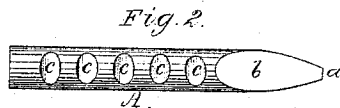


H. S. CUSHMAN.
Shoe-Sole Nails.

No. 147,826.

Patented Feb. 24, 1874.



Witnesses
S. W. Piper.
J. R. Brown.

Henry S. Cushman.
by his attorney,
R. H. Eddy.

UNITED STATES PATENT OFFICE.

HENRY S. CUSHMAN, OF MILFORD, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND ORISON UNDERWOOD, OF SAME PLACE.

IMPROVEMENT IN SHOE-SOLE NAILS.

Specification forming part of Letters Patent No. **147,826**, dated February 21, 1874; application filed
December 6, 1873.

To all whom it may concern:

Be it known that I, HENRY S. CUSHMAN, of Milford, of the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Shoe-Sole Nails; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 a side view, (on an enlarged scale,) of one of my improved nails.

My invention consists in a headless shoe-sole nail, notched on both opposite sides, and having its point in or at one side, and a clinching-slope extending obliquely across the nail from the point to the opposite side of the nail, all being as, and arranged substantially as, hereinafter explained, and as shown in the accompanying drawings.

In said drawings, A denotes the shank or body of the nail; *a*, its point; *b*, the clinching-slope; and *c c c*, &c., the notches in each of the opposite sides of the nail, such notches being disposed in a plane going longitudinally through the axis of the nail, and from heel to toe of the clinching-slope.

Nails having their points arranged in the axes of such nails, and shaped in opposite ways therefrom, are not liable to properly clinch when driven point foremost against a clinching-plate, such being due to the pressure on one slope of the point being counteracted by the pressure on the other; but with my nail, the pressure of the leather laterally against the nail while it is in the act of being driven is all on one side, and sets the nail to one side, and tips or turns it, so as to set the leather into the notches, and thereby increase the hold of the nail in the leather. The single clinching-slope, also, by its acute angle with the clinching-plate, insures the nail bending over and being clinched, and the clinching to be effected to better advantage than would result from a conical or pyramidally-pointed nail, or a nail with a wedge-shaped point, having its terminus in the axis of the nail.

I do not claim a nail made as described and shown in the British Patent, No. 1,988, for 1863, in which the notches are disposed only

in continuity with the point, and for the purpose of enabling such or the nail near such to readily bend while in the act of being clinched.

In my nail there are two ranges of notches, extending along opposite sides of the shank, and from or near the point to or near the larger end of the nail; besides, my nail, in one sense, is a headless one—that is, it has at its larger end no enlargement to constitute a head, as shown in the drawings of such patent. In my nail the ranges of notches are to receive the leather of the soles, it being forced into them by the tipping of the nail while it is in the act of being driven, and they not only serve the purposes of a head, but operate better to keep the outer from separating from the inner sole. With a headed nail the head soon wears off while the shoe is in use; but with the notched-shank nail, having the oblique clinching-slope extending from the point arranged eccentrically or at one side of the nail, as represented, the notches hold the sole so long as there may be any part of it in contact with the nail.

My nail differs from a screw having an oblique point, as shown in said patent, for such, when either screwed or driven into leather, must turn so as to prevent the point from tipping the shank; therefore the headed and helically-grooved shank, having an oblique point, is not only different in construction from my nail, but different in action. Furthermore, in my nail the notches of each range do not touch so as to form barbs, or spurs, or edges to cut the leather while the nail is being driven into it; but there is a cylindrical surface or space between each two next adjacent notches of each range, and, besides this, the notches of one range do not meet those of the other, but are insulated from them by cylindrical spaces or parts of the sides of the nail, all being as shown in the drawings. Such spaces between each two next adjacent notches of each range, and also between the two ranges, arranged as shown, with the oblique point, are essential to my invention or improvement, as they not only operate to prevent the leather from being bored or cut along the sides of the nail while it may be in the act of being driven,

but they cause the nail to enter so much easier that no awl-hole has to be made for its reception in the leather. The nail not only will enter the leather easier than a spurred nail, but will hold stronger, on account of the leather not being cut away along the sides of the nail, or expanded by an awl. With the cylindrical nail, having spaces between its two ranges of notches, and also between its several notches of each range, as set forth, and having the point and clinching-slope arranged with the axis, as described, the leather is expanded laterally from the nail while it is passing therein, and left free to contract upon the nail, and enter and fill the notches. The lateral or long cylindrical spaces between the two ranges not only enable the nail to enter the leather easily, but serve to guide it into the leather, and prevent it from diverging from its proper course.

I do not claim a nail formed with a lozenge sectional shank, and with barbs or spurs, made by notches in the shank, arranged close together or in contact, and having each range of such notches touching the other range thereof, all as represented in the United States Patent, No. 140,400.

I therefore claim—

As a new or improved manufacture, the headless shoe-sole nail, as described, having two ranges of notches, *c c*, spaces between such ranges and the notches of each, and its point *a* and clinching-slope *b*, arranged as specified and represented.

HENRY S. CUSHMAN.

Witnesses:

R. H. EDDY,
S. N. PIPER.