

L. GODDU.
Nailing-Machine for Boots and Shoes.
No. 215,116. Patented May 6, 1879.

Fig:1.

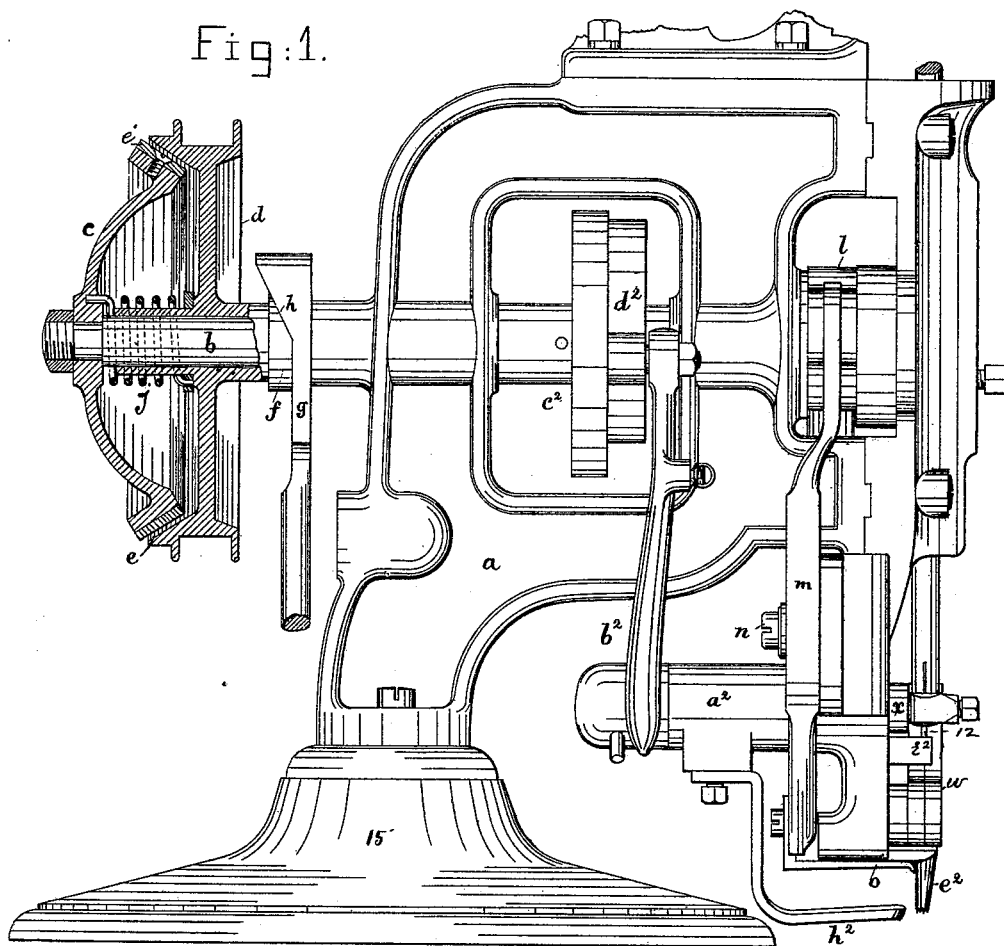


Fig:2.

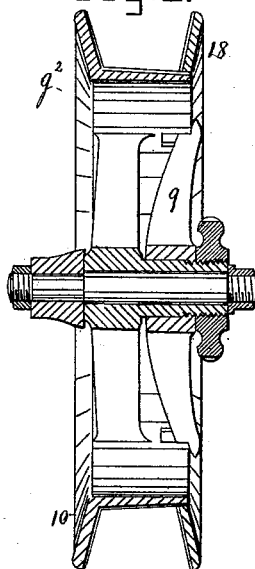


Fig. 5.

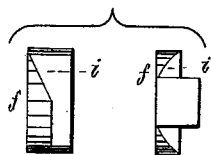
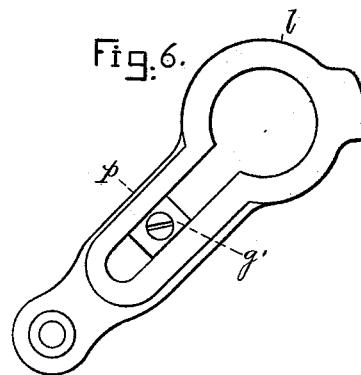


Fig. 6.



