

A. KNOWLTON.

Nail Selecting and Delivering Machines.

No. 136,074.

Patented Feb. 18, 1873.

Fig. 1.

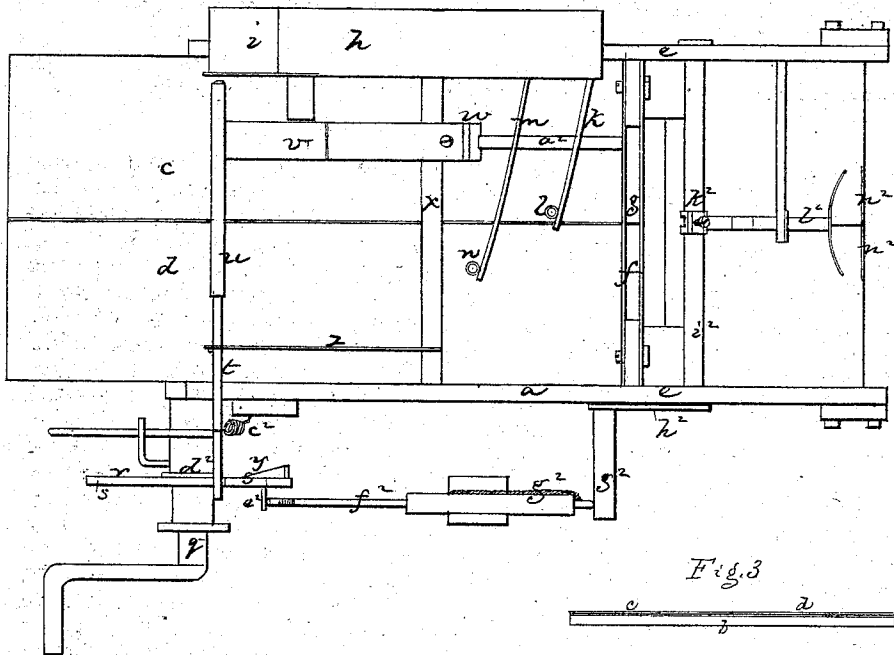


Fig. 3.

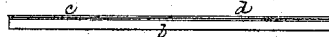
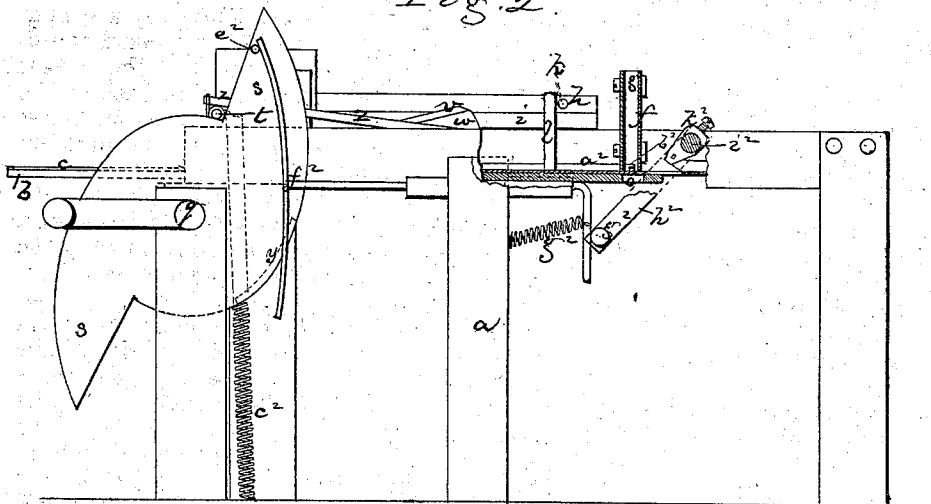


Fig. 2.



Witnesses.

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Inventor.

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By his Attys.
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UNITED STATES PATENT OFFICE.

ALBION KNOWLTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE, OF SAME PLACE.

IMPROVEMENT IN NAIL SELECTING AND DELIVERING MACHINES.

Specification forming part of Letters Patent No. 136,074, dated February 18, 1873.

