

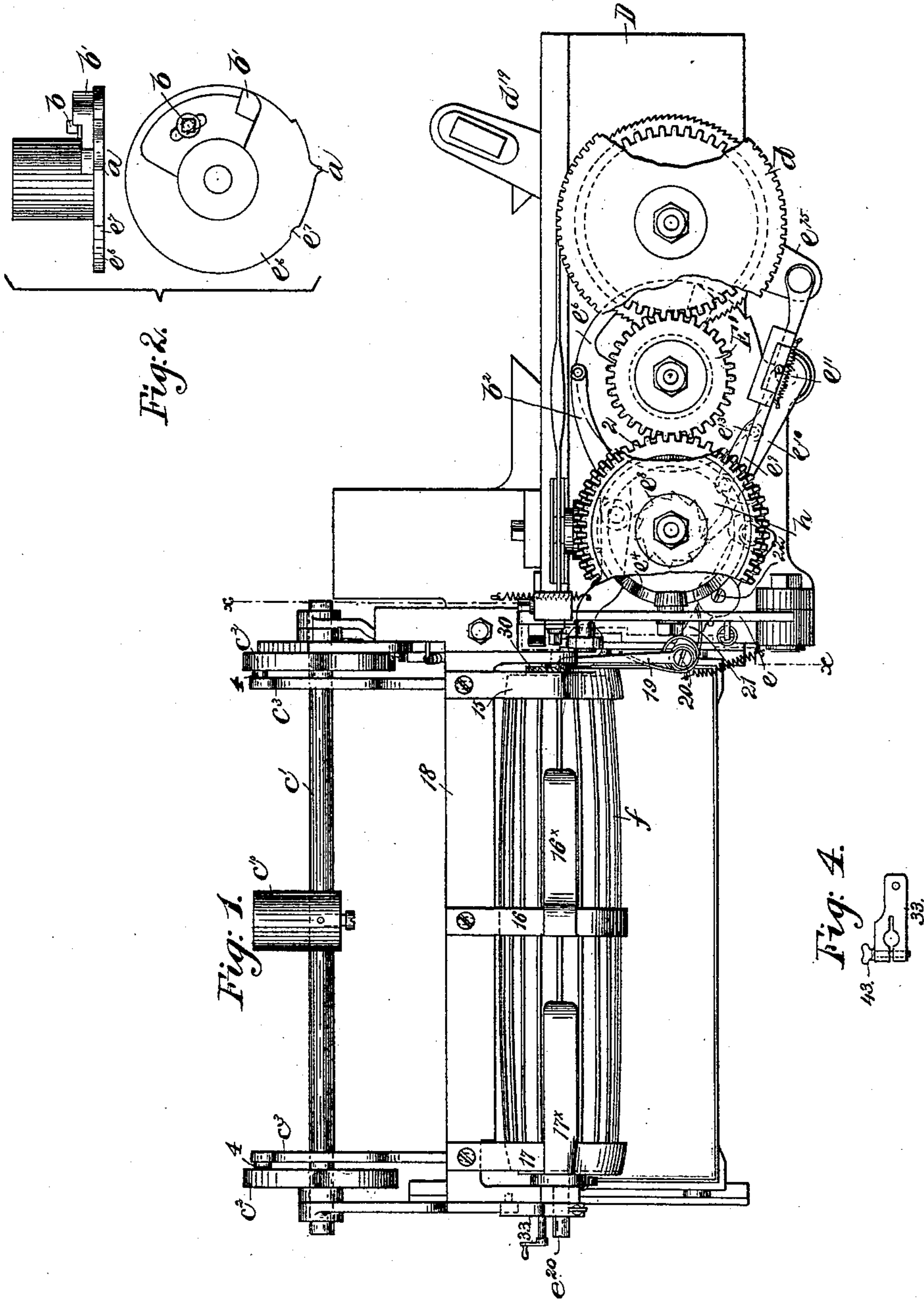
(No Model.)

2 Sheets—Sheet 1.

M. BROCK.  
TACK STRIP MAKING MACHINE.

No. 453,141.

