No. 676,541. Patented June 18, 1901.

T. KERSHAW.

FEEDING DEVICE FOR CARDING MACHINES.

(Application filed May 29, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

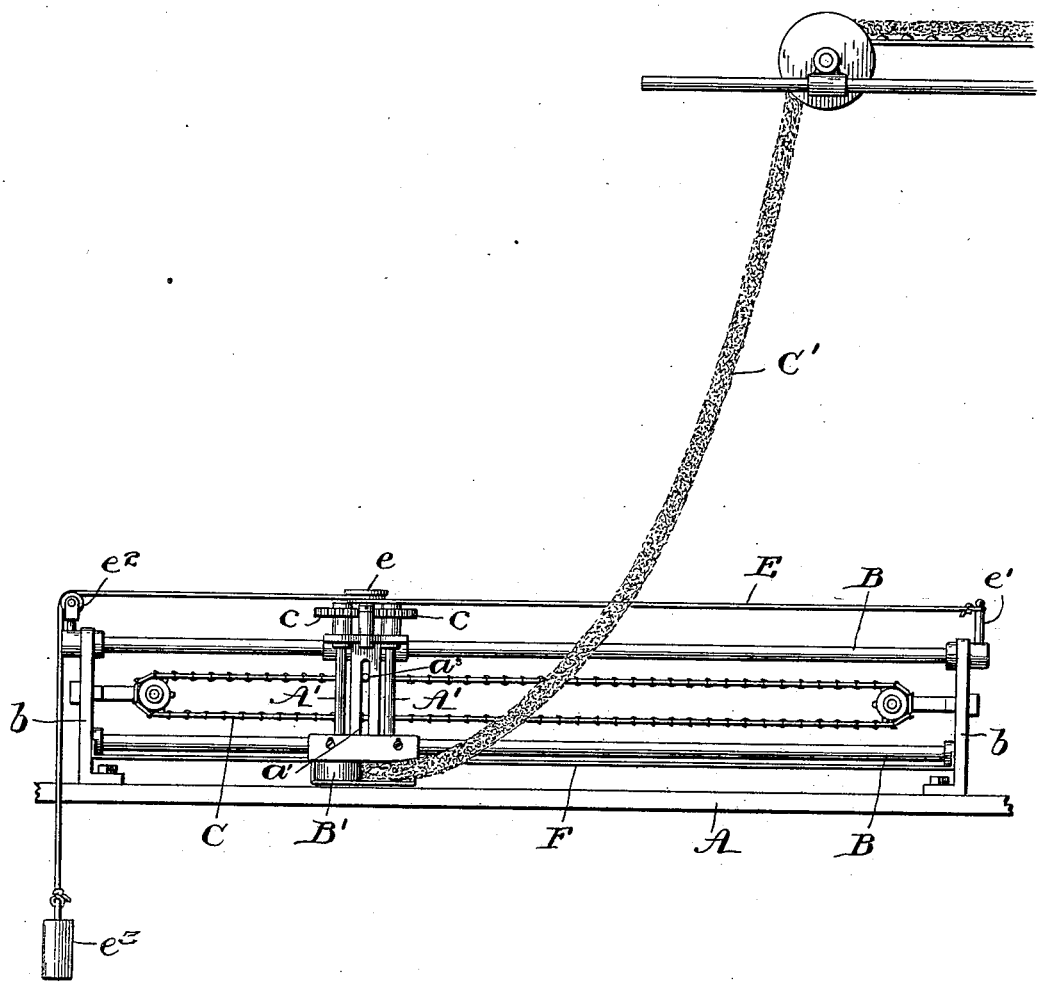

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Fig. 4.

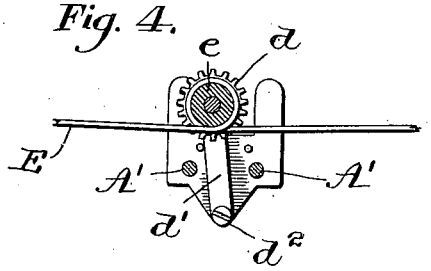


Fig. 2.

