

### APPARATUS FOR ATTACHING FILLETING TO THE FLAT BARS OF CARDING ENGINES.

Patented July 18, 1911.

4 SHEETS--SHEET 1.

W. P. Beards  
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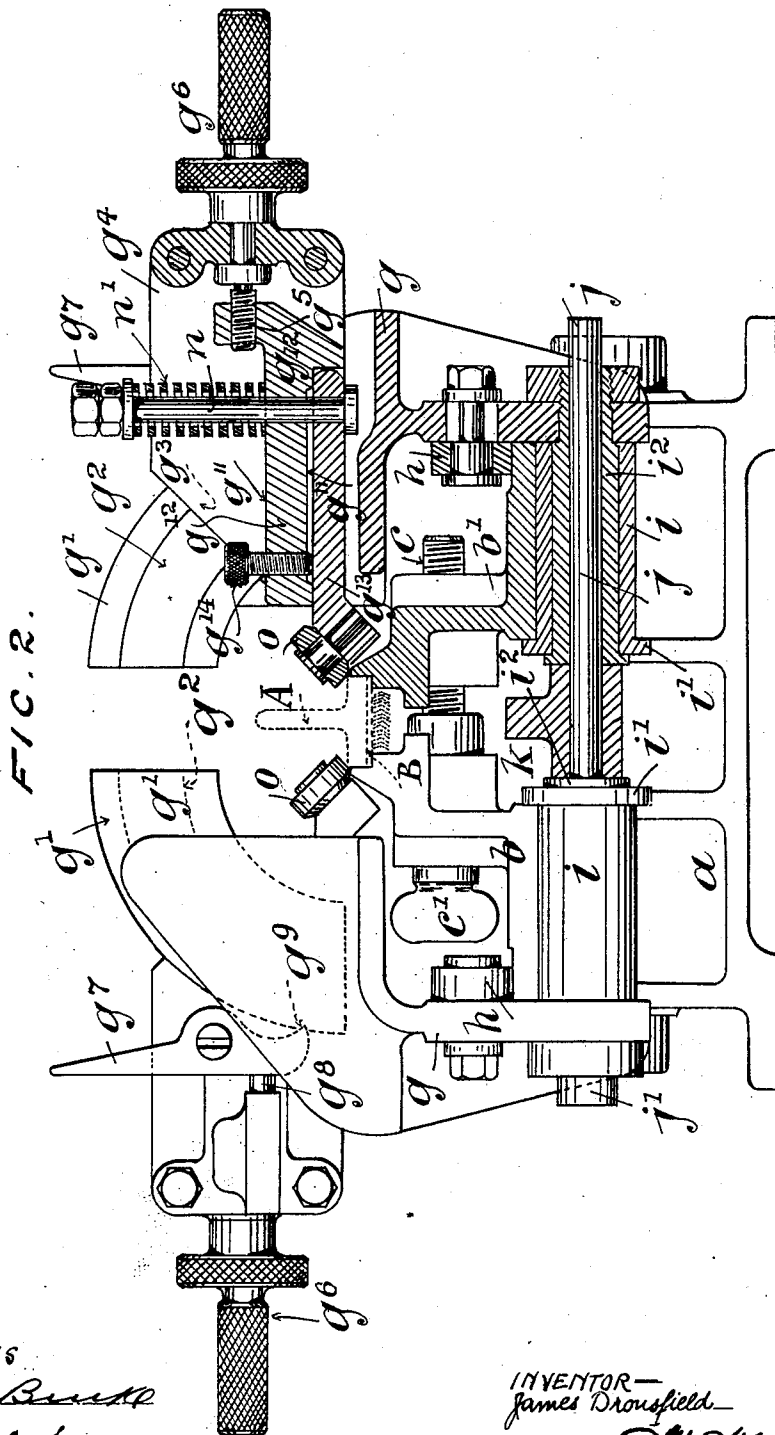
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APPLICATION FILED FEB. 6, 1911.

998,239.

