(No Model.)

C. E. STEWART.

TACK DELIVERING NOZZLE.

No. 561,832. Patented June 9, 1896.

FIG. 1.

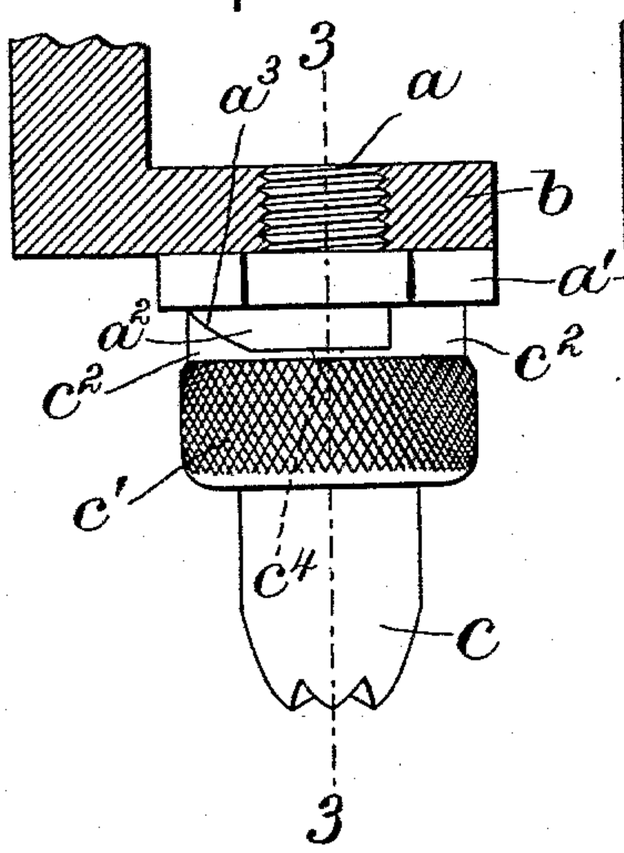


FIG. 2.

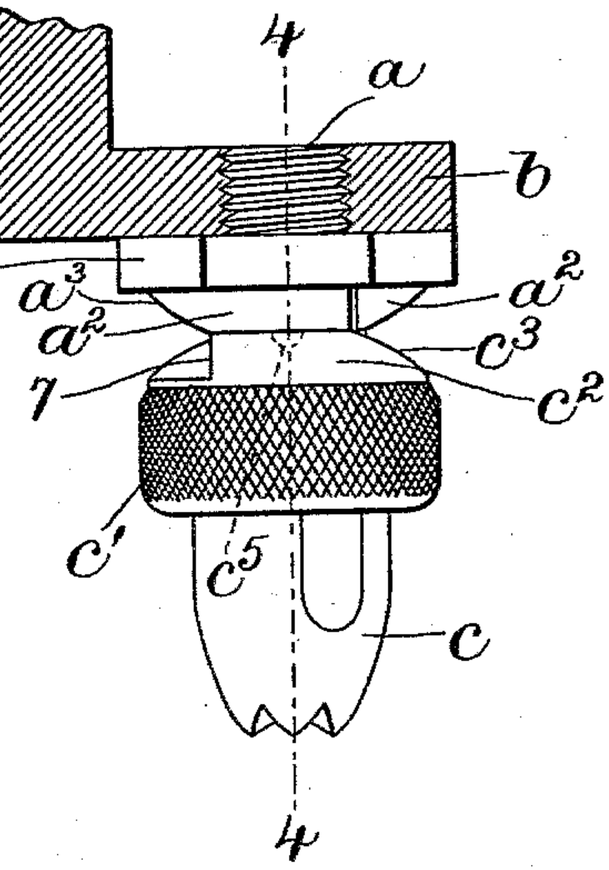


FIG. 3.

