L. GODDU.

Shoe Nailing and Tacking Machine.

No. 163,476. Patented May 18, 1875.

FIG. I.

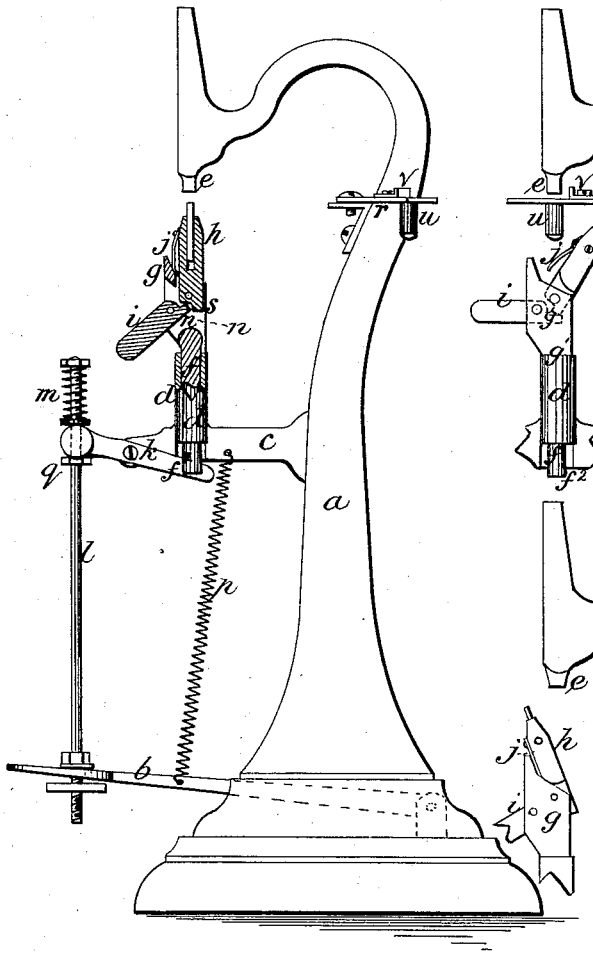


FIG. II.

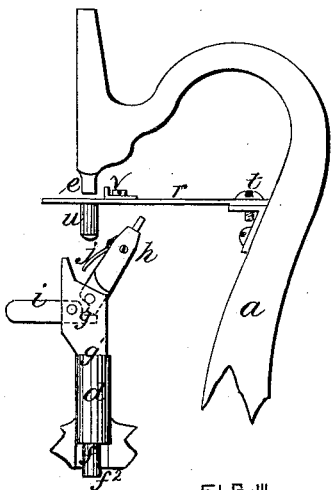
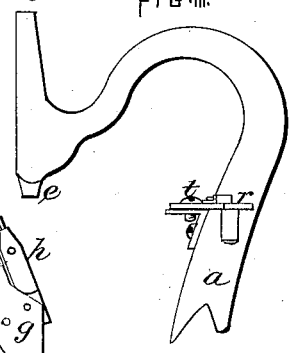


FIG. III.



WITNESSES.

F. B. Townsend.

J. A. Rutherford

INVENTOR.

Louis Goddu

By Johnson and Johnson

his Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS GODDU, OF WINCHESTER, ASSIGNOR TO AMERICAN CABLE-SCREW-WIRE COMPANY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHOE NAILING AND TACKING MACHINES.

Specification forming part of Letters Patent No. **163,476**, dated May 18, 1875; application filed April 23, 1875.

CASE C.

To all whom it may concern:

Be it known that I, LOUIS GODDU, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Shoe Nailing and Tacking Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention is designed primarily for use in tacking rands to the heels and soles of boots and shoes—that is to say, securing the beveled strips usually tacked by hand to form the foundation for the heel, and tacking the usual sole-rands, without using a last for the purpose. In practice the machine can be used for tacking what is known as the tap-sole to the outer sole, and the heel-seats of boots and shoes. This class of work has hitherto been done by hand, which is necessarily slow, and my machine being specially adapted for such preliminary work, the stock can be prepared with much greater facility, in less time, and with less labor and expense, which, in the manufacture of boots and shoes, enter largely as items of great advantage. In the organization of such a machine two kinds of supports are required for the different classes of work, and these independent supports have the capacity for being made interchangeable the one with the other, so that when one is in position for use the other is turned out of the way. A distinguishing feature of these two independent working devices consists in their capacity for adjustment, so as not to interfere with each other in bringing each to the same working point, and the adjustment of one for this purpose is made by a horizontal movement, while that of the other is made by a vertical movement. Then, again, one of these working devices is new, in its function as a thin pivoted table-bearer for the sole, the point of which, being provided with an inverted anvil, gives solidity to the thin bearer to receive the blow of the driver, and thereby prevent any undue yielding of the bearer, and especially to hold the work steady and firm to make the clinch of the nail-point.

