E. H. ROONEY.

COTTON WADDING APPARATUS.

APPLICATION FILED SEPT. 11, 1912.

1,189,873.

Patented July 4, 1916.

3 SHEETS—SHEET 1.

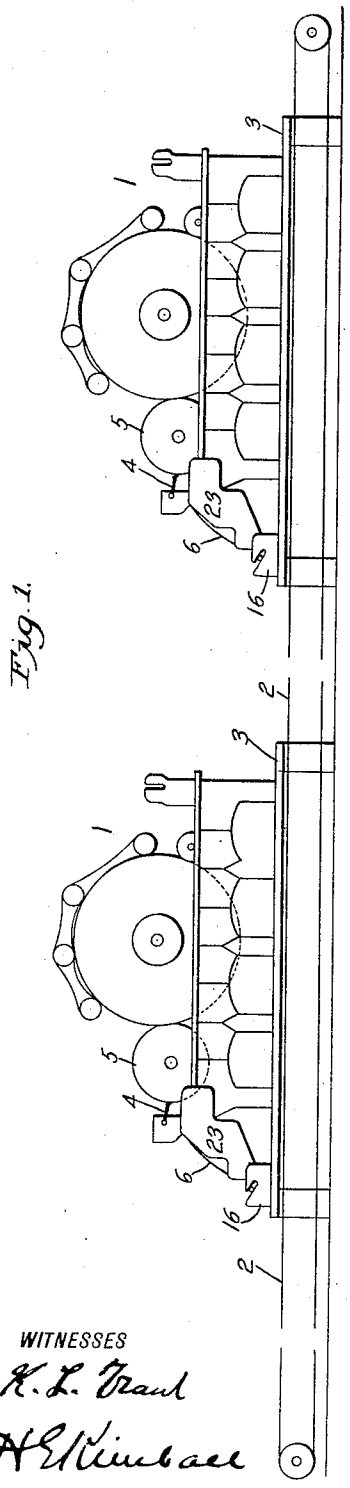


Fig. 1.

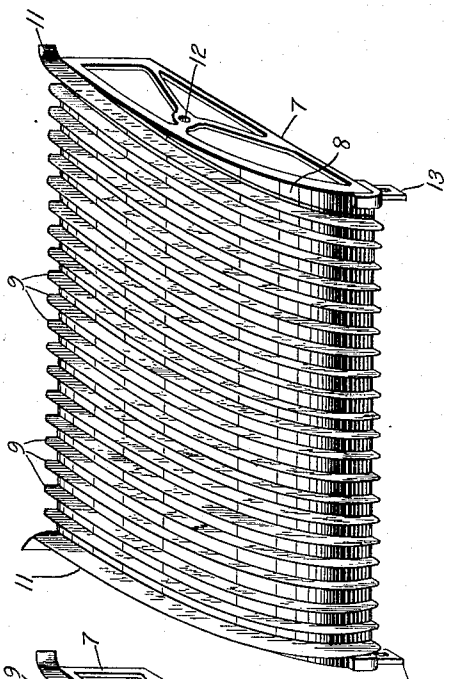


Fig. 3.

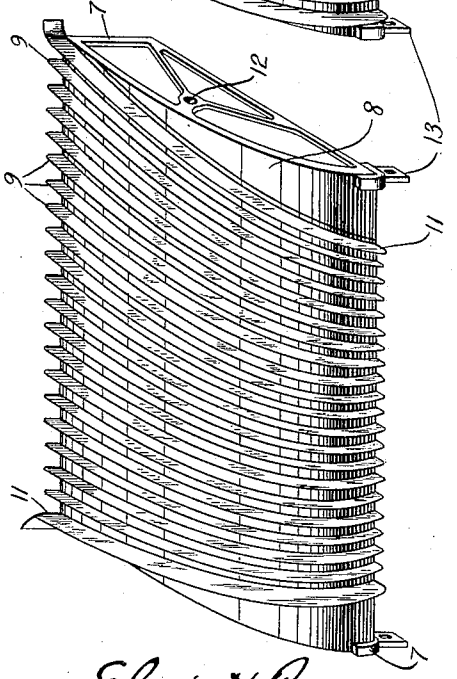


Fig. 2.

