S. E. MOWER.

Hand-Nailing Machine.

No. 225,482. Patented Mar. 16, 1880.

Fig. 1.

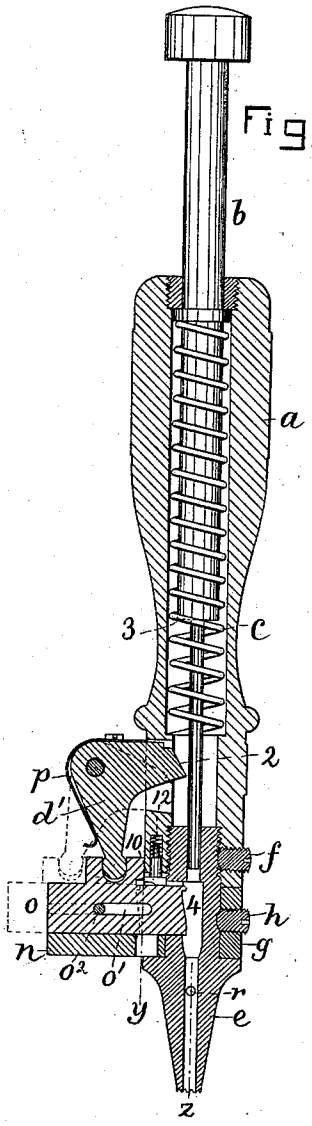


Fig. 2.

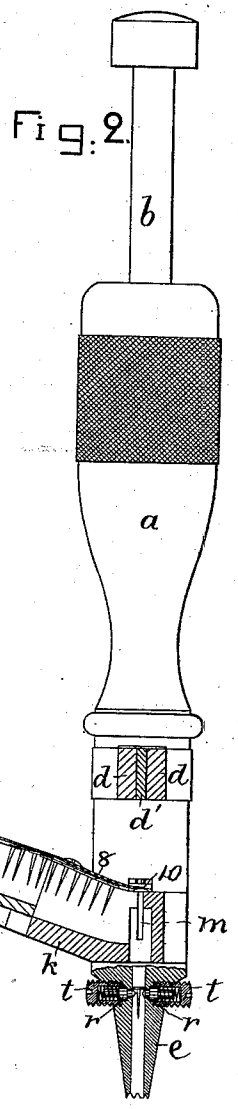


Fig. 5.

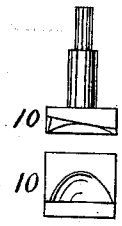


Fig. 3

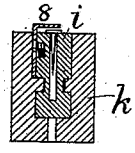
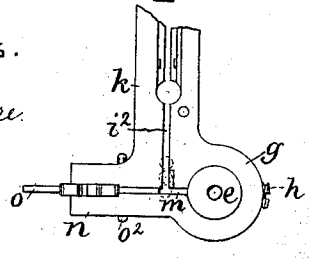


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

SAMUEL E. MOWER, OF MILFORD, CONNECTICUT, ASSIGNOR TO MAGNETIC LASTING MACHINE ASSOCIATION, OF SAME PLACE.

HAND NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 225,482, dated March 16, 1880.

Application filed September 27, 1879.

To all whom it may concern:

Be it known that I, SAMUEL E. MOWER, of Milford, county of New Haven, State of Connecticut, have invented an Improvement in Hand Nailing-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to a hand nailing-machine for boot and shoe work, and is shown in a hand-nailer in which headed nails placed in a magazine made as a trough are fed into a roadway, from which they are moved one at a time by a feed-bar reciprocating at right angles to the said roadway, the said nails being placed beneath the driver, by which, in its descent, they are driven into the sole of the boot or shoe, as desired.

The nails are automatically fed into the proper position to be driven by feeding devices actuated by the driving-bar, the said feeding devices consisting of a feed-bar reciprocating in a channel or slot at right angles to the tack-supplying roadway, and actuated by a bent lever, itself moved positively in one direction by the driving-bar in its descent, and then moved back by a spring after the driving-bar, in its ascent, has left it free to do so.

The feed-bar, in its outward movement, caused by the descent of the driving-bar, passes the end of the tack-supplying roadway, and a yielding holder acts to allow a single tack to drop into the feed-bar channel in front of said feed-bar, and then, upon the upward movement of the driving-bar, the said feed-bar pushes the tack into the center of the driver-passage in the nose of the nailer, where it falls nearly to the end of said nose, where it is sustained by two yielding pins or studs.

The feeding-bar, in its inward movement, passes in front of and closes the nail-supplying roadway until the driving-bar is moved downward to drive the tack from the nose, when the same feeding operation is again gone through with.

The studs which support the nail in the nose of the machine are held in position beneath the heads of the nails by springs, which yield and allow the studs to be pushed by the driving-bar when said driving-bar, in its downward movement, reaches the head of the nail.

Figure 1 represents, in longitudinal section, one of my improved nailing-machines; Fig. 2, a side view on a plane at right angles to Fig. 1, and partially in section on lines $y\,z$ thereof; Fig. 3, a sectional detail on line $x\,x$ of Fig. 2; Fig. 4, a top view of the feeding portion, the upper portion of the machine being removed; and Fig. 5, an enlarged separate detail, showing the front edge and under side of the yielding holder, which permits but one tack to be moved by the feed-slide at each movement.