To all whom it may concern:

Be it known that I, ALBION KNOWLTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Nail Selecting and Delivering Mechanism; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to a means of selecting nails, or of delivering them uniformly head downward or point downward. In my present invention the nails drop from a loose assemblage into a vertical throat, having a length corresponding to the length of the nail, a width sufficient to just receive a nail and enable it to drop freely through it, and any suitable depth, the nails dropping into this throat and upon two slides that pass under and form the bottom of the throat, the heads of the nails lying some in one direction and some in the opposite direction. Each slide has a nail-slot, which, if brought under the nail, lets the nail through it, and by suitable mechanism the head end of the nail, resting upon either slide-plate determines the movement of that plate, so that automatically the plate to be moved is determined by the position of the nail, and being moved the nail drops through the slot of such plate, tilting down head first, no matter upon which plate the head may rest. The mechanism may be arranged so that the point ends drop first, but the dropping of the head ends is the more readily effected.

The drawing represents a mechanism embodying my invention.

Figure 1 shows the machine in plan. Fig. 2 is a side and sectional elevation of it. Fig. 3 is an end view.

a denotes a frame; *b*, a stationary cross-plate, upon which rest two slide-plates, *c d*. Between two side rails, *e e*, extends a vertical throat-piece, *f*, containing a throat or pocket, *g*, into which the nails to be delivered pass, the nails filling the throat and standing one upon another. Upon one of the rails *e* stand two horizontal levers or tumblers, *h i*, from the upper one of which extends a rod, *k*, which rests against a pin, *l*, extending up from the

slide-plate *c*, a similar rod, *m*, extending from the lower tumbler *i* rests against a pin, *n*, extending up from the plate *d*. Each plate has a slot, *o*, which, when brought under the throat, will let the nail drop through it. At one end of the machine is a horizontal shaft, *q*, carrying a cam-wheel, *r*, having two cams, *s*, which, as the shaft is rotated, alternately raise a slide-rod, *t*, the rod being held normally by the stress of a suitable spring. This rod extends through a tube, *u*, fastened upon the end of an arm, *v*, extending from a boss, *w*, on a rod or shaft, *x*. The rod *t* slides in the sleeve *u*, and each time the cam-wheel rotates a cam, *y*, forces the rod forward in the sleeve, its return after the cam has passed being effected by a suitable spring, *z*. To the boss *w* is jointed a finger, *a*², the front end of which extends into the nail-throat. The end of the finger *a*² is made with a shouldered notch, *b*², and when the rod *t* is raised by the cam *s* the shaft or rod *x* is thereby turned and draws back the finger. When the cam-shoulder passes the slide-rod the rod is drawn down by a spring, *c*², and the finger *a*² is thereby thrown forward. If the nail-point is in the part of the pocket into which the finger enters, the notch of the finger will slip over the nail, so that the finger goes forward far enough to let the slide-rod down to its lowest position. In this position the end of the rod *t* is opposite to the tail end of the lever *i*, and as the side cam *y* strikes a pin, *a*², extending from the rod, it moves the rod *t* forward against the bottom lever *i*, moving it, and causing its rod *m* to strike the pin *n*, throwing back the slide *d*, upon which the head end of the nail rests; the nail-slot of this plate coming under the throat, the nail drops through and tips down head first. But if the head end of the nail is upon the plate *c* the finger *a*² will be stopped by the head, and from the consequent position of the finger the rod *t* cannot drop to its lowest position, but will remain up to such height that as the rod is thrown forward by the side cam its end will strike the upper lever, causing its rod *k* to strike the pin *l* and throw back the slide *c*, bringing its slot under the nail-throat, so that the nail drops through, its head end tipping down as before. By a suitable receiving mechanism placed beneath, the nails are all deliv-

ered in this uniform position. After the nail has been discharged a pin, e^2 , on the side of the cam-wheel strikes a slide-rod, f^2 , moving it forward, and causing it to strike a pin, g^2 , extending from an arm, h^2 , on a shaft, i^2 , to a collar, k^2 , upon which shaft a slide, l^2 , is jointed, an end piece of this slide striking a projection, n^2 , on the slide-plate, and moving the plate back to its normal position. When the pin e^2 passes the slide-rod f^2 , said rod is returned to its normal position by a spring, g^2 .

It will thus be seen that whichever way the nail-head lies the nail will be caused to drop down head first.

By a similar arrangement the plate having the point end lying upon it may be the plate moved, and the slot in said plate be brought

under the pocket so that the nail shall be discharged therefrom point first.

I claim—

1. The combination, with a hopper or chute, of the finger and the two slides, operating substantially as and for the purpose set forth.

2. The combination and arrangement of the nail-receiving socket and the two slides, operating to drop each nail in accordance with the position of its head, substantially as shown and described.

Executed this 27th day of September, A. D. 1872.

ALBION KNOWLTON.

Witnesses:

FRANCIS GOULD,
M. W. FROTHINGHAM.