In the accompanying drawings, Figure 1 represents a view of so much of a tacking-machine as is necessary to illustrate the application of my tacking devices to the standard which carries the usual feeding, cutting, and driving mechanism, and in which one of the working devices is shown as being turned out of position for use; Fig. 2, a similar view, showing the reversed positions of the working devices from that represented in Fig. 1, with respect to the nose of the machine; and Fig. 3, a view showing the pivoted work-support borne forward in front of the nose, to render it easy to apply the work.

The operating mechanism of the machine, so far as relates to what is known as a nailing-machine, is substantially such as that shown and described in my patent of October 24, 1871, No. 120,155, such mechanism being carried by the goose-neck standard, and embracing a guide-nose, a nail-driver and carrier for the nail, a cutter and a nail-feed, and the devices which unite them for joint action in the machine. Such elements being well known to those skilled in the use of such machines, their construction and operation need not be described herein.

In this machine the usual standard *a* carries the devices which form the subject-matter of this patent, and these consist, first, of a device connected with and operated by the treadle *b*, in a peculiar manner and for a specific purpose, and a device pivoted to the standard and brought into working position by the hand of the operator, and both devices working with respect to the nail-presenting nose.

A horizontal bracket, *c*, fixed to the standard, carries a vertical sleeve, *d*, at a distance from said standard to bring it in a vertical line with the nose *e*, and within this sleeve *d* a stem, *f*, is seated, so as to have a certain amount of vertical movement therein. This stem carries a slotted head, *g*, within the up-

per open end of which is pivoted a pin work-support, *h*, in such a manner as to allow it to maintain a vertical position directly beneath the nose, to hold the work for the action of the driver. This pin-support *h* is for holding the shoe in position while the heel portion is being nailed, and to do which I combine with it a locking-arm, *i*, pivoted within a slot in the front portion of said head *g*, and having its inner end made with a recessed shoulder, *n*, which co-operates with a similar recessed shoulder, *s*, formed in the lower end of the pin-support *h*, so that the two will interlock, and thereby maintain such support in its fixed position. This work-support *h* is capable of both a frontward and rearward adjustment—the first to bring it in position in advance of and from beneath the nose, in order to apply the work, as shown in Fig. 3, and the second to carry it back out of the way, when the hand device is brought into position beneath the nose, as shown in Fig. 2. The forward movement of the support is made against the action of a spring, *j*, attached to the front side of the pin-support, and bearing against the slotted head, so that upon the release of such support from its forward pressure it automatically resumes its vertical position for work. The locking-arm extends forward a short distance, and by its weight, in connection with the interlocking action of its shouldered end *n*, serves to hold the support firmly in its working position, while in the rearward adjustment of the pin-support to carry it out of the way, as shown in Fig. 2, its inclination holds it in such position by the shouldered end of the pivoted arm extending beneath and resting against the end of the pivoted pin-support, as shown by dotted lines in Fig. 2.

The vertical movement of the pin-support is to bring the work close up to the nose to receive the action of the driver, and this action is effected by the following devices: The stem *d* of the pin-support projects below the sleeve, and rests, by its forked end f^2, upon the inner end of an arm, *k*, pivoted to the front end of the carrying-bracket *c* in advance of the sleeve.

A vertical rod, *l*, connects the front end of the pivoted arm *k* with the front end of the treadle. This rod *l* passes through an opening in the end of the pivoted arm *k*, and, extending above it, is provided with a spiral spring, *m*, the object of which is to cushion the action of the treadle in effecting the upward thrust of the pin-support against the nose.

The normal position of the pin-support *h* is its maximum descent upon the sleeve, a shoulder, *g'*, upon the pin-support determining such descent, and is caused by a spiral spring, *p*, connecting the treadle near its pivot in the base of the standard with the sleeve-bracket *c* just in rear of such sleeve.

