T. D. HOLDEN.

ATTACHMENT FOR CARDING MACHINES.

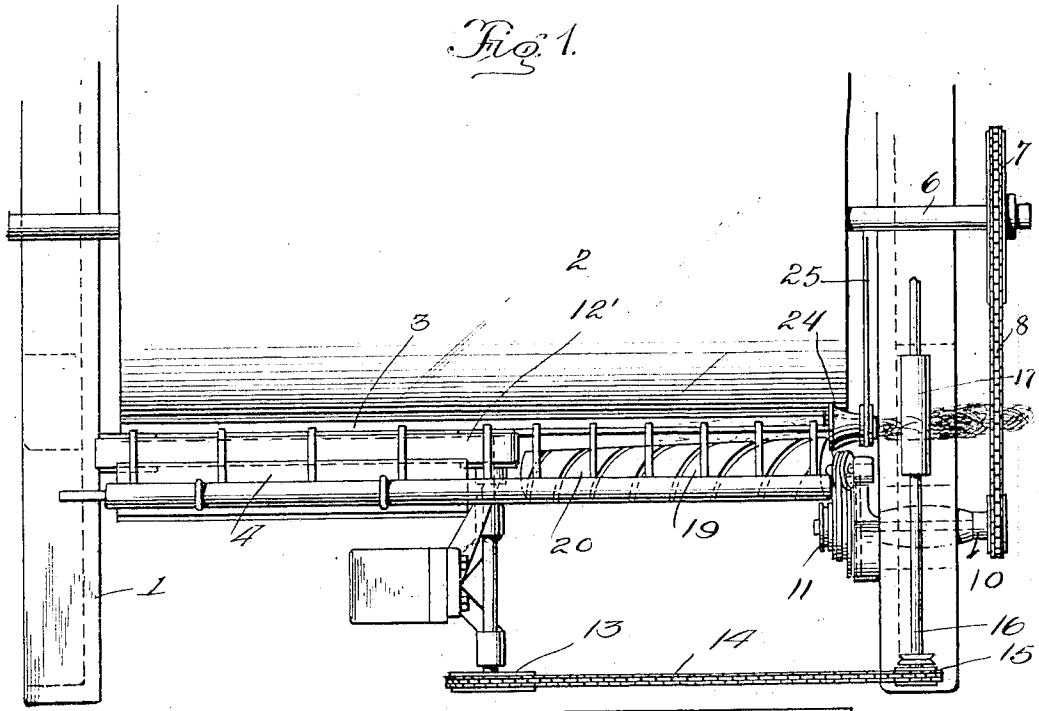
APPLICATION FILED DEC. 24, 1913.

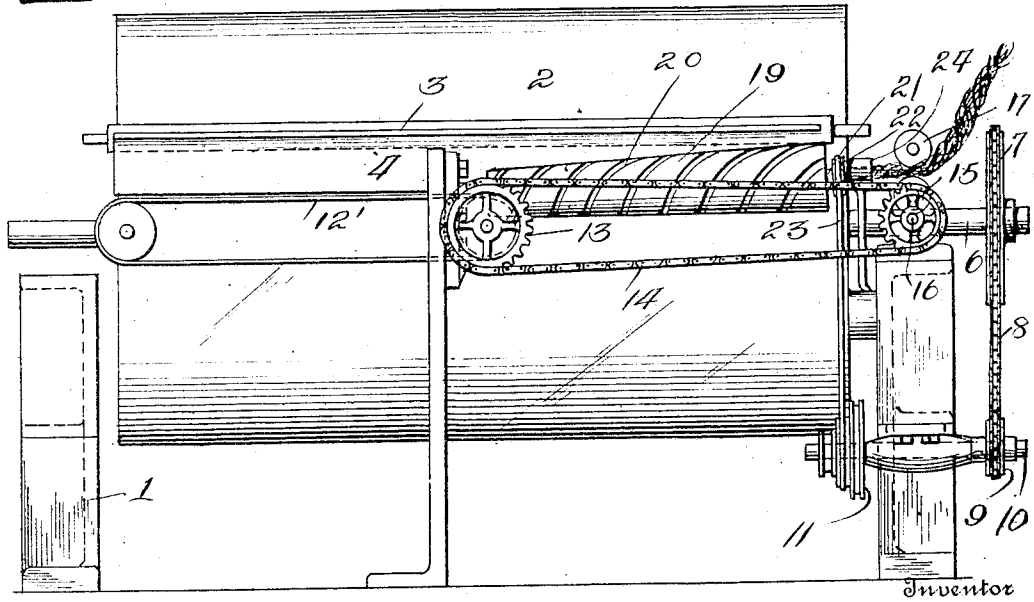
1,121,362.

