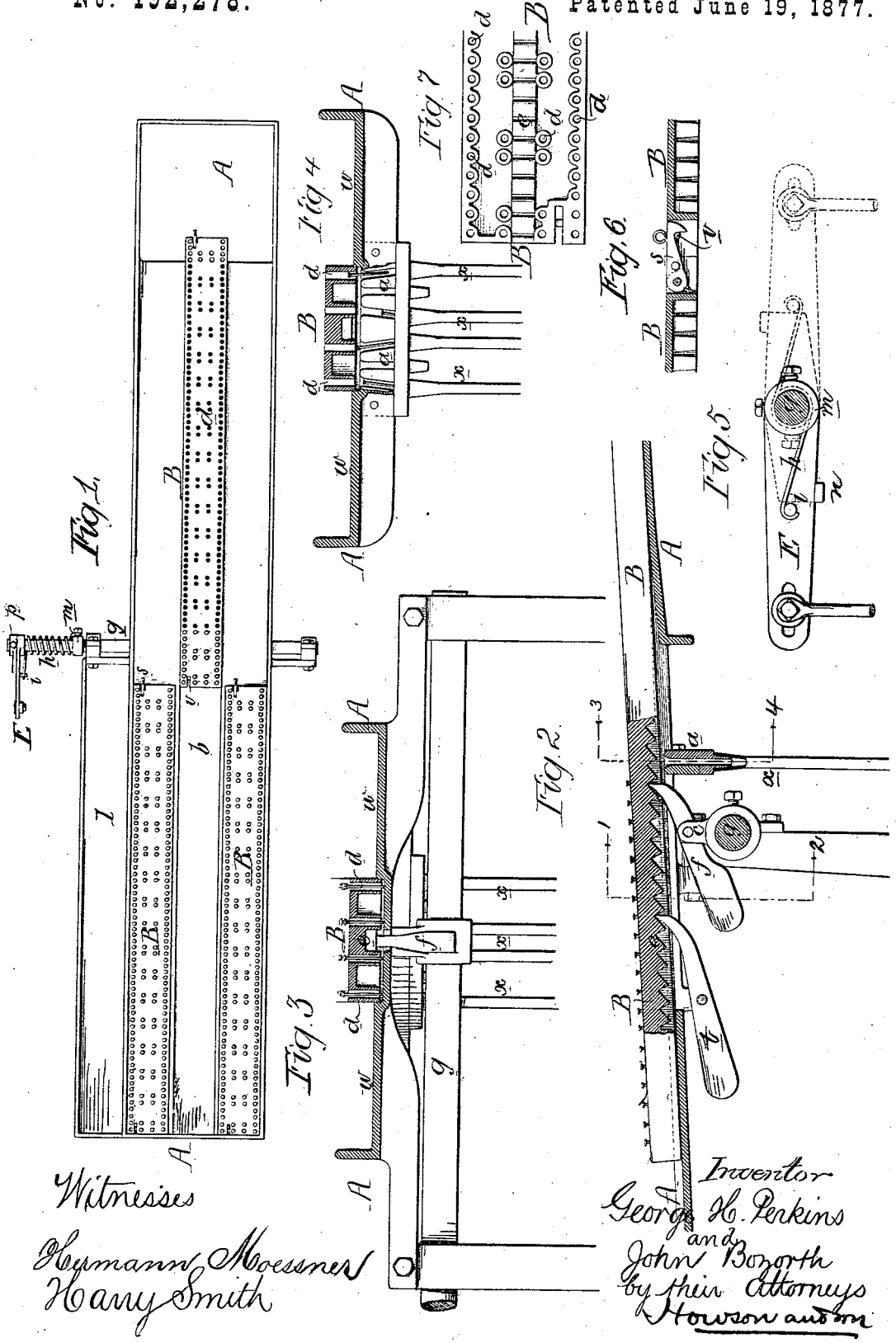
G. H. PERKINS & J. BOZORTH.

FEEDING MECHANISM FOR NAILING-MACHINES.

No. 192,278. Patented June 19, 1877.



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UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS AND JOHN BOZORTH, OF PHILADELPHIA, PA.

IMPROVEMENT IN FEEDING MECHANISM FOR NAILING-MACHINES.

Specification forming part of Letters Patent No. **192,278**, dated June 19, 1877; application filed May 7, 1877.

To all whom it may concern:

Be it known that we, GEORGE H. PERKINS and JOHN BOZORTH, of Philadelphia, Pennsylvania, have invented certain Improvements in Feeding Devices for Box-Nailing Machines, of which the following is a specification:

The object of our invention is to construct an automatic device for feeding nails to the nail-holders of a box-nailing machine, an object which we attain in the following manner, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view of our improved nail-feeding device; Fig. 2, a longitudinal section of part of the same, drawn to an enlarged scale; Figs. 3 and 4, transverse sections on the lines 1 2 and 3 4, Fig. 2, respectively; and Figs. 5, 6, and 7 detached views of parts of the device.

