Aug. 18, 1953 J. D. GIBSON 2,648,875

CLEARER TENSIONING DEVICE

Filed March 27, 1951

Fig. 1.

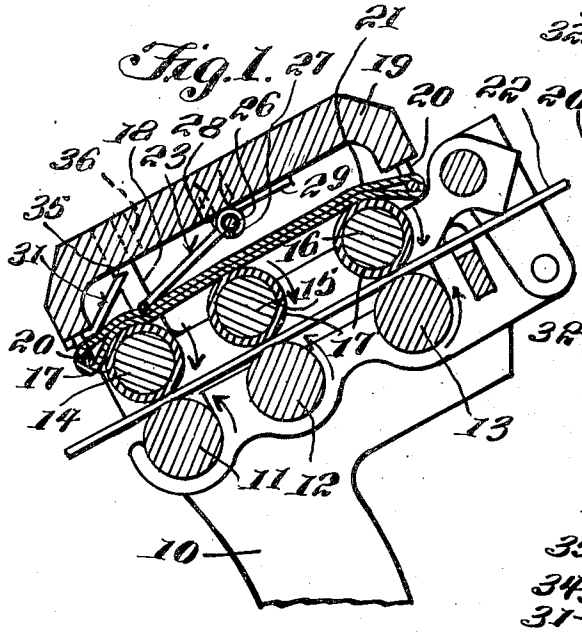


Fig. 2.

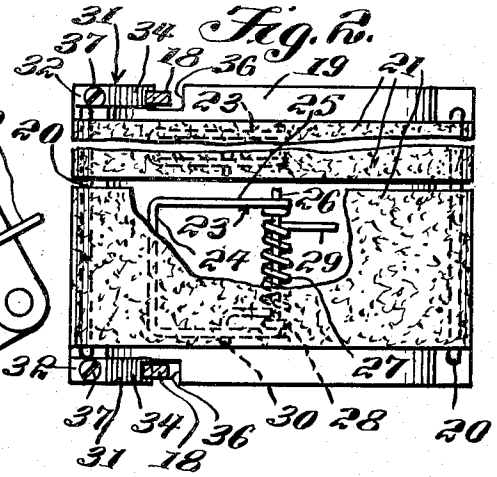


Fig. 3.

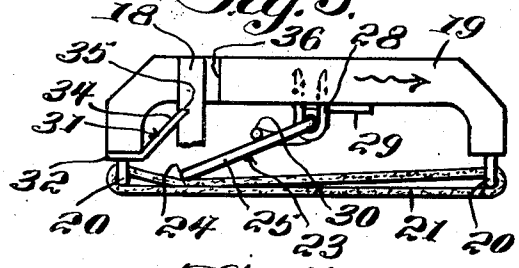


Fig. 5.

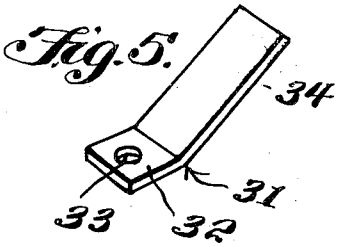


Fig. 4.

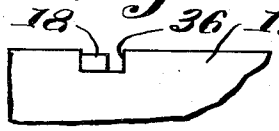
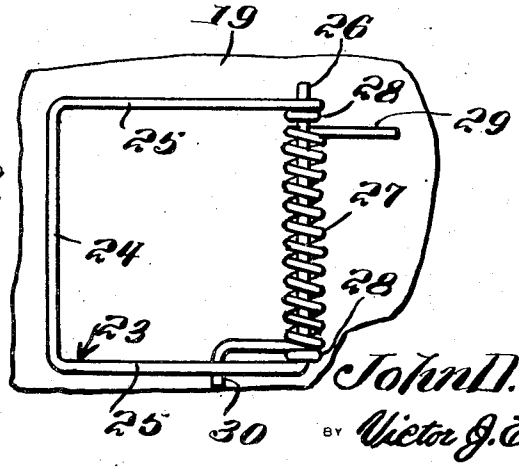


Fig. 6.