WITNESSES

K. L. Brand

H. R. Kimball

Elmer H. Rooney INVENTOR

BY

Munson & Evans ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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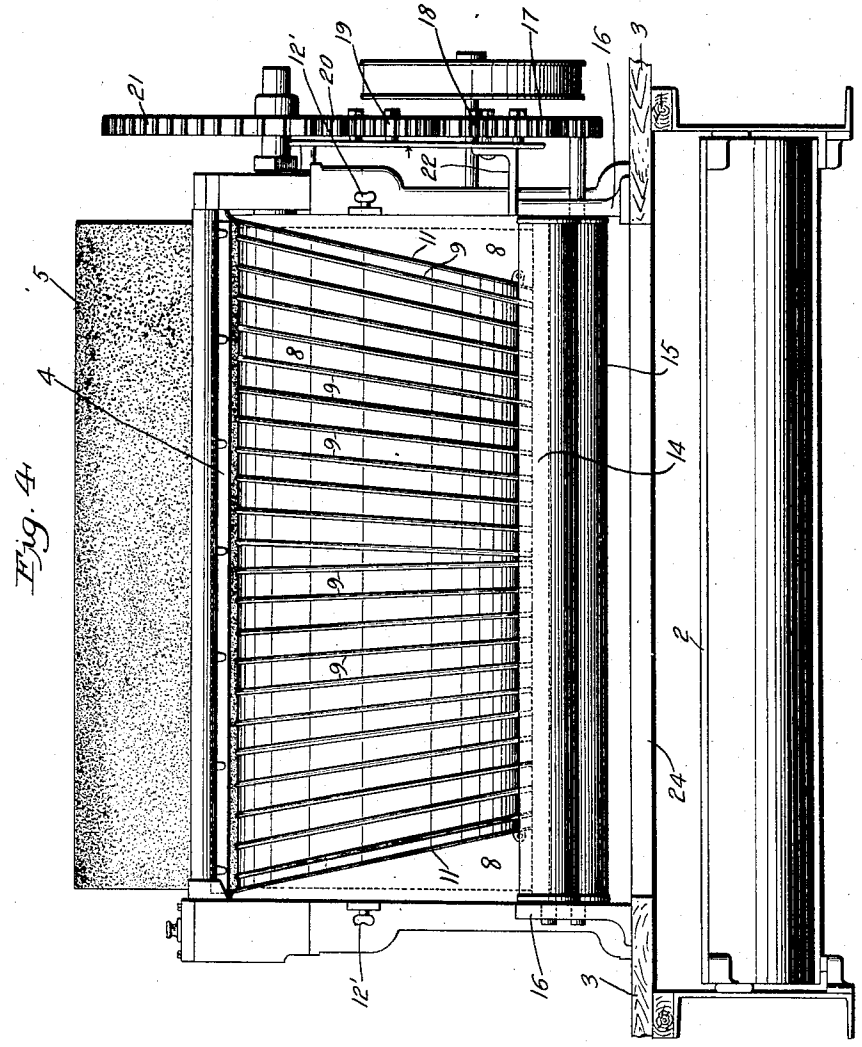


Fig. 4

WITNESSES

E. L. Grant

F. Whitelaw

Elcorie H. Rooney INVENTOR

BY

Munn & Co ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

E. H. ROONEY.

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3 SHEETS—SHEET 3.

Fig. 5.

