

(No Model.)

C. MILLS & R. W. HUNTON.
CARD CLOTHING ATTACHING DEVICE.

No. 581,752.

Patented May 4, 1897.

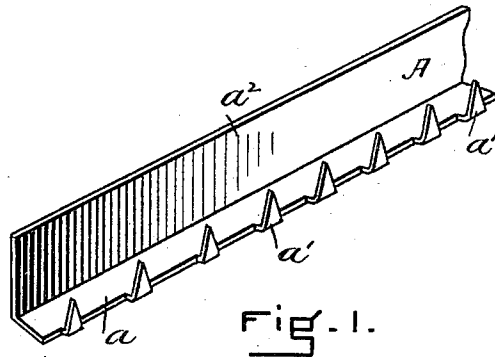


Fig. 1.

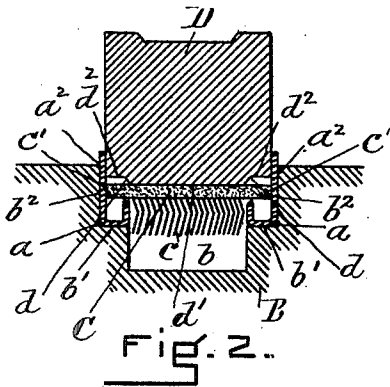


Fig. 2.

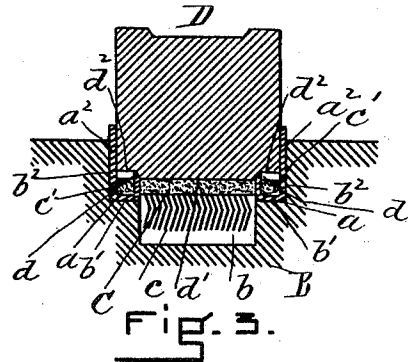


Fig. 3.

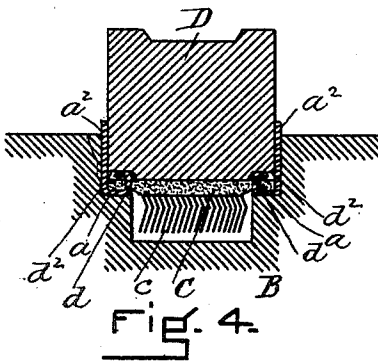


Fig. 4.

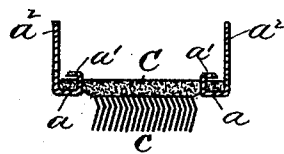


Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES MILLS AND ROBERT W. HUNTON, OF NEWTON, MASSACHUSETTS,
ASSIGNORS TO THE PETTEE MACHINE WORKS, OF SAME PLACE.

CARD-CLOTHING-ATTACHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 581,752, dated May 4, 1897.

Application filed August 1, 1894. Serial No. 519,149. (No model.)

To all whom it may concern:

Be it known that we, CHARLES MILLS, a subject of Victoria, Queen of Great Britain, and ROBERT W. HUNTON, a citizen of the United States, residing in Newton Upper Falls, county of Middlesex, and State of Massachusetts, have invented a new and useful Improvement in Means for Fastening Card-Clothing to the Flats of Revolving-Flat Carding-Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

It has been ascertained that card-clothing may be stretched and secured to flats by first connecting the edges of the clothing with clips having sections extending backward from and parallel with each other when so secured to the edges of the clothing, but which are separated from each other by a distance somewhat less than the width of the flat, and that the clothing thus provided with attached clips of the character specified can then be secured to the flat and at the same time stretched by causing the flat to be inserted between the two outstanding sections of the clips and forced home between them, causing them to stretch the clothing, and at the same time fastening the clips and the clothing to the flat by turning the free edge of each clip upon the under surface of the flat. To enable this to be done, it is desirable, first, that there be means for holding two clips of the character specified with their prongs extending upward and arranged a suitable distance apart, and devices for forcing the clothing upon the prongs of both clips simultaneously and for bending over the prongs upon the inner surface of the clothing; second, that there should also be used means for simultaneously forcing these bent-over prongs into the substance of the inner surface of the clothing while the clips and clothing are held in their holder, or, in other words, without removing them from the holder in which the clothing was driven onto the ends of the prongs; third, that there should also be means for holding the clothing with its attached clips in a manner to permit the insertion of a flat between the clips and the pressing home of the flat between them,

whereby the clothing is stretched and at the same time the free edges of the clips brought into a position to be turned by folding devices upon the inner surface of the flat, and the present invention comprises means whereby the first of these operations may be carried into effect.

The means for the accomplishment of the second and third steps will be made the subject-matter of separate applications.

