

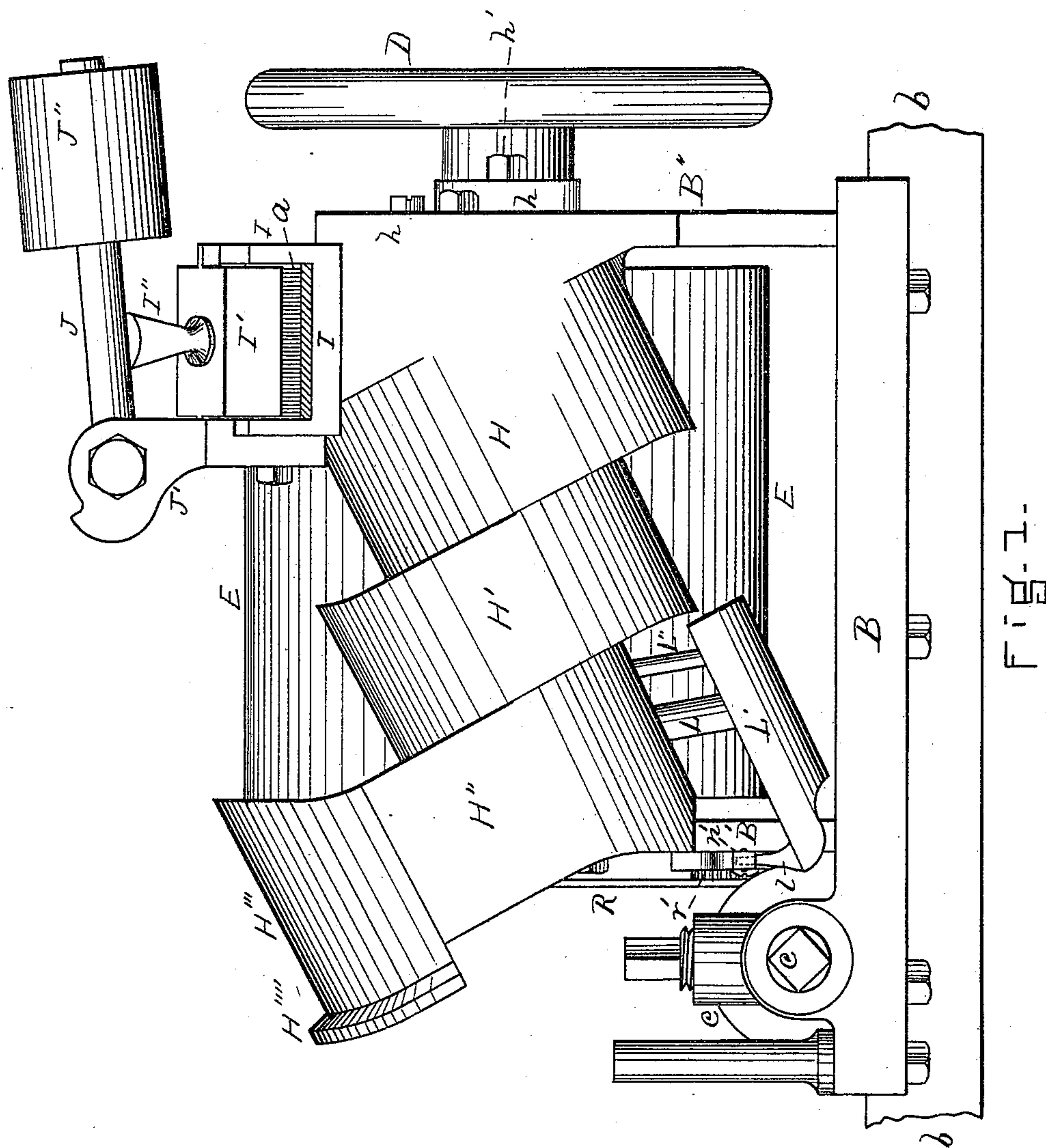
(No Model.)

4 Sheets—Sheet 1.

W. C. POWERS.  
CARD MOUNTING MACHINE.

No. 448,849.

Patented Mar. 24, 1891.



WITNESSES.

*J. M. Hartnett.*  
*B. W. Williams.*

INVENTOR.