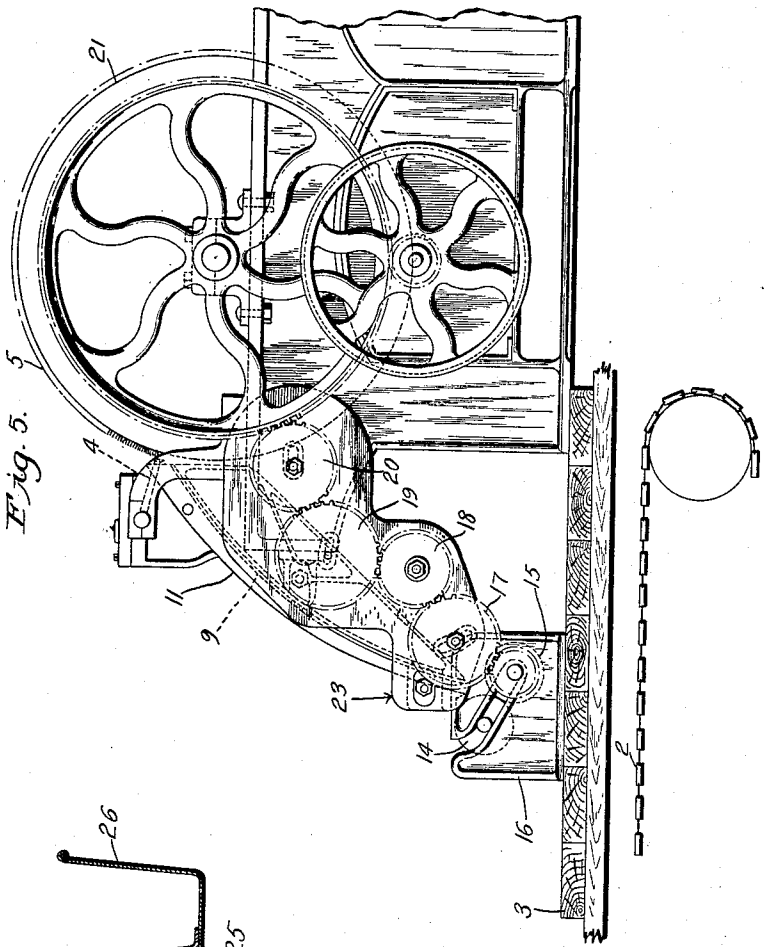
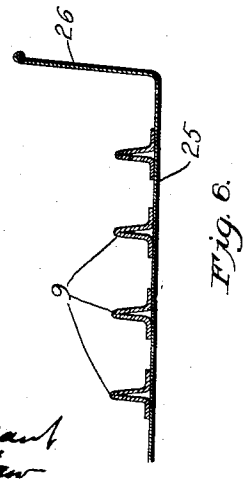


Fig. 6.



WITNESSES

K. L. Mast

F. Whitlaw

Elmer H. Rooney INVENTOR

BY

Wilson Thurman ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO. WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ELWIN H. ROONEY, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO WHITIN MACHINE WORKS, OF WHITINSVILLE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

COTTON-WADDING APPARATUS.

1,189,873. Specification of Letters Patent. Patented July 4, 1916.

Application filed September 11, 1912. Serial No. 719,710.

To all whom it may concern:

Be it known that I, ELWIN H. ROONEY, a citizen of the United States, residing at Whitinsville, in the county of Worcester and Commonwealth of Massachusetts, have invented the following described Improvements in Cotton-Wadding Apparatus.

The improvement consists in the combination with the series of cards employed in the manufacture of cotton wadding, of means for changing or reducing the width of the fleece delivered by each, so as thereby to reduce the width of the lapped fleeces on the conveyer, and thus control the width of the wadding produced therefrom. To make wadding of less width than the width of the card cylinders supplying the individual fleeces, as, for instance, by running shorter bat-rolls through each card, is impracticable and objectionable for various reasons, particularly on account of the rough and irregular selvage that is thereby formed, and it is the common practice to use a different series of cards for each width of wadding, the cylinders of such cards having the width of the particular wadding to be made. The present invention enables the same series of cards to produce fleece of such different widths as may be desired, each fleece being formed with improved selvage edges and adapted to be superposed or lapped on the conveyer in the usual way to form wadding of various widths. This result is brought about by the application of interchangeable conductors of special form to each card, upon which conductors the fleece passes from the doffer knife to the conveyer and by so passing undergoes the desired change in width.

In the accompanying drawings forming part hereof, Figure 1 is a diagrammatic view of cotton wadding apparatus; Figs. 2 and 3 are, respectively, perspective views of interchangeable fleece conductors adapted to produce different widths of wadding; Fig. 4 is a front elevation of one of such conductors in place on the card; Fig. 5 is a side elevation of the front of the card, so equipped; Fig. 6 a detail in section of the structure of the conductors.

The apparatus shown diagrammatically in Fig. 1 comprises a series of cards 1, of which two only are shown for illustration, arranged in line and preferably directly over a traveling lattice 2, or any other form of endless belt conveyer, which is thus common to all the cards in the series, so that the individual fleeces produced by the several cards will be evenly laid in superposition thereon in the usual way. The cards themselves may be constructed according to any suitable design, in the present case being shown as ordinary revolving top-flat cards mounted on elevated platforms 3, so as to allow the conveyer to pass freely beneath them, and provided with the usual doffer knife 4, engaging the doffer cylinder 5, to strip the fleece therefrom. Directly beneath the doffer knife each card is provided with a fleece conductor such as generally indicated by 6 in Fig. 1. This conductor, as shown more clearly in Figs. 2 and 3, is formed of a skeleton frame 7, supporting a convex bottom or floor 8, to which there are secured a multiplicity of perpendicular ribs 9, preferably convergently arranged thereon. The ribs are all of about the same height and their upper edges constitute a rib-formed fleece-receiving and conducting surface, having a general convex contour leading downwardly and forwardly from the doffer. The two outside ribs 11 may be somewhat higher than the intermediate ribs and are slightly flared at their upper ends, as indicated.

