Dec. 9, 1952 G. W. HARSTIN 2,620,518

ROVING STOP MOTION ATTACHMENT FOR SPINNING FRAMES

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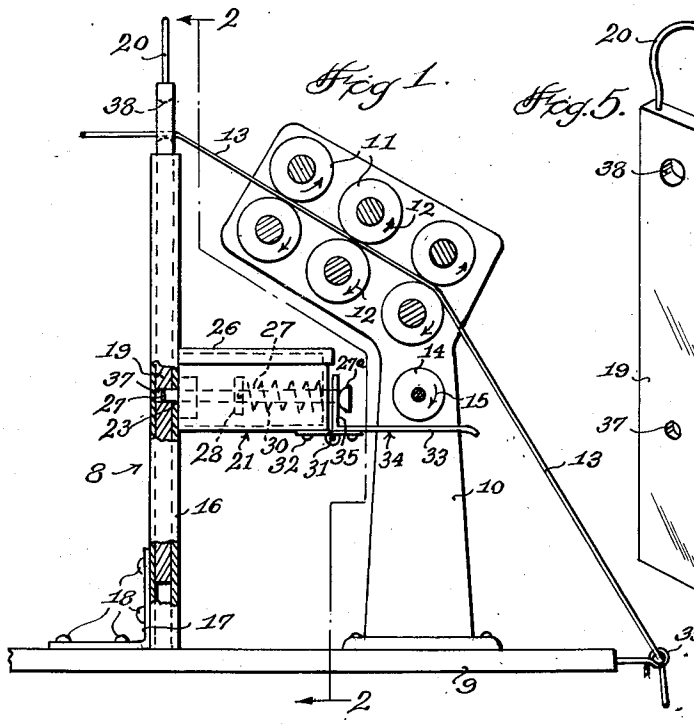


Fig 1.

Fig. 5.

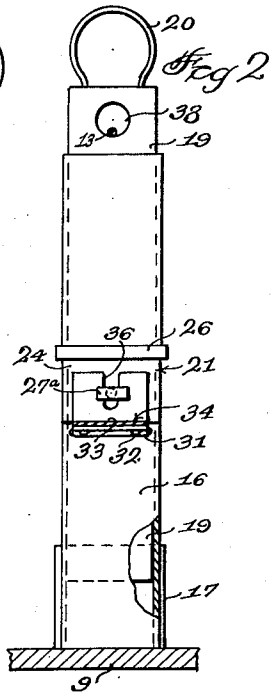


Fig 2

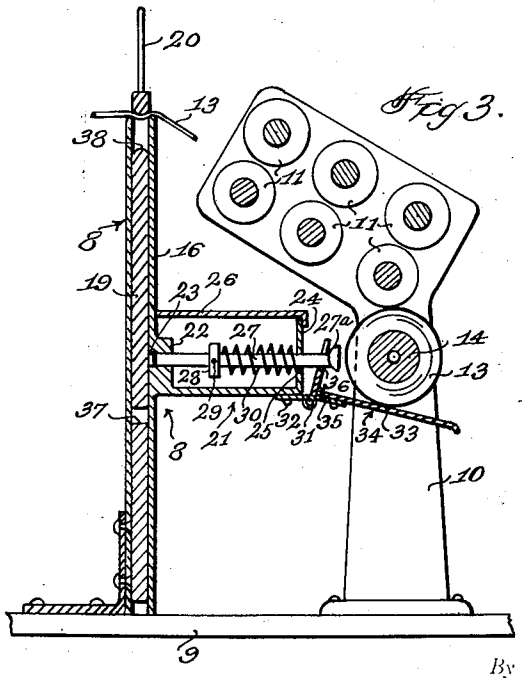


Fig 3.

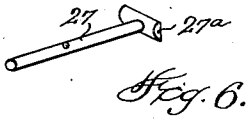


Fig. 6.

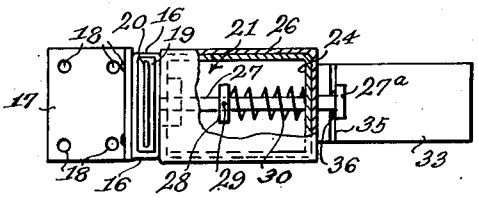


Fig. 4

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ROVING STOP MOTION ATTACHMENT FOR SPINNING FRAMES

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3 Claims. (Cl. 19—166)

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This invention relates to a novel attachment for use with conventional spinning frames for breaking the roving before it reaches the drawing rolls where a breakage has occurred beyond the drawing roll to stop further feeding of the roving through the drawing roll and to minimize the amount of waste which will be made.

