

J. C. BALLARD & J. F. BYNUM.
 LATCH FOR COTTON RING SPINNING AND TWISTING FRAMES.
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969,443.

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2 SHEETS—SHEET 2.

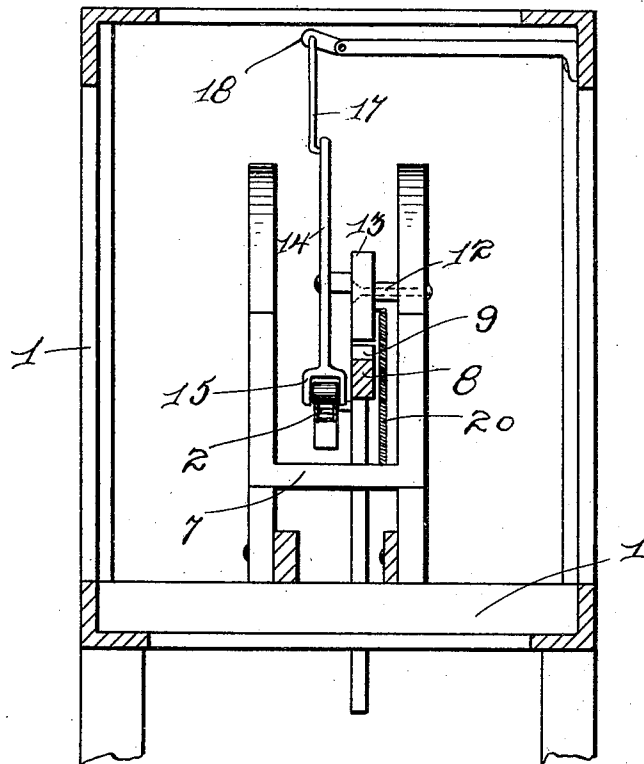


Fig. 2.

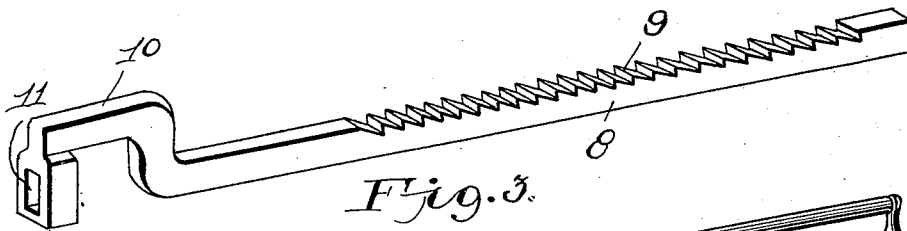


Fig. 3.

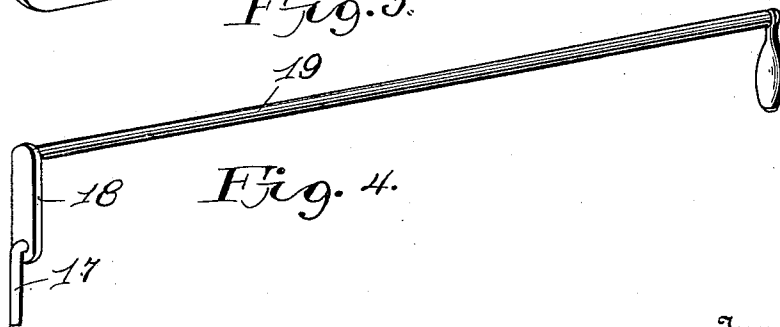


Fig. 4.

Witnesses

J. W. Will
H. J. French

Inventors
John C. Ballard
John F. Bynum.

By E. E. Vrooman
 Attorney.

UNITED STATES PATENT OFFICE.

JOHN C. BALLARD AND JOHN F. BYNUM, OF CHERRYVILLE, NORTH CAROLINA.

LATCH FOR COTTON RING SPINNING AND TWISTING FRAMES.

969,443.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN C. BALLARD and JOHN F. BYNUM, citizens of the United States, residing at Cherryville, in the county of Gaston and State of North Carolina, have invented certain new and useful Improvements in Latches for Cotton Ring Spinning and Twisting Frames, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to spinning and twisting machines, and the object of the same is to provide an automatically acting locking device which will stop the operation of the spindle building mechanism should said mechanism become broken or defective.

In carrying out the object of the invention generally stated above it will be understood, of course, that the essential features of the same are necessarily susceptible of changes in details and structural arrangements, one preferred and practical embodiment of which is shown in the accompanying drawings wherein:—

Figure 1 is a fragmentary side elevation of a spinning machine showing the improved safety attachment applied thereto. Fig. 2 is a vertical sectional view taken on the line 2—2, Fig. 1. Fig. 3 is a detail perspective view of a rack bar forming a part of the invention. Fig. 4 is a similar view of a pawl releasing lever carried by the spinning machine frame. Fig. 5 is a detail view of a bar and roller which cooperate with the builder chain to operate the locking device. Fig. 6 a vertical fragmentary sectional view taken substantially on the line 6—6, Fig. 5.

