

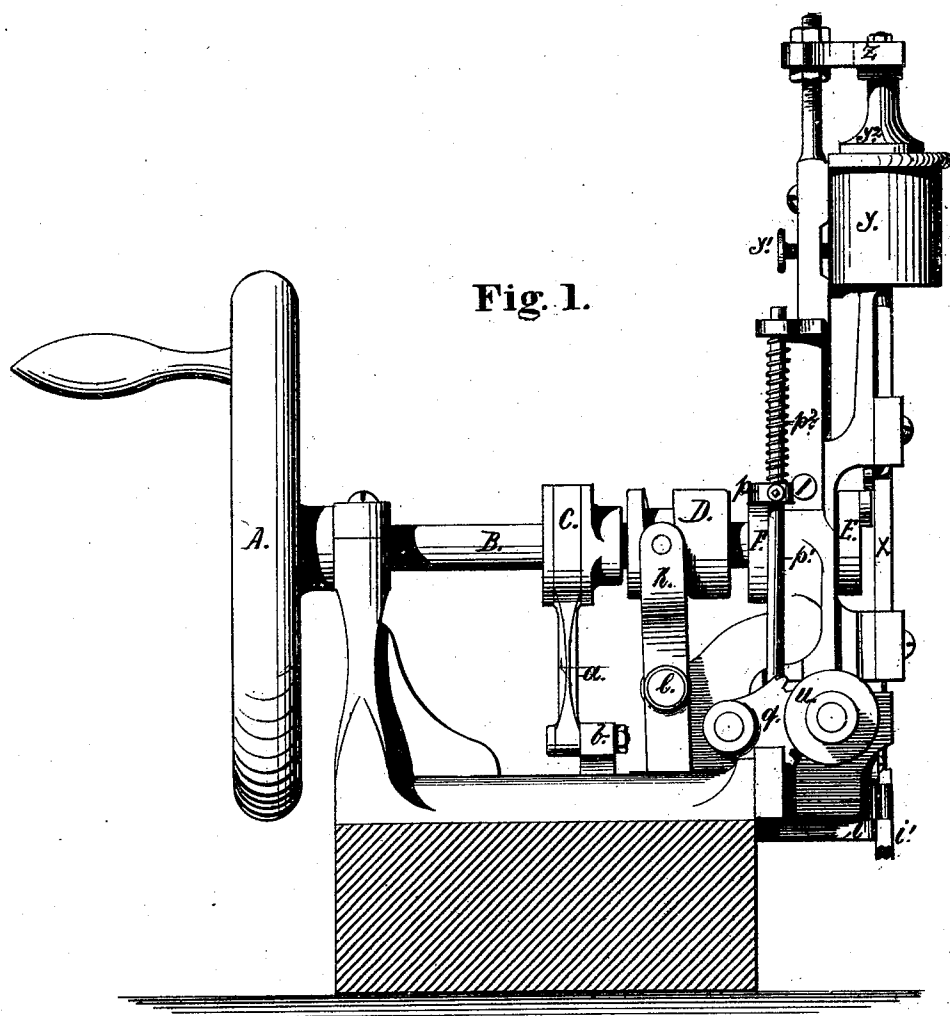
4 Sheets—Sheet 1.

W. G. BUDLONG.

BOOT AND SHOE NAILING-MACHINE.

No. 172,911.

Patented Feb. 1, 1876.



WITNESSES.

L. P. Langworthy

R. W. Eaton

INVENTOR.