More particularly, it is an object of the present invention to provide a roving stop motion attachment capable of fitting all spinning frames and which does not interfere with or in any way obstruct the normal operation of the spinning frame until a breakage occurs in the roving.

Still a further object of the invention is to provide a stop motion attachment of extremely simple construction which is capable of being economically manufactured and sold and quickly and easily attached to spinning frames for use in conjunction therewith and which may be readily reset after being automatically released for stopping the feed of roving to the drawing rolls of the spinning frame.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view, partly in vertical section, showing the attachment in an applied position and as it will appear before breakage of the roving;

Figure 2 is a transverse sectional view, partly in side elevation, of the attachment taken substantially along a plane as indicated by the line 2—2 of Figure 1;

Figure 3 is a substantially central sectional view of the attachment and including a part of the spinning frame taken substantially at a right angle to Figure 2 and showing the attachment released;

Figure 4 is a top plan view, partly in horizontal section, of the attachment;

Figure 5 is a perspective view of one element of the attachment, and

Figure 6 is a similar view of another element thereof.

Referring more specifically to tthe drawing, for the purpose of illustrating a preferred application and use of the roving stop motion attachment for spinning frames, designated generally 8 and comprising the invention, the numeral 9 designates a substantially horizontally disposed supporting member of a spinning frame to which is secured the drawing roll stand 10 containing the usual drawing rolls 11 which are suitably

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driven in the directions as indicated by the arrows 12 in Figure 1 in a conventional manner for feeding the roving 13 downwardly therethrough from left to right of Figure 1 from bobbins, not shown. A rotatable lap stick 14 is journaled on the stand 10 beneath the drawing rolls 11 and is likewise driven in a conventional manner in the direction as indicated by the arrow 15.

The roving stop motion attachment 8 includes a guide sleeve 16 which is secured by an angle bracket 17 and fastenings 18 to the spinning frame part 9 and disposed in an upright position thereon behind the roll stand 10. A relatively heavy bar 19 is slidably disposed in the guide 16 and normally urged downwardly therein by gravity. The upper end of the bar 19, which projects from the upper end of the guide 16 has a bail 20 secured thereto and rising therefrom to form a handle for manually raising the bar 19 relatively to the guide 16. A housing, designated generally 21, projects from one side of the guide 16 toward the roll stand 10 and is disposed at approximately the level of the lap stick or roll 14. Said housing includes an inner relatively thick wall 22 which preferably forms an integral part of one side wall of the guide 16 and which is provided with an opening 23 which opens into the guide 16. The housing 21 also includes an outer wall 24 which is disposed substantially parallel to the wall 22 and which has an opening 25 therein which aligns with the opening 23. The housing 21 is preferably but not necessarily provided with a removable cover or top 26 and the remainder of said housing, except for the cover 26, is preferably formed integral with the guide 16.

An elongated pin 27 forming a latch or detent extends reciprocally through the openings 23 and 25 and longitudinally and reciprocally through the housing 21 and is provided at its outer end with a crosshead or transverse enlargement 27a which is disposed outwardly of the end wall 24. A collar 28 is adjustably secured to the pin 27 by a setscrew 29, between the walls 22 and 24 to provide a seat for one end of an expansion coil spring 30 which is disposed on the pin 27 between the collar 28 and the end wall 24 for yieldably urging the pin 27 toward the guide 16.

A leaf hinge 31 has one leaf thereof secured by fastenings 32 to the underside of the housing 21, adjacent its outer end and the other leaf of the hinge 31 is secured by similar fastenings 32 to the underside of the longer leg 33 of a sub-

stantially L-shaped trip lever 34 which also includes a shorter upstanding leg 35 which rises from the hinge 31 and which is normally disposed adjacent and substantially parallel to the housing wall 24. The trip lever leg 35 is provided with an upwardly opening slot 36 through which the pin 27 extends and so that the head 27a bears against the trip lever leg 35 for normally urging it toward the housing wall 24 to maintain the longer leg 33 in substantially a horizontal position, as seen in Figure 1 and beneath and adjacent the lap stick or roll 14.

The bar 19 is provided with a pin or detent receiving opening 37 for receiving the inner end of the pin 27 when said bar 19 is in an elevated position, as seen in Figure 1, for supporting the bar thus elevated in the guide 16 and so that an upper opening 38 of the bar 19, which is located adjacent the handle 20, will then be disposed entirely above the upper end of the guide 16, as seen in Figures 1 and 2. The roving 13 extends loosely through the opening 38 before entering the drawing rolls 11, as clearly illustrated in Figure 1, and said roving after passing from the drawing rolls extends through a guide eye 39 which is disposed beyond the drawing rolls 11 and which constitutes a conventional part of the spinning frame.