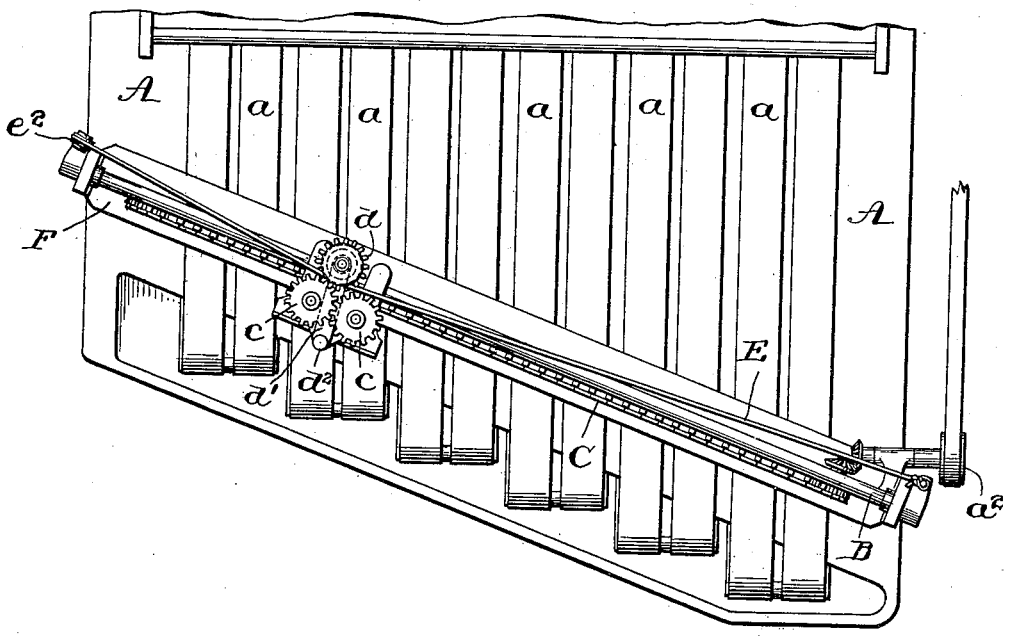


Fig. 3.

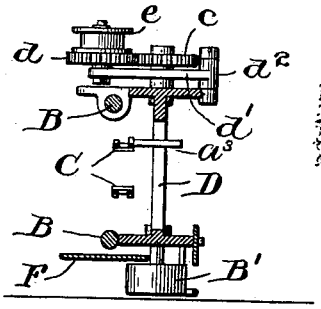
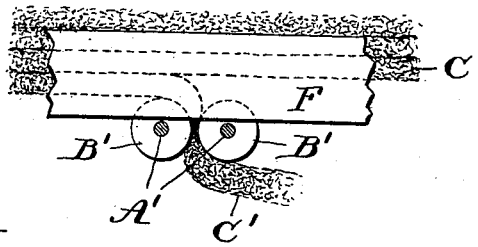


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS KERSHAW, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO RICHARD ECKERSLEY, OF SAME PLACE.

FEEDING DEVICE FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 676,541, dated June 18, 1901.

Application filed May 29, 1897. Serial No. 638,674. (No model.)

To all whom it may concern:

Be it known that I, THOMAS KERSHAW, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Feeding Devices for Carding-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the feeding attachments that are connected to the second breakers and finishers of wool-carding machines; and the object of my improvement is to construct a feeding device that will deliver the roving evenly upon the feed-table and retain it in practically the same position in which it is delivered, so that the stock will enter the carding-machine evenly and regularly from all parts of the feed-table.

To accomplish the desired result, I make the feed-rollers, through which the roving passes, much larger in diameter than those heretofore used and place them in such a position that they will project quite a distance underneath the flat presser-bar, thus delivering the roving so far back from the outer edge of the said presser-bar and in such frictional contact with the under side thereof that it will be impossible for the natural elasticity of the stock to force the roving out from under the presser-bar after the feed-rolls have passed by. I also place the driving mechanism for the feed-rolls on the upper ends of the shafts carrying said feed-rolls and above the traverse-rods, that extend across the feed-table.

In the accompanying drawings, Figure 1 is a front elevation of feeding device having my improvement thereon. Fig. 2 is a plan view of the feed-table and feeding-rolls. Fig. 3 is a vertical sectional view through the middle of the feed-rolls and the carrying-frame therefor. Fig. 4 is a plan view of the top of the frame carrying the feed-rolls with two of the cog-wheels removed therefrom. Fig. 5 is a sectional view of the flat presser-bar and feed-rolls, showing the roving passing through the feed-rolls and lying in position under the presser-bar.

