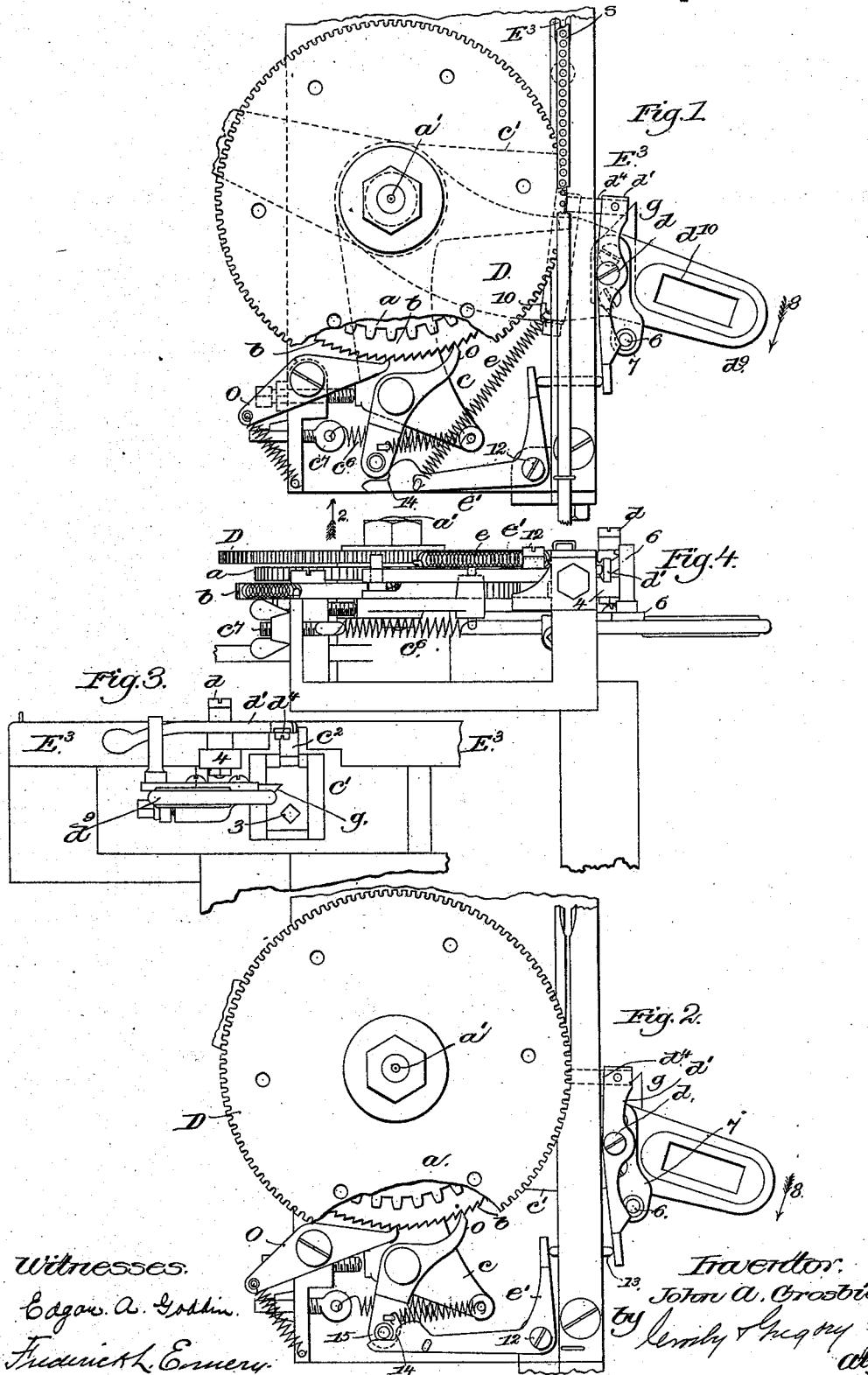


(No Model.)

J. A. CROSBIE.
MACHINE FOR MAKING TACK STRIPS.

No. 402,069.

