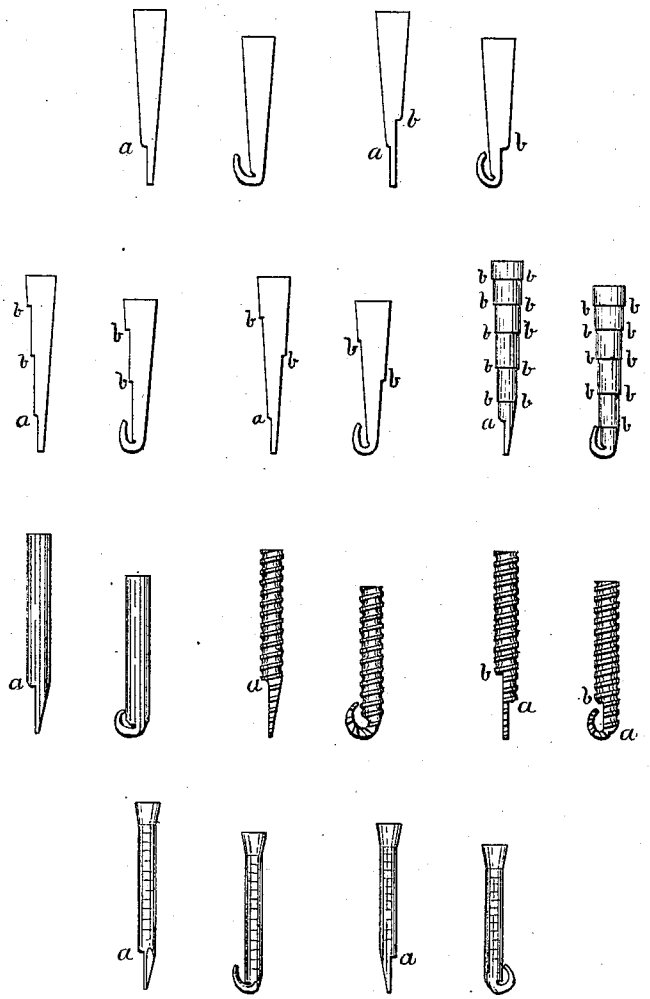
E. L. WIRES.
Shoe-Nails.

No. 206,515. Patented July 30, 1878.



Witnesses
J. E. Knox
Bernard Davis

Inventor
E. L. Wires
by J. E. Maynadier
his atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EPHRAIM L. WIRES, OF MILFORD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSEPH M. ESTABROOK, OF SAME PLACE.

IMPROVEMENT IN SHOE-NAILS.

Specification forming part of Letters Patent No. **206,515**, dated July 30, 1878; application filed February 27, 1875.

To all whom it may concern:

Be it known that I, EPHRAIM L. WIRES, of Milford, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Shoe-Nails, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, making a part hereof, in which several forms of nails are shown, all embodying one or both features of my invention, as will be hereinafter described.

My invention relates to the manufacture of shoe-nails; and consists, first, in making one or both sides of the point straight, or so nearly so that a shoulder, *a*, will be formed where the point joins the body of the nail, the straight side of the point being that side directly beneath the shoulder; second, in making the body of the nail so that its cross-section at one or more points, *b*, shall be, comparatively speaking, very much greater in area than its cross-section immediately below the said points *b*.

The purpose of the first part of my invention is to make a sudden decrease in strength between the point and the body of the nail, so that the body of the nail (all above the shoulder *a*) will be in all its parts more stiff and rigid than the point, (all below the shoulder *a*,) and the effect of this sudden decrease in strength is that the nail is always sure to clinch properly without danger of bending the body. The other side of the point may be made in any usual shape. This part of my invention is applicable to all forms of shoe-nails known to me.

The purpose of the second part of my invention is to prevent the nail, after it is once driven, from working inward, and this purpose is accomplished by making the nail so that its cross-section at *b* in the drawings shall be greater in area than its cross-section immediately below the point *b*—that is, so that its body shall suddenly increase in size at one or more points, the smaller part of the body being nearer the entering end of the nail than the larger part or parts. The shoulders so formed tend to compress the leather when the nail is driven, and prevent the nail from working inward. When used in connection with the clinching-point, the leather lying between the shoulders and the clinch is firmly clamped between them.

These nails may be manufactured by the usual nail-making machine. The point may be finished by milling, or special cutters may be used to form the point at the same time the blank is cut from the plate.

I am aware of the Patent No. 85,374 to J. M. Estabrook, and have for many years manufactured the nails described in it. In such nails the flat side of the point forms an obtuse angle with the side of the body of the nail, while in a nail embodying the first part of my invention the flat side of the point is substantially parallel to the side of the body, and the lower part of the shoulder *a* lies substantially at right angles to both. Owing to this difference the increase in strength or stiffness is gradual in the Estabrook nail, for it is obvious that the wedge-shaped part or point of that nail is practically as rigid as the body for about one-third of the whole length of the point, while in my nail the decrease is very sudden. So far as I know my mode of making a point is wholly new.

I am also aware of Letters Patent No. 2,182, of 1841, to Ballard, and No. 56,114 to Spear; but in the nails shown in these patents, as well as in all other shouldered nails known to me, the shoulders were presented toward the head of the nail instead of toward its entering end.

What I claim as my invention is—

1. A nail having a flat-sided point, the side of which forms at its junction with the body a right angle with the lower side of the shoulder *a*, as and for the purpose specified.

2. A nail whose body or shank is provided with one or more shoulders, *b*, from the entering end toward the butt or head, at right angles to the shank, the said shoulders presented toward the entering end, as and for the purpose specified.

E. L. WIRES.

Witnesses:
J. E. MAYNADIER,
B. DAVIS.