S. W. PHELPS.

MACHINE FOR DRIVING NAILS.

No. 108,624. Patented Oct. 25, 1870.

Fig. 1.

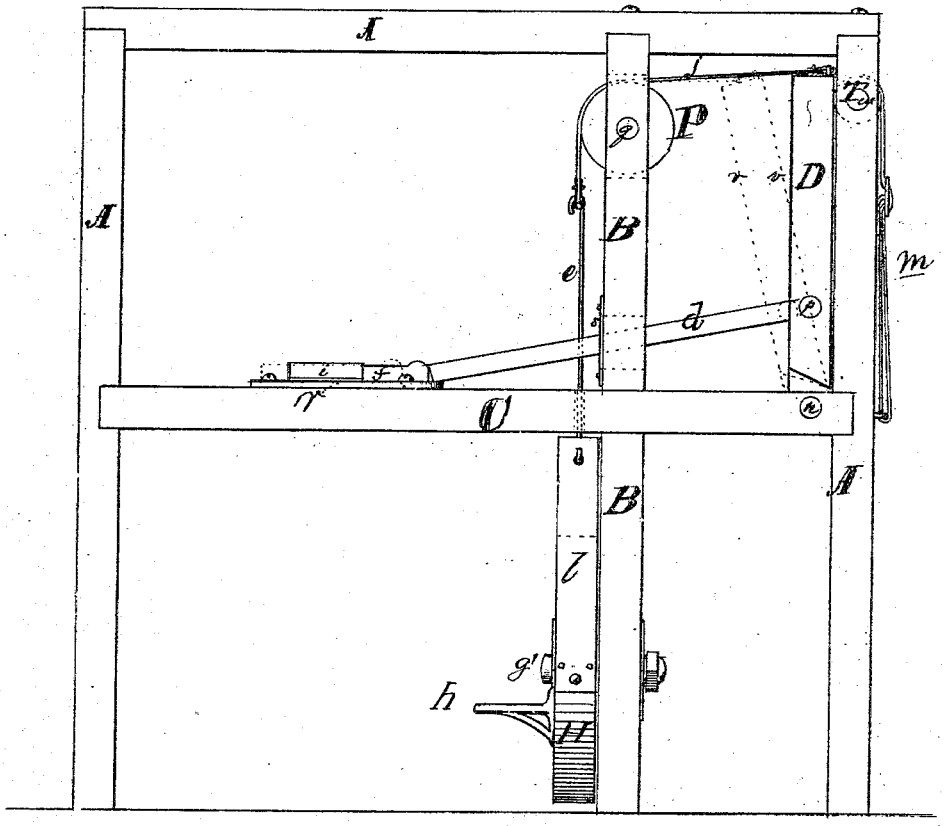
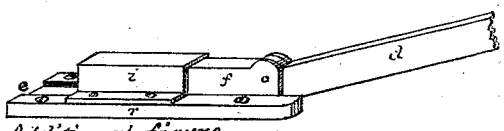


Fig. 2.



Additional figure

Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL W. PHELPS, OF SANDUSKY, OHIO.

IMPROVEMENT IN MACHINES FOR DRIVING NAILS.

Specification forming part of Letters Patent No. **108,624**, dated October 25, 1870.

To all whom it may concern:

Be it known that I, SAMUEL W. PHELPS, of Sandusky, in the county of Erie, in the State of Ohio, have invented an Improved Nail-Driving Machine, of which the following is a specification.

The first part of my invention relates to the gearing of a lever in such a manner as to exert power advantageously in the driving of small nails and brads in the manufacture of small boxes, such as those made to contain grapes, cigars, and other like articles, and to apply the power by the foot, so as to leave the hands free for other duty.

The second part of my invention relates to the pivoting of one or more jointed rods of metal to such lever and providing grooved ways for such rod or rods to move in, so that they shall act in right lines, and so that the operator may graduate and control the force exerted at will, in order to drive the smallest and shortest nails and brads with the greatest quickness, precision, and certainty.

