(No Model.)

G. & E. ASHWORTH.

DEVICE FOR SECURING CARD CLOTHING TO THE FLATS OF CARDING ENGINES.

No. 397,265. Patented Feb. 5, 1889.

FIG. 1

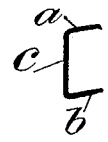


FIG. 2

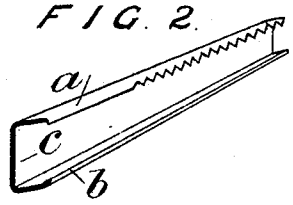


FIG. 3.

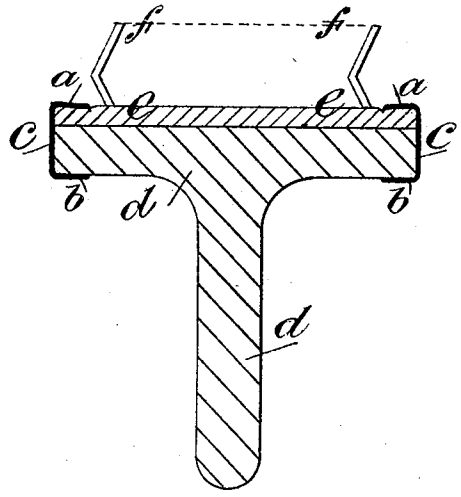


FIG. 4.

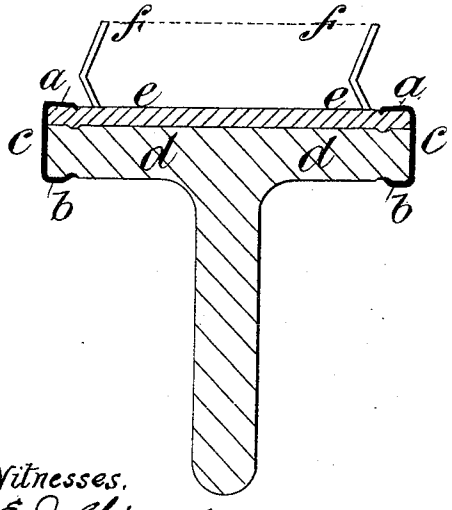
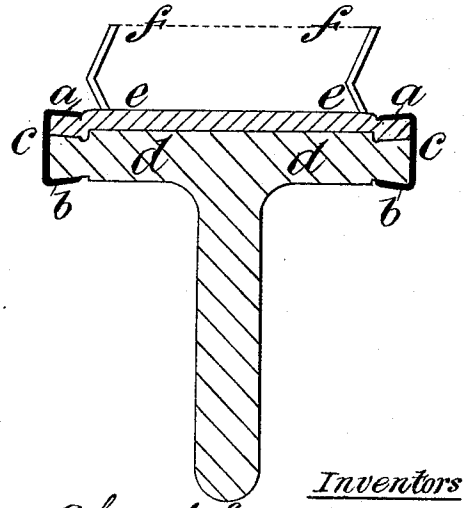


FIG. 5.



Witnesses.
E. J. Griswold
Geo. A. Crane.

Inventors
George Ashworth and Elijah Ashworth
by their Attys.
Howson and Howson

UNITED STATES PATENT OFFICE.

GEORGE ASHWORTH AND ELIJAH ASHWORTH, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

DEVICE FOR SECURING CARD-CLOTHING TO THE FLATS OF CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 397,265, dated February 5, 1889.

Application filed February 23, 1888. Serial No. 264,973. (No model.)

To all whom it may concern:

Be it known that we, GEORGE ASHWORTH and ELIJAH ASHWORTH, subjects of the Queen of Great Britain and Ireland, and residing at Manchester, county of Lancaster, England, engineers, have invented a Device for Securing Card-Clothing to the Flats of Carding-Engines, of which the following is a specification.