The cushioned rod *l* has a free movement within its guide in the pivoted arm *k*, and a stop-nut, *q*, on said rod acts upon the arm *k* in the ascent of the treadle, and thereby lowers the inner end of the pivoted arm, to leave the pin-support free to descend by its own weight, either to its normal position, to any intermediate height desired by the operator, or the thickness of the work to be operated upon.

This is highly important, as it enables the operator to adjust the height of the pin-support to suit any inequalities in the thickness of the stock to be tacked. It will be seen that by this construction the treadle movement is not only cushioned with respect to the pin-support, but the latter is cushioned with regard to the driver by compensating for the difference in the thickness of the material to be tacked.

As stated, the devices just described are operated by the treadle, and in unison with its movements, for effecting a particular kind of work, relating mostly to what is known as heel-work. When, however, it is desired to change the class of work, and to tack rands or other layers of material together, the pin-support is unlocked from its vertical position, and turned back out of the way, as stated, and an elastic bearer, *r*, is brought into position beneath the nose by turning it upon its pivot-connection *t* with the standard. This bearer consists of a thin steel tempered plate, of a width just sufficient to receive and hold the sole in a flat position at its extreme end, which will be just in advance of the nose, and gives great facility for moving the work under the driver-nose. It is sufficiently rigid to resist the blow of the driver, while affording capacity for varying thicknesses of the work, always pressing the work firm up against the nose, while giving ample play beneath the nose to pass the work under it during the operation of tacking.

To give solidity to the end of the thin bearer, I provide it with an inverted anvil, *u*, just in line with the driver, the action of which anvil is essentially the same as though it received the blow directly; but its inverted position gives an unobstructed flat surface upon which to apply and manipulate the work. An adjustable guide, *v*, is secured to the upper face of the bearer, by which the nails are driven at a uniform distance from the edge of the work. The bearer extends within the space usually formed by the goose-neck, and it may be turned to either side to suit the convenience of the operator. In this way I have organized, in a single machine, devices which not only accomplish work hitherto done by hand, but work which would ordinarily require separate and distinct operations by separate and distinct machines.

The following is claimed as new in a boot and shoe tacker, namely:

1. The standard of a nailing or tacking machine, provided with and sustaining the laterally-adjustable elastic plate-bearer *r* and the pivoted work-support *h*, whereby either may be moved into or out of action with the driver-nose *e*, according to the kind of work to be done, the device *h* being adapted rigidly

for heel-work, and the device *r* for sole-work in tacking on rands and sole-taps, substantially as herein set forth.

2. The combination, with the driver-nose of a tacking-machine, of the pivoted support *h*, provided with the shoulder *s*, and the pivoted handle-arm *i*, provided with the shoulder *n*, whereby the said arm serves as a handle by which to lock the work-support in or out of working position, as herein set forth.

3. The combination, with the driver-nose of a tacking-machine and a vertically-presenting work-support, *h*, of a pivoted locking-arm, *i*, and the operating-treadle *b*, whereby the work-support is maintained in a working position, substantially as herein set forth.

4. The combination, with the work-support *h*, of the slotted stem-carrier *g*, the pivoted handle-arm *i*, fixed sleeve *d*, and the treadle *b*, whereby the sleeve is carried by the standard, and the work-support by the treadle, as set forth.

5. The combination, in a tacking-machine having a vertically work-presenting pivoted support, *h*, of a cushioned connection for such support with the treadle, consisting of the pivoted arm *k*, and the cushioned connecting-rod *l m*, having a free connection with the pivoted arm, whereby the work-support has a cushioned action with regard to the nose-driver, and also an automatic adjustment with the nose independent of the action of the treadle, essentially as herein described.

6. The combination, with the pivoted work-support *h*, the slotted stem-head *g*, which carries it, and the arm *i*, which locks it in position, of a spring, *j*, acting against the slotted head *g*, whereby to automatically carry the support in true position with regard to the nose-driver, as herein described.

7. The combination, with the driver-nose of a tacking-machine, of a swinging flexible plate-bearer, *r*, pivoted to the standard for lateral adjustment in relation to the driver, essentially as herein described.

8. The combination, with a pivoted flexible plate-bearer, *r*, for supporting and presenting upon its flat surface the work for the action of the driver-nose, with an inverted anvil, *u*, carried by said bearer in the line of the driver, as and for the purpose stated.

In testimony that I claim the foregoing as my own I have affixed my signature in presence of two witnesses.

LOUIS GODDU.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.