(No Model.) 2 Sheets—Sheet 1.

J. & T. SHARPE.

WOOL COMBING MACHINE.

No. 492,170. Patented Feb. 21, 1893.

Fig. 1.

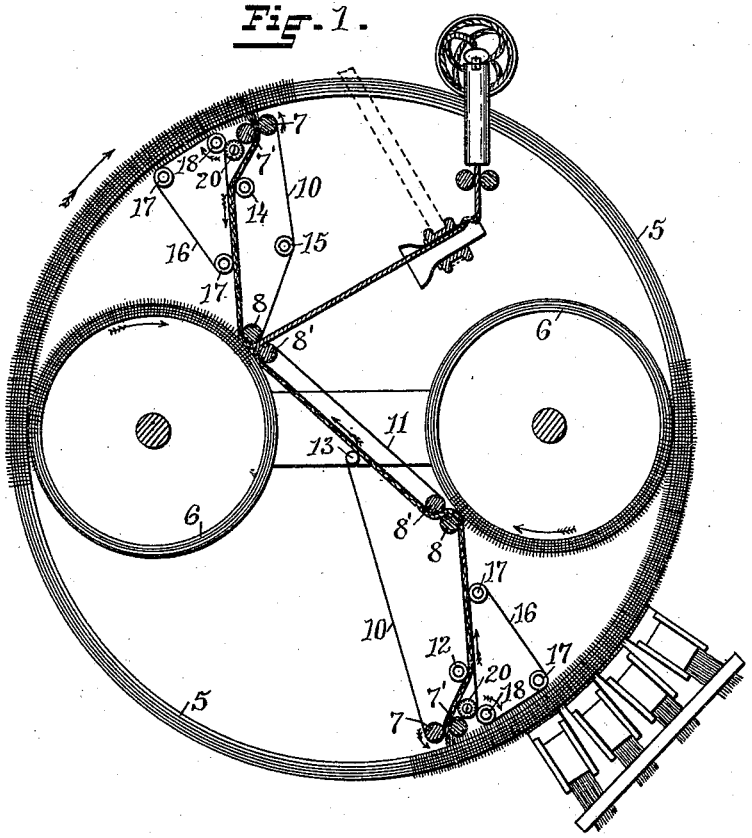


Fig. 2.

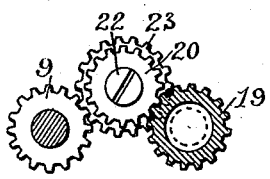
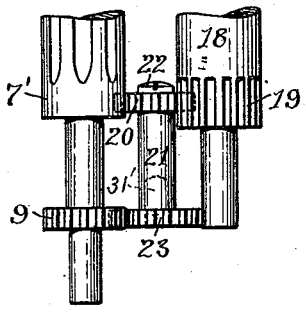


Fig. 3.