Assuming that the parts of the stop motion attachment 8 are in their positions as illustrated in Figure 1, it will be readily obvious that the roving 13 will move through the spinning frame parts as illustrated in the drawing without interference by said attachment 8. However, when a break occurs in the roving 13 the broken roving, which will continue momentarily to be fed downwardly by the drawing rolls 11 will contact the lap stick or roll 14 and will be wound therearound to create waste as seen at 13 in Figure 3 which will very quickly assume sufficient diameter to bear on the trip lever leg 33 thereby causing the trip lever 34 to swing clockwise on the hinge 31, as seen in Figures 1 and 3, from its position of Figure 1 to its position of Figure 3 and in so moving the trip lever leg 35 will swing away from the housing 21 to exert a pull against the head 27a of the latch pin 27 for retracting said latch pin outwardly of the guide 16 for disengaging its inner end from the opening 37 of the bar 19, thereby releasing the bar 19 to permit it to fall by gravity in the guide 16. When this occurs, the roving 13 will be clamped between the upper end of the guide 16 and the upper portion of the opening 38, which opening has a rounded edge, as seen in Figure 3, to thereby cause the roving 13 to be broken between the upper end of the attachment 8 and the drawing rollers 11 to thus quickly stop the feeding of the roving to minimize the amount of waste which will be made by the spinning machine and to prevent the roving from being again fed until the breakage therein has been repaired.

It will be readily apparent that the stop motion attachment 8 can be quickly and easily reset by merely raising the bar 19 by its handle 20 until its opening 37 aligns with the opening 23 so that the latch pin 27 can be projected by its spring 30 back to engagement with the opening 37 for latching the bar 19 in its raised, set position of Figures 1 and 2.

From the foregoing it will be readily apparent that a stop motion attachment of extremely simple construction has been provided which may be utilized with various types of spinning frames and which will in no way affect or interfere with the normal operation thereof but which will function automatically to stop the speed of the roving in the event of a breakage therein.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. The combination with a spinning frame supporting a set of rotating drawing rolls between which roving is fed and a rotating lap stick disposed adjacent the discharge end of the set of drawing rolls, of a roving stop motion attachment for the spinning frame comprising a guide member fastened to and supported in an upright position on a part of the spinning frame and behind and adjacent the drawing rolls, a bar slidably mounted in said guide and urged downwardly by gravity, spring projected latch means supported on said guide at a right angle to the bar and releasably supporting the bar in a raised position, said bar being provided with an opening disposed above the upper end of the guide, when the bar is in a raised position, through which the roving loosely extends and passes in moving to the drawing rolls, a trip lever hingedly mounted on a portion of said guide having one end engaging said spring latch means and an opposite end disposed adjacent the lap stick to be engaged by waste formed on the lap stick by the roving after a breakage therein for rocking the trip lever to retract said spring projected latch means out of engagement with the bar, said bar being urged downwardly by gravity after being released by the spring latch means for clamping the roving between the portion of the bar disposed above said opening and the upper end of said guide.

2. The combination of a spinning frame with a roving stop motion attachment as in claim 1, said trip lever having the end portions thereof disposed substantially at right angles to one another, and said last mentioned end portion being adapted to be normally disposed adjacent and beneath the rotating lap stick of the spinning frame on which the roving waste is wound after a breakage of the roving and said lever end being engaged by the waste for retracting said spring projected latch means for automatically stopping the feeding of the roving to the drawing rolls.

3. The combination with a spinning frame supporting a set of rotating drawing rolls between which roving is fed and a rotating lap stick disposed adjacent the discharge end of the set of drawing rolls, of a roving stop motion attachment for the spinning frame comprising a guide member supported in an upright position on a part of the spinning frame, a weighted element slidably mounted in said guide member and urged downwardly therethrough by gravity, spring projected latch means releasably supporting said weighted element in an elevated position relatively to the guide, said weighted element having an opening disposed above the guide member when the weighted element is supported in an elevated position and through which the roving extends and moves in passing to the drawing rolls of the spinning frame, and a trip lever connected to the latch means and pivotally supported on said guide having a part located adjacent the lap stick engaged and actuated by roving waste wound on the lap stick by a roving breakage for rocking the trip lever for retracting the spring projected latch to release the weighted element,

said weighted element being urged downwardly by gravity upon release for clamping the roving between the upper end of the guide member and a weighted element portion disposed above said opening to stop the feed of roving to the drawing rolls.

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