head passes over the pin. This notch is wider and deeper than the projecting pin and allows the pin to enter therein, and the hub then rotates until
100 the highest point in the cam completely affects the disengagement of the bobbin. Such engagement instantly stops the bobbin and positively prevents its rotation.

The arm 15 is preferably constructed of light copper wire, so that its weight places substantially no tension upon the yarn.

The battery and electromagnet may be made of sufficient strength to draw down the armature and release the catch 8 as quickly as desired.

The weight 10 or means for rotating the disengaging cam may be connected to the cam-hub in any suitable manner, as by means of a cord wound around the hub.

The parts may be readily installed in ordinary twisting-frames without substantial alteration.

It will be obvious that all the electromagnets for the stop mechanism of the whole twisting-frame may be operated by a single battery.

What I claim is—

1. In a stop mechanism for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a projection from said hub, a latch member normally engaging said projection, means for rotating said hub when released, and means for disengaging said latch member from said projection.

2. In a stop-motion for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a pin carried by said hub for positively engaging said bobbin when disengaged from said spindle, a latch normally engaging said hub, and means for disengaging said latch from said hub upon the breaking of the yarn.

3. In a stop-motion for bobbins, a bobbin; a driving-spindle, means carried by the spindle to engage the bobbin, means for disengag-

ing the bobbin from the driving-spindle, comprising a cam mounted on a rotatable hub and a pin carried thereby positively engaging said bobbin when disengaged from said spindle; and electromagnetically-operable means for controlling said disengaging and engaging and stopping means including a stationary contact and a freely-pivoted arm having a passage surrounding the yarn, and held thereby out of engagement with said stationary contact.

4. In a stop mechanism for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a projection from said hub, a latch member normally engaging said projection, means for rotating said hub when released, and electromagnetically-operable means for disengaging said latch member from said projection including a stationary contact and a freely-pivoted arm having a passage for the yarn.

5. In a stop-motion for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a pin carried by said hub for positively engaging said bobbin when disengaged from said spindle, a latch normally engaging said hub, and electromagnetically-operable means for disengaging said latch from said hub upon the breaking of the yarn, including a stationary contact and a freely-pivoted arm surrounding the yarn and held thereby out of engagement with said stationary contact.

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