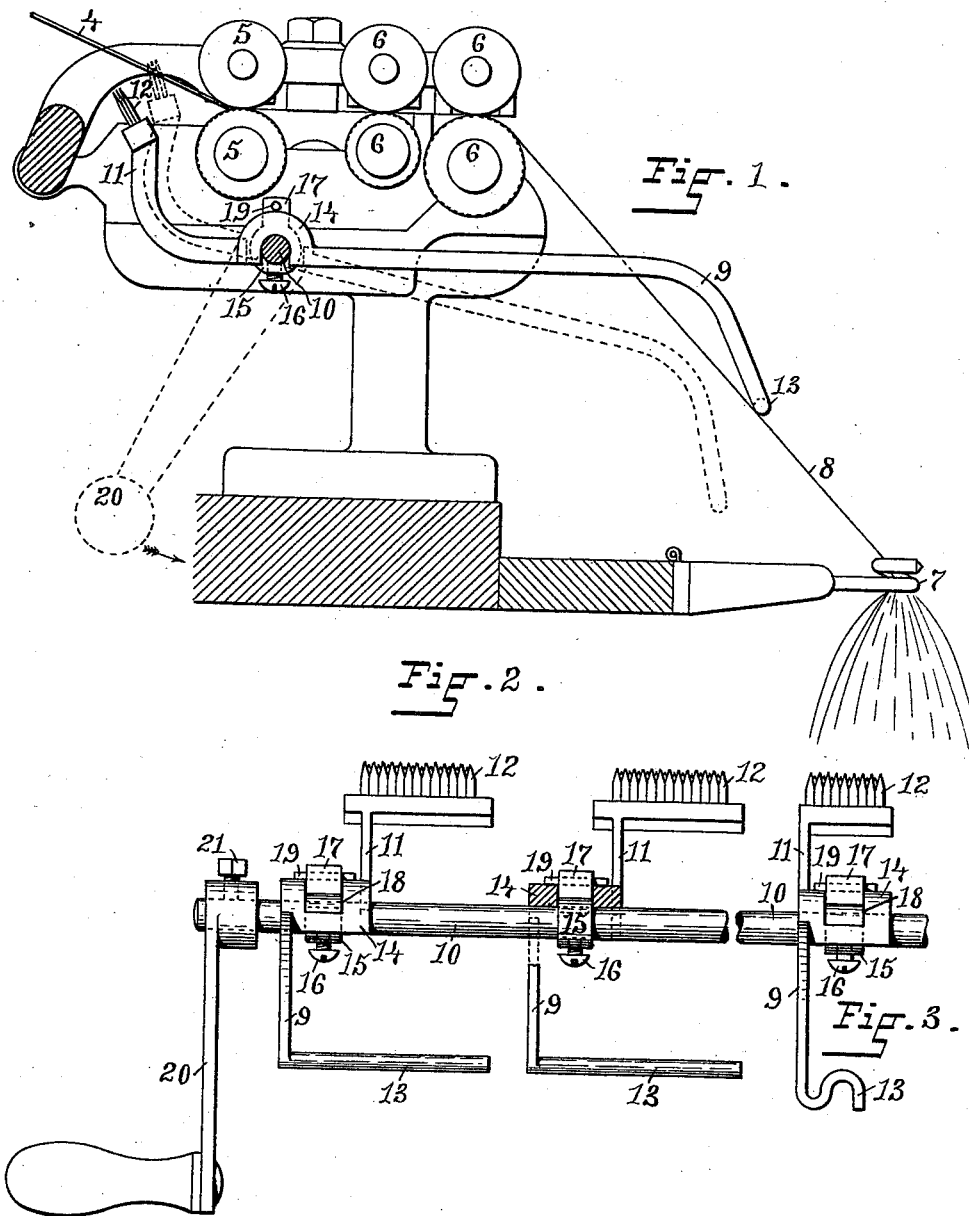


(No Model.)

W. MURRAY.
SPINNING MACHINE.

No. 418,584.

Patented Dec. 31, 1889.



WITNESSES:

Chas. H. Luther Jr.
M. F. Bligh.

INVENTOR:

William Murray
Joseph A. Miller & Co
Atty's

UNITED STATES PATENT OFFICE.

WILLIAM MURRAY, OF PROVIDENCE, RHODE ISLAND.

SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,584, dated December 31, 1889.

Application filed February 7, 1889. Serial No. 298,963. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MURRAY, of Providence, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Spinning-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improved device for preventing the waste of sliver in spinning-machines; and it consists in the peculiar and novel construction of the device by which the delivery of sliver is automatically stopped when the thread between the delivery-roll and the cop, spool, or bobbin breaks, as will be more fully set forth hereinafter.