*Walter C. Powers.*  
By his Atty.  
*Henry Williams*

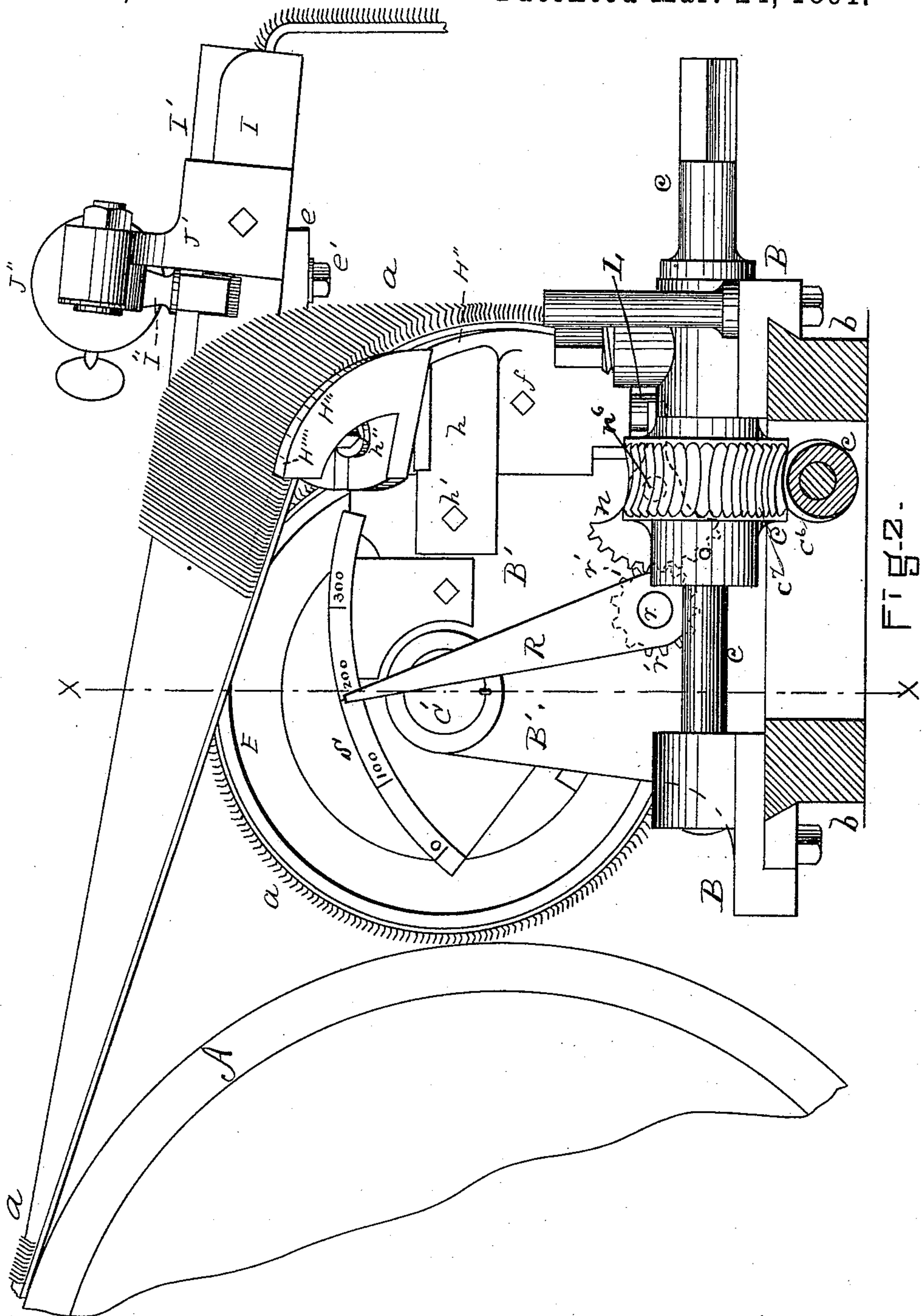
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