(No Model.)

M. BROCK.

MACHINE FOR MAKING TACK STRIPS.

No. 402,060. Patented Apr. 23, 1889.

Fig: 1.

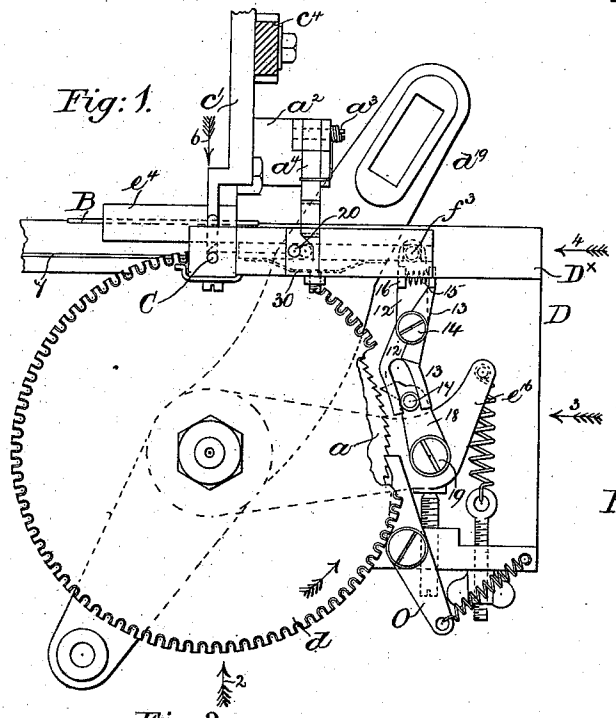


Fig: 2.

Fig:4.

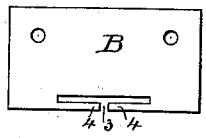


Fig:5.

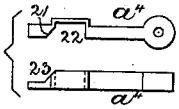


Fig:3.

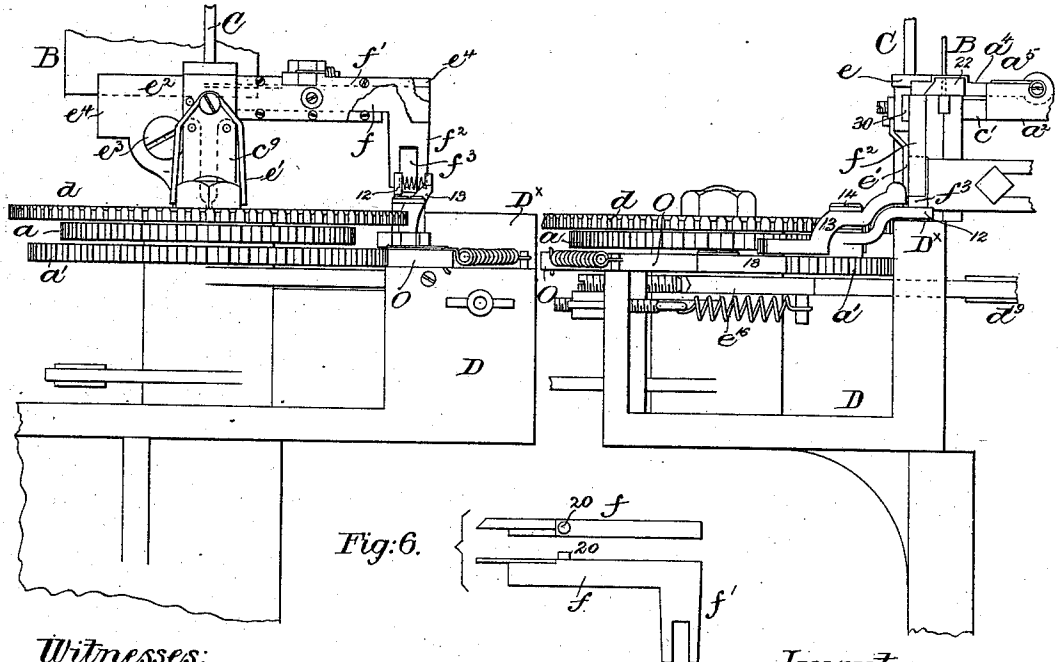
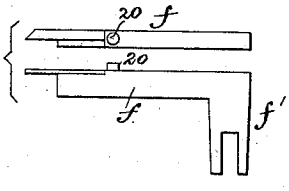


Fig:6.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING TACK-STRIPS.

SPECIFICATION forming part of Letters Patent No. 402,060, dated April 23, 1889.

