(No Model.)

J. M. ESTABROOK.

SOLE FASTENING.

No. 261,213. Patented July 18, 1882.

Fig. 1

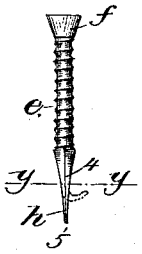

Fig. 3.

Fig. 4

Fig. 5.

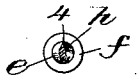

Fig. 2.

Fig 6

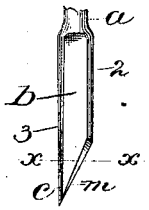

Fig. 7.

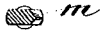

Fig. 8.

Fig. 9.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOSEPH M. ESTABROOK, OF MILFORD, MASSACHUSETTS.

SOLE-FASTENING.

SPECIFICATION forming part of Letters Patent No. 261,213, dated July 18, 1882.

Application filed April 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. ESTABROOK, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Sole-Fastenings and Methods of Manufacturing the Same, of which the following description, in connection with the accompanying drawings, is a specification.

My invention consists in a sole fastening provided with an awl-shaped point, as will be hereinafter described, which enables the fastening to be driven without first making a hole in the sole for its reception, the said point having its two side edges reduced, made thin and sufficiently sharp to cut their way through the leather, and being also adapted to be clinched.

Figure 1 represents in edge view one of my improved sole-fastenings; Fig. 2, a section thereof on the line *y y;* Fig. 3, a view of Fig. 1, looking at it from the right; Fig. 4, an edge view of one of my novel sole-fastenings with the head omitted; Fig. 5, another view of the fastening shown in Fig. 4. Fig. 6 represents a blank from which to make a fastening such as shown in Figs. 1 and 3. Fig. 7 is a cross-section of the tapered end of the said blank on the dotted line *x x*, Fig. 6. Fig. 8 is a side elevation and cross-section of a fastening having a modified form of the awl-point; and Fig. 9 is a modification of the oval point flattened at its end.

In the manufacture of headed sole-fastenings in accordance with my invention I take a wire or strip of metal and flatten it at intervals for a length sufficient to produce the bodies and points of two fastenings, leaving unacted upon a portion of the wire between the said flattened portions, said portion so left round or of the original shape of the wire being of sufficient length to afford enough stock for the heads of two fastenings, and midway its length this flattened portion is cut or severed diagonally by V-shaped cutters to leave a V-shaped edge, and the head-forming portion is also severed transversely, producing a blank such as shown in Fig. 6, in which *a* represents the head-forming portion, *b* the flattened body, and *c* the point-forming portion.

To produce a sole-fastening from the blank shown in Fig. 6 the flattened body *b* is compressed between suitable corrugating-dies, which corrugate or notch the body of the blank, as at *e*, the said dies acting against the edges 2 3 of the flattened part of the said blank. The point *e* of the blank is then compressed in a like direction between the dies of proper form to produce an awl-shaped point, *h*, which will be substantially oval in cross-section, as shown in the drawings, Figs. 1 to 3, the said point being of sufficient length and of the right shape to be readily clinched on an iron or metal shod last or horn, and being also of such shape at its edges as to enable the said fastening to be driven into and cut its way through the leather without the necessity of first making a hole therein for its entrance or reception. The head will be formed by an upsetting process.

Although I prefer a fastening with a head, as in Figs. 1 and 3, the said head may be omitted, as in Figs. 4 and 5.

Although I greatly prefer that the awl-point should be of the cross-section as shown in Fig. 2, yet I may make the same of lozenge shape in cross-section, as shown in Fig 8, wherein it will be seen that the edges 4 4 are thin or sharp, as in the case of the oval point, Figs. 1 and 2.

The essential features constituting the awl-point are the blade of greater width than thickness, the reduced or thinned edges 4, and the tapered shape of the blade to form a sharp central point, 5.

It is obvious that the extremity of the awl-point may be slightly flattened, as at Fig. 7, without departing from my invention.

The dotted lines, Fig. 1, show the point *h* clinched.

The diagonally-cut end *c* of the blank assists materially in giving shape to the awl-point *h*, when the blank is subsequently compressed in dies of the form necessary to give to the point of the fastening the awl shape shown and described.

In the manufacture of metallic sole-fastenings in accordance with my invention I first flatten the metal rod or strip, or suitable parts thereof, preferably between rollers, to form the flat body portion *b*, after which the flattened body part is placed between suitable corrugated dies, and the said body acted upon at its edges is squeezed or compressed in a direction

opposite that from which it was acted upon to flatten it, such action enabling me to form well-defined corrugations or threads.

By the process herein described I am enabled to employ softer stock than heretofore, the same being hardened and stiffened by compression, and by compressing the part *c* for the awl point *h* less than the body *b* for the corrugated or threaded shank *e* I am enabled to leave the point *h* softer than the shank *e*. When the point-forming part *c* of the blank, Fig. 6, is compressed, the point which in Fig. 6 is in line with one edge of the blank is thrown inward in line with the center of the body of the fastening, and at such time the beveled edge *m* of the blank assists materially in the ready and easy formation of the awl-point *h*.

Means or apparatus for making sole-fastenings such as herein referred to will form the subject of another application for United States Patent to be made by me.

I am aware that sole-fastenings have been provided with chisel-shaped and with conical and with pyramidal points; but I am not aware that a sole-fastening has ever been provided with an awl-shaped point—viz., a tapering point, oval in cross-section, and wedge-shaped in the direction of its length, as shown in the drawings.

The method or process herein described will also form the subject-matter of another application for United States Letters Patent to be filed by me.

I claim—

As an improved article of manufacture, a metallic sole-fastening having its point made awl-shape, substantially as described—viz., broad and reduced at its two edges, and having a central point and adapted to be clinched, substantially as described.

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

JOS. M. ESTABROOK.

Witnesses:

ARTHUR W. VANT,

G. W. GREGORY.