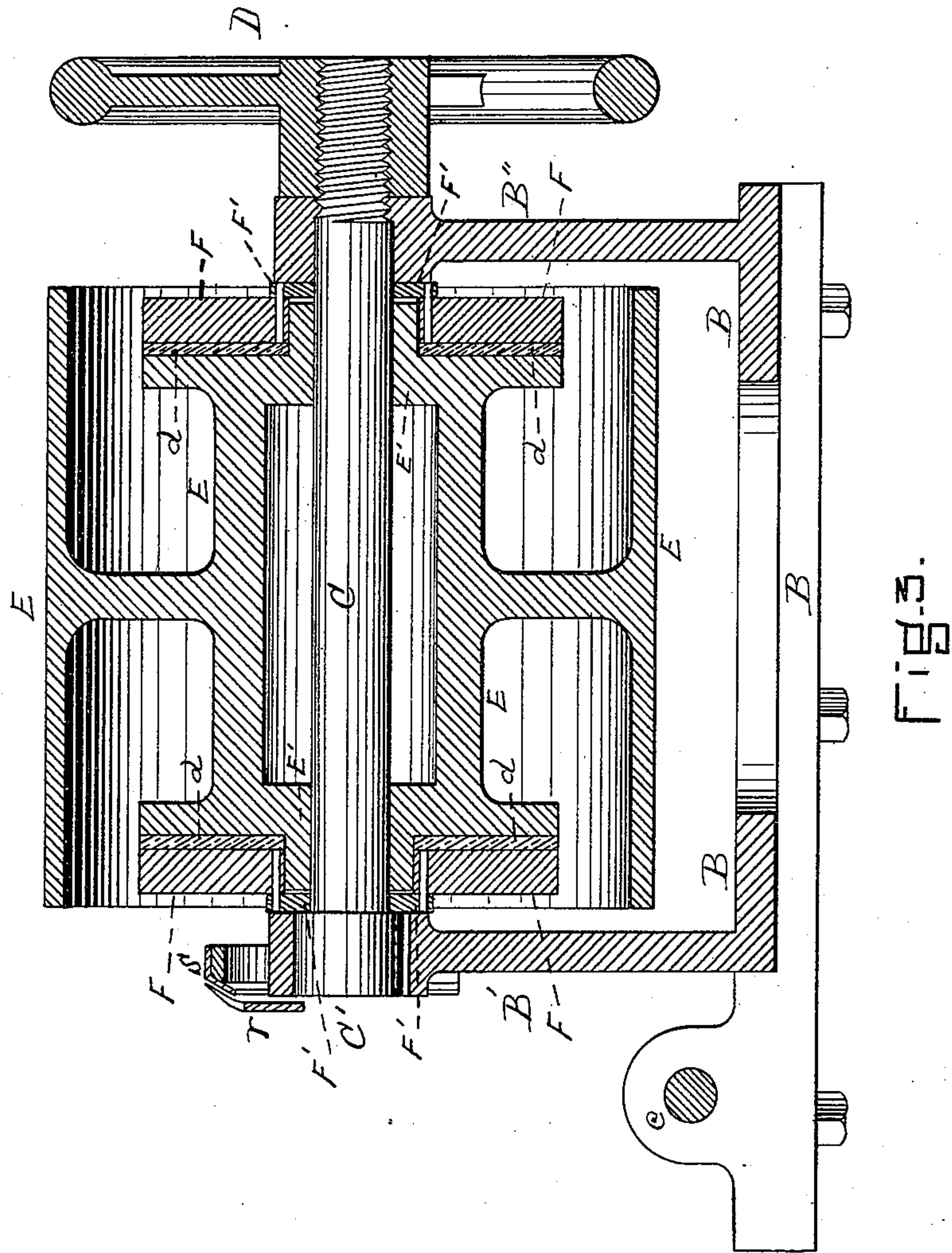
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(No Model.)