Patented Dec. 15, 1914.

2 SHEETS—SHEET 1.

Fig. 1.





Inventor

Fig. 2

J. D. Holden

Witnesses

L. L. Burket.

C. Rosenberg.

By A. S. Pattison

Attorney

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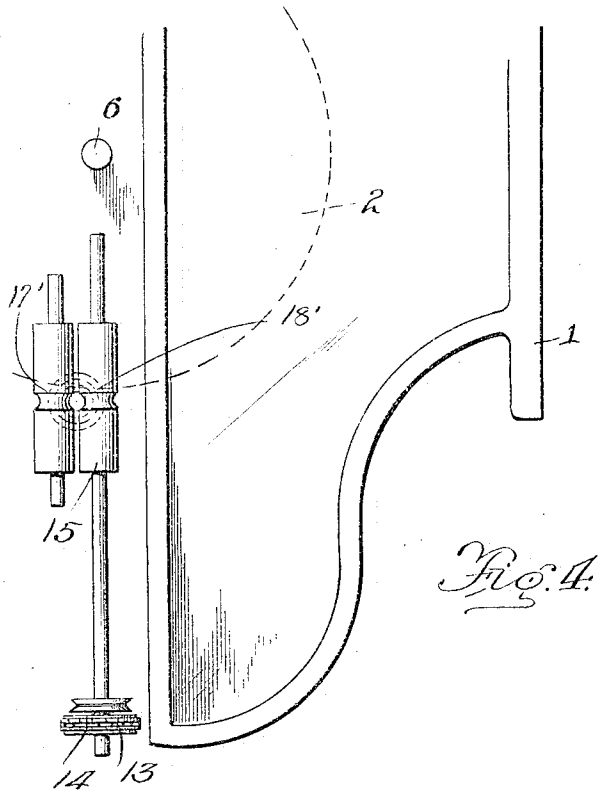


Fig. 4.

Fig. 5.

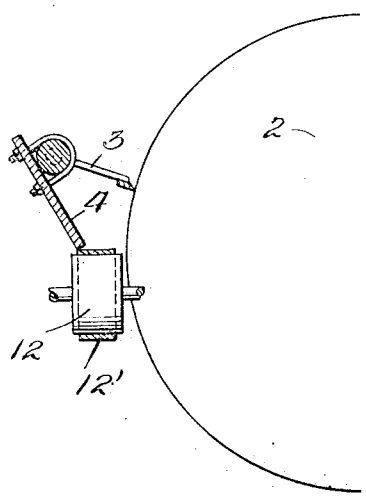
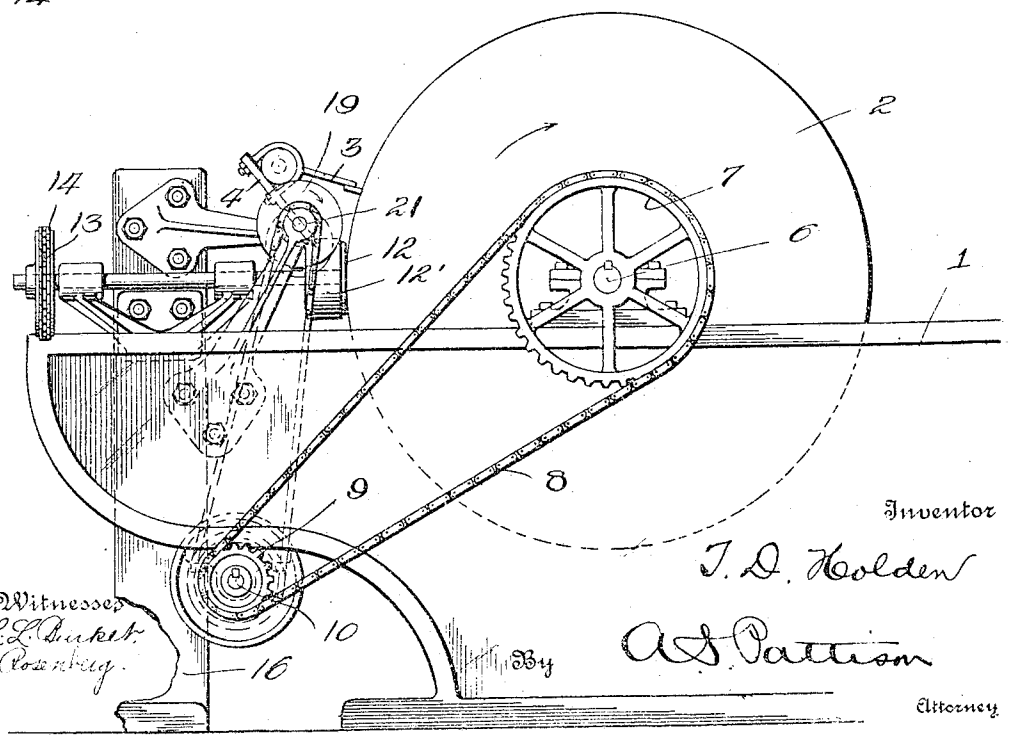