In the drawings, Figure 1 is a view in perspective of one of the side clips. Fig. 2 is a view in vertical section taken through a clip-holder and a plunger, representing the position of the parts immediately preceding the application of the clothing to the clips. Fig. 3 is a view of the same parts, representing their position after the edges of the clothing have been driven upon the prongs, but before the prongs have been turned upon the upper surface of the clothing. Fig. 4 shows the position of the parts after the prongs have been turned upon the upper surface of the clothing. Fig. 5 is a view in cross-section of the clothing and attached clips.

We prefer to make the side clips A from flat strips of sheet metal having serrations or points upon one edge. Each strip is bent or formed to the shape represented in Fig. 1 to form a clip which shall have the relatively narrow section a , which is adapted to lap or extend upon the outer or exposed surface of the card-clothing at one edge, and from which project at right angles the serrations or prongs a' , and which shall also have the binding-section a^2 formed at a right angle to the said narrow section a and extending upward from its outer edge to any desired height. The prongs or serrations are of a sufficient length to pass entirely through the edge of the clothing and be bent outwardly upon and pressed into the under surface thereof. In practicing our invention two of these clips, which are preferably of the length or very nearly the length of the clothing, are placed in the holder B, which is preferably constructed as represented in Figs. 2, 3, and 4—that is, it has a central recess b and a bed b' upon each side thereof, from which extends upward the wall b^2 . This holder is prefer-

ably made of metal, and the beds b' are of a width to receive and hold the narrow sections a of the clips, the clips being disposed upon these beds in opposed relation to each other, which brings the sections a^2 in contact with the side walls b^2 and the prongs a' at the outer edges of the beds b' and extending upwardly therefrom.

The card-clothing C has the wired section c , which is a trifle less in width than the width of the recess b , and the unwired edges c' . Its entire width is about equal to the width of the space between the sections a^2 of the clips when in their holder, and the clothing thus shaped is then placed in the holder between the two sections a^2 of the clips and with its unclothed edges resting upon the points a' of the two clips. There is then brought into operation a plunger or pressure-block D, which has the prong-turning surfaces d separated by a flat surface d' . The flat surface d' is of about the width of the wired section of the clothing. The prong-turning surfaces d have inclined sections separated from each other by a space equal to that which separates the prongs a' of the clips A in the holder, and these inclined surfaces extend to the straight surfaces d^2 , which form cavities into which the ends of the prongs may enter during the downward movement of the plunger or pressure-head, as will hereinafter appear. The pressure-head thus shaped is then inserted into the holder between the sections a^2 of the clips and is moved downward therein, pressing the wired section of the clothing downwardly, by means of its flat portion d' , into the recess b , and the edges c' of the clothing upon the prongs a' of the clips, causing the prongs to penetrate the edges of the clothing and to come into contact with the inclines d and surfaces d^2 and by them to be turned over upon the inner surface of the clothing. These successive movements of the pressure-head are well represented in Figs. 2, 3, and 4, Fig. 4 representing the relation of the pressure-head to the holder at the completion of its movement, the ends of the prongs then being represented as turned upon the inner surface of the clothing. The pressure-head is then removed and preferably the clothing with the clips attached thereto left in the holder, where they are subjected to another operation by a second plunger or pressure-head, which embeds the ends of the prongs in the substance of the clothing without applying pressure to the intermediate or wired section of the cloth-

ing. This will form the subject-matter of a separate application.

It will be understood that either the pressure-head or holder may be the movable member.

It will be seen that by this device the two clips are simultaneously attached to opposite edges of the clothing and at a uniform distance from each other and that the sections of the clips which are afterward used for attaching the clothing to the flat are sustained in place and caused to have a right-angular relation to the inner surface of the clothing.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a device for attaching clips of the character specified to the edges of card-clothing, a holder having the beds b' upon which the clips in opposed relation are placed, the spacing-walls b^2 , and the recess b for the reception of the wired section of the clothing, with a pressure-head or plunger D, having a flat surface d' and the point-turning surfaces d and d^2 , as and for the purposes specified.

2. In a device for securing attaching-clips to card-clothing, the combination with a bed b' , a wall b^2 to position and hold the attaching-clip in place relative to the card-clothing, and a plunger D having the surfaces d and d^2 for turning the points of the clip, substantially as described.

3. In a device for securing attaching-clips to card-clothing, the combination with a holder for the clothing and clip provided with the recess b and having the surfaces b' on which the attaching-clips are placed, of the plunger D to turn and clamp the securing-prongs of the clip in the card-clothing, substantially as described.

4. In a device for simultaneously attaching two card-clothing-securing clips to the opposite edges of the card-clothing, the combination with clip-holders having supporting-beds adapted to receive and hold said clips upon their front edges, and shaping-walls shaped as specified, of means adapted to enter between said shaping-walls and move the card-clothing relative to the said holders, substantially as described.

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Witnesses:

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