4 Sheets—Sheet 4.

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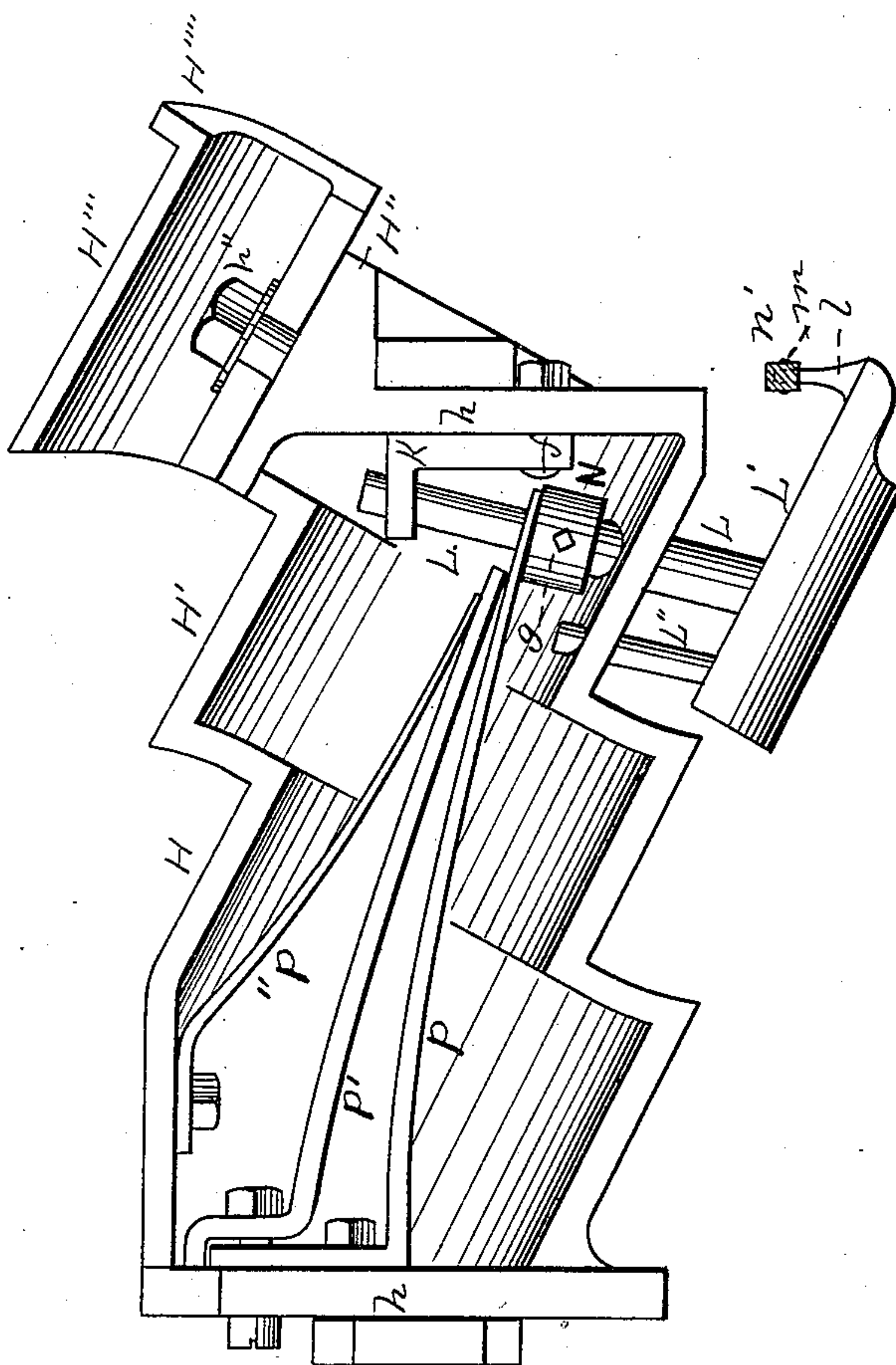


FIG. 4.

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Henry W. Williams



# UNITED STATES PATENT OFFICE.

WALTER C. POWERS, OF FALL RIVER, MASSACHUSETTS.

## CARD-MOUNTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 448,849, dated March 24, 1891.

Application filed July 14, 1890. Serial No. 358,707. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER C. POWERS, of Fall River, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Card-Mounting Machines, of which the following is a specification.

This invention relates to machines for mounting fillet-cards upon cylinders or doffers of carding-engines; and it consists in an improved tension mechanism or arrangement whereby a more even tension may be obtained for the fillet than is possible in any machine of a similar character now in use. The nature of the invention is fully described below, and is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the tension mechanism of a card-mounting machine embodying my invention. Fig. 2 is a side elevation showing a portion of the doffer-cylinder being provided with a covering of card-clothing. Fig. 3 is a section on line *x*, Fig. 2. Fig. 4 is an enlarged view of the inside of the saddle, (below described,) showing the tension weighing mechanism therein.

Similar letters of reference indicate like parts.

A, Fig. 2, is the doffer or cylinder constructed as usual, upon which the fillet *a* is mounted.

B, Figs. 1 and 2, is a carriage adapted to slide in the ordinary manner on a suitable bed *b* in front of the doffer as the fillet is being mounted, the mechanism *c c* consisting, essentially, of ordinary worm-gearing comprising a screw *c*<sup>6</sup> on one horizontal shaft, and a worm *c*<sup>7</sup> on another horizontal shaft at right angles with the first, the shaft provided with the screw being mounted in the bed *b*, and the shaft provided with the worm being mounted in the traveling carriage B, all constructed as is common in machines of this character, and also in lathe-beds being utilized for this purpose. The carriage is provided with uprights B' B'', Fig. 3, supporting a bolt or screw C, whose head C' is keyed in the upright B', and whose threaded end passes through the upright B'', said threaded end supporting outside the said upright the correspondingly internally-threaded hand-wheel D.