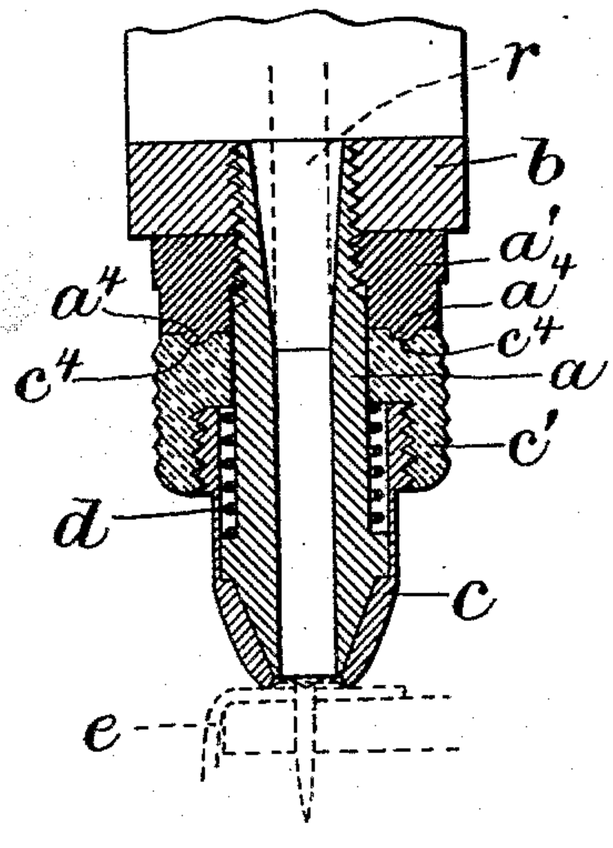
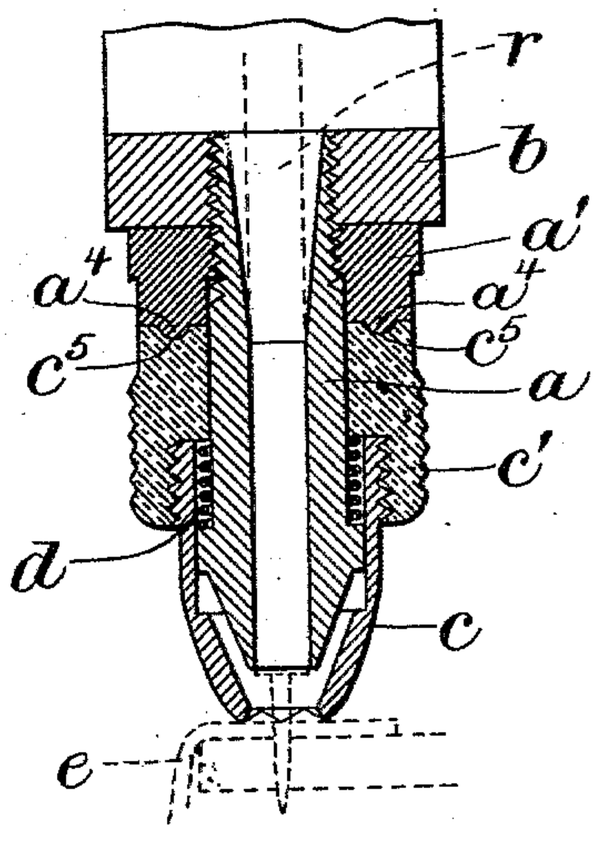


FIG. 4.



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UNITED STATES PATENT OFFICE.

CHARLES E. STEWART, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE BOSTON LASTING MACHINE COMPANY, OF MAINE.

TACK-DELIVERING NOZZLE.

SPECIFICATION forming part of Letters Patent No. 561,832, dated June 9, 1896.

Application filed March 21, 1895. Serial No. 542,606. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. STEWART, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tack-Delivering Nozzles, 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 holds them for the action of a reciprocating driver which is forced up 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.

