F. O. TOBEY.

Sole-Fastening.

No. 169,062. Patented Oct. 19, 1875.

Fig. 1.

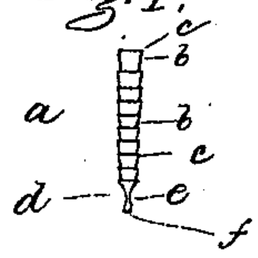

Fig. 2.

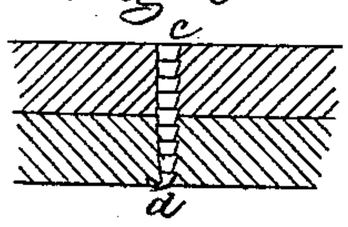

Fig. 3.

Witnesses.

L. H. Latimer.

Wm Pratt.

Inventor.

Frank O Tobey

PER Crosby & Gregory Atty's.

UNITED STATES PATENT OFFICE.

FRANK O. TOBEY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SOLE-FASTENINGS.

Specification forming part of Letters Patent No. **169,062,** dated October 19, 1875; application filed May 18, 1875.

To all whom it may concern:

Be it known that I, FRANK O. TOBEY, of Boston, Suffolk county, Commonwealth of Massachusetts, have invented Improvements in Sole-Fastenings, of which the following is a specification:

This invention relates to fastenings for uniting leather, and chiefly for uniting the uppers and soles in the manufacture of boots and shoes; and this invention consists in a tapering nail composed of a series of connected conic frustums, arranged substantially as described, whereby the base of one cone furnishes the outer head, and the apex of another cone the point. The apex of the point-forming cone is prolonged to a length greater than the diameter of its base, and this apex above the point is preferably reduced in diameter to weaken the nail a little above the extreme point, and to insure that the apex shall bend readily at its smallest diameter and clinch rather than rivet. The small central point of the nail can be readily introduced into the awl-hole, and the nail can be driven after but a partial operation of the awl. The base of each cone acts as a head to hold the leather on the body of the nail, and the leather is pinched and bound tightly between the clinched point on one side and each base, they all acting as a series of heads, and preventing movement of the leather over the body of the nail away from the clinched point. When driving the nail the set given the leather by the blow of the hammer is held and retained through the action of the head-like cones and the clinching-point. The leather becomes embedded between the spaces about the body of the nail.

Figure 1 represents one of my improved shoe-nails. Fig. 2 represents such a nail driven into, clinched, and shown as holding together two plates of leather. Fig. 3 represents the heads of the nails as they appear when driven into the sole.

On the drawing, the nail *a* is shown as composed of a number of connected conic frustums, *b*, the base *c* of the uppermost frustum serving as a head, and each intermediate frustum as an additional head. The apex *d* of the frustum which serves the purpose of a point for the nail, is elongated for a distance greater than the diameter of its base, and at *e*, a short distance above the extreme point *f*, the apex is reduced in size to weaken the apex, so that it will first bend at *e*, and this insures a proper amount of the nail for clinching purposes, and overcomes the liability of the point riveting, as might often be the case if the nail were driven straight and were not weakened at *e*.

A shoe-nail to operate properly must clinch and embed its point in the inner sole.

A nail constructed as described holds the plates of leather forming the shoe-sole very firmly together. This nail is produced from a wire scored or cut away by means of a suitable tool, so as to form the frustums.

Having described my invention, I claim—

A shoe-nail, substantially as described, composed of a series of connected conic frustums of varying diameter, forming a tapering nail and with an elongated point-forming apex, substantially as set forth.

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

FRANK O. TOBEY.

Witnesses:

G. W. GREGORY,

L. H. LATIMER.