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WITNESSES

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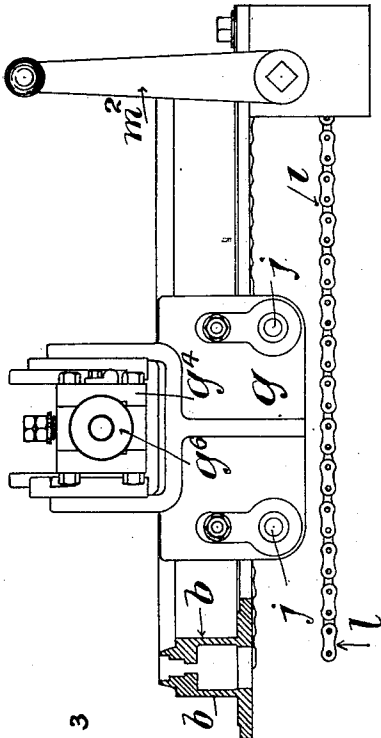


FIG. 3

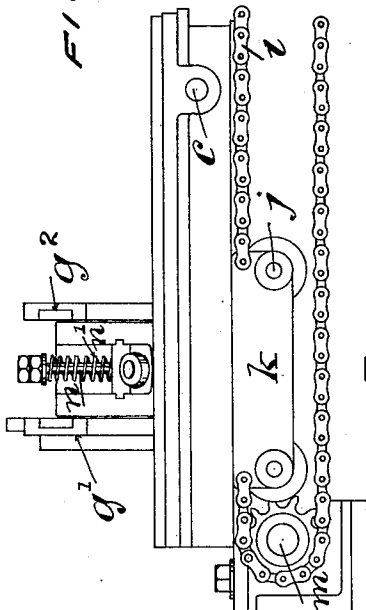
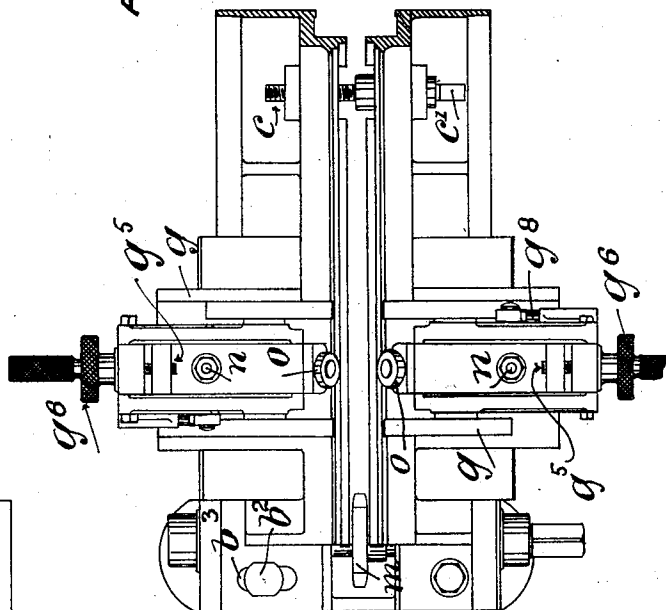


FIG. 4.