Patented May 26, 1891.



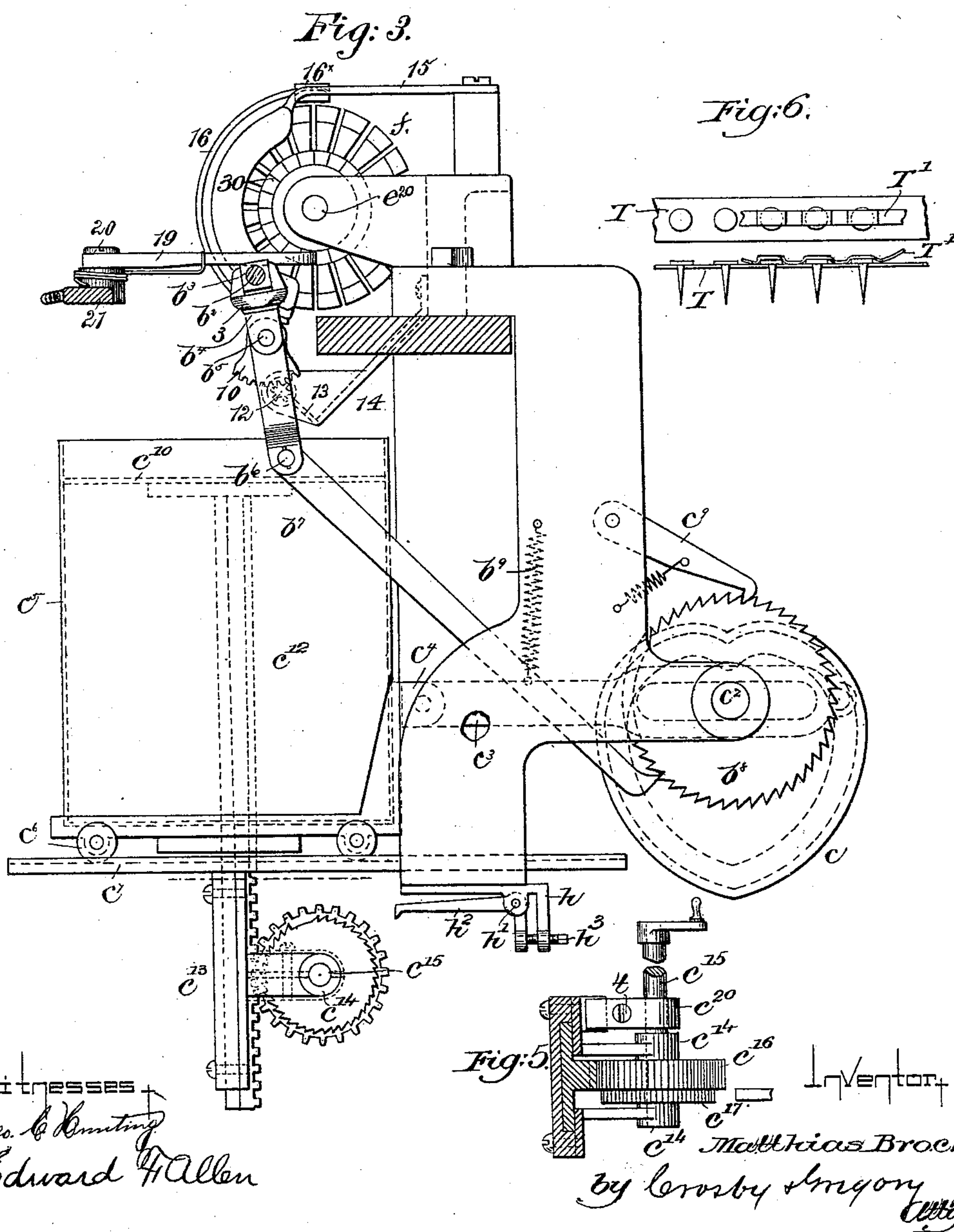
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2 Sheets—Sheet 2:

No. 453,141.

