No. 622,367. Patented Apr. 4, 1899.

R. W. HUNTON.

FLAT FOR CARDING ENGINES.

(Application filed Oct. 24, 1896.)

(No Model.) 2 Sheets—Sheet 1.

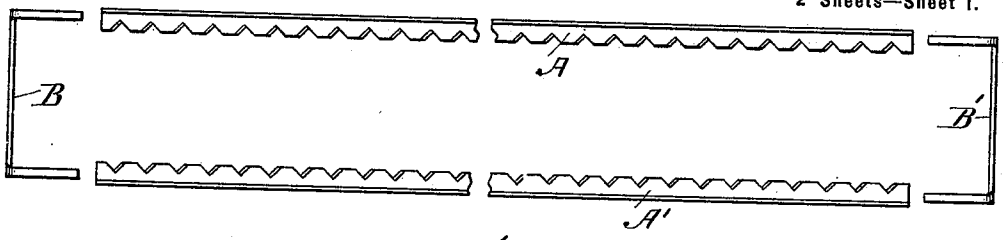

Fig. 1.

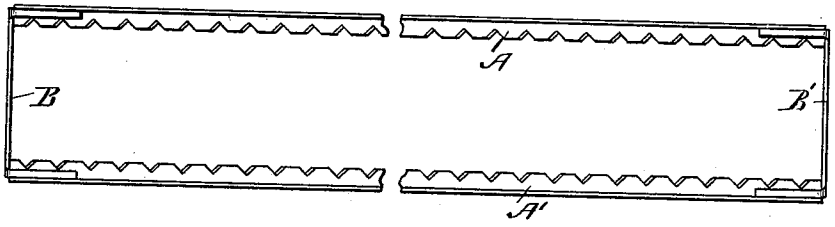

Fig. 2.

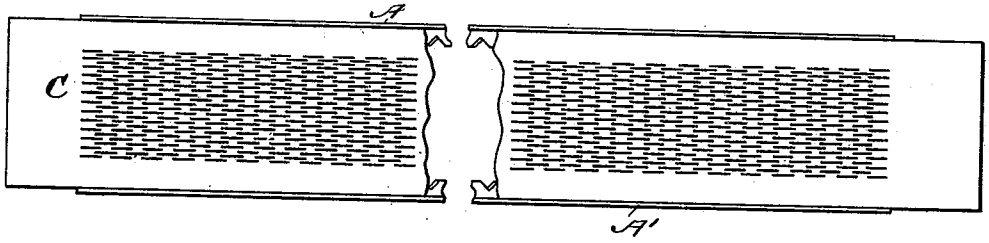

Fig. 3.

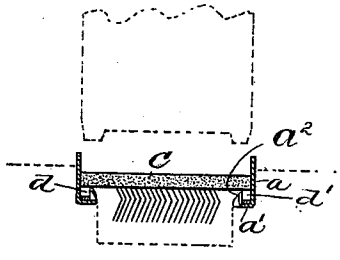

Fig. 4.

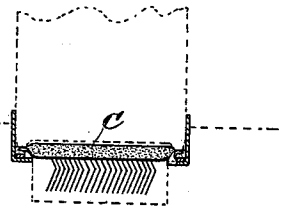

Fig. 5.

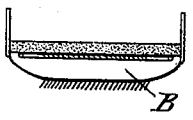

Fig. 6.

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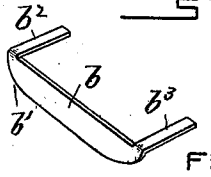

Fig. 7.

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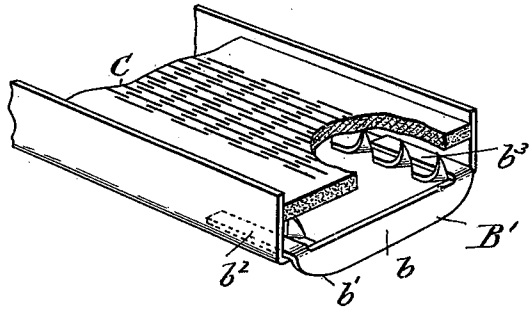

Fig. 8.

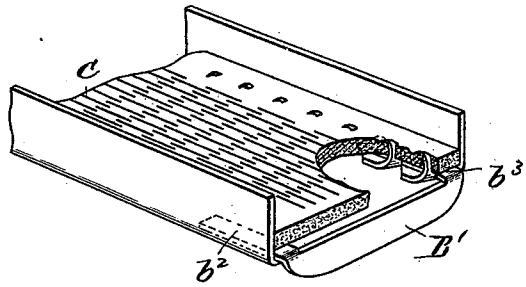

Fig. 9.

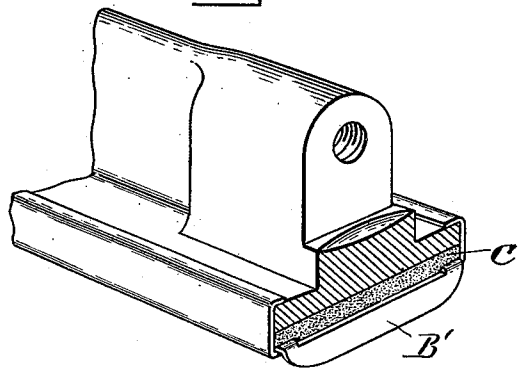

Fig. 10.