Patented Apr. 23, 1889.



Witnesses.

Edgar A. Godkin.

Frederick L. Emery

23. Inventor:
John A. Crosbie,
by Emily & Gregory

UNITED STATES PATENT OFFICE.

JOHN A. CROSBIE, OF METHUEN, MASSACHUSETTS, ASSIGNOR TO THE MCKAY & COPELAND LASTING MACHINE COMPANY, OF PORTLAND, MAINE.

MACHINE FOR MAKING TACK-STRIPS.

SPECIFICATION forming part of Letters Patent No. 402,069, dated April 23, 1889.

Application filed October 18, 1888. Serial No. 288,484. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. CROSBIE, of Methuen, county of Essex, 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.

10 This invention has for its object to improve the machines described in United States Patents Nos. 230,386 and 247,143, to which reference may be had. In the patents referred to a series of tacks are driven into a strip of paper, and the feed movement of the paper is made dependent upon the insertion of a tack at the proper time. In these machines referred to the point of each tack is made to depress a spring-supported latch, and there-
15 after the feed-wheel is rotated; but if the latch is not depressed the feed-wheel stands still. In practice it often happens that the needle-points of tacks being inserted in the strip are blunted by striking the said latch or a
20 part thereof to depress the latch, as stated.

The object of this invention is to prevent the blunting of the tacks. In this invention the side of the tack is operated upon above its point or between the point and head by a
25 feeler, which, when a tack is present, enables the usual feeding-pawl to act upon the feed-ratchet and move the feed-wheel, and with it the strip in which the tack has been driven; but in case a tack has not been entered into
30 the strip then the feeler acts to prevent the feeding-pawl from engaging the feed-ratchet. In the present embodiment of this invention the feeler is made to act upon a pawl-con-
35 troller which directly engages the said pawl
40 when the feed-ratchet is not to be moved. The tack while being acted upon by the feeler is supported laterally between its ends, so as not to tip.

45 My invention consists, essentially, in the combination, with a feed-wheel and its actuating-pawl, of a feeler and means between it and the said pawl whereby when the tack is present the feeler permits the pawl to actuate the feed-ratchet and feed-wheel, and when the
50 tack is absent causes the pawl to be thrown

out of engagement with the feed-ratchet, thus leaving the feed-wheel at rest.

Figure 1 shows a sufficient portion of a machine for making tack-strips to enable my invention to be understood, a tack having been 55 presented in the strip; Fig. 2, a like view, but with the pawl-controller in a different position, as it will be when a tack has not been presented. Fig. 3 is a view of Fig. 1, looking at it in the direction of the arrow 2; and Fig. 4, a partial right-hand elevation of Fig. 1.

The feed-wheel D, pawl o, detent-pawl O, lever d⁹, having the slot d¹⁰, and the roadway E³, are and may be as in United States Patent No. 247,143, wherein like letters are used 65 to designate like parts. The feed-wheel D next its under side has fastened to it a gear, a, and the said gear has fixed to it a ratchet-wheel, b, the feed-wheel, gear, and ratchet-wheels being free to rotate in unison about 70 the stud a'. The gear a and the ratchet b are shown but not lettered in the said patent. These parts, with the exception of the pawl o, are all to be actuated as provided for in the said patent.

The pawl o is mounted upon a bell-crank lever, c c', (shown partially by dotted lines, Fig. 1,) having its fulcrum on the stud a', the end c' of the said lever being downturned, (see Fig. 3,) and having connected to it by a 80 screw, 3, a support, c², which is extended upwardly almost to the under side of the feed-wheel D, the said support normally standing at one side of a notch in the feed-wheel, in which is to descend the tack which is to be 85 inserted in the paper or in the strip s, the said support being so located that the point of the tack in its passage through the said strip cannot meet the top of the support.