Without my devices, or similar ones, nails and brads have to be made longer and sharper pointed than would otherwise be necessary, in order that they may be pricked into the wood or other material by the aid of the thumb and finger, and thus the operation becomes a very tedious one, requiring much patience and practiced skill, whereas by the use of my devices the nails and brads, however short and small, may be placed in such grooved ways, in front of the driving-rods hereinafter described, and forced home with the greatest facility. Any number of such drivers may be arranged so as to be operated by the same lever at once, so as to drive as many nails as may be desired, in one right line, into a box at one operation, and thus greatly facilitate the manufacture of such boxes.

In the accompanying drawings, Figure 1 represents a side elevation of my machine: and Fig. 2 represents a perspective view of a portion of the rod *d*, driver *f*, guide *i*, plate *r*, with its groove *c*.

The frame for the operative parts of the machines is composed of the pieces A A A, fitted and fastened together as shown; and C is a platform or bench upon which the work is to be done. This bench may be placed at a convenient height from the ground for the operator to either sit or stand while operating the machine.

The upright B is framed into the bench C and top piece, A, in any suitable manner, or as shown in the drawings, and serves to stiffen the frame, as a guide for the jointed rod *d*, and as a bearing for the axles of the pulley P and wheel H.

The lever D extends down through a suitable slot in the bench C, and is pivoted upon the rod *n*, which passes through it and into the bench again in the rear.

In the upright B a vertical slot is provided of sufficient length to allow the rod *d*, which passes through it, the requisite play room. That slot is indicated by dotted lines in Fig. 1, and the back end of the rod *d* is pivoted in the lever D, as shown at *p*, same figure. A metal plate, S, is fastened upon the upright, as shown, to prevent the said slot from being worn out of shape.

The lever D is pivoted upon the bolt *n*, which passes horizontally through the bench C, as shown, and when that lever is drawn forward in the act of driving a nail or nails it occupies the position indicated by the dotted lines *v v*, Fig. 1. As a guide for the nails and the driver *f*, the plate *r*, having the groove *c*, is screwed down upon the bench, and the driver *f* is connected with the rod *d* by a hinge-joint, and moves back and forth in the groove when operated by the lever D. In order to further guide and confine the driver in its goove, a box of sheet metal, *i*, of the form shown, is fastened to the plate *r*. The outer end of the groove *c* and the outer end of the driver *f* should be made exactly of the sizes suitable to the forms and sizes of the nails to be driven.

It will be observed that Fig. 1 shows merely the front edges of the frame-pieces A A A, the upright B, and bench C, and that these parts may be made just as wide as may be required for the operation of any number of rods and drivers that may be desired.

In order to operate the lever, a thin elastic sheet of suitable metal, or a strip of leather, should be fastened to its top end, and should extend thence over the pulley P, and its extremity be furnished with a suitable hole for the upper hook on the rod *e*. This rod, by means of a hook on its lower end, after passing through a vertical hole through the bench,

forms a similar connection with a strap of metal or leather, *l*, which is fastened upon the periphery of the wheel H, and this wheel turns upon its bearing-pin *g'*, which passes through it and the upright B, as shown. The foot-piece *h* is made fast upon the side of the wheel H, very near its periphery. Now, when the foot is pressed upon the piece *h*, the band is drawn over the pulley P, and the lever D is drawn forward into the position shown by the dotted lines *v v*, and thus the rod *d* is impelled endwise, and the driver *f* likewise, and so does the work required.

In order that the lever, after having driven the nail or nails, shall automatically resume its vertical position, an elastic band, of any suitable material, is fastened to its top end, and is then passed over the pulley T, which turns on its axis *w*, and thence down on the outside of the frame, and a proper distance to furnish the required elasticity, and then fastened to a staple therein.

I claim as my invention—

1. The lever D, with its pivoted bearing *n*, the rod *d* and the driver *f*, connected therewith by a hinge-joint, the grooved plate *r*, guide *i*, and bench C, when combined and operated substantially in the manner and for the purpose set forth.

2. The frame A A A, the upright B and its pulleys P, the wheel H, and the foot-piece *h*, strap *l*, rod *e*, strap *j*, and pulley T and elastic band *m*, when combined substantially in the manner set forth and described.

SAML. W. PHELPS.

Witnesses:

BENJAMIN F. LEE,
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