A. VAN WAGENEN.

Nail-Strips for Sole-Fastenings.

No. 166,661. Patented Aug. 10, 1875.

FIG I

FIG VI

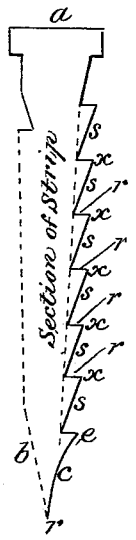


FIG II

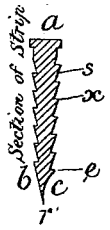


FIG III

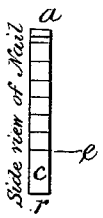


FIG IV

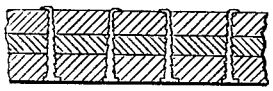
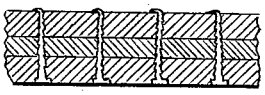


FIG V



WITNESSES

John C. Laing.
J. H. Rutherford

INVENTOR

Albert Van Wagenen,
By Johnson and Johnson,
his Attorneys

UNITED STATES PATENT OFFICE.

ALBERT VAN WAGENEN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN NAIL-STRIPS FOR SOLE-FASTENINGS.

Specification forming part of Letters Patent No. **166,661**, dated August 10, 1875; application filed May 17, 1875.

CASE C.

To all whom it may concern:

Be it known that I, ALBERT VAN WAGENEN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Nail-Strip for Sole-Fastenings; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

In another patent bearing even date herewith I have described a nail strip or blank having a shouldered or head-forming edge, side seizing ratchet-fins of peculiar construction, and a double side taken to define that portion of the nail-strip which forms the clinch-forming edge and a clinching-point when the nail is cut and driven against an iron horn or work-support.

The feature claimed herein consists in the combination, with a nail-strip, of a shouldered or head-forming edge, parallel or oblique seizing side ratchet-fins, with a thin tapered edge, having one of its sides concave the full width of the clinching-edge, such combination of a beveled and a concave thin edge effecting with certainty the turning and clinching of the point of each nail always in one and the same direction when cut from the strip and driven against the horn, thereby not only insuring better work, but giving symmetry to the work inside. With the double-edge taper-strip the points of the nails are liable to turn and clinch in opposite directions, which gives the appearance of being driven at different distances apart, and besides they do not bring equal tension upon the inner sole. The concavity formed on one side of the thin edge of the strip, with the opposite tapered, avoids this objection, and renders it impossible for the point of the nail when cut to be crushed, instead of making the clinch in driving the nail against the horn.

In the accompanying drawings, Figure 1 represents a side view of a nail-strip, embracing my invention; Fig. 2, a cross-section of the strip; Fig. 3, a side view of one of the nails when cut; Fig. 4, a view showing the nails with the points clinched in different directions, as they are liable to do when cut from a strip having its thin clinch-forming edge formed by a double taper; Fig. 5, a similar view with the nails clinched in the same direction, and Fig. 6 an enlarged partial section of the strip.

The blank or strip may have its sides either tapered or parallel, and the side ratchet-fins *x* may be either parallel with the edges of the strip or oblique thereto. The thick edge of the strip has a shoulder or head-forming edge, *a*, projecting alike from both sides and from which the head is formed when the nail is cut. The thin edge of the strip defines the clinching-point of the nail when cut, and is formed by a bevel, *b*, on one side and a concavity, *c*, on the other, which extends from the edge *r* to the ridge *e*, which bounds the thin or clinch-forming edge. The effect of the concavity *c* thus formed and the bevel *b* is to reduce the thickness of the strip at the junction of the thin edge *r* with the body *e* of the strip, and to cause the point of the nail to always turn and clinch with the concave side down, thereby not only insuring the clinching of the nail, but its clinching always in the same direction, and hence giving better satisfaction in the character of the work. The ratchet-fins are formed upon the sides of the strip with long and short angles *s* and *r*, and, while presenting smooth sides to the driving of the nail, form anchorages to prevent its working out of the sole. The edge of the strip is intact, as shown in Fig. 1, and the nail when cut has two of its sides straighter from the shoulder or head *a* to the point *r*, as shown in Fig. 3, which, in connection with the bevel *b* and the concave from *r* to *e*, gives the best effect and insures absolutely the clinching of the point of the nail always in the same direction. The junction of the concave with the bevel *b* forms a straight cross-edge horizontally and a vertically entering point, as shown in Figs. 3 and 6, so that the point does

not deflect the direction of the nail, but turns toward the shoulder *e* the moment the point strikes the work-support.

A nail-strip having a groove above the clinch-forming edge to effect the clinching of the nails in the same direction when driven into the sole against an iron horn or last is not claimed in this patent, but such groove being made at the base of points tapering on all four of their sides is a different thing from my invention, and is not so satisfactory in its results as those effected by a concave which bounds the clinch-forming edge, and is combined with a side-bevel and a penetrating point equal in width to that of the nail when cut from the strip.

The following is claimed as new in nail-strips for sole-fastenings, namely:

1. A metallic nail-strip or blank having a thin or taper clinch-forming edge, with one side *c* thereof concave from the strip-edge *r* to the ridge *e*, which bounds the clinch-forming edge, substantially as and for the purpose set forth.

2. The combination, in a metallic nail-strip or blank, of a shouldered or head-forming edge, *a*, side seizing ratchet-fins *x*, and a clinch-forming tapered edge with one of its sides made concave the full width of the clinch-forming edge, substantially as and for the purpose herein set forth.

3. The combination, in a nail-strip having a clinch-forming edge, of the bevel side *b*, the concave side *c*, and the penetrating point *r* extending from one straight side of the nail to the other, substantially as herein set forth.

4. A nail for boots and shoes having a clinch-forming point formed by the bevel *b* on one side, a concave, *r*, on the other, and a penetrating point the width of the nail, as shown and described.

In testimony that I claim the foregoing as my own I have affixed my signature in presence of two witnesses.

ALBERT VAN WAGENEN.

Witnesses:

A. W. ADAMS,

B. S. HENRY.