Patented May 26, 1891.



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Fig: 5.

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# UNITED STATES PATENT OFFICE.

MATTHIAS BROCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MCKAY  
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## TACK-STRIP-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 453,141, dated May 26, 1891.

Application filed November 4, 1890. Serial No. 370,293. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHIAS BROCK, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Tack-Strip-Making Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention is intended as an improvement on that class of machine represented in United States Patent No. 247,143, dated September 13, 1881, and has for its object to provide means for collating the tack-strips.

15 In accordance with my invention I have provided a machine of the class referred to with a collating drum or cylinder, upon which the tack-strip is fed, the said drum being moved intermittently, and to counteract the tendency of the strip to curl upwardly, due chiefly to the quicker drying of the usual head-covering strip I have made the said drum larger at or near the center of its length, and from such larger diameter the said cylinder tapers toward each end. In order that the strips may be laid substantially straight in the receptacle into which they are fed from the said cylinder, I have interposed between the said receptacle and cylinder an arresting device, on which the strip is made to drop from the cylinder, the said arresting device having a gate or shelf, which is automatically opened or tipped to let the strip fall into the receptacle. I have shown the receptacle as having wheels to run on a track, and I have provided means whereby the said receptacle may be moved intermittently, preferably by a cam, the movement of the receptacle causing the more uniform laying or distribution of the tack-strips in the receptacle.

The features in which my invention more particularly consist will be hereinafter more fully described, and specified in the claims to be made.

45 Figure 1 is a top or plan view of part of the machine shown in United States Patent No. 247,143, referred to, with my present improvements added; Fig. 2, a detail of one of the cams to be described; Fig. 3, a section to the left of the dotted line *x*, Fig. 1. Fig. 4 is a detail showing the friction device for hold-

ing the shaft of the cylinder; Fig. 5, a detail of the devices for intermittently actuating the bottom plate of the receptacle; and Fig. 6 shows a strip with tacks therein, some of the tacks being crossed by a covering-strip.

The table D, the feed-wheel *d*, the gear under it, the intermediate *E'*, and the gear 2, engaged by the said intermediate, the cam-wheel *e*<sup>6</sup>, attached to the intermediate *E'* and having a notch *e*<sup>7</sup>, the cam *e*<sup>4</sup>, the ratchet *e*<sup>8</sup> above it, the lever *e*, moved by the said cam to cut off the tack-strip, the pawl *e*<sup>9</sup>, the lever *e*<sup>15</sup>, to which it is jointed, the arm *e*<sup>10</sup>, having the stud *e*<sup>13</sup> to enter the notch *e*<sup>7</sup>, and the gear *h* are and may be all substantially as in said patent, to which reference may be had, it being unnecessary to herein further describe the said parts.

In my invention I provide the periphery of the disk or cam *e*<sup>6</sup> with a projection *a*, and upon the upper side of the said disk I have adjustably secured by a set-screw *b* a tappet *b'*, which in the rotation of the cam *e*<sup>6</sup> strikes a roller or other stud on a lever *b*<sup>2</sup>, having loosely mounted upon its outer end a block *b*<sup>3</sup>, which enters a bifurcated head 3, pivoted upon a vertical pivot at the upper end of a lever *b*<sup>4</sup>, pivoted at *b*<sup>5</sup>, the lower end of the said lever having pivoted to it at *b*<sup>6</sup> a pawl *b*<sup>7</sup>, which as the lever *b*<sup>4</sup> is vibrated engages and rotates intermittently a ratchet-wheel *b*<sup>8</sup>, the said pawl being kept in engagement with the said ratchet-wheel by a suitable spring *b*<sup>9</sup>. The ratchet-wheel is fast on a cam *c*, fast on a shaft *c'*, the shaft having fast on it near its opposite end a like cam *c*<sup>2</sup>. These cams, as shown, have like heart-shaped grooves, into which enter suitable rollers or other studs 4 of like arms *c*<sup>3</sup>, jointed to suitable ears of a carriage *c*<sup>5</sup>, shown as mounted on rollers *c*<sup>6</sup> on a track *c*<sup>7</sup>. This carriage constitutes a tack-strip receptacle, and its bottom plate *c*<sup>10</sup> will preferably be made movable vertically, as will be described. The ratchet-wheel has a detent *c*<sup>9</sup>, which co-operates with it, and the shaft *c'* has a counter-weight *c*<sup>10</sup>. (Shown only in Fig. 1.) The lever *b*<sup>4</sup> has a segment 10, (see Fig. 3,) which engages a pinion 12 on the end of a rock-shaft, to which is attached the shelf or gate 13, which when closed abuts against the lower end of a chute or apron 14,