E is a drum loose on the screw C, and of substantially the shape shown in section in Fig. 3, and F F are friction-disks pinned to washers F' F', which surround the screw C between the ends of the drum and the uprights B' B'', the friction-disks being supported by the hubs E' of the drum and being separated from the ends of said drum by the washers *d*. As is evident, rotation of the hand-wheel D upon the thread of the screw C crowds the friction-disks F against the ends of the drum, thus rendering rotation of the drum more difficult. In other words, the power needed to rotate the drum is varied at will by means of the hand-wheel D.

The saddle, Figs. 1 and 4, consists of a plate having the three curved surfaces H H' H'' placed at the angle shown, (such surfaces not being new in this invention,) supported by the frame *h*, bolted at *h'* to the upright B''. The surface H'' has bolted to it at *h''* the supplemental curved surface H''', as shown, provided with the flange or guide H''''.

Bolted at *e'* to an integral table *e*, extending horizontally from the saddle, is the trough I, (not new in this invention,) said trough being provided with the ordinary loose cover I', having the post I'', upon which the lever J rests, said lever being hinged to the bracket J' and provided with the weight J''.

In operation the fillet *a* is fed in through the trough I, under the weighted cover I', over the drum E, around and back under it, thence over the surface H, and around the drum to and over the surface H', around the drum and over the surfaces H'' H''', and over the drum to the doffer A. The hand-wheel D is turned until the proper pressure is applied by the friction-disks F to the ends of the drum, and the weight J'' is so placed as to just allow the drum to rotate under the moving fillet.

As above stated, the curved surfaces H H' H'' H'' H''' are not new, nor the trough D, with its weight and lever. By combining with these devices my drum E, which is of a single piece, and the friction-disks F and their operating mechanism, a very even and satisfactory tension is secured.

Bolted at *f* to the inner or rear side of the frame *h* of the saddle is a bracket K, perforated to receive and guide the rod or post L,



which extends down through the bottom of the saddle, as shown in Figs. 1 and 4, and has rigidly secured to its lower end the foot  $L'$ , having a curved under surface, as shown.

5 An additional guide-post  $L''$  extends from the foot or shoe  $L'$  up through the lower end of the saddle. The post  $L$  has adjustably secured to it within the saddle, by means of a set-screw  $g$ , a block or rest  $N$ , upon which

10 the free end of a spring  $P$  presses, the opposite end of said spring being secured to the frame  $h$  of the saddle. A similar but shorter spring  $P'$  has its free end on the spring  $P$ , and still another spring  $P''$  presses on the

15 spring  $P'$ . The foot  $L'$  has an integral extension  $l$ , which extends rearward horizontally, and is pivotally connected at  $m$  with the slotted lever  $n'$ , integral with the sector  $n$ , pivoted at  $n^6$  to the frame or upright  $B'$ , and engaging the gear-wheel  $r'$  on the shaft  $r$ .

20 Fixed on this shaft is also the pointer  $R$ , extending to the scale  $S$ , which is supported by the frame of the machine. As the fillet passes under the foot  $L$ , (over its curved surface,) before passing up over the surfaces  $H'' H'''$ , it

25 presses up and lifts said foot against the power of the springs  $P P' P''$ , and the extension  $l$  operates the gear  $n r'$ , so that the pointer indicates on the scale  $S$  the amount or weight

30 of the tension on the fillet produced by the tension mechanism above described.

By means of the disks  $F$  the strain is so equalized by being partially transferred to

the drum that the weight  $J''$  can be materially lessened, thus preventing the machine 35 from being as top-heavy as formerly and reducing the weight on the wire surface of the fillet.

Having thus fully described my invention, what I claim, and desire to secure by Letters 40 Patent, is—

1. In a card-mounting machine, the combination, with the saddle and trough, arranged substantially as specified, of the drum  $E$  and friction-disks  $F$ , said drum being mounted on 45 the shaft  $C$  and provided with mechanism, as  $D$ , whereby the said friction-disks may be pressed against the ends of said drum, substantially as set forth.

2. In a card-mounting machine, the combination, with the trough and drum, of the saddle provided with the tension-weighting mechanism described, and consisting, essentially, of the springs  $P P' P''$ , post  $L$ , provided with the block  $N$  and extending through the bot- 55 tom of the saddle, foot  $L'$ , provided with a curved surface, index  $R$  and scale  $S$ , and mechanism intermediate said foot and said scale and index, whereby the amount of lift of said foot as produced by the tension of the 60 fillet as it passes over the saddle is indicated, substantially as described.

WALTER C. POWERS.

Witnesses:

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CHESTER COREY.