Referring to said drawings by numerals, 1 designates the usual frame of a spinning and twisting machine through which a builder chain 2 passes, one end of said chain being connected with a rocker arm 3 which in turn has a pivotal connection with the usual traverse bar 4. The other end of said chain, after passing over the sprocket 5, extends to and connects with the building mechanism 6. Said chain 2 passes through a casing 7 supported on the frame 1. A rack bar 8 extends through said casing, the upper surface of said bar being toothed as indicated at 9. Said bar is supported to one side of said chain 2 by the arched shaped end 10 which is provided with an eye 11 in which the bar 4 is fastened. A pivot bar 12 projects from one side of said casing 7 and carries a pawl 13 which is normally held over the teeth of

the rack bar 8. Said pawl 13 also has a pivotal connection with a lever 14 the bifurcated lower portion 15 of which incloses a roller 16. Said bifurcated portion 15 is adapted for engagement over the chain 2 with the roller 16 in contact therewith. The upper end of said bar 14 is provided with a reduced extension 17 which has a hooked engagement with a crank arm 18 of a lever 19 which may be manually manipulated to raise said bar 14 and pawl 13. A spring 20 connects the pawl 13 with the bottom of the casing 7, and is constantly exerting a pressure tending to pull the pawl 13 into engagement with the teeth 9 of the rack bar 8.

As will be seen by reference to Fig. 1, normally the chain 2 is taut and the bar 14 is supported thereby in a position which retains the pawl 13 out of contact with the teeth of the rack bar 8. In the event of said chain 2 breaking, or sagging, the bar 14 will drop causing the pawl 13 to engage with the teeth 9 of the bar 14, the downward movement of the pawl and bar 14 being accelerated by the action of the spring 20. The engagement of the pawl 13 with the rack bar 8 obviously locks said bar and thereby prevents movement of the traverse bar 4.

It will be seen that the operation of the improved locking device is automatic, and the same operates simultaneously with the breaking or damaging of the chain 2, so that operation of the traverse is immediately stopped, thereby preventing damage being done to the machine or any of the parts thereof.

What I claim as my invention is:—

1. In a spinning machine, the combination with the traverse bar and the builder chain, of a rack bar carried by said traverse bar, a pawl, and a bar contacting with said chain and adapted to rock said pawl into engagement with said rack bar when said chain breaks.

2. In a machine of the character described, the combination with frame and the traverse bar and the builder chain, of a rack carried by said traverse bar, and means adapted to be actuated by said chain for locking said rack when said chain breaks.

3. In a machine of the character described, the combination with the frame and the traverse bar and the builder chain thereof, a rack carried by said traverse bar, a spring held pawl, and a lever carried by said frame

and having an end roller held in contact with said chain, said lever being adapted to be actuated by said chain to hold said pawl disengaged from said rack.

- 5 4. In a machine of the character described, the combination with a frame and the traverse bar and builder chain thereof, of a lever having a crank connection with said frame and a bifurcated free end adapted to
10 straddle said chain, a roller in the bifurcated end of said lever, a rack bar carried by said traverse rod, and means operated by said lever for locking said rack bar when said chain breaks.
- 15 5. In a machine of the character described, the combination with the frame and the traverse bar and builder chain, of a rack bar carried by said traverse bar, and means operated by the breaking of said chain for
20 automatically locking said rack.
6. In a machine of the character described, the combination with the frame and the traverse bar and builder chain, of a casing carried by said frame, and means carried by
25 said casing for automatically locking said traverse bar when said chain breaks.
7. In a machine of the character described, the combination with the frame and the

traverse bar and builder chain, of a rack carried by said traverse bar, a lever carried
30 by said frame and contacting with said chain, a pawl adapted to be rocked to engagement with said rack when said chain breaks, and a manually operated lever for releasing said pawl from said rack.

35 8. In a machine of the character described, the combination with the frame provided with a traverse bar and builder chain, a casing carried by said frame and through which said chain passes, a rack carried by
40 said traverse bar and also passing through said casing, a pawl carried by said casing, a lever pivotally connected to said frame and contacting with said chain, said lever being
45 connected to said pawl and normally retaining the same away from said rack, and a spring for forcing said pawl into engagement with said rack when said chain breaks.

In testimony whereof we hereunto affix our signatures in presence of two witnesses. 50

JOHN C. BALLARD.
JOHN F. BYNUM.

Witnesses:

A. H. HUSS,
DAVID P. DELLINGER.