We have shown our invention as applied to that class of box-nailing machines in which the nails are fed to the holding devices by means of delivery-tubes *x;* but it should be understood that it is not limited to machines of this class.

The usual mode of feeding is to introduce the nails into the upper ends of the tubes *x* by hand, a plan which is objectionable, partly on account of the labor involved, but principally on account of the want of uniformity in the delivery of the nails to the nail-holders which results from this mode of feeding.

These objections we overcome by the use of a perforated plate, strip, or band, which carries the nails and delivers the same uniformly to the nail-holders or to the tubes leading thereto.

The mode in which we prefer to carry out the invention is that illustrated in the drawing, which we will now proceed to describe.

A is a table, supported in a slightly-inclined position by a suitable frame-work, and having a row of openings communicating with tubular projections *a*, to which are secured the upper ends of the feeding-tubes *x*—four only of the latter being shown in the present instance.

At or about the center of the table A is a longitudinal recess, *b*, in which are arranged to slide plates B, the latter being provided with openings *d* for the reception of the nails, and each opening being of a size sufficient to permit the free passage of the head of the nail. The number and arrangement of these openings *d* may be varied as circumstances may suggest.

When the plates are within the recess *b* of the table A, the points of the nails rest upon the bottom of the recess; but as a row of nails is brought over the openings in the table said nails will drop into the openings and pass through the tubular projections *a* into the tubes *x*, and thence to the machine.

Various means may be employed for causing the movement of the plate B, so that it will deliver row after row of nails to the tubes; but the means which we prefer are shown in Figs. 1, 2, 3, and 5.

On the under side of each plate B is formed a rack, *e*, to which is adapted the point of a weighted pawl, *f*, hung to an arm, *c*, on a rock-shaft, *g*, motion being communicated to the latter in the following manner: A lever, E, is loosely hung to the shaft *g*, and is operated at intervals from some moving part of the machine. Against a pin, *i*, on this lever bears one end of a spring, *h*, which is coiled round the shaft *g*, and attached at its opposite end to a collar, *m*, on the same.

The power required to overcome the tension of this spring is equal to, or slightly in excess of, that required to move the plate B, so that, as long as the movement of the plate is unobstructed, the upward movement of the lever E will cause a forward movement of the shaft *g* and its pawl, and consequent feeding of the plate; but as soon as there is any obstruction to the forward movement of the plate, the movement of the lever E will be taken up by the spring without turning the shaft *g*, and the feeding of the plate will therefore cease.

The backward motion of the shaft is direct, being caused by the action of the lever E upon a lug, *n*, carried by a plate, *p*, rigidly secured to the shaft *g*.

When it is desired to feed the nails to the machine at a different period in its operation, the lever E and its connections may be reversed, as shown in Fig. 5.

A retaining-pawl, *t*, prevents back movement of the plate B.

The table A is preferably made of such a length that a fresh plate, B, can be inserted

in the recess *b* before the plate in advance has been exhausted, the two plates being connected together by means of the latch *s* carried by one plate and arranged to hook over a pin, *v*, on the other. (See Fig. 6.)

The table is also made of such a width that a ledge, *w*, is formed on either side of the recess *b* for the reception of empty plates B, which are filled by an attendant with nails taken from a trough, I, at one side of the table, and are then in position for being readily moved into the recess *b*, when required.

It is not absolutely necessary in carrying out our invention that sliding plates B should be used as nail-carriers, as, in some cases, a revolving plate, or an endless belt, might be substituted for the sliding plates.

It will be evident that in either case the nails will be fed to the nail-holders in a more accurate and uniform manner than by the usual practice of hand-feeding.

We claim as our invention—

1. The combination of the table A, having openings communicating with the nail-holders of a box-nailing machine, with movable nail-carrying plates or strips B, substantially as specified.

2. The table A, having a central recess, *b*, a ledge, *w*, on either or both sides of the same, adapted to receive the movable plates, and means, substantially as described, for reciprocating said plates.

3. The plates B, each provided at one end with a latch, *s*, and at the other end with a pin, *v*, as specified.

4. The combination of the plates B and their racks *e* with the rock-shaft *g*, carrying a pawl, *f*, and governed in its forward movement by a spring, as specified.

5. The combination of the rock-shaft *g*, its collar *m*, and plate *b*, with lug *n*, with the loose lever E and spring *h*.

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

GEORGE H. PERKINS.
JOHN BOZORTH.

Witnesses:
HERMANN MOESSNER,
HARRY SMITH.