WITNESSES

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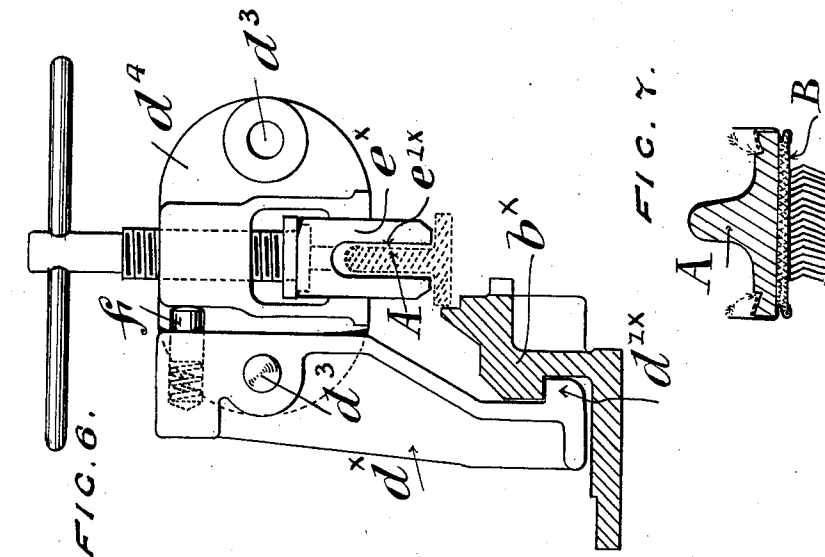
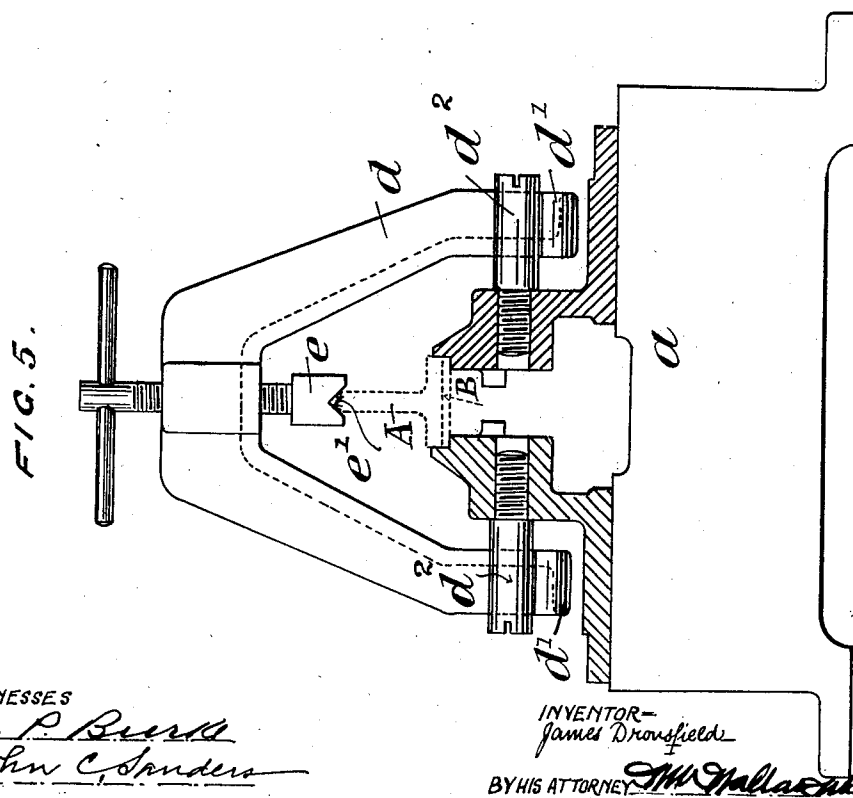
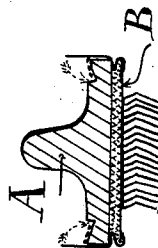


FIG. 7.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES DRONSFIELD, OF OLDHAM, ENGLAND.

APPARATUS FOR ATTACHING FILLETING TO THE FLAT-BARS OF CARDING-ENGINES.

998,239.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed February 6, 1911. Serial No. 606,867.

*To all whom it may concern:*

Be it known that I, JAMES DRONSFIELD, a subject of the King of Great Britain and Ireland, residing at the Atlas Works, Oldham, in the county of Lancaster, England, card-grinding-machine maker, have invented new and useful Improvements in Apparatus for Clothing or Attaching Filleting to the Flat-Bars of Carding-Engines, of which the following is a specification.

This invention relates to an apparatus for mounting card filleting (such as is provided with sheet metal fasteners) upon flat bars, which form the chain of flats used in revolving flat cards.

The improved machine is of a class adapted to work on flat bars designed to take a sheet metal fastener which is rolled down upon the flat bar.

The drawings attached illustrate my apparatus for the indicated purpose.

In said drawings:—Figure 1 is an end view of the apparatus. Fig. 2 shows a further end view, partly in section. Fig. 3 is a longitudinal side view and illustrates halves of the complete carriage in two positions. Fig. 4 is a plan. Fig. 5 shows a detail view of a flat bar clamping bracket, &c. Fig. 6 shows a modified and preferred form of flat bar clamping bracket. Fig. 7 indicates a flat bar and foundation with one known form of sheet metal clip attached.

In apparatus according to this invention I utilize a main bed *a*, capable of ready attachment to a bench or table. This main bed *a*, has a fixed longitudinal jaw *b* and a movable longitudinal jaw *b'*. The movable jaw *b'* is guided, with respect to the other, by studs *b<sup>2</sup>* which pass through slots *b<sup>3</sup>* and are screwed into the main bed, and, is adjusted, by transverse set screws *c* having suitable heads *c'*. Said longitudinal jaws *b b'* are shaped to seat and grip the flat bar *A* (see Figs. 1, 2 and 5) and to form as it were a longitudinal vise into which the length of filleting and flat bar can be introduced. To insure that the filleting and flat bar are properly bedded together, V-shaped clamps such as *d*, shown in Fig. 5, may be used, the bent or shaped extremities *d'* of which hook below or onto trunnions *d<sup>2</sup>* or studs attached to the longitudinal jaws. Such clamps have a screw-adjusted block *e*, with recess *e'*, which bears on the rib of the flat bar *A*, as seen in Fig. 5. As a modification, the limbs *d<sup>x</sup>* of the clamps may be piv-