Application filed October 29, 1888. Serial No. 289,380. (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 Machines for Making Tack-Strips, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Prior to my invention machines have been devised for driving tacks into a strip of paper for use in lasting and in nailing machines, and said machines have been provided with means acted upon by the point of the tack last inserted in the strip to control the movement of the feed-wheel for moving the tack, the feed-wheel not being moved in case of the failure of a tack to enter the strip at any descent of the driver employed to drive the tack. United States Patent No. 247,143, dated September 13, 1881, shows a machine of this class, and in its use the fine points of the tacks are frequently blunted or dulled by the depression of the latch which insures the operation of the feeding-wheel.

In my present invention, which is represented as an improvement on the machine shown in the said patent, I have interposed in the path of movement of the so-called "transferring-plate" a slide-bar, which, in its movement by a tack, actuates, as shown, a lever, which controls the engagement of the pawl with a feed-wheel common to the said patent and for moving the strip.

In my invention the point of the tack is not called upon to perform any duty except that of penetrating the strip, the body or side of the tack acting to move the slide-bar referred to.

My invention consists, essentially, in the combination, with a driver, a throat, a transferrer, and a feeding device or wheel and pawl to move it, of a gate and intermediate mechanism to determine the time of engagement of the said pawl with the said feeding-driver.

Figure 1 is a plan view of a sufficient portion of a machine for making tack-strips to enable my improvements to be understood; Fig. 2, a view of the devices shown in Fig. 1, looking in the direction of the arrow 2. Fig. 3 is a view of Fig. 1 looking in the direction of the arrow 3. Fig. 4 shows the slide-plate B by itself. Fig. 5 shows the finger a^4 in top and side view, and Fig. 6 shows the gate in top and side view.

The machine herein to be described contains a table or plate, D, a feed-wheel, d, a lever, d^{19}, a pawl-carrying lever, e^{16}, a sliding plate, B, for transferring the tack to be driven from the lower end of a chute (not shown) into position opposite the upper end of a driveway or throat having jaws, as c^9, a transferring-plate, c', actuated by a lever, c^4, and a detent, O, all as in the patent referred to, where like parts are designated by like letters.

The parts so far described, being old and common to the patent referred to, need not be herein further specifically described.

The feed-wheel d has immediately below it and upon its shaft a gear, a, which in practice engages an intermediate gear to drive a corresponding gear and attached bevel-wheel, as in the said patent, and below the said tooth-gear a the shaft of the wheel d has secured to it a ratchet-wheel, a', also fully shown in the said patent.

The transferring-plate c' has secured to it a bracket, a^2, which receives a screw or other stud, a^3, upon which is pivoted a cam-finger, a^4, normally held down by a spring, at a^5, the said finger being beveled and notched on its under side at its forward end and also at its side next the plate c', as indicated, respectively, in Figs. 1, 3, and 5.

The driveway or throat herein marked e has a vertical passage through which descends the driver C, common to said patent, to drive the tack from the throat into the tack-strip, (not shown,) which comes into the machine over the roadway $D^{\times}$.

The beveled jaws c^9, pivoted in the throat and between which the tack is held as it is being driven, are acted upon by a spring, e', herein shown as a single piece of wire connected to the throat by a screw e^2. This throat has attached to it by a screw, e^3, a block, e^4, in or against which and between which block and the tack-raceway (not shown) is reciprocated the slotted slide-plate B, (shown separately in Fig. 4 and common to the said patent,) the said slide-plate being slotted, as shown,

to permit the body of a tack to pass from the raceway into the vertical part 3 of the said slot, the under side of the head of the said tack resting on the projections 4.

The slide-plate B carries the tack which is to be driven into the usual paper strip from the usual raceway into position opposite the concaved end of the transferring-plate c' when the latter is withdrawn, so that as the transferring-plate is again pushed forward it acts upon the tack and removes it laterally from the slot 3 of the plate B into the open slot at the rear side of the throat e and in position under the driver C, which is to drive the tack from the throat into the usual tack-strip fed forward in the direction of the arrow 4 over roadway $D^{\times}$ of the bed or table, the said roadway being slotted, as at 7, in usual manner to receive the tacks after they have been driven through the strip, the slot serving to guide the tacks.

