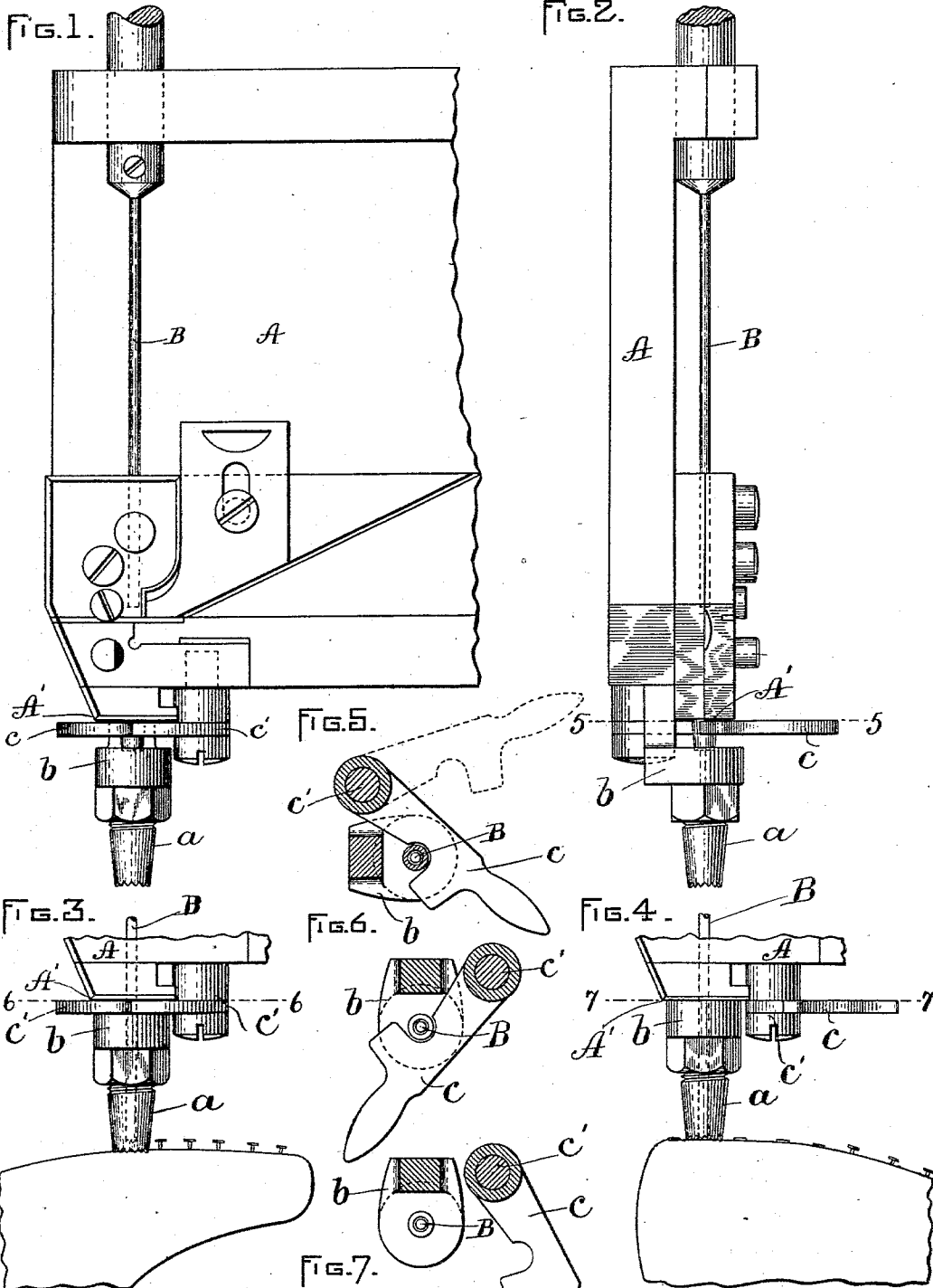


(No Model.)

H. E. STEVENS.
TACK DRIVING MACHINE.

No. 561,833.

Patented June 9, 1896.



WITNESSES:
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UNITED STATES PATENT OFFICE.

HENRY E. STEVENS, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE BOSTON LASTING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

TACK-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,833, dated June 9, 1896.

Application filed April 1, 1895. Serial No. 544,007. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. STEVENS, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Tack-Driving Machines, of which the following is a specification.

This invention relates to tack-delivering devices for use in machines adapted to drive tacks into boot or shoe uppers and soles in the operation of lasting, the machine having a tack-delivering nozzle which receives the tacks one at a time and presents them to a reciprocating driver which is forced into the nozzle and drives the tack therefrom into the upper and sole of a shoe mounted on a last and presented to the lower end of the nozzle. In a machine of this class the depth to which the tacks are driven is determined by the relative positions of the work-supporting end of the nozzle and the end of the driver when the latter is at the extreme of its downward movement. It is often desirable to vary the depth of penetration of the tack, or, in other words, the projection of the head of the tack above the outer surface of the upper, some kinds of work requiring a greater projection of the tack-head than others. In some kinds of work it is desirable to drive the tacks more deeply at the heel portion than elsewhere, in order that the heel-tacks may remain in place in the completed boot or shoe after the lasting operation, the other tacks being pulled out.