Our invention relates to the securing of the card-clothing to the flat-bars which are used in carding-engines, and relates especially to the bars, which are linked together so as to form endless chains. In order to obtain a large number of the flats in simultaneous operation, it is important that the flat-bar shall be made as narrow as possible as compared with the width of the card-surface.

The objects of our invention are to obtain a secure fastening of the clothing, with a narrow margin on each side of the wires, and also to impart a neat finish to the edges of the bars. We attach the clothing to the bar by means of clamps or clips, which are made of sheet-steel or of suitable sheet metal, and are bent into a trough shape, so that when applied and fixed by clamping or pressing one web of the clamp extends over a portion of or the whole of the margin of the card-clothing and clamps the same firmly to the bar, and a second web takes hold of the back of the bar, the intermediate portion of the clamp covering and concealing the raw edge of the foundation material, and also the edge of the flat-bar, and imparting a smooth neat finish to the bar and rendering the edge of the bar less liable to retain fluff and dust.

We will further describe our invention with reference to the accompanying drawings.

Figure 1 represents a cross-section of the clamp. Fig. 2 is a perspective view of the clamp. Fig. 3 is a section of a carding-engine flat with the clamp applied at each edge. Fig. 4 illustrates the application of the clamps to a bar which is grooved on its face. Fig. 5 illustrates the application of the clamps to a bar which is rabbeted for a short distance from each edge.

The clamp illustrated by Figs. 1 and 2 is by preference made of sheet-steel, and is as long as the fillet or strip of card-clothing, so that one clamp only is required on each edge of the bar. The clamps might, however, be made shorter, if preferred for any reason, so that two or more would be applied to each edge of the bar. The strip of metal to form the clamp is bent so that two webs project at right angles or at other suitable angles from the central or intermediate portion, *c*, of the web. In Fig. 1, *a* is the web which is intended to clamp down the foundation material, and *b* is the web which is intended to pass below or to take hold of the back of the bar. The angle of the web *b* to the part *c* of the clamp will vary according to the formation of the back of the bar. The edge of the web *a* is left with a burr in the shearing of the strip of metal, this burr sinking into the foundation material when the clamp is fixed; or the said edge may be toothed or serrated with the same object, as shown at the right of Fig. 2, or may be left smooth or without special preparation.

Fig. 3 is a cross-sectional view of a flat, and illustrates the manner in which the clamps are applied. In this figure, *d* is the ordinary metal bar, and *e* is the foundation of the card-fillet. The clamps are represented by *c c*. A clamp is applied to one edge of the flat, with the central part, *c*, close to the said edge and the web *a* projecting over the margin of the foundation. Pressure is then applied at or near the inner edges of the webs *a* and *b* by suitable means, so as to press the web *a* downward upon the foundation material, and also to force the web *b* closely against the back of the bar, the foundation material being compressed by the web *a*. The margin of the foundation will then be tightly clamped down upon the metal bar and forcibly held by the elastic grip of the clamp or spring-clip. The security of the fastening may be increased by applying the pressure upon the clamp, so as to cause the edge of the web *a* to indent or sink into the substance of the foundation to some extent. When one edge has been secured, the fillet is stretched tight, and the other margin is clamped in the same way as the first margin.

In Figs. 4 and 5 the metal bars are grooved or rabbeted, or both, so as to increase the hold of the clamps upon the foundation material or upon the bar, or upon both.

In Figs. 3 to 5, the lines *f* indicate the wire-dents of the card-fillets.

Having fully described our invention, we state that we claim—

1. The herein-described clamp for securing strips of card-clothing to carding-engine flat-bars, and consisting of a spring-clip adapted to grip the edge of the bar and the foundation material of the card-fillet, and to cover and conceal the edge of the latter and the bar, all substantially as described.

2. The combination of a carding-engine flat-bar and card-clothing to be secured thereto, with spring-clips gripping the edges of the bar and the foundation material of the card-fillet, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEO. ASHWORTH.
ELIJAH ASHWORTH.

Witnesses:
DAVID FULTER,
JOSHUA ENTWISLE.