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CLEARER TENSIONING DEVICE

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2 Claims. (Cl. 19—139)

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This invention relates to clearers for rolls of textile spinning frames and speeders, and more particularly to a tensioning means for clearers used in removing or collecting loose individual fibers or dust from slivers or rovings.

The object of the invention is to provide a tensioning device for clearers that are used in collecting or removing loose fibers from slivers or rovings, whereby there will be no poor spinning.

Another object of the invention is to provide a clearer tensioning device which includes a spring member for urging the endless clearer band into contact with the spinning or drawing rolls, so that the clearer band is self adjusting to the rollers regardless of the size of the rollers, there being a locking means for preventing upward movement of the wooden clearer bar or block.

A further object of the invention is to provide a clearer tensioning means which is extremely simple and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application, and in which like numerals have been used to designate like parts throughout the same:

Figure 1 is a transverse sectional view showing a conventional drawing system in which the clearer tensioning means of the present invention is attached thereto;

Figure 2 is a top plan view of the assembly with parts broken away and in section;

Figure 3 is a fragmentary side elevational view of the wooden clearer bar, showing the clearer tensioning device attached thereto;

Figure 4 is a fragmentary top plan view of the bar, showing the slots for the lug;

Figure 5 is a perspective view of the latch;

Figure 6 is a fragmentary plan view showing the spring member.

Referring in detail to the drawings, the numeral 10 designates a portion of a spinning or drawing frame which is conventional, and supported in the frame 10 is a plurality of lower rollers 11, 12 and 13, Figure 1. Arranged above the rollers 11, 12 and 13 is a plurality of upper rollers 14, 15 and 16. The upper rollers 14, 15 and 16 are each covered with a leather cover which is indicated by the numeral 17. The stock being worked, such as the sliver or roving 22, Figure 1, is adapted to pass between the upper and lower sets of rollers.

Formed integrally with the frame 10, or secured thereto, is an upstanding lug 18, and mounted above the upper set of rollers is the usual clearer block or bar 19. A pair of securing elements, such as staples, 20 serve to secure the endless clearer belt or band 21 to the bar 19. The clearer band 21 serves to pick up and collect loose individual fibers from the sliver or roving 22, so that there will be no poor spinning.

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The present invention is directed to a means for tensioning the clearer band 21 so that the clearer band 21 will function regardless of the size of the rollers. Thus, in the event that the rollers become worn or are replaced by off-size elements, the tensioning means of the present invention will insure that the band 21 continues to function efficiently.

The spring tensioning means includes a spring member 23 that has a web 24, Figure 6, and spaced parallel legs 25, there being a shaft portion 26 extending between the pair of legs 25. Circumposed on the shaft portion 26 is a coil spring 27, and suitable securing elements, such as staples 28, Figure 1, serve to connect the spring member 23 to the bar 19. Thus, the spring 27 urges the web portion 24 of the member 23 into engagement with the band 21, so that portions of the band 21 will engage the roller 14, whereby lint or other foreign matter will be efficiently collected or picked up by the band. It will be seen from Figures 2, 5 and 6 of the drawings that the spring 27 includes an arm 29 which bears against the lower surface of the bar 19, and the spring 27 has its other end shaped to define a transverse finger 30 which engages one of the legs 25 so as to normally bias or urge the spring 23 into the position shown in Figure 3.

A means is provided for preventing accidental movement of the bar 19 upward or away from the upper set of rollers. Thus, the spring member 23 will be able to properly function. This last-named means comprises a latch or keeper 31, Figure 5, and the latch 31 includes an offset end portion 32 which is provided with an aperture or opening 33. A suitable securing element, such as a screw, 37, Figure 2, projects through the opening 33 for securing the latch 31 to the bar 19.

The other end of the latch 31 is indicated by the numeral 34, and the free end of the latch 31 seats in or projects into a recess or cut out 35 which is arranged in the lug 18. It will be seen that each of the lugs 18 projects through a slot 36 in the bar 19, and the slots 36 are slightly larger than the lugs 18.