The handle *a*, of suitable form externally to be readily grasped, and bored to receive the driver-bar *b* and its retracting-spring *c*, is provided with suitable lugs *d*, Fig. 2, to furnish bearings for the feed-actuating lever *d'*, and the handle is screw-threaded at its lower end to receive the nail guide or nose *e*, with its connected feeding devices, which, when screwed into place, is securely held by the set-screw *f*.

The tack-supplying magazine-tube and feeding devices are supported in suitable projections from the sleeve *g*, which surrounds the upper portion of the nose *e*, and is secured thereto by the set-screw *h*.

The nail-supplying magazine, having a channel of suitable dimensions to receive the bodies of the nails while their heads rest upon the upper edges of the said channel, is held in the arm *k*, formed with a roadway, *i*, in continuation of that in the magazine.

The arm *k* is split apart for a portion of its length, and is provided with lugs to receive a thumb-screw, *l*, to enable the split portion to be clamped tightly upon the magazine-tube.

The roadway i^2 communicates with and terminates in the yielding slot *m* for the feed-bar, the said slot being at right angles to the roadway i^2, and being formed in the projecting part *n* of the sleeve *g*, the said slot being of the same width as the roadway i^2, so that when the end of the feeder is drawn back of the roadway the foremost tack in the said roadway will enter the said slot *m*, and be stopped in front and ready to be moved forward by the feed-bar or feeder *o*.

It is essential to the operation of this nailer that but a single tack be at any one time held or contained in the passage *m* in front of the

feed-bar. To insure this I have placed at the lower end of the handle, just in front of the spring 8, which bears upon the heads of the tacks, and prevents their overriding, a yielding holder, 10, herein shown as a block having a vertical stem surrounded by a spring, 12. The outer face of this holder (see Fig. 5, wherein the holder is shown enlarged) is cut away or recessed to permit the head of a tack to pass under it, and so as to form a shoulder or guide for part of its length for the side of the tack-head, the said holder so acting upon the lowermost tack of the series of tacks in the roadway as to permit it, and it only, to escape from the roadway into the right-angled slot *m* in front of the feed-bar. Were it not for this holder, which presses down upon the top of the head of the tack, a separator would have to be employed to pick out or off the end tack.

The feed-bar *o*, slotted at *o'* to receive the guide-pin o^2, is recessed above to receive an arm of the actuating-lever *d'*, the other arm of which enters a slot in the handle *a*, and has an inclined portion, 2, to be struck by the shoulder 3 of the driver-bar *b*, to move the said lever *d'* and connected feed-bar *o* to the position shown in dotted lines in Fig. 1, when the foremost tack or nail in the roadway, which has been resting against the side of the feed-bar, passes into the slot *m* in front of the feed-bar, the head of the nail passing under the holder 10.

When in the upward movement of the driver-bar *b* (caused by its retracting-spring *c*) the shoulder 3 passes the end 2 of the lever *d'*, the said lever is thrown back by the spring *p*, attached to the lugs *d*, and the feed-bar connected therewith is moved to the full-line position in Fig. 1, pushing the tack in the guide in front of it into the recess 4 in the upper part of the nose *e*, from which it falls into the nose until its head rests, as shown in Fig. 2, upon the supporting-studs *r*. These nail-supporting studs *r* are free to slide longitudinally in the hollow screws *t*, and are pressed toward the center of the nose by springs, (shown in Fig. 2,) the inner ends of said studs being conical, as shown, to enable them to be thrust aside by the head of the nail or end of the driver-bar when descending through the nose to drive the tack or nail.

I claim—

1. In a hand nailing mechanism having a roadway for the tacks or nails, the combination, with the shouldered driver-bar, of the feed-actuating lever adapted to be operated by the said driver-bar, its spring *p*, and the connected feed-bar working in a slot, *m*, substantially as and for the purpose set forth.

2. A nailing mechanism for boots and shoes provided with a roadway in continuation of a magazine-tube for tacks or nails, and a slot or passage-way at right angles thereto for the reception of the end tack of the series, combined with a yielding holder to operate upon the head of the end tack or nail next to be driven, and a feed-bar to insure the feeding of a single nail into the nose, substantially as described.

3. A nailing mechanism for boots and shoes provided with a roadway in continuation of a magazine-tube for tacks or nails, and a slot or passage-way at right angles thereto for the reception of the end tack of the series, combined with a spring, 8, to overlap the heads of the tacks in the roadway, a yielding holder located at or near the end of the said spring to act upon the tack next to be driven, and a feed-bar to insure the feeding and driving of the tacks singly, substantially as described.

4. The combination, with the nail guide or nose and a driver-bar of a nailing-machine, of the nail-supporting studs having conical ends free to yield radially outward from the said nail-guide, and springs to keep them pressed inward, substantially as and for the purpose set forth.

5. The handle *a* and the shouldered nose screwed therein, combined with the sleeve *g*, adapted to receive the slide *o*, substantially as described.

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

SAMUEL E. MOWER.

Witnesses:

H. G. THOMPSON,

H. GRANT THOMPSON.