It will be understood that the frame, ribs and floor portion are all secured together in a permanent and rigid manner so that the fleece conductor as a whole can be readily moved about and attached to and detached from the card. For this purpose the framework 7 is provided with attachment means in the form of bolt-holes 12 and depending ears 13 adapted for engagement by corresponding holding members, such as 12′ (Fig. 4) mounted in the card frame and adapted to secure the conductor in its position when placed on the card, as shown in Figs. 4 and 5. When thus placed, the top of the rib-formed surface will be immediately below and slightly in front of the doffer knife 4, and will extend thence forwardly with an increasing downward pitch toward the lower or outlet end of the conductor, where it is disposed in the appropriate position to deliver into the bite of a pair of calender rolls 14 and 15. These rolls in the present case are journaled in standards

16, separate from the card frame and independently secured to the platform 3. The lowermost roll is driven from the card through a train of gears 17, 18, 19 and 20, from the doffer cylinder gear 21, such train being carried on an auxiliary frame plate 22, secured to the side of the loom frame as well as to the top of the standard 16. The gear train is inclosed in a casing 23. The upper roll 14 rests by its gravity against the lower roll and is confined in position by the inclined slot formed in the standards 16. Directly below the calender rolls there is an opening 24 in the platform 3, which opening is immediately above the traveling conveyer 2, all as will be plain from a consideration of the drawings.

For each card there is supplied a set of removable fleece conductors, constructed substantially as above described but differing from each other in the degree of convergence of the ribs forming the conducting surface. With a set of cards having say 46-inch card cylinders there would be a sufficient number of conductors properly convergent to reduce the fleece to the standard wadding sizes of 40, 36 and 32 inches respectively. In the operation of the apparatus when equipped with any of these sizes of conductors, the fleece delivered by the doffer knife falls onto the rib-formed surface and is at first slightly pushed along upon the latter by the action of the knife; as it approaches the outlet of the conductor, however, and by reason of the convexity of the latter above referred to, its advance is assisted by gravity while it rests the meantime upon the converging ribs, being by such engagement and movement contracted in width, the contraction taking place gradually and uniformly over the whole surface of the fleece, so that on reaching the outlet end of the conductor it is of the same width as the latter with a well defined selvage edge. The calender rolls may rotate at a surface speed accommodated to the movement of the fleece to deliver the same through the opening 24 onto the common conveyer 2, where it is associated with the other fleeces that are to form the wadding, as will be understood.

In the detailed view of Fig. 6 is indicated a modified form of fleece conductor in which the ribs 9 are formed of bent sheet-metal strips soldered or otherwise secured to the bottom floor 25, the side margins 26 of which are turned upwardly to form the side walls of the conductor.

It will be evident that instead of removing one conductor and substituting another of different degree of convergence, the ribs themselves can be adjustably secured to the floor portion 8, so as to be moved and set thereon at such convergence as may be required.

I claim:

1. Means for changing the width of a card fleece, comprising a fleece conductor having a convex bottom wall and a plurality of closely spaced converging ribs also convex as to their edges secured on such wall and forming a fleece conducting surface, and means for detachably securing said conductor to the card frame to receive the fleece from the doffer.

2. In apparatus of the kind described, the combination of a traveling conveyer, a series of elevated cards successively arranged above the same and comprising each a fleece conductor mounted to receive the fleece direct from the doffer knife of the card, such conductor being formed of converging ribs sharply inclined downward at the delivery end, whereon the fleece moves downwardly by the aid of gravity, and a pair of driven rolls at the end of such ribs adapted to lay the fleece upon the conveyer.

In testimony whereof, I have signed this specification in the presence of two witnesses.

ELWIN H. ROONEY.

Witnesses:
OSCAR L. OWEN,
CHESTER C. LAMB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."