Fig. 3.



Witnesses
L. L. Burket
6 Rosenberg.

Inventor
T. D. Holden
By A. S. Pattison
Attorney

UNITED STATES PATENT OFFICE.

THOMAS D. HOLDEN, OF WINOOSKI, VERMONT.

ATTACHMENT FOR CARDING-MACHINES.

1,121,362. Specification of Letters Patent. **Patented Dec. 15, 1914.**

Application filed December 24, 1913. Serial No. 808,536.

To all whom it may concern:

Be it known that I, THOMAS D. HOLDEN, a citizen of the United States, residing at Winooski, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Attachments for Carding-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in attachments for carding machines.

The object of my invention is to provide an attachment for a machine of this character adapted to gather the wool-fiber after it has been combed by the doffer-comb, and to convey it to one side of the machine and at the same time partially twist it so that it will be held together in a uniform sliver ready to be presented to the card finisher.

Another object of my invention is to provide a simple, cheap and effective attachment of this character having certain details of construction and operation hereinafter more fully described.

In the accompanying drawings—Figure 1 is a top plan view of a carding machine showing my attachment applied thereto. Fig. 2 is a side view of Fig. 1, looking in the direction of the arrow of Fig. 1. Fig. 3 is an end view of Fig. 2, looking in the direction of the arrow of Fig. 2. Fig. 4 is a side elevation showing in detail the drawing roll and the rotating tube. Fig. 5 is a vertical sectional view partly broken away and taken on the line A—B of Fig. 1.

Referring now to the drawings, 1 represents the frame of my improved carding machine which is provided with the usual doffer-roll 2 and the doffer-comb 3, all of which is of the usual structure and needs no further description. Secured to the doffer-comb 3 is a board 4 adapted to convey and keep the fiber down upon the belt carrier 5, as will be hereinafter more fully described. Carried by the shaft 6 of the doffer-roll 2 is a sprocket wheel 7, over which passes a chain 8, the said chain passes over a sprocket 9 carried by a shaft 10, and said shaft carries a stepped pulley 11.

The doffer-comb 3 is operated in any desired manner and needs no further description. Below the lower end of the board 4 is a belt carrier 12′ extending the half length of the doffer roll 2, and upon which the fiber is deposited as it is combed by the doffer comb 3. This belt carrier, as shown in Fig. 2 of the drawing, is of the endless belt type and the pulley 12, over which the belt-carrier passes, is provided with a sprocket 13, over which the chain 14 passes. The said chain extends to the right of the machine and passes over a sprocket 15, mounted upon the shaft 16 of the drawing-roll 17. This drawing-roll, as shown, is at one side of the doffer roll 2 and in a horizontal plane approximately that of the upper face of the endless carrier 5. This shaft 16 is driven in the usual manner and needs no further description. The rotation of this drawing-roll shaft 17, through the medium of the sprockets 13 and 15 and chain 14, rotates the pulley 12 over which the endless conveyer passes, by means of which the same is caused to deliver and convey the fiber as it is combed from the doffer-roll. Below the drawing-roll 17, is a second drawing-roll 18. These rolls are provided with openings 17′ and 18′ respectively, registering with the opening through which the sliver passes, as will be hereinafter more fully described.