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

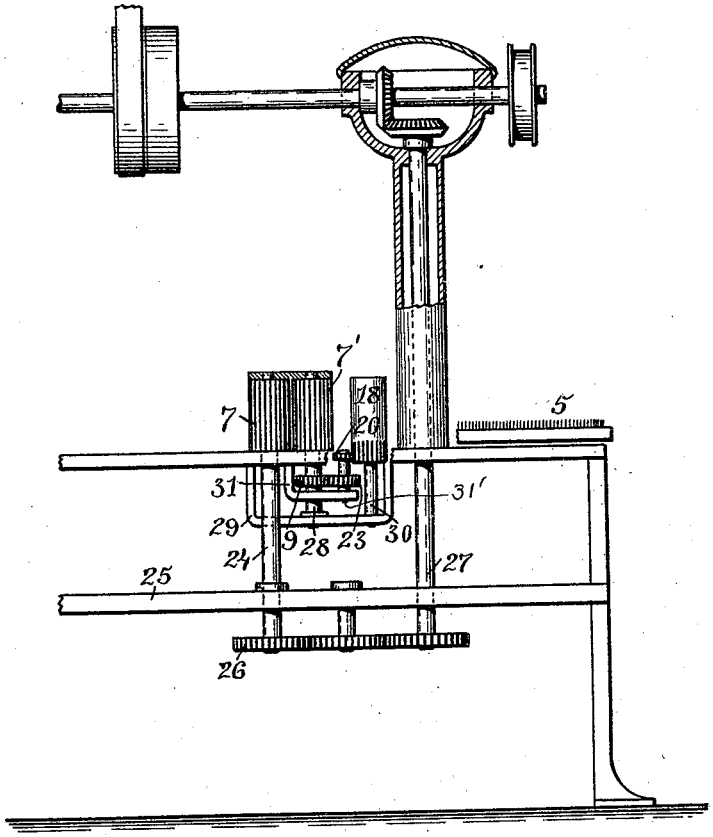


Fig. 5.

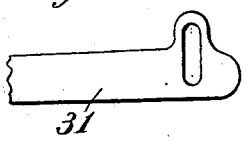
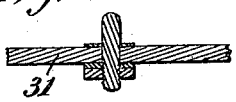


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN SHARPE AND THOMAS SHARPE, OF THORNTON, RHODE ISLAND.

WOOL-COMBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,170, dated February 21, 1893.

Application filed May 31, 1892. Serial No. 434,877. (No model.)

To all whom it may concern:

Be it known that we, JOHN SHARPE and THOMAS SHARPE, of Thornton, in the county of Providence and State of Rhode Island, have jointly invented certain new and useful Improvements in Wool-Combing Machines; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in adjustable mechanism for operating the guide-aprons of a wool-comb.

The object of the invention is to produce a wool-comb in which the movement of the guide-aprons may be adjusted without reference to the speed of the drawing-off rolls and the delivery-aprons carried thereby.

The invention consists in the peculiar construction of the guide-apron drive-rolls and the combination therewith and with drawing-off rolls provided with suitable gears, of mechanism intermediate the drawing-off rolls and the drive-rolls of the guide-aprons, whereby the movement of the drawing-off rolls is transmitted to the drive-rolls of the guide-aprons in a greater or less degree, as will hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a top view of a wool-comb showing the arrangement of the aprons and indicating the means for driving the guide-aprons. Fig. 2 represents a top view, partly in section, of the mechanism for driving the guide-apron. Fig. 3 represents an elevation of the same removed from the wool-comb and from the supporting brackets to more clearly indicate the operation, parts of the rolls being broken away. Fig. 4 represents a portion of a wool-comb showing the improved arrangement of the draw-off rolls and the guide-apron drive-roll, also indicating the method of driving the same. Fig. 5 represents an enlarged top view of a portion of the bracket for supporting the mechanism for driving the guide-apron. Fig. 6 represents a sectional view of the same showing the movable-stud, for carrying the intermediate gears and shaft, clamped in a slot of said bracket.

Similar numbers of reference designate corresponding parts throughout.

In the drawings 5 indicates the large circle of a wool-comb of which 6—6 represent the smaller circles which are rotatable within the larger circles.

7 and 7′ are the usual drawing-off rolls for drawing the sliver from the large circle, and 8 and 8′ indicate the usual rolls by which the sliver is drawn from the smaller circles. These rolls 7 and 7′ and 8 and 8′ are fluted longitudinally and are provided with shafts vertically journaled in suitable bearings; the shafts of the drawing-off rolls 7′—7′ are also provided with the gears 9—9.

The delivery-aprons 10—10 are formed of any suitable material and are carried by the drawing-off rolls 7 and 8 driven in any ordinary manner and pass between these rolls and those marked 7′ and 8′, an intermediate-apron 11 being carried on the rolls 8′—8′. These delivery-aprons 10—10 are guided and distended by the vertically-journaled rolls 12 and 13, and 14 and 15.

The guide-aprons 16—16 are supported on the vertical guide-rolls 17—17 and on the drive-rolls 18 also vertically journaled, the lower portions of these rolls 18 being furnished with gears 19 which may form portions of said rolls or be secured thereto.

