G. W. COPELAND, E. WOODWARD & M. BROCK.

Tacking-Machines.

No. 197,608. Patented Nov. 27, 1877.

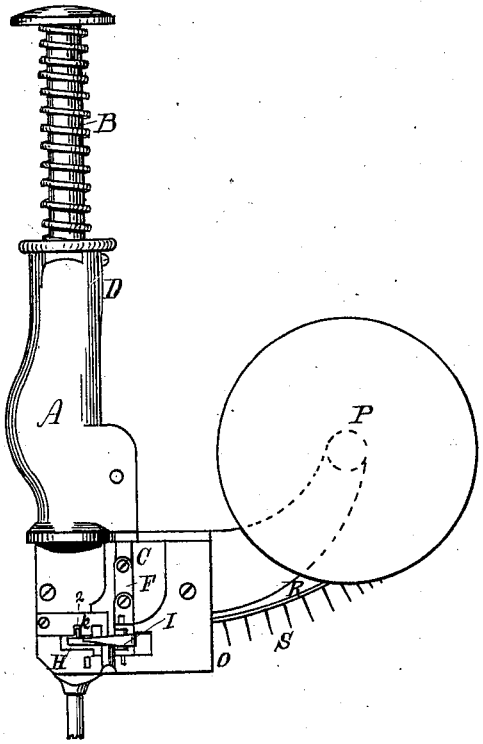

Fig. 1.

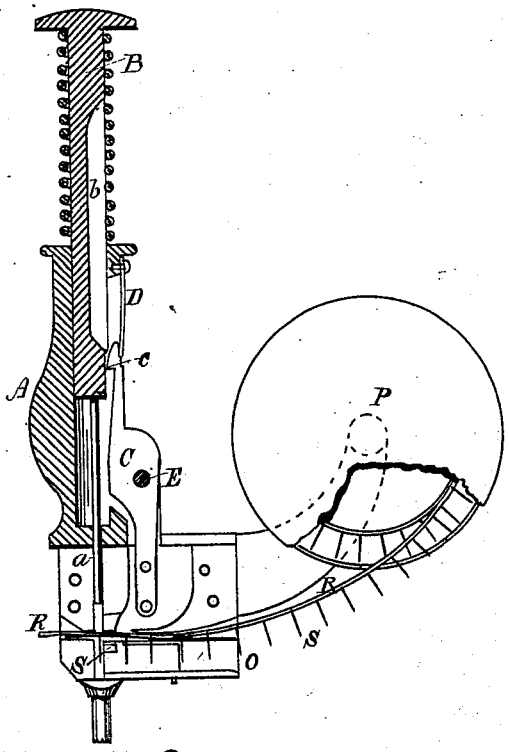

Fig. 2.

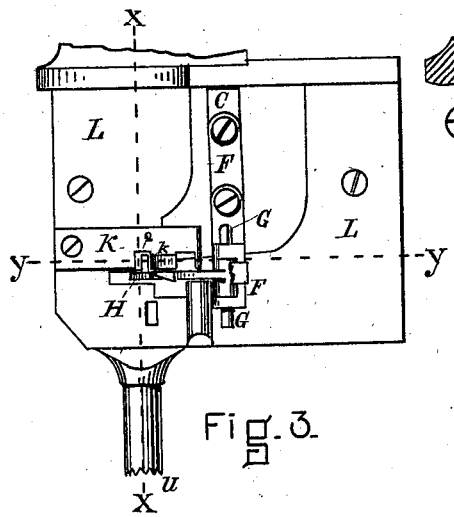

Fig. 3.

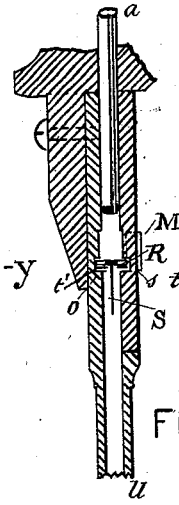

Fig. 4.

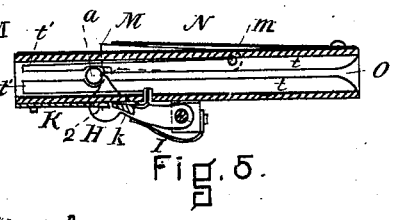

Fig. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE W. COPELAND, OF MALDEN, AND ERASTUS WOODWARD AND MATTHIAS BROCK, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO SAID COPELAND.

IMPROVEMENT IN TACKING-MACHINES.

Specification forming part of Letters Patent No. **197,608**, dated November 27, 1877; application filed April 24, 1877.

To all whom it may concern:

Be it known that we, GEORGE W. COPELAND, of Malden, in the county of Middlesex, and ERASTUS WOODWARD and MATTHIAS BROCK, both of Boston, in the county of Suffolk, all in the State of Massachusetts, have invented an Improvement in Tacking-Machines, of which the following is a specification:

Our invention relates to a machine for driving tacks, with especial adaptation for use in connection with machines for lasting boots and shoes.