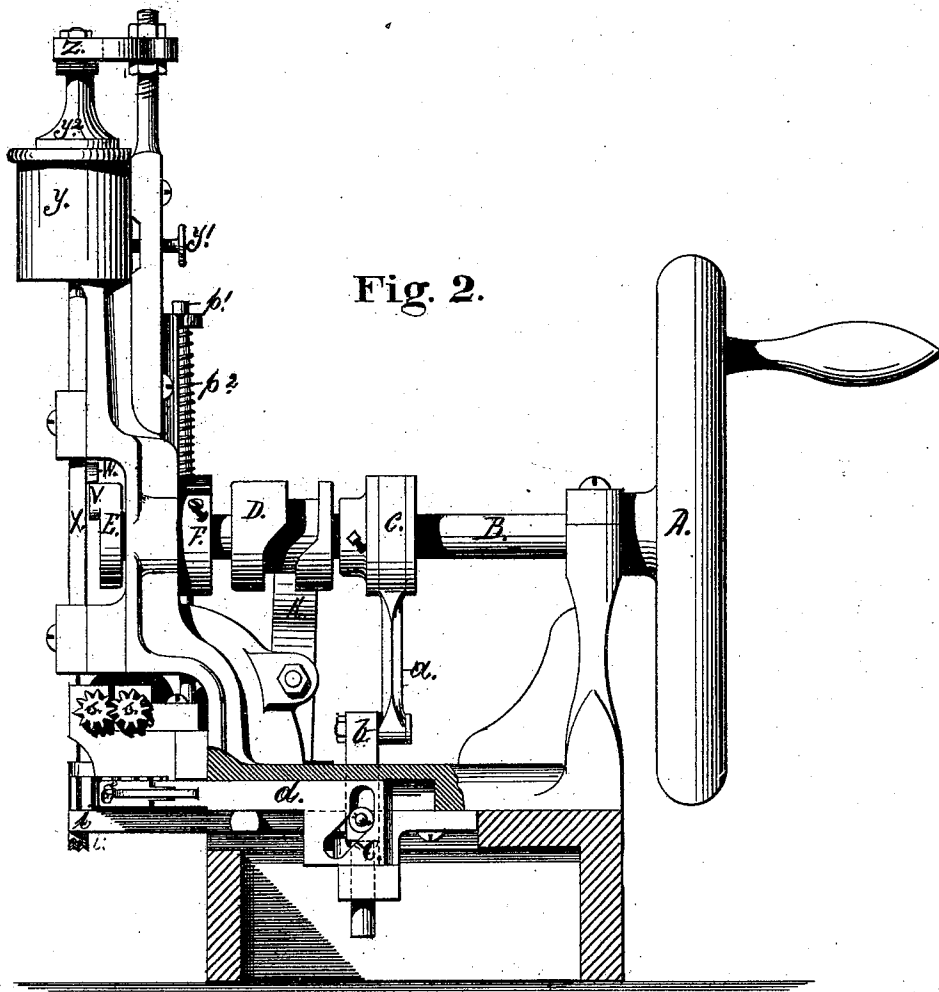
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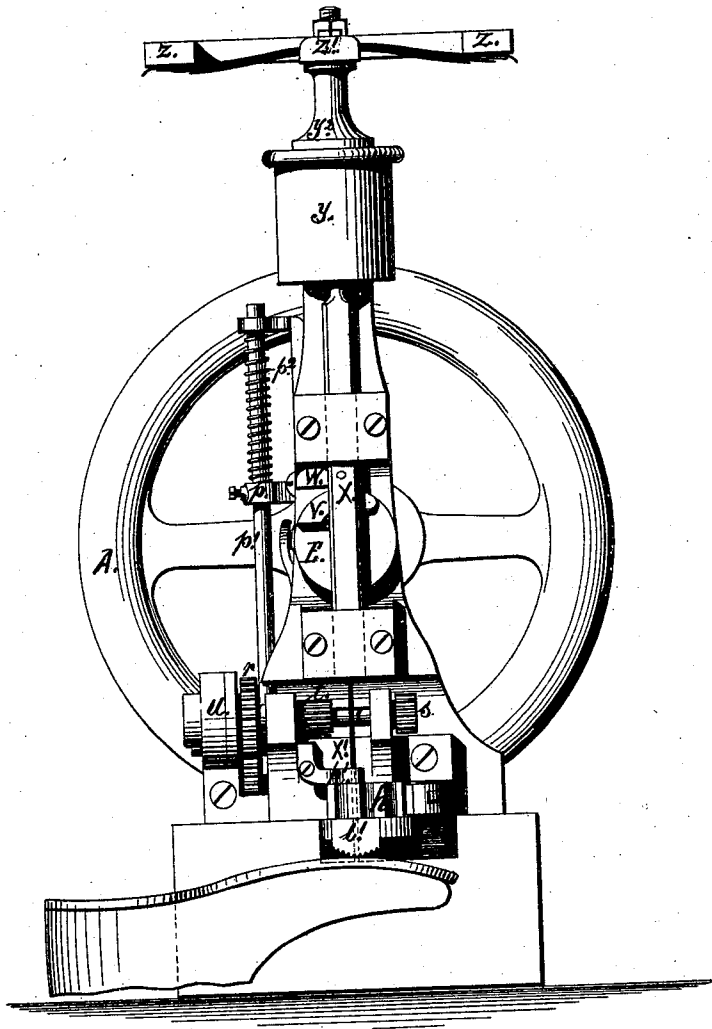
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Fig. 3.



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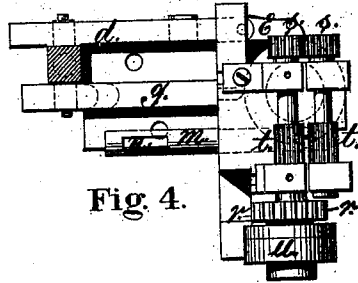


Fig. 4.

