E. J. VALES.

ROVING STOP FOR SPINNING FRAMES.

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1,103,329. Patented July 14, 1914.

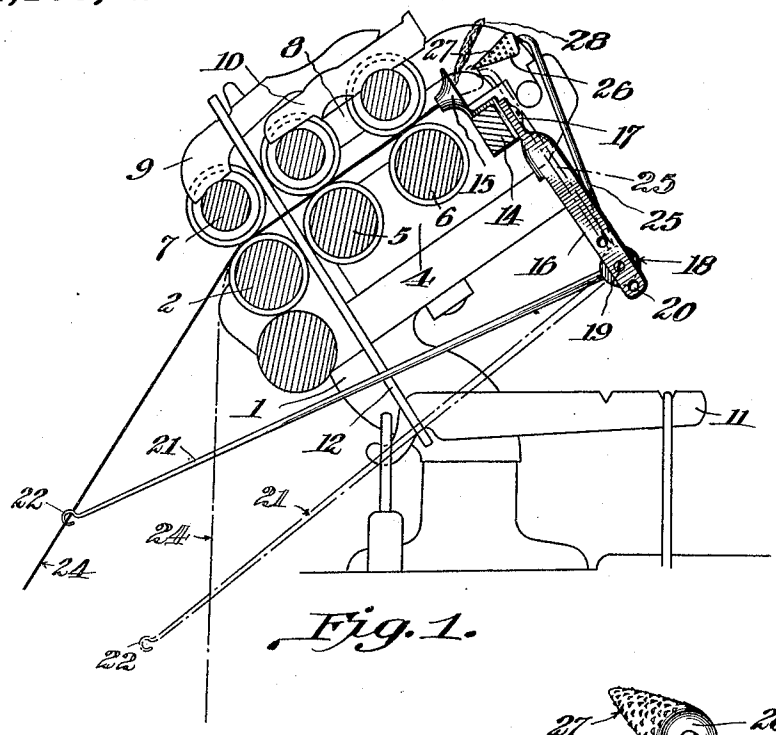
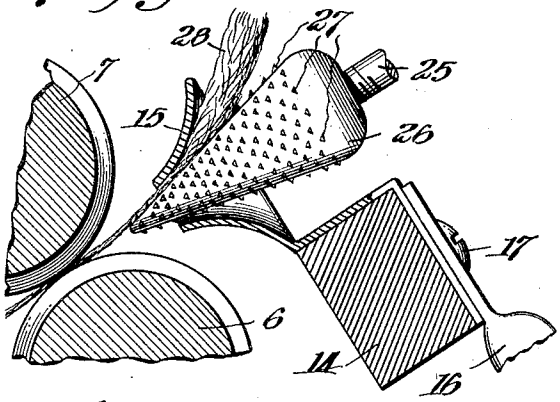


Fig. 1.

Fig. 2.



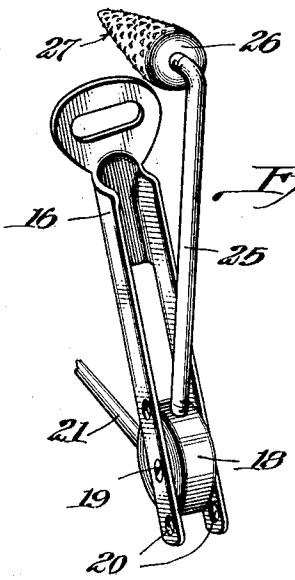


Fig. 3.

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ROVING-STOP FOR SPINNING-FRAMES.

1,103,329. Specification of Letters Patent. Patented July 14, 1914.

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To all whom it may concern:

Be it known that I, EDWARD J. VALES, a citizen of the United States, and a resident of the city of Augusta, in the county of Richmond, State of Georgia, have invented certain new and useful Improvements in Roving-Stops for Spinning-Frames, of which the following is a specification.

This invention relates broadly to the spinning branch of the textile arts and more particularly to roving stops for spinning frames.

The principal object of this invention is to provide a mechanism for stopping the roving from feeding to the feed rolls when the thread is broken.

A further object of this invention is to provide a stop for the roving prior to its reaching the feeding rolls, which stop is automatically carried into position by the movement of the roving when the thread is broken between the front feeding roll and the bobbin.