Intermeshing with the gear 19 is an idle-gear 20 removably secured to the upper end of the shaft 21, by the screw 22, which is suitably journaled in a bracket, not shown in the drawings, and to the lower end of this shaft 21 is secured the gear 23 which intermeshes with and is driven by the gear 9 carried by the shaft of the drawing-off roll 7′ to which rotation is imparted from the frictional contact of its fluted surface with the surface of the delivery-apron 10, or the sliver carried by that apron.

By reference to Fig. 4 of the drawings it will be seen that the draw-off rolls and guide-apron drive-roll are vertically journaled in positions adjacent to the large circle. The draw-off roll 7 has a vertical shaft 24 which is journaled in the comb-frame 25 and is driven by a gear 26 at its lower end intermeshing with one of a train of gears operated in the usual manner by the vertical-shaft 27. The draw-off roll 7′ has a shaft 28 journaled at its lower end in the bracket 29 depending from the upper bar of the comb-frame in

which bracket is also secured the lower end of the shaft 30 on which the roll 18 is rotatable. Also depending from the upper bar of the comb-frame is a small bracket 31 and in this bracket is secured an adjustable stud 31′ which extends into a socket formed in the lower end of the shaft 21 and on which said shaft is rotatable and from which said shaft, carrying the gears 20 and 23, may be removed and a similar shaft carrying other gears substituted therefor.

When it becomes desirable to change the size of the gears 20 and 23, the stud 31′ is moved along the slot with which the bracket 31 is provided, being clamped to the bracket by ordinary clamping means shown in Fig. 6 to locate the stud at the proper distance from the gear 9 and the gear 18.

It will be apparent that, by changing the size of either of the gears 20 or 23, the speed of the drive-rolls 18 and consequently the speed of the guide-aprons will be altered and by this means they will be driven either faster or slower than the delivery-aprons.

In the usual construction of a wool-comb both the delivery and guide aprons are run over or between fluted-rolls and are, consequently, subjected to much wear from said rolls, whereas, in our improved arrangement, only one belt is acted upon by the fluted rolls, the guide-belt being operated on by smooth rolls which do not tend to wear it in the same degree as in wool-combs as heretofore constructed. Again where the belts are both corrugated by the action of the rolls their friction on the sliver is equal, and at the point where the guide-belt is directed away from the delivery-belt the sliver is apt to follow the direction in which the guide-belt is moving and becomes wound around the same, at every turn gathering additional sliver the removal of which necessitates the stopping of the comb, but in our improved construction the guide-belt being smooth has very little pull on the sliver and hence is not apt to draw the same away from the delivery belt or apron. We also find that in some cases it is desirable to drive the guide-belt at a greater speed than that at which the delivery-belt is traveling, this being accomplished, as stated, by changing the gear 20.

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

1. The combination with the large and small combs, the drawing-off rolls and delivery-aprons of a wool-combing machine carried thereby, of drive-rolls vertically journaled adjacent to the large circle and separated from the draw-off rolls, guide-belts driven by said rolls, guide-rolls for distending the same, and adjustable means intermediate the draw-off rolls and the drive-rolls whereby the latter are driven, as described.

2. The combination with the larger comb-circle 5, and the smaller circles 6—6 rotatable within the larger circle, the draw-off rolls 7 and 7′ vertically journaled near the inner circumference of the larger circle, the rolls 7—7 being rotatable by suitable mechanism, the draw-off rolls 8 and 8′ vertically journaled adjacent to the circumference of the small circles, gears 9 on the shafts of the rolls 7′—7′, and delivery-aprons carried by the rolls 7 and 8 and distended by the rolls 12 and 13, and 14 and 15, of the guide-aprons 16 supported on the rolls 17 and 18, a gear 19 provided on the lower portion of the roll 18, a gear 20 intermeshing with said gear and removably secured to the upper end of the shaft 21 suitably journaled, and a gear 23 secured to the lower end of said shaft and intermeshing with the gear 9, as described.

In witness whereof we have hereunto set our hands.

JOHN SHARPE.
THOMAS SHARPE.

Witnesses:
M. F. BLIGH,
HENRY J. MILLER.