Arranged at the right of the belt-carrier 5, is a taper-roll 19 having the spiral grooves 20 in its periphery and which is adapted to receive the fiber from the belt carrier and twist and roll the sliver, whereby a knotted or irregular fiber may be more readily straightened out and gathered before going to the finisher. The taper-roll 19 is carried by a shaft 21 having a pulley 22 over which passes a belt 23, which also passes over the pulley 11, and by means of which the taper-roll is continuously driven. At the end of the taper-roll 19 is the rotating tube 24, which is driven by a belt 25, which in turn is driven by the same mechanism that drives the shaft 16 of the drawing roll 17 and needs no further description. This rotating tube 24, as shown, is at a point on a line with the belt carrier adjacent the inner periphery of the taper-roll, whereby the sliver as it is twisted by the taper-roll passes through the rotating tube and is further twisted and passes from this rotating tube between the drawing-rolls, where it is further compressed and passes from the machine in a comparatively compact sliver, so that it can be readily handled in presenting it to the finishing machine.

Having thus described my invention,

what I claim and desire to secure by Letters Patent is—

1. The combination with a carding machine, of a carrier below the doffer-comb and a taper-roll having spiral grooves adapted to receive the fiber from the carrier and twist and convey it to one side of the machine.

2. The combination with a carding machine, of an endless carrier below the doffer-comb, of a taper-roll having spiral grooves adapted to receive the fiber from the endless carrier and twist and convey it to one side of the machine.

3. The combination of a carding machine, of an endless conveyer below the doffer-comb, a taper-roll having spiral grooves in its periphery and adapted to receive the fiber from the endless conveyer and twist and convey it to the side of the machine, and a rotating tube through which the sliver is forced by the taper-roll.

4. The combination with a carding machine, of an endless conveyer below the doffer-comb, a rotating taper-roll having spiral grooves in its periphery and adapted to receive the fiber from the endless conveyer and twist and convey the fiber to the side, a rotating tube adjacent the end of the taper-roll and through which the sliver passes, drawing rolls adjacent the rotating tube and between which the sliver passes, and means driven by the carding machine operating the endless conveyer, the taper-roll, the rotating tube and the drawing-rolls.

5. The combination with a carding machine, a horizontally arranged endless conveyer below the doffer-comb an obliquely arranged taper-roll adjacent the end of the endless conveyer and having spiral grooves in its outer periphery, means for rotating the taper roll, and operating the endless conveyer, a rotating tube adapted to receive the sliver from the taper-roll and drawing-rolls receiving the taper-roll from the rotating tube, substantially as shown and described.

6. The combination with a carding machine, of an endless conveyer below the taper-comb, means for operating said endless conveyer, a taper-roll receiving the fiber from the endless conveyer and having grooves in its outer periphery adapted to twist and convey the fiber to one side of the machine, a rotating tube adapted to receive the sliver from the taper-roll, means for rotating the tube and rotating the drawing-rolls receiving the sliver from the rotating tube.

7. The combination with a carding machine, an endless belt conveyer horizontally arranged below the doffer-comb, means operated by the machine for driving said endless conveyer, a taper-roll adjacent the end of the endless conveyer and obliquely arranged and having spiral grooves in its periphery and adapted to twist and convey the fiber as it passes from the endless conveyer, a rotating tube adjacent the opposite end by the taper roll through which the sliver passes from the taper-roll, means driven by the machine for rotating the tube and the taper-roll and drawing-rolls horizontally arranged at right angles to the rotating tube and having a space through which the sliver passes as it leaves the rotating tube, and means for rotating the drawing-rolls in opposite direction.

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

THOMAS D. HOLDEN.

Witnesses:
CHARLES E. ALLEN,
FREDREIC G. GUNTHER.