The roadway-block, as herein shown, has a 90 lug, 4, on which is erected a stud-screw, d, which serves as the fulcrum for the feeler, composed, essentially, of a lever, d', having a blade, as d⁴, which, after each descent of the driver (not herein shown, but common to the 95 patents referred to) has driven a tack into the strip s, is moved to press the blade d⁴ against the body of the tack in the strip, the body of which tack below that part thereof which is acted upon by the blade d⁴ at such time rest- 100

ing close to or against the side of the support c^2 . This feeler derives its motion of vibration from a pin, 6, projecting from a lug, 7, connected to or forming part of the arm or lever d^9 , the said pin at each movement of the said lever d^9 in the direction of the arrow 8 withdrawing the blade d^4 to permit the descent of a tack through the strip s and through one of the openings directly under it at the edge of the feed-wheel, and after the descent of the usual driver to drive a tack the lever d^9 is moved in the opposite direction, permitting the spring e , connected to a fixed stud, 10, and to the pawl-controlling lever e' , pivoted at 12, to act upon and turn the said lever, so that the latter through a slide-pin, 13, or its equivalent, a link, acts upon the end of the feeler-lever opposite the blade d^4 and causes the said lever to be turned with a yielding pressure in the direction to place the edge of the blade d^4 against the body of the driven tack close to the under side of the feed-wheel D. When a tack is present in the strip and the blade comes in contact with it, the tack acts to limit the movement of the feeler-lever, and consequently of the controller-lever e' , so that the latter is prevented from moving far enough under the action of the spring e to place the notched part 14 of the controller in the path of movement of the pin or lug 15, erected upon the outer end of the pawl o , which is moved to engage the ratchet-wheel b and rotate the feed-wheel D, the lever $c\ c'$, carrying the pawl o , as herein shown, deriving its motion in the direction to cause the pawl o to move the feed-wheel by the pressure against the support c^2 , or it may be the arm c' of the said lever $c\ c'$ of the finger g , attached to the lever d^9 , the lever $c\ c'$ deriving its movement in the opposite direction from the spring c^6 , connected thereto and to the stud c^7 .

In case a tack should not come under the driver, and consequently a tack should not be driven into the strip s at any one descent of the driver, then in such case the blade d^4 does not have opposed to it a tack, and consequently the movement of the feeler-lever by the spring e is far enough to enable the controller to be turned about its fulcrum 12 sufficiently to place the notched part 14 of the pawl-controller in line with the pin or projection 15 of the pawl o , so that as the lever $c\ c'$ starts to move the pin 15 in contact with

the projection 14 of the controller-lever e' immediately acts to throw the point of the pawl o out from engagement with the teeth of the ratchet-wheel b , and consequently the pawl o fails to act upon and move the feed-wheel. In this way the feed-wheel is moved after a tack has been inserted in the strip s , and the point of the tack touches nothing but the strip.

Believing myself to be the first to provide a vibrating feeler to contact with the side of the tack to determine whether or not the feed-wheel and strip shall be moved, I desire to say that I do not intend to limit my invention to the exact form of feeler herein shown, but desire to include as of my invention any form of feeler which has a movement toward and from the body of the tack, or at an angle to the longitudinal center of the body of the tack; nor do I desire to limit my invention to the exact connection shown between the feeler and the pawl-controller for the pawl, as such connection, and also the pawl-controller, might be variously modified in construction and yet be comprehended in my invention.

I claim—

1. In a machine for making tack-strips, a feed-wheel and a pawl to move it, combined with a feeler to contact with the side of a tack driven into the strip and enable the said pawl to act and move the said feed-wheel, substantially as described.

2. In a machine for making tack-strips, a feed-wheel, a pawl to move it, and a pawl-controller, combined with a feeler to contact with the side of a tack driven into the strip and keep the pawl-controller in position to enable the said pawl to act and move the said feed-wheel, substantially as described.

3. A feed-wheel, a pawl to rotate it, a support for one side of the body of a tack driven into a tack-strip, and a pawl-controller, combined with a feeler adapted to contact with the body of a driven tack between the said support and the said feed-wheel, to operate substantially as described.

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

JOHN A. CROSBIE.

Witnesses:
G. W. GREGORY,
MABEL RAY.