My invention has for its object to enable the tack-delivering nozzle to be readily adjusted, so that the operator may readily regulate the depth of penetration of the tack at any time during the operation of lasting, and thus cause some of the tacks to be partially and others wholly driven. To this end the invention consists in a tack-driving machine comprising a supporting-frame, a reciprocating driver, a yieldingly-mounted tack-delivering nozzle movable on the supporting-frame in the direction of movement of the driver, and two interchangeable stops located at different heights, each adapted to positively arrest the upward movement of the nozzle, so that the tacks may be either driven home, their heads bearing on the face of the work,

or only partially driven, their heads standing out from the work.

The invention also consists in certain incidental features, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a portion of a lasting-machine provided with my improvement. Fig. 2 is an end view of the same. Fig. 3 is a view similar to the lower portion of Fig. 1, with the mechanism arranged to drive the tack so as to leave the head projecting. Fig. 4 is a view similar to Fig. 3, with the mechanism arranged to drive the tack home, as in the heel portion. Fig. 5 is a section on line 5 5 of Fig. 2, looking downwardly. Fig. 6 is a section on line 6 6, Fig. 3. Fig. 7 is a section on line 7 7, Fig. 4.

In the drawings, A represents a portion of the frame of a tack-driving lasting-machine, and B represents the reciprocating driver which drives the tacks into the upper and inner sole of a boot or shoe.

The machine may be of any suitable construction and is provided with suitable means for supplying the tacks to the driver.

a represents the throat or nozzle, through which the tacks are driven by the driver, as usual, the lower end of said nozzle constituting a rest against which the work is held by the operator.

It will be understood that the machine is or may be provided with suitable mechanism for supplying tacks to the throat *a*, the tacks being supplied automatically and in such manner that at each descent of the driver a tack is delivered to the nozzle in time to be driven therefrom by the driver. The nozzle *a* is affixed to a holder *b*, which is formed as a slide fitted to move vertically in guides on the frame of the machine, so that the nozzle is adapted to move to a limited extent in the direction of movement of the driver, the upward movement of the nozzle being limited by a fixed stop or shoulder *A'* on the frame of the machine.

In machines now in common use the let-off mechanism which supplies tacks to the nozzle is operated by the upward movement of the

nozzle, the latter being normally depressed below the shoulder A', so that it is free to be moved upwardly by the upward pressure of the work against it, so that the operator can
 5 cause the insertion of a tack into the work at any desired point by forcing the work upwardly against the nozzle, the latter being thus forced upwardly until it meets the shoulder A' and in its upward movement actuating
 10 mechanism that supplies a tack to the throat. All this is well known and forms no part of my invention.

Heretofore the upward movement of the nozzle has been limited only by the fixed stop
 15 A'. Hence the work has been held at an unvarying point with relation to the lower end of the driver when the latter is depressed, the tacks being therefore driven uniformly with no provision for holding the nozzle or work-
 20 rest at different heights and thus varying the depth of insertion of the tacks.

In carrying out my present invention I provide two interchangeable stops located at different heights relatively to the path of the
 25 driver and each adapted to positively arrest the upward movement of the nozzle, so that the operator can cause a varying depth of insertion of the tacks. In the embodiment of my invention here shown one of said stops is
 30 the fixed shoulder A', while the other is an arm c, pivoted at c' to the frame of the machine and adapted to swing under the shoulder A' and thus become interposed between said shoulder and the nozzle, said arm being
 35 movable into and out of the path in which the nozzle moves. When the movable stop is thus interposed, it shortens the upward movement of the nozzle, so that the latter supports the work below the lower end of the driver,
 40 the tacks being therefore left with their heads

projecting from the work, as shown in Fig. 3. When the movable stop is displaced, as shown by dotted lines in Fig. 5, it permits the nozzle to move upwardly to the fixed stop A', thus causing the tacks to be driven home, as shown
 45 in Fig. 4.

I claim—

1. A tack-driving machine comprising a supporting-frame, a reciprocating driver, a tack-delivering nozzle movable on the sup-
 50 porting-frame in the direction of movement of the driver, and a stop device located above the delivering end of the nozzle and movable into and out of the path in which the nozzle
 55 moves.

2. In a tack-driving machine, the combination with a reciprocating driver, of a work-rest composed of a tack-delivering nozzle which is movable in the direction of move-
 60 ment of the driver, a fixed shoulder or support arranged to hold the nozzle in one position, and a movable support adapted to be interposed between the nozzle and the fixed
 65 support.

3. In a tack-driving machine, the combination of a reciprocating driver, a slide movable
 70 on the frame of the machine in the direction of movement of the driver, a tack-guiding throat affixed to said slide, and a stop or support pivoted to the supporting-frame and
 75 adapted to limit the upward movement of the slide and nozzle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 26th day of
 75 March, A. D. 1895.

HENRY E. STEVENS.

Witnesses:

ERNEST D. LIBBEY,
 WINFIELD S. WALKER.