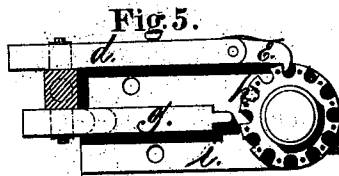


Fig. 5.

Fig. 7.

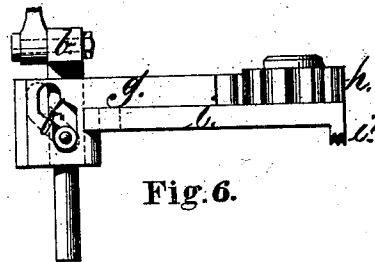
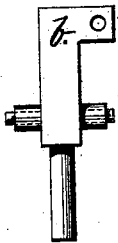


Fig. 6.

Fig. 8.

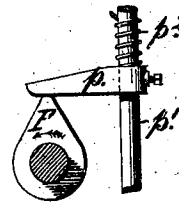


Fig. 9.

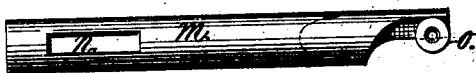


Fig. 10.

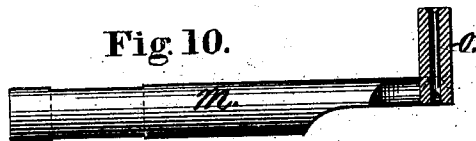


Fig. 11.

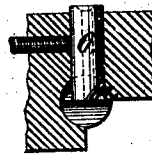


Fig. 12.

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UNITED STATES PATENT OFFICE.

WILLIAM G. BUDLONG, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF
ONE-HALF HIS RIGHT TO GEORGE S. DOW, OF SAME PLACE.

IMPROVEMENT IN BOOT AND SHOE NAILING MACHINERY.

Specification forming part of Letters Patent No. **172,911**, dated February 1, 1876; application filed
November 18, 1875.

To all whom it may concern:

Be it known that I, WILLIAM G. BUDLONG, of the city and county of Providence, State of Rhode Island, have invented new and useful Improvements in Boot and Shoe Pegging Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification.

Figure 1 is a side elevation of my improved boot and shoe pegging machine. Fig. 2 is an elevation of the opposite side of the same. The lower part of the standard is shown as broken away, to show some of the moving parts. Fig. 3 is a front view of the same. Fig. 4 is a top view of the corrugating-rolls and the gearing connected with the same. Fig. 5 is a top view of the mechanism for rotating and locking the carrier. Fig. 6 shows the locking-lever and cam-slot. Fig. 7 is a view of the reciprocating slide operating the locking and rotating device. Fig. 8 shows the cam F and a portion of the reciprocating bar *p*¹. Figs. 9 and 10 are different views of the peg-cutter. Fig. 11 is a view of the die. Fig. 12 shows an end view and side view of the peg or nail made on this machine.

Similar letters of reference indicate corresponding parts.

This invention has reference to that class of boot and shoe pegging machines in which metallic fastening is used; and consists, first, in a novel arrangement by which the wire is automatically fed to the cutting device of the machine; second, in the peculiar arrangement by which the wire is corrugated and prepared to form the fastening or peg; third, in the peculiar combination, with a die for holding the wire, of a reciprocating cutter for cutting a peculiar long point, straight on one side, to facilitate the clinching; fourth, in a peculiar device by which the separated peg is brought over the place where it is to be driven; fifth, in the combination of mechanism by which the peg is driven by a sudden blow with the above devices.

In the drawings, A is the hand-wheel, by which motion is imparted to the machine. In place of the hand-wheel a pulley may be used,

and the machine may be driven by power. B is the main driving-shaft, supported in journals secured to a suitable frame. C is an eccentric, secured to the shaft B, having an eccentric strap sliding on the same, and imparting motion to the rotating and locking device described hereafter. D is the grooved cam operating the cutter-bar. E is the revolving disk on the end of the shaft B. F is a cam, secured to the shaft B.

I will now describe the different functions performed by these devices at each revolution of the shaft B. Connected with the eccentric C is the arm *a*, extending to, and connected with, the reciprocating slide *b*. This slide reciprocates in a round hole or bearing at its lower end, and is provided with a pin extending from each side and sliding in curved cam-slots, the slot *c* being made into the arm *d*, to which the pawl *e* is connected, and by which the carrier is rotated, and the slot *f* in the arm *g*, which locks the carrier.

The cam-slots *c* and *f* and the eccentric C are so arranged that the functions of rotating and locking are performed at such times as allows all the parts to move in unison, and thus perform successively all the functions.

h is the revolving carrier turning on a stud and resting on the plate *i*. The carrier *h* is provided with chambers, in which the nail or peg is carried under the driver, and may have a rotative motion, as shown, or a reciprocating motion between the driver and the die, so as to carry each nail as soon as cut under the driver. In my practical experience I prefer the rotary carrier, as herein shown and described.