The plate e^4 is extended, as shown, to the right of the throat, and is grooved longitudinally at one side to receive a gate, f, which is retained in the said groove by a cover, f', secured in place by suitable screws, the said gate being beveled at its front end toward the transferring-plate c', as best shown in Fig. 1 by dotted lines, and in Fig. 6, so that as the said transferring-plate is moved forward in the direction of the arrow 6, Fig. 1, it will push the tack then in front of it and just left there by the plate B against the beveled end of the gate f, and will push the same to the right, thus uncovering the slot leading into the throat e, and enter the said passage in the throat into position under the driver C. In case a tack should not be left in front of the transferring-plate, then the gate would not be reciprocated to the right.

The gate f has a depending leg, f^2, slotted to receive a stud, as f^3, erected upon one arm, as 12, of a double lever, 12 13, mounted on a fulcrum, 14, the short end of the member 13 of the said double lever being acted upon by a spiral or other spring, 15, which rests against a lug, as 16, on that arm of the member 12 of the lever which carries the stud f^3. In this way the double lever is made to present two arms to embrace a stud, 17, erected upon a pawl, 18, pivoted at 19 on the lever e^{16}, the said lever being reciprocated or partaking of movements such as provided for in the said patent. The gate is held frictionally by a spring-plate, 30. (See dotted lines, Fig. 1.)

The gate f has a stud, 20, the full and dotted lines in Fig. 1 representing it in its two positions.

The finger a^4, referred to, is shown separately in Fig. 5, and it will be noticed that it has at its under side a cam-surface, 21, and a notch, 22, and at its side next the plate c' a cam-surface, 23. When the transferring-plate c' is started forward toward the throat, the gate f is supposed to be in its farthest position to the right viewing Fig. 1, with the pin 20 in the dotted-line position; but as the said transferring-plate is moved forward the cam portion 23 of the finger a^4 acts on the stud 20 and pushes the gate f to the left in the dotted-line position, Fig. 1, so as to close the slot leading into the throat e, after which in its farther movement in the same direction the said beveled surface 23 passes the said stud 20, bringing the groove 22 in line with the said stud 20, this happening just before the body of the tack in front of the transferring-plate c' is pushed positively against the beveled end of the gate f.

As the tack is pushed against the beveled end of the gate f in the further movement of the plate c', the gate is pushed to the right, the pin 20 at such time entering the slot 22 of the finger. During this movement of the gate to the right the leg f^2, acting against the stud f^3 of the member 12 of the double lever, causes the opposite end of the said member 12 to be moved toward the ratchet-wheel a', permitting the pawl 18 to act upon the said ratchet, the spring-held part 13 of the said double lever at such time acting against the pin 17 to push the pawl 18 into the teeth of the ratchet-wheel a' just as or before the lever e^{16} is vibrated in a direction to move the feed-wheel in the direction of the arrow thereon in Fig. 1. In the backward movement of the plate c' and finger a^4 the beveled surface 21 at the under side of the said finger meets the stud 20, lying in the slot 22 of the finger, and the finger is lifted against the spring a^5, it, however, dropping immediately, as in Fig. 1, as the finger is drawn fully back.

In case the gate f should not be pushed back by the action of a tack against its beveled end, as described, then the two-part lever 12 13 will not be moved, and the stud 17 of the pawl 18 in the movement of the arm e^{16} will travel back and forth in the slot between the ends of the two parts 12 13 of the double lever. By making the lever double or in two parts and providing the part 13 with a spring, as 15, to keep it against the stud 17, it is possible to crowd the point of the pawl gradually and in a yielding manner down into the base of the ratchet-teeth without liability of breaking the machine.

I do not desire to limit my invention to the exact form shown of throat e and a feed wheel or device for engaging the tacks to feed the usual strip.

I claim—

1. In a machine for driving tacks into a strip, the throat, the driver to drive a tack into the strip, feeding mechanism to act against the driven tack to feed the tack-strip, and a pawl and intermediate devices to engage and move the said feeding mechanism, and a gate, combined with a transferring-plate, to push a tack against the said gate, and with means between the said gate and pawl to cause the latter to actuate the feeding mechanism only when the said gate is moved by the action of a tack against it, substantially as described.

2. In a machine for driving tacks into a strip, the feed-wheel, the pawl having a projection and intermediate ratchet to actuate the feed-wheel, and the double lever having a spring to control one of its arms, combined with the sliding beveled gate engaging one member of the said double lever, and with a throat, a driver, and a transferring-plate to push a tack against and move the said gate, substantially as described.

3. In a machine for driving tacks into a strip, the transferring-plate, the throat, the driver, and the gate having a stud, 20, combined with the pivoted finger having a notch, as 22, and beveled at 21 and 23, to operate substantially as described.

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

MATTHIAS BROCK.

Witnesses:
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F. L. EMERY.