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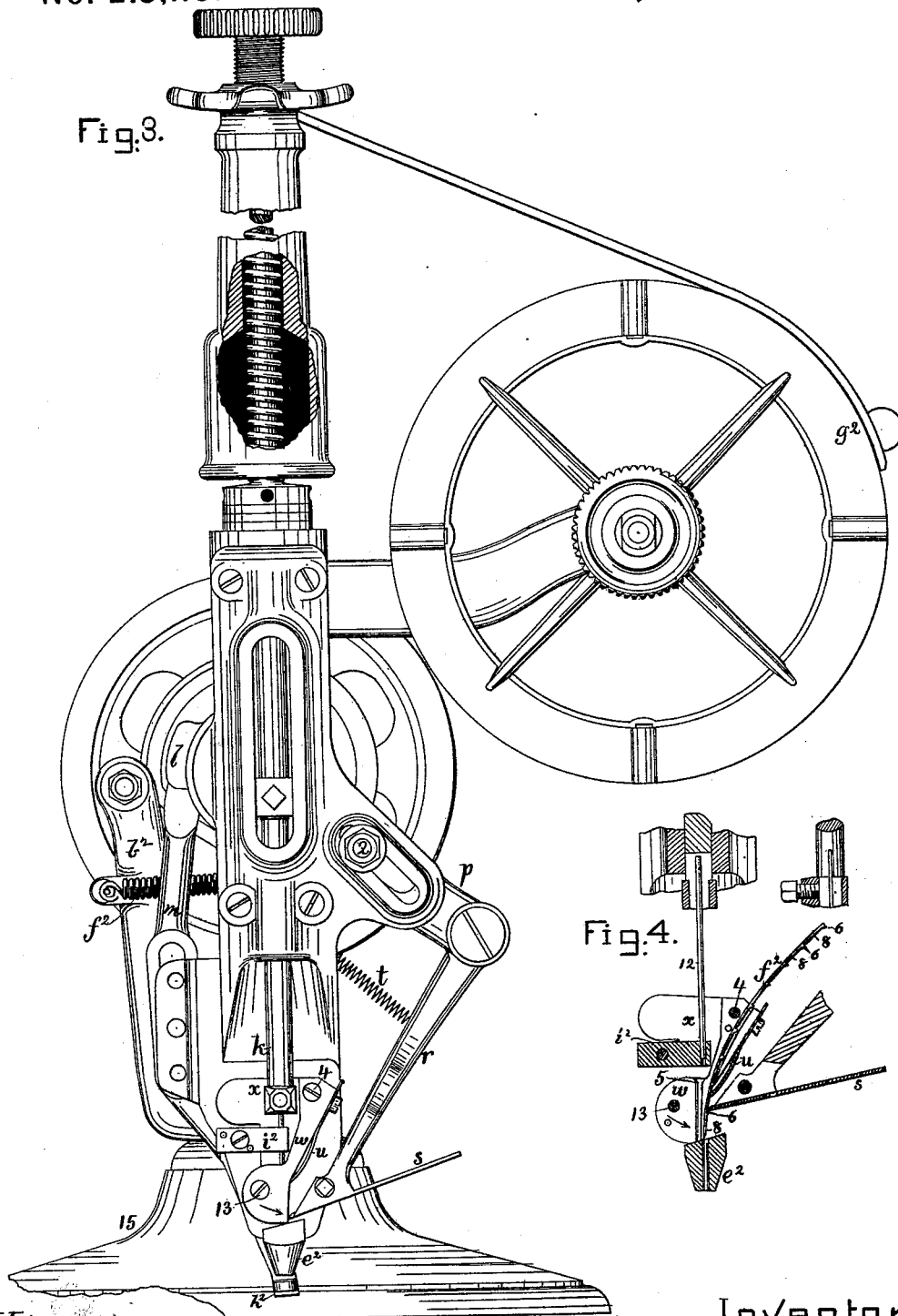
INVENTOR
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Witnesses.