By means of the present invention "eyebrowing" will be prevented. The tension means of the present invention is adapted to be used on spinning frames, speeders and drawing frames in textile mills. The bar or member 23 is secured to the under surface of the bar 19 by means of the staples 28. The spring 27 causes the member 23 to bear down on the clearer cloth or band 21, the band 21 being fabricated of cloth so that loose cotton fibers will be collected and retained, and also dust will be collected. The rollers 14, 15 and 16 each have a cover 17 thereon, and the covers 17 may be made of leather, rubber or cork. The clearer band or cloth 21 does not rotate, but it is constructed similar to an endless belt, and the clearer band 21 is secured to the bar 19 by means of staples 20.

In order to prevent the bar 19 from moving upwardly and thereby offsetting the advantage of the tensioning bar or member 23, the latch 31 is provided. When the roving or sliver 22 is being processed, the roving or sliver 22 passes between the lower set of rollers 11, 12 and 13 and the upper set of rollers 14, 15 and 16, as shown in Figure 1. This produces a stretch or draft in the cotton stock 22, and while the cotton 22 is moving through the rollers, loose fibers are collected on the top rollers. Further, unless the clearer cloth or band 21 is in close contact with the top rollers, a layer of loose fibers will gather around the top rollers, and when a sufficient quantity of these loose fibers is collected, these fibers will collect or accumulate in the space between the roller 14 and the adjacent staple 20. However, by causing the clearer band 21 to bear positively against the top roller, the loose fibers are prevented from accumulating on the top rollers, so that these loose fibers pass through between the clearer band or cloth 21 and the top rollers, so that as the top rollers continue to turn, the fibers will cling to the fuzzy woollen cloth 21 and then these loose fibers can be picked off or removed by the spinner whenever desired.

The latch 31 is preferably made of spring steel and the latch 31 is connected to the bar 19 by means of a screw 37. The free end of the latch 31 intercepts or seats in a slot 35 which has been previously filed or ground into a retaining lug 18. The lug 18 is part of the conventional frame or machine and may be cast integrally with the steel roller stand in order to maintain the bar 19 in its proper place. Further, it will be seen that the slot 36 in the bar 19 is somewhat larger or wider than the lug 18, whereby the bar 19 can move backwards in the direction of the arrows shown in Figures 1 and 3, as the bar follows the motion of the top rollers. This backward motion of the bar 19 is made use of in order to lock the latch 31 into the slot 35 in the lug 18. In order to remove the bar 19, the bar 19 is simply moved forwardly and then lifted up.

The conventional bar 19 is not, in many cases, heavy enough to cause enough friction between the clearer piece 21 and the roller 14, Figure 1, to cause loose fibers to be drawn through and deposited behind the roller 14. Since there are from six to eight clearer pieces supporting the weight of each bar 19, the necessity of having a heavier or weighted slat or latch to hold the slat down in order to increase the tension of the clearer piece onto the roller 14 is apparent.

Further, the rollers sometimes have different sizes so that it is necessary to have individual adjusting clearer pieces 21. It will be seen from Figure 1 that the clearer band 21 contacts the rollers and that the staples 20 that secure the clearer band extend beyond the outside edge of the rollers 14 and 16, Figure 1.

What is claimed is:

1. In a clearer tensioning device, the combination with a frame, a lug projecting upwardly from said frame, a plurality of rollers supported on said frame, a clearer bar mounted above said rollers and provided with a slot for receiving said lug, and an endless clearer band supported by said bar for engaging said rollers, of a spring means for urging said clearer band into engagement with said rollers, said spring means comprising a spring member pivotally connected to the bottom of said clearer bar, a coil spring circumposed on said member, and means for preventing said clearer bar from accidentally moving upwardly from said rollers, said last-named means comprising a latch having an offset end secured to said bar, there being a cutout in said lug for receiving the other end of said latch.

2. In a clearer tensioning device, the combination with a frame, a lug projecting from said frame, a plurality of rollers supported on said frame, a clearer bar mounted above said rollers and provided with a slot for receiving said lug, and an endless clearer band supported by said bar for engaging said rollers, of a spring means for urging said clearer band into engagement with said rollers, said spring means comprising a spring member pivotally connected to said clearer bar, a coil spring circumposed on said member, and means for preventing said clearer bar from accidentally moving upwardly from said rollers, said last named means comprising a latch having an end secured to said bar, there being a cut-out in said lug for receiving the other end of said latch.

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