upon which the tack-strips, duly set with tacks, are dropped intermittently from the carrying-cylinder *f*, to be described.

The gate is opened intermittently to discharge the strip or strips therein into the receptacle, and to insure their proper distribution therein the said receptacle is gradually moved back and forth on the said track by the cams *c*.

The tack-strip *T* will be set with tacks snugly, and to the said strip and tacks therein will be fed longitudinally, as provided for in the said patent, or as in other similar machines upon which United States patents to me have been granted. These strips may have the heads of the tacks therein kept in place by a thin head-covering paper strip *T'*. The tack-strip in practice is cut off in lengths, usually of about thirteen inches long, by the usual cutter-lever *e*. As stated, these tack-strips are in drying liable to curl, owing to the drying of the covering-strip, which is wet with paste when applied to the foundation strip. Instead of letting these strips drop when cut off, I have provided a carrying-cylinder *f*, which is shown as made up of a series of staves or strips sufficiently separated to leave spaces between their edges for the reception of the bodies of the tacks, and the cylinder is stopped intermittently with its slots one after the other in line with the bodies of the tacks depending from the tack-strip and being fed in usual manner. The cylinder is of greatest diameter near the center of its length and tapered therefrom toward each end, the taper near each end being more abrupt than between the ends and center of the cylinder. The leading end of the tack-strip as it is being fed from the machine upon the cylinder and before the strip is cut off is passed under a series of conforming plates 15 16 17, secured to a cross-bar 18, forming part of the frame-work. These conforming plates under which the strip is passed keep the strip down on the cylinder while being dried, the lips 16<sup>x</sup> 17<sup>x</sup> extended from the conforming plates being upturned at their ends to insure the proper passage of the end of the strip under the plates. The cylinder is rotated intermittently by a pawl 19, pivoted at 20 on a pawl-carrying lever 21, pivoted at 22, the said lever 21 having at its opposite end (see dotted lines, Fig. 1) a roller or other stud, which will in practice be adjustable thereon, the said stud being acted upon by the back of the pawl *e*<sup>9</sup>, it at such time being moved by or through the action of the arm *e*<sup>10</sup> of the projection *a*, the said projection meeting the roll *e*<sup>13</sup> on said arm *e*<sup>10</sup> a little after the pawl *e*<sup>9</sup> has acted to move the ratchet-wheel *e*<sup>8</sup>. The forward end of the pawl 19 engages a ratchet toothed crown-wheel 30, attached to one end or journal *e*<sup>20</sup> of the cylinder, so as to rotate the same intermittently. The tack-strips in the rotation of the cylinder are gradually dried and drop from the lower side of the cylinder onto the rest or gate described. The drying of

the strips may be facilitated by the action of a current of air admitted within the cylinder by a suitable pipe, or the shaft or journal of the cylinder may be hollow and perforated within the cylinder.

To prevent any rotation of the cylinder due to momentum, I provide the journal or shaft *e*<sup>20</sup> of the cylinder (see Figs. 1 and 4) with a friction device 33, shown as a split and pivoted block having a thumb-screw 43, by which to close the jaws of the device more or less closely on the said journal or shaft.