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UNITED STATES PATENT OFFICE.

LOUIS GODDU, OF WINCHESTER, ASSIGNOR TO GORDON McKAY AND JAMES W. BROOKS, TRUSTEES OF McKAY METALLIC FASTENING ASSOCIATION, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN NAILING-MACHINES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **215,116**, dated May 6, 1879; application filed February 20, 1879.

To all whom it may concern:

Be it known that I, LOUIS GODDU, of Winchester, county of Middlesex, State of Massachusetts, have invented an Improvement in Tacking or Nailing Machines for Boot and Shoe Work, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to a machine to tack or nail the outsoles upon boots or shoes, and is an improvement upon the machine represented in United States Letters Patent No. 122,377, to which reference may be had.

In that machine the wire was fed by means of rollers, and consequently it was not adapted to feed headed nails, which is one of the objects of this invention, the said nails being connected head to point in a continuous wire supplied from a reel. In that machine the wire-guide was fixed, and the severed nail left in a transferrer was, by the movement of the transferrer, placed in the line of descent of the driver, to be driven from the transferrer through a rigid guide-nose into the stock of the shoe.

In this my present invention the wire-guide is pivoted so as to turn above the guide-nose, and is provided with a nail-driver passage, and the passage for the wire nails is open at its side.

The feeder, which also acts as a cutter, engages the head of a nail of the string of nails, and feeds the string of nails forward, so as to enter the nail next to be driven into the passage in the guide-nose, and as the head of the said nail arrives at the inclined upper surface of the feeder the latter also comes in contact with and rests upon the said inclined surface, and by a further continuance of its motion in an angular direction the nail is severed between the end of the feeder and the opposite top edge of the guide-nose. The nail having been severed, the guide is turned about its pivot sufficiently far to bring the nail-driver passage in it in line with the nail-driver and nose-passage, when the nail, by the descent of the driver, is driven from the nose.

In this plan it will be observed that each nail is engaged directly at its head, when it is

carried forward during the feeding action, and it is by the same device held at the head until it is severed, a suitable holder being employed to prevent back motion of the strip when the feeder is retracted.

Figure 1 represents, in side elevation, the upper part or head of a nailing-machine containing my improvements; Fig. 2, a section of the reel removed; Fig. 3, a front elevation thereof, the driver-tube being partially broken away. Fig. 4 is a detail of the guide for the string of nails, showing the feeder and the nose in section; and Fig. 5 is a separate view of the collar, to be hereinafter referred to.

The frame-work *a* of the machine is much as usual, and contains a driving-shaft, *b*, upon which is mounted the usual fast pulley *c* and the loose pulley *d*, having friction-surfaces *e* between them. Next to the hub of the pulley *d*, and between it and the frame *a*, is placed a loose collar, *f*, one end of which is reduced to receive upon it and to guide the wedge-slide *g*, it having a wedge-surface, *h*, to contact with a corresponding inclined surface, *i*, formed upon the said collar, so that as often as the wedge-slide is depressed by a suitable treadle it throws the two friction-faces of the pulleys *c* & *d* in operative engagement; but when the wedge-slide is raised the spring *j* separates the pulleys.

At its extreme forward end the shaft *b* has upon it a lifting projection or cam to raise the driver-rod *k*, which is thrown down by a spring, all as usual.

Just back of the driver-lifting cam is an eccentric, that enters the eccentric-strap *l*, which actuates the lever or arm *m*, adjustably pivoted at *n*, and provided at its lower end with the feeding-surface *o*, which acts upon the shoe, as usual. This same eccentric and strap are, in this instance of my invention, made available to operate the feeding arm or device which moves the string of nails forward. To do this the said strap *l* has projected from it a slotted arm, *p*; and a guide-block, *q*, loosely pivoted upon the adjustable pin or bolt 2, enters the slot in the said arm, as shown in Fig. 6, the adjustment of the said pin or bolt toward or from the eccentric enabling the arm

to have more or less motion, according to the length of the individual nails in the string of nails.