A still further object of this invention is to provide a roving stop which will securely hold the roving from passing through the trumpet guide when the thread is broken between the front feeding roll and the bobbin.

Other and further objects of this invention will in part be obvious and will in part be pointed out in the specification hereinafter following by reference to the accompanying drawings in which like characters represent like parts throughout the several figures thereof.

Figure 1 is a detail elevational view of a part of a roll stand showing the roving stop in normal position. Fig. 2 is an enlarged view of the plunger head holding the roving stop in the trumpet guide. Fig. 3 is a detail view of the support for the roving stop device.

The entire spinning machine is not illustrated for the reason that this device is intended for use on the ordinary well known type of spinning frame and only such parts as directly coöperate with the operation of this device have been illustrated, and these parts are only illustrated diagrammatically.

In the operation of a spinning frame or machine, the thread frequently breaks between the front feed rolls and the spindle or bobbin. Heretofore it has been the practice to provide a scavenging, or waste, roll beneath the front feed roll to catch the loose end of the roving, in case the thread breaks, and wind it upon the scavenging roll to prevent the loose end from catching in other portions of the machinery. This type of mechanism is wasteful of the stock and requires considerable attention in that the scavenging roll must be frequently cleared or cleaned. To obviate the difficulties attendant upon this type of mechanism, a number of roving stop devices have been devised to prevent the feeding of the roving to, or through, the feed rolls when the thread is broken. Many complicated clamps, special guides, and special types of feed mechanism have been devised. Most of these devices are intricate and are delicate in adjustment and operation, and it is well recognized that delicate mechanisms are usually unsatisfactory in a textile mill, because they soon become clogged in their action by loose pieces of yarn, waste, etc.

The invention which will hereinafter be described in detail, comprises simply a roughened or knurled plunger stop which drops against the moving roving when the thread is broken, and the movement of the roving itself wedges this plunger head against the trumpet guide so tightly that the resistance of the roving passing through the trumpet guide is greater than the feeding friction of the feed rolls, consequently the roving is held stationary between the feed rolls and does not feed. This mechanism is simple in construction, positive in its operation and obviates the delicate parts of special clamps and complicated stops.

Referring now to the drawings and particularly to Fig. 1, the roll stand is shown as including a main frame 1, which carries a front feed roll 2, and also carries roll slides 4, upon which a middle roll 5 and a back roll 6 are mounted. The top rolls 7 coöperate with the feed rolls and are maintained in position by cap bars 8. Saddles 9 and 10 rest against the upper portion of the bearings of the top rolls and distribute the pressure of the weight (not shown) which hangs on the weight lever 11 that is operatively connected by a link 12 to the saddle 9. A roving rod, or bar 14, carries trumpet guides 15 (only one being illustrated) and is constructed to have a slight traverse movement. The parts hereinbefore described in detail by reference to the drawings, are all common in the art and are merely referred to as illustrative of general types of mechanisms of

the character now used in spinning machines. This mechanism is merely illustrative, and any other type of such mechanism may be used in connection with applicant's invention, which consists of a roving stop comprising a U-shaped support 16, preferably formed of sheet metal, and attached to the roving bar 14 by a stub screw 17, or other convenient type of securing device. This U-shaped support carries a hub 18, which is pivotally mounted upon a screw bolt 19 which passes through one of the openings 20 in the U-shaped support and thereby pivots the hub 18 between the side plates of the support 16. The hub 18 carries a feeler finger 21 which is preferably tapered from the hub outwardly toward the point which is formed into a hook or guide 22 that is adapted to gently rest upon the thread 24 after it leaves the front roll 2 and before it reaches the "pig tail" thread guide (not shown). The reason, or preference, for tapering the feeler finger is to permit it to rest lightly upon the thread 24 and to distribute most of the weight near the hub 18. This hub 18 also carries an upwardly projecting rod 25, on the upper end of which is mounted a roughened, or knurled, roving stop plunger 26. This plunger may be formed of hardened steel and is preferably cone-shaped, and is provided with small points, or knurls, or spines 27. The U-shaped support 16 is provided with a plurality of openings 20, previously referred to, (or it may be provided with a slot) to permit the vertical adjustment of the screw bolt 19 in order to admit of the device to be adjusted in such manner that the point of the plunger stop 26 will strike directly into the trumpet guide when the hub 18 is rotated in a forward direction as the feeler finger 21 is dropped by the breaking of the thread. Since the support 16 carrying the roving stop device, is mounted on the roving rod or bar 14, the roving stop mechanism is traversed by the roving rod 14 and the trumpets 15, thereby maintaining the correct position for operation at all times.