WITNESSES

A. J. McNamara

W. L. Thompson

INVENTOR

Robt. W. Hunton

UNITED STATES PATENT OFFICE.

ROBERT W. HUNTON, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO THE PETTEE MACHINE WORKS, OF SAME PLACE.

FLAT FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 622,367, dated April 4, 1899.

Application filed October 24, 1896. Serial No. 609,956. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. HUNTON, a citizen of the United States, residing at Newton Upper Falls, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Flats for 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.

The invention relates especially to the end clips of flats and the manner of attaching them to the card-clothing and flats.

In the drawings, Figure 1 is a view representing in plan inverted side clips used for attaching the card-clothing to the flats and disconnected end clips. Fig. 2 is a view of the side clips and of the end clips, representing the relation which they bear to each other in the finished flat. Fig. 3 is a view in plan of card-clothing laid upon the side clips, but not attached thereto. Fig. 4 represents the relation which the edges of the clothing bear to the side clips before they are united thereto, showing in the spaces within the prongs of the clips the arms of an end clip. Fig. 5 represents the edges of the clothing united to the side clips, the arm of the end clips being at the same time clamped between the side clips and the edges of the clothing. Fig. 6 is a view in cross-section of the card-clothing upon a line with the end clip, representing in end elevation the end clip and the side clips. Fig. 7 is a view in perspective of an end clip. Fig. 8 is a view in perspective, enlarged, of the ends of the side clips, the end clip connected with the ends of the side clips and the card-clothing placed between the side clips but not attached thereto, a portion of the end clothing being removed to show the prongs of the side clips and the arms of the end clip. Fig. 9 is a view in perspective, enlarged, of the parts represented in Fig. 8 after the clothing has been attached to the side clips and end clip. Fig. 10 is a view in perspective of the same parts as shown in Fig. 9, representing them as attached to the flat.

A A′ represent the side clips, B B′ the end clips, and C the card-clothing. The side clips are shaped as represented in plan in Fig. 1, in section in Fig. 4, and in perspective in Fig. 8. Each extends very nearly the full length of the clothing and flat, is angular, has the outer section a, the under section a', and the prongs a^2. In uniting the side clips to the clothing the side clips are first placed in a holder, as represented in Fig. 4, and the card-clothing placed between the sections a with its edges resting upon the prongs. While the clothing is thus held each end clip is placed at the ends of the side clips, the end clip extending across the ends of the clothing from side clip to side clip. Each end clip has the main section b of any desired thickness and width, preferably having the rounded corners b' and also the arms $b^2 b^3$, which extend at a right angle to the place of the section b in the same direction and are parallel with each other. These arms b^2 are narrow and adapted to be inserted into the spaces or cavities $d\,d'$ between the prongs of the side clips, their side sections a, and the clothing which exist before the clothing has been attached to the clips. (See Fig. 4.) This brings the arms of the end clips upon the inner surfaces of the sections a' of the side clips and between the prongs and the side sections a, and when the side clips have been united to the edges of the clothing by the prongs a^2 the arms b^2 are confined between the sections a' of the clips and the prong and the edges of the clothing. The clothing, with the side and end clips thus secured to it, is then slightly spread by the flat and attached to the flat by bending or folding the upper parts of the side sections of the side clips upon the inner surface of the flat adjacent to each end thereof, (see Fig. 10,) and this causes the end clips to be tightly bound and fastened to the flats. There is thus provided a simple and efficient way of securing the end clips to the clothing and to the flat and one that does not require that holes be formed in the clothing or flat or that any extra fastening be used in attaching the end clips.

It will be seen that the end clips are not only attached to the card-clothing by the binding or clamping action of the side clips which confine the arms of the end clips against the surface of the clothing, but that the arms

of the end clips are held in pockets formed in the side strips, whereby lateral or transverse movement of the end clips is prevented. It will also be noticed that the end clips thus act to fasten or tie the side clips together at their ends. It will be seen also that the end clips are attached to the clothing and flat simultaneously with the attachment of the side clips thereto and that a saving in labor is thus accomplished.

It will be seen that the clip is smooth upon both edges. This is essential. The outer edge must be so in order not to engage and connect lint or otherwise interfere with the operation of the engine. The inner edge, or the one contiguous to the clothing, must be so in order that it may be readily inserted between the side clips and moved along the clothing and without engaging or moving the clothing, it being understood that the clothing is strained longitudinally at the time the clips are attached to it.

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

1. The combination of the flat, clothing, the attaching side clips and the end clips having smooth edges and also having arms b^2, b^3 extended between the side clips and the clothing and held to the clothing by said side clips only, as set forth.

2. The combination of the flat, the card-clothing, the attaching side clips provided with prongs and the end clips having smooth edges and having arms b^2, b^3 extended between the side clips and the clothing, held to the clothing by said side clips only, and which arms also serve to tie together the ends of the side clips by engaging the prongs thereof.

3. The combination of the flat, the card-clothing, the attaching side clips and the protecting end clips having smooth edges and also having arms b^2, b^3 which extend between the side clips and the clothing, the said side clips having means for attachment to the flats, and whereby the clothing, end clips, side clips and flat may be simultaneously and permanently secured together.

ROBT. W. HUNTON.

In presence of—

WM. L. THOMPSON,

A. J. M. MCNAMARA.