At the end of arm p is pivoted the arm r , which carries the blade s , for engaging the heads of the nails of the string of nails to feed them forward and for severing them. The said arm is held by a spring, t , so that as the arms p r are raised the blade s will always remain in close contact with the open-side face of the guide w , as shown at the right of Fig. 4, except at its extreme upward position, when it rides upon the detent-spring u , which prevents the string of nails moving backward and lifts the blade, to be in readiness at the commencement of its descent to engage the head of that nail immediately below it.

The guide w is connected at 4 with an arm, x , located at the end of a rock-shaft supported in bearings a^2 , and having at its rear end an arm, b^2 , which at top has a roll or stud, c^2 , which is acted upon by a cam, d^2 , to move the guideway in the direction of the arrow; (see Figs. 3 and 4,) to place the nail-driver passage 5 in line with the passage in the nose e^2 , and a spring, f^2 , moves it in the opposite direction to keep the roll against the cam. This cam and spring are so employed in preference to a grooved cam, in order that in case of obstruction by reason of fault with either a nail or driver the machine will not be broken.

It will be noticed that the upper surface of the nose e^2 is inclined.

The blade s , having engaged the head 6 of a nail, 8, composing the string of nails f^2 , (see Fig. 4,) which string of headed nails will proceed from a coil of such nails held upon a suitable reel, g^2 , will, acting directly against the said head, move it and the string downward, so as to place the end or lowermost nail directly into the passage of the nose.

When the head of the nail is pressed down below or at the level of the inclined surface of the nose the under surface of the blade strikes the said inclined surface, and further movement of the arm r causes the end of the blade to move across the passage in the guide-nose and sever from the string of nails the nail just placed therein. As the blade is being moved to sever the nail the guideway is slightly released, the cam d^2 being of proper shape for that purpose.

The left-hand side of the nose, at its inclined top, will be hardened or provided with a steel blade, to act as the cutting member opposed to the blade.

The guide h^2 for the edge of the sole is as usual.

The block i^2 acts as a guide for the driver. The removable side 18 of the reel carried by the arms 9 is made as a continuous annular flange, as is also the fixed side 10.

The guideway w is made in two parts, held together by the screw 13, as well as by the screw 4, which attaches it to arm x .

The reel will, in practice, be held by a suitable

friction apparatus, to permit it to be turned only for the proper distance.

In Fig. 3 I have shown the friction apparatus as composed of a leather strap, the strap bearing on the flanges or other part of the reel, and being properly weighted. Any other suitable friction apparatus may be employed. This head or upper part of the machine may be used to operate upon a shoe or boot held either by hand or upon a jack of any usual construction, the feed o moving the said shoe.

The head in this present drawing is shown as mounted upon a base, 15; but it will be understood that this head, in use, will be mounted upon the regular column.

In action the feeder will be moved upward in excess of the length of the nail, that it may, without adjustment, feed more than one length of nail. The detent-spring u also, by its pressure on a nail near the one next to be driven, acts to so hold the nail-string in the guideway that the heads will always project outward to be engaged by the blade. The blade is sharpened from its upper side only.

I claim—

1. The open-sided guide and a nose below it, combined with a blade to engage the head of one nail of a string of nails and place its body and head into the passage in the said nose, the said blade having a movement along the inclined surface of the said nose and across its passage to sever the nail, substantially as described.

2. The movable guideway w , provided with a nail-passages and a nail-driver passage, combined with the nail-driver and the stationary nose immediately below the end of the said guide, to operate substantially as described.

3. In a nailing-machine, the eccentric-strap and slotted arm p and fulcrum-pin, combined with the arm r and blade to engage the head of a nail, substantially as described.

4. The rock-shaft provided with arms b^2 x , combined with the cam d^2 , and spring f^2 , and guideway w , and nose e^2 , to operate substantially as described.

5. The nose provided with an inclined upper surface or top, combined with the movable blade, adapted to rest upon and move in the direction of the said incline, substantially as described.

6. In a nailing-machine, the combination, with the fixed and loose pulleys c d and main shaft b , of the collar provided with an inclined face and the wedge-bar and spring j , to stop the machine after driving each nail.

7. The guideway and blade s , combined with the spring u , to operate substantially as described.

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

LOUIS GODDU.

Witnesses:

G. W. GREGORY,
L. F. CONNOR.