oted, at *d<sup>3</sup>*, to a part *d<sup>4</sup>* which carries the screw adjusted block *e<sup>x</sup>* with recess *e'<sup>x</sup>*, the limbs in this case being independent and pivoted. Small, spring actuated, plungers *f*, press outward the upper extremities of the limbs *d<sup>x</sup>* of such clamp. The modified clamp is not liable to fracture, because the pivoted parts can better accommodate themselves one to another. The hooked extremities *d'<sup>x</sup>* are shown engaging below projections *b<sup>x</sup>* formed in one with the halves of the longitudinal vise. Whatever form of clamp be used, the function is to hold down the flat and foundation while the transverse set screws *c* are adjusted, after which, the clamps are removed.

Mounted on the main bed, is a carriage, made up of two traveling brackets *g, g*, which run on anti-friction rollers, there being small rollers *h h* on the top, and long rollers *i i* below, the rollers below having inner collars *i', i'*, and turning on clamped sleeves *i<sup>2</sup>, i<sup>2</sup>*. Through each two sleeves *i<sup>2</sup>, i<sup>2</sup>* (which are in alinement), a spindle *j* is passed, having a head or collar *j'* at one end, the rear half of the complete carriage, however, being movable laterally on the spindle *j* when adjusted along with the movable half of the bed *b'* or longitudinal vise. Immediately below the jaws of the longitudinal vise *b, b'*, and intermediate of the sleeves *i<sup>2</sup>, i<sup>2</sup>* for the long rollers *i, i*, is a bracket *k* held at two points by the transverse spindles *j*, and, to this bracket, is attached the ends of a pitch chain *l*. This pitch chain *l* passes over toothed pinions *m, m'* mounted one at each end of the machine, one of said pinions being driven by a hand-lever *m<sup>2</sup>* or hand wheel. Movement of the chain *l* traverses the carriage *g, g*, which is guided by the bars *b, b'* and runs on the anti-friction rollers *h, i*, that is, four rollers back and front.

Each half of the traveling carriage *g, g* is formed with, or has attached, quadrant brackets *g', g'*, having quadrant guide ways *g<sup>2</sup>, g<sup>2</sup>*, to accommodate correspondingly shaped quadrant projections *g<sup>3</sup>, g<sup>3</sup>* on a main bracket *g<sup>4</sup>* which can be moved angularly through an arc equal to 45°, or thereabout. Each main bracket *g<sup>4</sup>* carries an adjustable set screw *g<sup>5</sup>*, and handle *g<sup>6</sup>*, together with a pawl *g<sup>7</sup>* and spring plunger *g<sup>8</sup>* to act on the pawl *g<sup>7</sup>*. The main bracket *g<sup>4</sup>* can assume two positions, one at 45° to the other, and, the pawl *g<sup>7</sup>* locks the bracket *g<sup>4</sup>* in either

position by engaging with notches  $g^9$ ,  $g^{10}$  cut in the quadrant shaped projections  $g'$  on the carriage halves.

Fitting in cut grooves  $g^{11}$ , in each main bracket  $g^4$ , is an auxiliary bracket  $g^{12}$ , which has attached to it a bearer or support  $g^{13}$  which carries a rolling down bowl  $o$  set at  $45^\circ$  to the vertical, the attachment being made flexible for preference, say, by the use of a screwed bolt  $n$  and spring  $n'$ , to allow yielding of the bearer  $g^{13}$  and bowl  $o$  in the event of any obstruction being encountered. A screwed stud  $g^{14}$  may if desired be passed through the auxiliary bracket  $g^{12}$  and caused to bear on the bowl bearer or support  $g^{13}$  to allow of adjustment of the bowl  $o$ . The auxiliary bracket  $g^{12}$ , and consequently the rolling down bowl  $o$ , on each side, can be advanced and retracted by the set screw  $g^5$ .