In the operation of the device the thread 24 passes under the hook or guide 22 on the feeler finger 21 and normally holds this finger in an elevated position. When the thread breaks the feeler finger drops to dotted line position shown in Fig. 1, and the knurled head 26 falls against the moving roving 28 that is being drawn through the trumpet guide 15 by the feed rolls. The continued movement of the roving causes the spines 27, or roughened portions of the plunger 26, to engage with the roving, thus carrying the plunger with the roving until the plunger is drawn so tightly in the opening of the trumpet guide that the roving can no longer be drawn forward by the feed rolls, thereby preventing the loose end of the broken thread from being fed forward by the feed rolls. Immediately as the operator ties the ends of the thread together, starts the spinning operation, and raises the hook or guide 22 to place it in position over the thread, the knurled plunger 26 is withdrawn from within the trumpet guide 15 and immediately the roving 28 will again be drawn forward by the feed rolls and the spinning frame will operate normally.

Having thus described my invention, what I desire to claim is:—

1. A roving stop for spinning machines and the like, comprising in combination, a roll stand, feed rolls mounted on said roll stand and adapted to feed a string of roving, a roving bar, a trumpet guide for guiding the roving before it enters the feed rolls, said trumpet guide being mounted on the roving bar, a hub, a support wherein said hub is pivotally mounted, said support being attached to the roving bar, a feeler finger carried by said hub, a hook on said feeler finger adapted to engage the thread and support the feeler finger thereon, an upwardly extending rod also carried by said hub, and a plunger stop carried by said rod, said plunger stop being cone-shaped, the axis of said cone being substantially tangential to a circle passing through said trumpet guide and whose center is a pivotal point for said hub, the conical portion of said plunger stop being roughened to provide a frictional surface adapted to engage and stop the roving when the feeler finger is dropped by the breaking of the thread.

2. A roving stop for spinning machines and the like, comprising in combination, a roll stand, feed rolls carried by said roll stand and adapted to feed a strand of roving, a roving bar, a trumpet guide mounted on said roving bar, a feeler finger, a hook on the end of said feeler finger in engagement with the thread as it leaves the feed rolls, a conically shaped plunger head provided with a roughened surface and operatively connected with said feeler finger, the parts being constructed and arranged to drop the conical plunger into the trumpet guide when the thread is broken.

3. A roving stop for spinning machines and the like, comprising in combination, feed rolls adapted to draw roving from a suitable supply and feed the roving forward as required, a funnel shaped guide through which the strand of roving passes prior to reaching the feed rolls, a feeler finger in engagement with the strand after it leaves the feed rolls, and a conical shaped plunger operatively connected with the feeler finger to drop the point of said conical shaped plunger into the funnel shaped guide when the strand in engagement with the feeler finger is broken, said conical shaped plunger being provided with a roughened sur-

face to engage the roving when dropped as aforesaid.

4. A roving stop for spinning machines and the like, comprising in combination, a funnel shaped roving guide for guiding a strand of roving, a feeler finger adapted to engage said strand, and a conical shaped plunger operatively connected with said feeler finger and adapted to be dropped into said funnel shaped guide when the strand is broken, said plunger being provided with a roughened surface to engage said roving and clamp the same within said guide.

5. A roving stop for spinning machines and the like, comprising in combination, a roving guide having an opening, a feeler finger adapted to engage the strand of roving, a conical shaped plunger having a roughened surface, and means for drawing the roving through said guide, the said parts being constructed and arranged to drop the point of the conical plunger into the opening in the roving guide when the strand is broken and to draw the plunger tightly against the guide to stop the roving by the tension on the roving.

6. In combination, a funnel shaped roving guide, a conical shaped plunger roving stop, said plunger stop being provided with a roughened surface, means for drawing a strand of roving through said funnel shaped guide, and means for dropping the conical plunger stop against the moving roving within said guide to engage the roving and draw the plunger forward to wedge the roving between said conical plunger stop and the walls of said guide to stop the feed of the roving.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."