TWISTER HEAD TRAVERSING MOTION FOR WOOL SPINNING MACHINES

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2 Sheets-Sheet 1

INVENTOR.

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Made in U. S. A.
My invention has reference to an improvement in textile machines and more particularly to an improvement in wool spinning machines.

In the usual construction of spinning machines the upper or back rolls are covered with leather. When the yarn is allowed to go straight between the rolls, it will in time wear a groove in the leather covers of the rolls. Devices heretofore used for reciprocating the yarn back and forth between the rolls are useless for use in wool spinning machines, owing to the difference in the construction of wool spinning machines.

The object of my invention is to improve the construction of wool spinning machines, whereby the twister heads, through which the yarn goes, are given a traversing or reciprocating motion, in addition to their revolving motion, thereby giving a traversing or a reciprocating motion to the yarn between the drawing rolls.

A further object of my invention is to provide the twister head traversing motion with a driving mechanism that will give an extremely slow traversing motion to the twister heads compared to the revolving speed of the drawing rolls.

My invention consists in the peculiar and novel construction of a mechanism for giving a traversing or a reciprocating motion to the revolving twister heads of a wool spinning machine, said mechanism having details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a vertical front view of the driving end portion of a wool spinning machine provided with my improved twister head traversing motion.

Figure 2 is a vertical transverse sectional view through the machine, taken on line 2, 2, of Figure 1, and looking in the direction of the arrows 4, 4, and

Figure 3 is an enlarged detail sectional view taken on line 3, 3, of Figure 1, and looking in the direction of the arrow 6.

In the drawings C indicates adjacent portions of a wool spinning machine, D my improved twister head traversing motion or mechanism, and E the yarn.

The twister heads 5, 5 are provided with horns 5a which, due to the inclination of the roving E prior to its entry in the twister head, engage said roving and act to agitate the same during passage through the twister head. A front drawing roll driving shaft 8, is rotatably supported in a bearing 9, in the end frame 1, shown in dotted lines in Figure 1, it is fixed at its inner end to the shaft of the front drawing rolls 3, 3, and has on its outer end a bevel gear 10. This bevel gear 10, meshes with a bevel gear 11, on a shaft 12, operatively connected to the main driving mechanism, not shown, of the machine.

A front roll stand 13, is secured at intervals the length of the machine to the strut 2. Each stand 13, has a front roll bearing 14, a boss 15, to which is fixed a longitudinal rod 16, an upper bearing member 17 having a front bearing 18, and a rear bearing 19. Secured to the rod 16, is a back roll supporting arm 20, and fixed to the stand 13, is a fulcrum arm 21. A ball crank lever 22, is pivotally supported on the fulcrum arm 21, and it has a vertical arm 23, the lower end portion of which bears against the trunnions of the back rolls 4, 4, and a horizontal arm 24, on which is a weight 25, as shown in Figure 2.

A horizontal front bar 26, has a sliding
fit through the front bearing 18, and a horizontal rear bar 27, has a sliding fit through the rear bearing 19, in the stand 18. A twister head supporting frame 28, is clamped to the front and rear bars 26 and 27, and it has an upper vertical bearing 29, and a lower vertical bearing 30, in which the twister head 5, is rotatably secured. This twister head frame 28, is clamped to the bars 26 and 27, by a base member 31, which fits over the top half of the bars, a clamping member 32, which fits over the under half of the bars, the base member 31 and clamping member 32 being clamped to the bars by a bolt 33, and nut 34 as shown in Figure 3.

A worm 35, on the shaft 37, meshes with a worm gear 36, fixed on a shaft 37, which is rotatably supported in a bearing member 38, secured to the strut 2. A pinion 39, is fixed to the shaft 37, and meshes with a gear 40, fixed to a shaft 41, rotatably supported in a bearing 42, on the end of a bracket 43, secured to the end frame 1, and fixed to the shaft 41, is an off center cam 44, having a continuous cam groove 45. A lever 46, is pivotally attached at its upper end to a member 47, secured to the end frame 1, and it has on its lower end a roll 48, running in the cam groove 45. A connecting link 49, is pivotally secured at its outer end to the lever 46, and at its inner end to a yoke 50, which is fixed to the front and rear bars 26 and 27, by pins or other means, as shown in full and broken lines in Figure 1.

In the operation of my improved twister head traversing motion or mechanism, the yarn E, comes straight downward through the twister head 5, in the usual way and then downward between the drawing rolls 3 and 4, the front drawing rolls 3, 3, being revolved at a comparatively high rate of speed by the shaft 8. The twister heads 5, 5, are revolved, as described and now being supported on the traversing bars 26 and 27, are given a traversing or reciprocating motion in the machine, through the operations of the worm 35, worm gear 36, pinion 39, gear 40, cam 44, lever 46, link 49 and yoke 50.

My invention lies in giving to the twister heads of a spinning machine, a traversing or a reciprocating motion in the machine and this being in addition to their usual revolving motion. It is therefore evident that I am not obliged to confine myself to the construction of the mechanism shown for this purpose, as any reciprocating mechanism could be used for giving a traversing or a reciprocating motion to the bars 26 and 27 and the twister heads 5, 5.

Having thus described my invention I claim as new:

In a spinning or twisting machine having the usual operating elements including twister heads, drawing rolls, yarn going through the twister heads and between the drawing rolls and drawing roll stands, a reciprocating bar slidably mounted in fixed supports, twister head frames secured to said reciprocating bar, said twister head frames having bearings for the twister heads, a lever pivotally mounted on a fixed support, an operative connection between said lever and said reciprocating bar, and intermediate the ends of said lever and a cam effective to move said lever and thereby reciprocate said bar to traverse said twister heads whereby substantially uniform traverse speed is attained.

In testimony whereof, I have signed my name to this specification.

SIGURD H. HELLAND.