A represents the main frame of the feed-table.

a a are the endless belts of webbing on the feed-table. These belts are of the usual construction and secured in the frame A in the ordinary manner.

B B are the two traverse-rods, extending diagonally across the frame A.

b b are the end supports for the traverse-rods.

C is an endless chain belt passing around sprocket-wheels secured in the supports *b b*.

D is the frame carrying the feed-rolls and the actuating mechanism therefor. The upper part of this frame fits around and slides over the top traverse-rod B, the lower part resting against and sliding on the lower traverse-rod B.

A′ A′ are two vertical shafts fitting into frame D.

B′ B′ are the two feed-rolls, secured on the lower end of the shafts A′ A′.

c c are two cog-wheels secured on the ends of the shafts A′ that project above the frame D. *d* is another cog-wheel secured on the arm d', that is pivoted at d^2 to the top of the frame D.

e is a grooved roller secured on the top of the cog-wheel *d* and turning upon the same shaft.

E is a cord secured at one end to the pin e', passing around the grooved roller *e*, over the support e^2, and having on the free end the weight e^3.

F is a flat presser-bar, about half an inch thick and about four inches wide, extending from side to side of the feed-table, immediately under the traverse-bar B and in contact with the roving after it is laid on the feed-table.

C′ is the roving coming from the next forward machine and being laid on the feed-table.

a' is a vertical slot in the frame D.

a^3 is a finger secured on the chain belt C and projecting into the slot a'.

a^2 is the driving-wheel, operating the beveled gear-wheels which actuate the chain belt.

As the frame D is moved back and forward by the chain belt C operating through the finger a^3 in the vertical slot a' the cord E will operate the cog-wheel *d* and cause it to fall into gear with one or the other of the

cog-wheels *c c*, thus giving a positive motion to the feed-rolls B′ B′. When the movement of the frame D is reversed, the cog-wheel *d* will be thrown out of gear with one of the wheels *c* and into gear with the other one, thus always making the feed-rolls turn in the same direction.

By the construction and arrangement of mechanism above described it will be seen that the roving is delivered directly upon the belts of the feed-table and underneath the flat presser-bar at such a position inwardly of the outer edge of the latter that the frictional contact of the roving with the bar and with the belt will counteract the natural elasticity of the stock to force the roving out from the bar as it is progressively delivered thereunder by the feed-rolls during the motion of the traverse-frame. The stock is thus laid and held upon the belts of the feed-table in a smooth and even state and delivered thereby to the breaker in practically the same condition as it is introduced to the feed-rolls.

It will be understood that by my invention the roving is not compressed or compacted between the plate and the belts, but that, on the contrary, the stock is delivered thereto in its loose condition, the frictional action being incident to the natural elasticity of the roving.

In those machines of the prior art wherein the feed-rolls are constructed and arranged to deliver the roving along the outer edge of the presser-bar the roving bulges and spreads beyond and above the latter. The surface of the roving in contact with the belts is, perforce, uneven, and in consequence the roving is carried in by the belts in an irregular and disordered condition. This objection is effectually overcome by my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a feeding mechanism for carding-machines, the combination with the feed-table, including the carrier-belts, and the flat presser-bar extending from side to side of the table and directly above said belts, of the feed-rolls projecting into the space between said bar and belts, means whereby said rolls are moved longitudinally of said bar, and means for rotating said rolls during their traverse, whereby the roving is delivered by the rolls in a position uniformly between said bar and belts, and there maintained by the frictional contact incident to the natural elasticity of the stock, substantially as described.

2. In a feeding mechanism for carding-machines, the combination with the feed-table, including the carrier-belts, and the flat presser-bar extending from side to side of the table and directly above said belts, of a traverse-frame, mechanism for actuating the same, vertical shafts in said frame, coacting feed-rolls on said shafts projecting into the space between said bar and belts, and means for rotating said shafts and rolls during the motion of the traverse-frame, whereby the roving is delivered by said rolls in a position uniformly between said plate and belts, and thus maintained by the frictional contact incident to the natural elasticity of the stock, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS KERSHAW.

Witnesses:
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CHAS. H. PILE.