G. H. PERKINS.

MACHINES FOR NAILING BOXES.

No. 185,777. Patented Dec. 26, 1876.

Fig. 1.

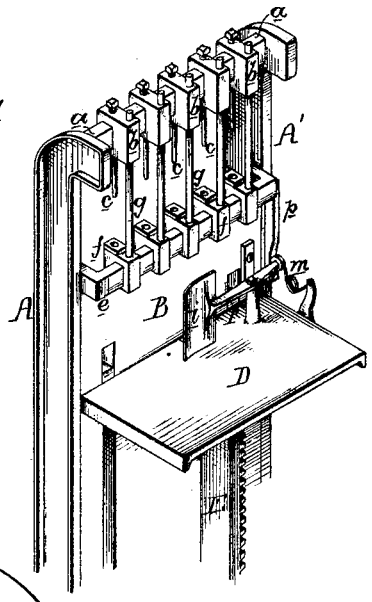


Fig 2.

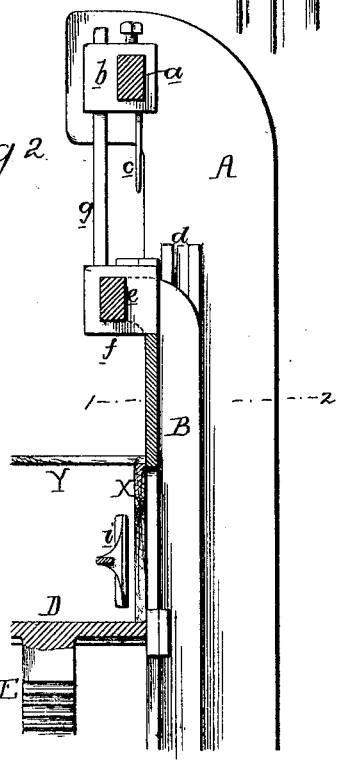


Fig. 3.

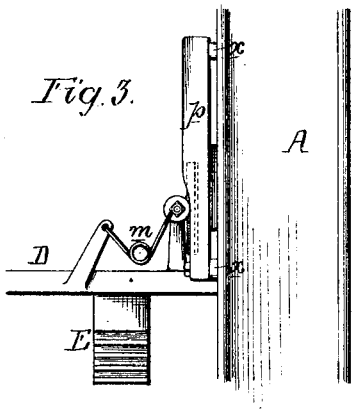
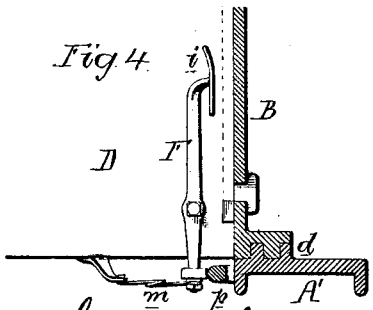


Fig 4.



Witnesses
Hermann Boessneck
Harry Smith

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UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, JOSEPH LE COMTE, OF NEW YORK CITY, AND THE ATLANTIC REFINING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR NAILING BOXES.

Specification forming part of Letters Patent No. **185,777**, dated December 26, 1876; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, GEORGE H. PERKINS, of Philadelphia, Pennsylvania, have invented certain Improvements in Machines for Nailing Boxes, of which the following is a specification:

The object of my invention is to so construct a box-nailing machine that the end of the box will be firmly held in its proper position while the nails are being driven, and will be prevented from being bent and split by the pressure to which it is subjected; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of sufficient of a box-nailing machine to illustrate my improvement; Fig. 2, a transverse vertical section of the same, on an enlarged scale; Fig. 3, a side view, and Fig. 4 a sectional plan on the line 1 2.

The frame of the machine consists of two opposite end standards, A A′, connected together at the top by a cross-bar, *a*, which carries a number of blocks, *b*, from the under side of each of which projects a finger, *c*. Adapted to guides *d* on the standards A A′ is a plate, B, which is provided at the upper end with a bar, *e*, carrying as many nail-holders, *f*, as there are blocks *b* on the bar *a*, and each of the nail-holders *f* has an opening directly in line with the finger *c* of the block *b* above it. The nail-holders *f* are also furnished with guide-bars *g*, adapted to openings in the blocks *b*. In front of the machine is a table, D, supported by a toothed stem, E, and having projections adapted to vertical slots in the plate B, a vertical movement being imparted to the table by means of suitable gearing below.

The operation of the above machine is as follows: Nails are inserted into the openings in the holders *f*, and are retained in position therein by springs or other means. A strip, X, of board intended to form one end of the box is then placed edgewise upon the table D, the face of the strip resting against the face of the plate B, and the end of another strip, Y, intended for one side of the box, is then placed upon the upper edge of the strip X, as shown in Fig. 2. The table D is now elevated, and the strip Y strikes the under edges of the nail-holders *f* when the motion is communicated to the plate B, the elevation of which causes the fingers *c* to enter the openings in the nail-holders, and drive the nails therefrom into the strips.

The above description is applicable to the machines as now constructed; but in these machines the end X of the box has to be held in place by one hand of the operator, while the other hand holds in place the side Y of the box. These sides are often of two pieces, so that it is difficult with one hand to hold them properly in place while the nails are being driven.

Another serious objection to the ordinary machine is the tendency of the end of the box, when made of thin wood, to bend and split when subjected to the pressure caused by clamping it between the table D and the nail-holders *f*. These objections I overcome in the following manner:

To a post on the table D is pivoted a lever, F, carrying at the inner end a plate, *i*, and at the outer end an anti-friction-roller, which, in the present instance, is caused by a spring, *m*, to bear upon the edge of a cam-plate, *p*, secured to the frame. When the table D is depressed the plate *i* is at a sufficient distance from the plate B to permit the ready insertion of the end of the box between the two; but as the table rises the cam-plate *p* causes such a movement of the outer end of the lever F that the plate *i* is caused to bear tightly against the end of the box and hold the same firmly against the plate B while the nails are being driven.

By this means not only am I enabled to use thin wood for the ends of the boxes without danger of splitting the same, but the operator has both hands free to adjust the side of the box to its proper position.

As will be observed in Fig. 3, blocks *x* of rubber or other elastic material are inserted between the cam-plate *p* and the frame of the

machine, so that the plate can be readily adjusted to accord with variations in the thickness of the end of the box, and can also yield when excessive pressure is exerted against the inner end of the lever F, and thus prevent the fracture of the same.

My invention, although illustrated and described in connection with a machine in which the table D and plate B move, while the bar *a* is stationary, may, it will be evident, be applied to machines, in which the table is stationary, and the plate B and bar *a* move, or in which the plate B is stationary, and the table D and bar *a* move. The outer end of the lever F may also, in some cases, be acted upon by a spring which tends to keep the plate *i* always in contact, or nearly so, with the plate *b*, the cam-plate *p*, in such case, being dispensed with.

I claim as my invention—

1. The combination, in a box-nailing machine, of the table D, the automatic nailing devices, and a plate, B, with a pressure-plate, *i*, arranged and operating so as to hold the side or end of the box firmly against the plate B while the nails are being driven.

2. The combination of the plate B, plate *i*, and lever F, and cam-plate *p*, as set forth.

3. The combination of the lever F and its plate *i* with the cam-plate *p*, having an elastic backing, *x*, as set forth.

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

GEO. H. PERKINS.

Witnesses:

HERMAN MOESSNER,

HARRY SMITH.