The bottom plate *c*<sup>10</sup> is attached to a piston *c*<sup>12</sup>, provided with rack-teeth, (see Fig. 3,) which is adapted to slide vertically in a guide *c*<sup>13</sup>, attached to the under side of the carriage. The guide *c*<sup>13</sup> has ears *c*<sup>14</sup>, which form bearings for a shaft *c*<sup>15</sup>, having a gear *c*<sup>16</sup>, which meshes with the rack-teeth of the piston, and a ratchet-wheel *c*<sup>17</sup>, having one of its teeth cut away to leave a broad space, as in Fig. 3. The frame has a stand *h*, on which is pivoted at *h'* a pawl *h*<sup>2</sup>, made adjustable by a screw *h*<sup>3</sup>. At each inner run of the carriage the pawl *h*<sup>2</sup> meets a tooth of and rotates the ratchet-wheel and shaft, causing the gear to lower the piston and bottom plate *c*<sup>10</sup>, on which the tack-strips are deposited.

To prevent the shaft *c*<sup>14</sup> rotating, except when moved positively by the pawl and ratchet, I have provided the said shaft with a friction device composed of two like friction devices *c*<sup>20</sup>, entered by a clamping-screw *t*, the rotation of which causes the shaft to be clamped more or less closely. This clamp is shown chiefly by dotted lines in Fig. 3. The shaft *c*<sup>15</sup> has a handle (see Fig. 5,) by which to move it and the bottom plate by hand when desired. When the blank space in the ratchet-wheel comes uppermost, the pawl will slip on the ratchet-wheel and not move it.

It is not intended to limit this invention to the use of the special gearing shown, by which to gradually lower the bottom plate *e*<sup>10</sup> to thereby evenly lay the tack-strips in the receptacle, and instead of the particular gearing shown I may employ any other usual equivalent devices, I believing myself to be the first to provide a tack-strip receptacle with a movable bottom.

I claim—

1. In a tack-strip-making machine, a collecting drum or cylinder having a series of slots for the reception of the bodies of the tacks driven through the under side of the strip, substantially as described, combined with a receptacle for the tack-strips.

2. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip, substantially as described, combined with conforming plates, to operate as set forth, feeding devices for the tack-strip, and a receptacle, substantially as described.

3. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip and con-



forming plates, combined with the lips and feeding devices for the tack-strip, to operate substantially as described.

4. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip and tack-strip cutter, combined with a friction device and means to rotate the said cylinder and feeding devices for the tack-strip, substantially as described.

5. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip, and the gate, combined with means to automatically operate the said gate and with feeding devices for the tack-strip, substantially as described.

6. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip, and the gate, combined with means to automatically operate the said gate and with a tack-strip receptacle, substantially as described.

7. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip, combined with the tack-strip receptacle, and means, substantially as described, to move the same for the better distribution of the tack-strips thereon, substantially as described.

8. In a tack-strip-setting machine, a movable collecting drum or cylinder provided with slots to receive the bodies of the tacks driven into the strip, the disk  $e^6$ , having a

projection  $a$  and notch  $e^7$ , and the pawl 19, combined with the arm  $e^{10}$  and pawl  $e^9$ , to operate substantially as described.

9. In a tack-strip-setting machine, a movable collecting drum or cylinder provided with slots to receive the bodies of the tacks driven into the strip, the receptacle, the cam for moving it, the pawl  $b^7$ , its carrying-lever, and the lever  $b^2$ , combined with the cam  $e^6$  and its attached tappet  $b'$ , substantially as described.

10. The collecting drum or cylinder slotted to receive the bodies of the tacks driven into and depending from the tack-strip, the chute or apron, and the gate, the rock-shaft, and pinion, combined with the lever  $b^4$  to actuate the gate, substantially as described.

11. In a tack-strip-making machine, the collecting drum or cylinder slotted for the reception of the bodies of the tacks driven into the said tack-strip, the movable receptacle having a vertically-movable bottom plate provided with a piston, combined with a gear to engage and move its shaft and means to rotate the said shaft intermittingly, substantially as described.

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

MATTHIAS BROCK.

Witnesses:

GEO. W. GREGORY,  
EMMA J. BENNETT.