The invention consists in a means of automatically feeding the tacks to the delivery-tube in the proper position to be acted upon by the driver; also, in a means for preventing the clogging of the delivery-tube by the tack-strip; also, in a means for retaining the tack in place in the delivery-tube.

Referring to the drawings, Figure 1 is an elevation of a machine embodying our invention. Fig. 2 is a vertical section of the same. Fig. 3 is an enlarged view of the parts composing the feeding mechanism. Fig. 4 is a section through the line *x x* of Fig. 3. Fig. 5 is a section through the line *y y* of Fig. 3.

A represents a metal frame or holder, adapted to be readily grasped or held by the hand. Within the frame A is arranged a driving-spindle, B, provided with a retracting-spring, as shown in Fig. 1, and having at its lower end the tack-driver *a*. C is a lever, provided at its upper end with a projection, *c*, which enters a recess, *b*, in the driving-spindle B, when the latter is forced downward, the said projection being forced into the recess by means of a spring, D, attached to the frame, as shown in Fig. 2.

The lever C has its fulcrum at E, and on its lower end is attached a bar or pawl-holder, F. H is a pawl hung on a pin, G, in the pawl-holder F, as shown in Fig. 3. On the inner end of the pawl H is a pin or projection, 2, which is caused to come in contact with the body of the tack at the proper time to feed it to the driver. The pawl H is forced down upon the tack by means of a spring, I, Fig. 1.

Attached to the rear side of the cap-piece L is a flat spring, K, the free end of which is bent at a right angle, as shown in Fig. 5, the bent end entering a slot in the cap-piece, and bearing against the strip which holds the tacks, so as to retain the said strip in place while the pawl H is retracted. In the forward portion of the spring K are two recesses or openings, Fig. 3, between which is an incline, *k*, rising from rear to front. The pin 2 on the pawl H, when in the rear slot or recess, as shown in Figs. 3 and 5, is in the position when the tack is fed forward and ready to be driven. As the spindle descends to drive the tack, the projection *c* on the lever C enters the recess *b* in the spindle B, which serves to retract the pawl H, the pin 2 of which then rides over the incline *k*, and drops into the recess or opening in front of the same, thus clearing the succeeding tack on the strip.

As the driving-spindle B rises, the projection *c* on lever C is forced out of the lower end of the recess *b*, which causes the pawl H to return under the incline *k*, thereby raising the bent end of the spring K, and thus releasing its hold on the tack-strip R. At the same time the pawl H feeds the succeeding tack forward, and when it has arrived at the point where the feed is completed, the pin 2 on pawl H re-enters the rear opening from beneath, thus releasing the spring K, and causing it to drop at once upon the tack-strip R, where it remains until raised again to feed the next tack.

In order to insure the straight position of the tacks in a line with the driver, I have provided a means of closing the feedway at its point of connection with the driveway, as follows: In Fig. 5, O represents the feedway for the passage of the tacks S. In the rear of the throat-piece is a thin metal plate, M, hinged at *m*, and held in a closed position by a spring, N. The inner front edge of the plate M is provided with an inclined projection, that serves to close the feedway at its junction with the driveway, and thus preventing any displacement of the tack after it has entered the driveway. As the tack is fed forward, the plate M is forced back by the same sufficiently to al-

low the tack to enter the driveway, when the plate M is again forced back into place by the spring, and the driveway is closed to the feedway.

As the driver *a* forces the tack downward, the head of the tack, in passing through the paper strip, leaves a burr or projecting rough edge on the under side of the said strip. In order to prevent this burr from interfering with the smooth passage of the paper strip and clogging the driveway, there are provided two flat springs, *t t*, between which the body of the tack passes, and which are attached at one end to the bottom of the feedway, nearest its mouth, or where the tack-strip enters, while the other ends, which are free, extend across the driveway. The free ends of the springs *t' t'* are somewhat elevated, and support the tack-strip as it passes along. As the tacks come to the driveway, the driver *a* forces them through the strip, pressing the springs down upon the bed of the feedway. Upon the upward movement of the driver, the springs immediately rise and elevate the paper strip, so that the burr on the under side will pass freely through without interruption or clogging the driveway.

The end of the feed-tube which comes in contact with the upper is serrated or roughened, as shown at *u*, in order to prevent it from slipping when held in an inclined position, and also to serve to draw forward the upper to its place as the tack is driven.

What we claim as our invention is—

1. In a tacking-machine, the combination, with feeding and driving mechanism, of springs *t t*, adapted to hold a tack-strip, through which nails are driven singly as presented to the driver, all substantially as shown and described.

2. The pawl H and holder K, provided with the incline *k* between two openings in the holder, whereby the tack-strip is held in place and fed at each upward movement of the driver, substantially as specified.

3. The hinged plate M, constructed as described, in combination with the guideway O, for the purpose of maintaining the tack in proper position in the driveway, substantially as described.

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

GEO. W. COPELAND.
ERASTUS WOODWARD.
MATTHIAS BROCK.

Witnesses:
JOS. H. ADAMS,
JOSEPH O'KEEFE.