The cam D imparts reciprocating motion to the cutter through the lever K, secured to, and turning on, the pin or fulcrum *l*, the lower end entering the cutter *m* through the slot *n*. The rotating motion of the cam D is thus changed to the reciprocating motion of the cutter *m*. The groove in the cam is of such shape that the operation of cutting the nail or peg from the wire is performed at a certain time, to correspond with the movement of the other parts of the machine.

To the disk E, secured to the end of the shaft B, and rotating with the same, the pe-

culiar-shaped cam V is secured. The crescent shape of this cam, operating on the arm W, rapidly raises the driver-bar X, to which the arm is secured, and thus allows the carrier to rotate, the driver being at rest until the next nail arrives under the driver-pin, when the crescent-shaped cam V suddenly releases the driver. Secured to the lower end of the driver-bar X is the driver pin X', which enters the hole in the carrier and drives the nail home.

During the revolution of the carrier the end of the driver-pin X' rests in the guard h, to protect the same against injury.

To the upper end of the driver-bar X a piston, Y², is secured, which reciprocates in the dash-pot Y, in which an air-cushion is thus formed to retard the blow of the driver. This retarder is regulated, so as to give force to the blow of the driver, by the vent-valve Y¹. The dash-pot Y is firmly secured to a proper standard, which is carried above the dash-pot, and sustains the trust-arm Z, against which a spring is secured at Z' on the upper end of the piston Y², so that when the cam V has passed the arm W the driver is forced down, giving a sudden sharp blow to the nail or fastening, which, on coming in contact with the metallic last, is instantly clinched on the inside of the shoe.

The cam F, secured to the shaft B, raises the arm p, secured to the rod p¹, against the force of the spring p². The lower end of the rod p is secured to a pin on the segmental gear g, and imparts oscillating motion to the same, while the gear engages with the gear r, (shown in Fig. 4,) which motion is communicated by two gears, s s, to the two corrugating-rolls t t, between which the wire is fed.

U is a clutch, which holds the gear r and the corrugating-rolls from turning back when the rod p¹ descends and forces the segmental gear down, and so insures motion in one direction only at proper intervals, so as to deliver a certain length of wire to form a peg or nail at each revolution of the shaft D.

It will be observed that by the peculiar and novel combination of all these movements the functions of corrugating the wire, cutting the nail, rotating and locking the carrier, and driving the peg or nail are all performed at each revolution of the shaft D.

The air-chamber of the retarder, instead of being provided with one adjustable valve, may have two or more such valves at different heights, so that a cushion of more or less air may be retained in the chamber, and thus the distance as well as the force of the blow be regulated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent--

1. The combination, with the eccentric C,

duplex slotted cam-slide b, and carrier h, of the arm d, carrying an actuating-pawl, and the locking-arm g, substantially as and for the purpose described.

2. The combination, with a carrier, of an actuating-arm, d e, and a locking-arm, g, substantially as and for the purpose specified.

3. The combination, with the driver, of a crescent-shaped cam, V, the latter being secured or formed on the disk F, secured to the end of the driving-shaft, for raising the driver, and the atmospheric retarder, the piston of which is secured to the end of the driver, and serves to control the descent of the same, substantially as and for the purpose set forth.

4. In combination with the rod p¹, the segmental gear g and gear r, for operating the feed-rolls, substantially as described.

5. The combination, with a rotary carrier, of a reciprocating cutter, m, constructed to point one and square the other end of the nail, substantially as and for the purpose specified.

6. The combination, with the driver, of an atmospheric retarder, the piston of which is secured directly to the driver, to regulate its descent, and the adjustable bracket, against which the driver-spring is forced, substantially as and for the purpose set forth.

7. The combination of the guard h' with the carrier and driver, substantially as and for the purpose set forth.

8. The combination, with a rotary carrier, of corrugating-rolls for corrugating and feeding the wire, and the means, substantially as set forth, whereby an intermittent movement is imparted to the rolls, substantially as and for the purpose specified.

9. In a pegging-machine, the combination of the following elements: corrugating-rolls, for feeding and corrugating the wire; a cutter for giving the desired shape to the fastening device; a rotary carrier, to transport the fasteners to the desired point; a locking device, to secure the carrier while the nail is forced home, and a driver, regulated by an atmospheric retarder, for forcing the nail into the sole of the boot or shoe, substantially as and for the purpose specified.

10. The combination, with the driver and a cutting device, substantially as described, of the carrier, arranged to form part of the die for cutting the peg, nail, or fastening, and also carry the same to the proper place to be driven by the driver, substantially as described.

WILLIAM G. BUDLONG.

Witnesses:

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