The operation of clothing a flat bar, is, as follows. I place the flat bar A face downward, with the foundation B below the face, and carrying the clips on the edges. The movable jaw  $b'$  of the longitudinal vise is then set-up to the requisite degree, and the pressing down clamps  $d$  or  $d^x$  are applied and adjusted. Next, the longitudinal vise is screwed up tight. The operator then actuates the set-screws  $g^5$ ,  $g^5$  to advance the auxiliary brackets  $g^{12}$   $g^{12}$  and force the bowls  $o$  properly against the sheet metal clips, said bowls  $o$   $o$ , as stated, being disposed to roll down the clips to the extent of  $45$  degrees. This done, the lever handle  $m^2$  is turned and the carriage  $g$ ,  $g$  traversed along the bed, and over the clips, to perform one half of the rolling down process. After this, the main brackets  $g^4$ ,  $g^4$  are simply turned-up  $45^\circ$ , and the pawls  $g^7$  snap into the notches  $g^{10}$ , the turning-up of said brackets moving the bowls  $o$ ,  $o$  into a vertical position and pressing down the clips just at the point of contact. This accomplished, the hand lever  $m^2$  is again turned, and the carriage  $g$ ,  $g$  is traversed from end to end, over the bed, and, the rolling down bowls  $o$   $o$  press the clips down level on the flat back and secure a proper attachment. By the use of the applied set screws  $g^{14}$  acting on the bowl carriers I can arrange to adjust the position of the bowls  $o$ ,  $o$  somewhat, apart from the movement due to the turning-up of the main bracket. After a proper rolling down, the main brackets  $g^4$ ,  $g^4$  are turned back to the horizontal again, the auxiliary brackets are screwed back, and the vise released, whereupon the properly clothed bar can be removed and a fresh one inserted.

The machine works easily, and is very simple, and compact.

Obviously variations in construction can be made while retaining the main features.

I declare that what I claim is.

1. A flat-bar clothing machine having supports, an adjustable vise on said supports

and means for adjusting such vise, guiding rails on the vise halves, and a carriage moving longitudinally thereon, gear and operative means for moving the carriage end-on, and angularly movable brackets one on each side of the carriage, said brackets having rolling down devices, and locking devices in connection with the angularly movable brackets and the carriage for holding the rolling down devices in adjusted position ready for the rolling down operation, and all for the purpose set forth.

2. A flat-bar clothing machine, comprising supports, a clamping vise thereon, means carried by the vise halves for adjusting the vise, and a slidable carriage moving lengthwise of the vise the same having anti-friction guiding means, combined gear for moving the carriage, which has angularly adjustable brackets carrying rolling-down bowls, supports attached to the brackets for said bowls, and combined gear for holding the angularly adjustable brackets in adjusted position, and means for setting-up the bowl-carrying devices, as set forth.

3. A flat-bar clothing machine, having in combination, a clamping device, with supports for the same and means for adjusting the clamping device, a traveling carriage, moving longitudinally of the vise and having anti-friction guiding devices, traversing gear to move the carriage and movable brackets on the carriage, such brackets having adjustable auxiliary brackets and rolling-down bowls on supports for the same and including means for holding the movable brackets in the desired angular positions, and guides for said angularly movable brackets, as set forth.

4. A flat-bar clothing machine having in combination an adjustable vise, means for setting the same, supports for said vise, a movable carriage in halves, moving along the vise and driving gear for traversing the carriage, which has angularly adjustable brackets and auxiliary brackets together with means for adjusting such auxiliary brackets, and bearers connected to said brackets, said bearers carrying rolling-down bowls, and disengageable means for holding the angularly adjustable brackets when moved, as set forth.

5. A flat-bar clothing machine comprising a vise, means for setting the same, supports for the vise, and having an endwise movable carriage in halves, supported in connection with said vise and driving means for traversing the carriage, together with angularly adjustable brackets on said carriage, and auxiliary brackets with adjusting means therefor, bowl bearers, bowls thereon, a flexible connection between the bearers and auxiliary brackets, and means for holding down the flat-bar when adjusting the vise, all in combination and as described.

6. A flat-bar clothing machine having in combination supports carrying a clamping device, adjusting means therefor, a traveling carriage moving along the vise, guiding means for said carriage and traversing gear for the carriage, main brackets on the carriage and guides therefor, auxiliary brackets on the main brackets and adjusting screws therefor, bearers, rolling down bowls on the auxiliary brackets and a flexible connection for the bearers, operating handles and disengageable gear for adjusting the brackets

when the same are moved angularly, and applicable clamps for clamping the flat-bars when adjusted in the vise, all substantially as described and shown. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES DRONSFIELD.

Witnesses:

RICHARD WEBSTER IBBERSON,  
NORMAN KIERNAN.

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