L. GODDU.

SOLE-FASTENINGS FOR BOOTS AND SHOES.

No. 190,575. Patented May 8, 1877.

Fig. 1.

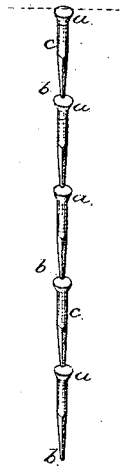


Fig. 2.

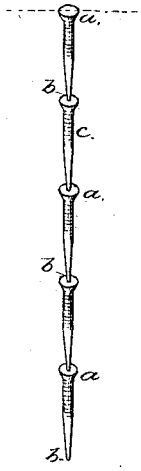


Fig. 3.

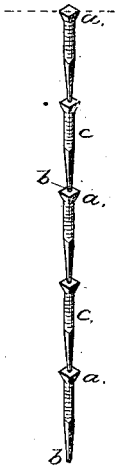


Fig. 6.

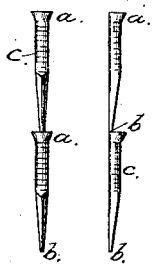


Fig. 4.

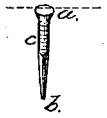
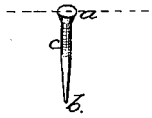


Fig. 5.



Witnesses:
Floyd Norris.
Wm. A. Wagner.

Louis Goddu
Inventor:
by Johnson & Johnson
Attys

UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN SOLE-FASTENINGS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **190,575**, dated May 8, 1877; application filed April 11, 1877.

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 Sole-Fastenings for Boots and Shoes, which improvements are fully set forth in the following specification, and accompanying drawings.

The nails or tacks are formed upon wire or rods with their heads and points connected in continuous lengths to be coiled and used in machines for feeding, cutting, and driving the nails in uniting the soles to the uppers in the manufacture of boots and shoes.

In continuous wire nails heretofore made, having heads and points, the heads have been no larger than the diameter of the wire before the nail was formed on it, and the formation of the connected heads and points was by roll-dies.

In the present plan the heads and points of the connected nails or tacks are pressed and formed by dies operating in such manner that the stock which is to form the head is taken from the wire and forced into the head, which thereby projects beyond the body of the nail on one or both sides and makes the taper point.

By this method a projecting head of any shape is formed upon wire of small diameter, and the taper forming the point may be of any desired form. The important matter is to make the head project from the body of the wire and from the stock, which is taken to make the taper point, and which, in fact, is surplus stock displaced from the side of the wire and folded into the head. In this way the nail is rendered softer, and is better every way than when rolled.

The body or shank of the nail between the head and the taper remains about the same diameter as before forming the nails on it, the heads and taper points being made by dies which open and close as the blank wire is fed between them. Part of the surplus stock can be cut out and thrown away, but it is preferable to lose no stock. I have made such continuous nails both ways.

Referring to the drawings, Figure 1 represents a portion of such wire of nails or tacks, the projecting heads and the taper points being formed on one side of the wire; Fig. 2, a similar view, the projecting heads and the taper points being formed on both sides of the wire; Fig. 3, a similar view, showing square heads and triangular taper points. Figs. 4 and 5 are forms of nails cut from the continuous lengths of wire; and Fig. 6 the wire shown in Fig. 1 in different views and enlarged.

The wire is fed through dies which operate with an opening and closing movement, and press and form into continuously connected lengths nails or tacks having enlarged or projecting heads *a* and taper points *b* joining in the length of the wire.

The spaces between the heads and points form the shanks *c* of the distinct nails or tacks, the point of one nail joining the head of another. The taper necessary to form the point of each nail is not made by reducing the diameter of the wire by roll-dies, but by forcing sufficient metal from its normal position into dies to form an enlarged head projecting beyond the body of the wire on one or more sides without severing the tack from its main length, and thereby determine the length of the nails or tacks. In Figs. 1 and 6 the heads are shown round and projecting from the side of the wire, having the taper intervals which form the points of the connected nails, and the forming of such taper portions of each nail supplies the metal for the large head of each nail, outside of the diameter of the wire, leaving a slender connection at the junction of head and point for the separation of the nails for use.

The heads and tapers may be formed on both sides of the wire, and of any desired form.

In Fig. 3 square heads and triangular taper points are shown; but the heads may be made oval or diamond shape, and the point may be of conical taper. The method of obtaining the head renders it easy to give it any form and a large lateral projection on a comparatively slender wire, which answers as well as larger wire and effects considerable saving in cost.

The body of the wire may be corrugated or not, as deemed best. The shape of the head

and point and the extent and projection of the heads beyond the diameter of the wire are governed by the construction of the dies.

In forming the heads and points by dies in the way described, the metal is left in a soft condition, and is better for clinching, gives greater holding power, and drives straight.

A continuous wire of headed and pointed tacks thus formed is well adapted for shoe-tacking machines, the tacks being severed either before or after being driven into the sole, and the inserting-machine governs the feed of the wire, so as to make the separation of each tack at the junction of head and point.

The heads may serve, in connction with the feed device, as the means for making and determining the feed, and the feed device may also serve as the cutting device, leaving the severed tack in position to be driven by the driving mechanism.

The article is furnished the trade in coils of suitable size, and makes a new manufacture of wire tacks in connected lengths with large heads projecting beyond the diameter of the wire. This is the important feature of the invention, as the size of the wire is not required to be large enough to form the heads by the diameter of such wire under the plan hitherto practiced by the elongating action of roll-dies.

The face of the taper does not extend the full diameter of the wire at the junction with the head, and the taper is about half the length of the nail.

I claim—

1. A continuous length of distinct nails or tacks, each having a head formed of stock taken from the preceding nail and projecting beyond the diameter of the wire forming the continuous length of tacks or nails, as set forth.

2. A continuous length of distinct nails or tacks, each having a tapering point narrower than the diameter of the wire, and a head formed of stock taken from the entering end of the preceding nail, projecting from and beyond the diameter of the wire of which they are formed, as set forth.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

LOUIS GODDU.

Witnesses:

A. VAN WAGENEN,

R. L. ROBERTS.