It is the object of my invention to provide means whereby the operator may quickly vary the length of the tack-delivering nozzle, so that it will vary the depth of penetration of the tacks, in order that the desired variation in the projection of the tack-heads may be secured; and to this end the invention consists in a telescopic tack-delivering nozzle comprising two members or sections, one of which is movable upon the other to lengthen and shorten the nozzle, and means for supporting the movable member in the different positions to which it may be adjusted.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a tack-delivering device embodying my invention, the adjustable member being shown in its raised position to cause the maximum depth of penetration of the tack. Fig. 2 represents a similar view showing the adjustable member in its depressed position to cause the minimum penetration of the tack. Fig. 3 represents a section on line 3 3 of Fig. 1. Fig. 4 represents a section on line 4 4 of Fig. 2.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a tack-delivering nozzle, which is adapted to be secured to a suitable part of a lasting or tack-driving machine, the said nozzle being here shown as screw-threaded at its upper portion and screwed into a socket in an arm or holder *b*, which constitutes a part of the machine.

As my invention relates wholly to the tack-delivering device I deem it unnecessary to describe the driving mechanism and other parts of the machine, it being sufficient to say that the nozzle is supplied with tacks one at a time and supported so that the reciprocating driver *r* alternately enters and is withdrawn from the nozzle.

The nozzle is of telescopic construction, and comprises the body member *a* and an adjustable member or foot *c*, which is movable lengthwise upon the member *a* to lengthen the nozzle, as shown in Fig. 4, and shorten the nozzle, as shown in Fig. 3. Means are provided whereby the movable member or foot may be supported in either of the positions shown, said means being preferably as next described.

To the member *a* is affixed a cam-shaped collar a', having two projections a^2, each having an inclined face a^3, said collar being preferably formed as a nut screwed upon the threaded part of the member *a* and constituting a stop against which the adjustable member or foot *c* is yieldingly held by a spring *d*, interposed between shoulders or bearings formed on the said members. The foot *c* is provided with two projections c^2, each having an inclined face c^3, said projections being preferably formed on an externally-milled and internally-threaded collar c', screwed upon the upper portion of the foot *c*. When

the foot is turned to the position shown in Figs. 1 and 3, the projections a^2 and c^2 interlock and coöperate with the spring d in securing the foot in a raised position, permitting the upper e to be held so that the driver r will drive the tacks to the maximum depth. When the foot is turned to the position shown in Figs. 2 and 4, the inclined faces a^3 c^3 cause a depression of the foot, so that the upper e is correspondingly depressed and the heads of the tacks are left projecting.

I prefer to provide one of the projections a^3 with a downwardly-projecting dowel a^4, which interlocks with a cavity c^4, as shown in Fig. 3, when the foot is in its raised position, and with a cavity c^5, as shown in Fig. 4, when the foot is in its depressed position, the foot being thus prevented from turning accidentally from one position to the other.

It will be seen that when the operator desires to change the position of the foot he first slightly depresses it to separate the dowel a^4 from the corresponding cavity and then turns the foot until its position is changed by the conjoint action of the spring and projections.

I do not limit myself to the described devices for holding the adjustable member or foot in the different positions to which it may be adjusted and may employ any other suitable means for securing the desired result.

The cam-shaped collar a' may be considered a bearing of varying height, which determines the height of the foot c by the rotary adjustment of the latter, the rotation of the foot quickly changing its height.

I claim—

1. A tack-delivering nozzle comprising telescopic members, one rotatable and movable longitudinally upon the other, and a bearing of varying height whereby said movable member is moved longitudinally when rotated.

2. A tack-delivering nozzle having a cam-shaped collar, an adjustable foot or extension, and a spring whereby said foot is yieldingly pressed against said collar.

3. A tack-delivering nozzle having a cam-shaped collar, an adjustable foot or extension having cam-shaped projections, and a spring whereby the projections of the foot are pressed yieldingly against the said collar.

4. A tack-delivering nozzle having a foot or extension which is rotatable and movable longitudinally on the nozzle, interlocking projections on the nozzle and foot, and a spring whereby said projections are yieldingly pressed together, said projections having cams or inclines which cause a longitudinal movement of the foot when the latter is partially rotated on the nozzle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 1st day of January, A. D. 1895.

CHARLES E. STEWART.

Witnesses:

C. F. BROWN,

A. D. HARRISON.