In spinning-machines as heretofore constructed the sliver passes to the feed-rolls, the drawing-rolls, and delivery-rolls, and then through the guide-eyes to the traveler or flier. The partly-twisted thread between the delivery-roll and cop, spool, or bobbin frequently breaks from various causes, and as the drawing-rolls continue to revolve sliver is continually delivered, which cannot be spun or twisted, causing great waste, as the so-delivered sliver has to be removed before piecing.

The object of this invention is to prevent this waste of sliver by severing the sliver back of the feed-rolls.

In the accompanying drawings, Figure 1 is a sectional view of the drawing-roll portion of a spinning-machine, showing the feed, the drawing and delivery rolls, the guide-eye through which the sliver passes to the ring traveler or flier, and the automatic stop by which the delivery of the sliver is stopped when the end breaks. Fig. 2 is a front view of the automatic stop device removed from the machine, showing the rod on which the automatic stop is pivotally mounted, the adjustable projection for limiting the movement of the stop, and the handle for operating the rod. Fig. 3 is a view of a modified form of the stop mounted in operative position on the rod.

In the drawings like numbers of reference designate corresponding parts throughout.

Referring to the drawings, the number 4 designates the sliver; 5 5, the feed-rolls; 6 6, the drawing-rolls, and 7 the guide-eye through

which the drawn-out sliver 8 passes to the traveler or flier.

9 indicates a slightly overbalanced lever pivoted on the rod or shaft 10 by the yoke-shaped bearing 14 and provided with the bent arm 11, to which is attached the comb 12, formed of a number of sharp-pointed pins in two or more rows. The pins are formed of fine wire bunched close together in alternate rows, so that the sliver cannot enter between the points, and one or more points must enter the sliver and the comb tear the same when it is presented to the moving sliver. The lever 9 is provided with a finger 13, which rests on the drawn-out sliver 8 and supports the lever in normal position. This finger 13 may be straight, as shown in Fig. 2, or may be hook-shaped, as shown in Fig. 3.

On the rod or shaft 10 are placed the stops 15—one for each device. These stops are adjustably secured to the rod 10 by the screws 16 and have a projection 17 formed on the upper side, which projection passes through a slot 18, formed in the bearing 14. The pin 19 passes through the projection 17 and securely holds the bearing 14 on the rod or shaft 10 in working position and against displacement by jar or from other causes. A handle 20 may be attached to one or both of the ends of the rod or shaft 10 by the bolt 21, as clearly shown in the drawings.

The operation of the device is as follows: To start up a frame, the handle 20 is moved in the direction of the arrow shown in Fig. 1, partially revolving the rod 10 and carrying with it the stops 15, when the projection 17 will come in contact with the rear portion of the bearing, thereby elevating all the levers 9, and with them all the fingers 13, and depressing the bent arms 11, carrying the combs 12. Then the sliver 4 is passed through the feed-rolls 5 5, thence through the drawing-rolls 6 6, thence through the guide-eye 7 to the ring or flier, and then to the bobbins. The handle 20 is then moved back to its normal position, when the projections 17 will assume the position shown in Fig. 1, and all the fingers 13 will rest upon the drawn-out slivers 8. When, now, if one or more of the drawn-out slivers 8 should break, the finger 13 will drop and with it the lever 9, by reason of its

being overbalanced, causing the bent arm 11 to rise and with it the comb 12, which will enter or break the sliver 4, so that no sliver will be delivered to the rolls, and will thereby prevent waste.

The position assumed by the device when a thread or threads have been broken is clearly shown by broken lines in Fig. 1.

In piecing up any individual breaks the finger 13 can be individually raised by the operative and placed on the newly-pieced sliver 8 without going to the end of the spinning-frame.

I am aware that devices provided with a plate having pointed teeth formed on one edge have been used to break the threads or slivers. In such plates the sliver is liable to ride on the plate between the points of the teeth. In my improved comb fine metal-pointed pins are placed in two, three, or more rows bunched together, so that the points of the needles or pins in one row are placed between the points of the pins in the adjoining row, so that the sliver cannot ride in the space between the points and must be torn when the comb comes in contact with the same.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the drawing-rolls of a spinning-machine and the guide-eyes, of a series of pivoted levers 9, provided with the fingers 13 and the arms 11, having the pointed wire combs 12 secured thereto, the shaft 10, the crank 20, and the stops 15, as described.

2. The combination, with the drawing-rolls of a spinning-machine and the guide-eye, of the shaft 10, the crank 20, the stop 15, and the overbalanced lever consisting of the bearing 14, the arm 11, the bunch or comb of fine pointed wires 12, and the lever 9, provided with the finger 13, as described.

3. The combination, with the top rolls and the levers 9, fingers 13, and bent arms 11, having the combs 12, of the shaft 10, provided with the stops 15, and handle 20, constructed to operate the levers, as described.

WILLIAM MURRAY.

Witnesses:

M. F. BLIGH,
J. A. MILLER, Jr.