E. F. RICHARDSON.

Boots and Shoes.

No. 206,041 Patented July 16, 1878.

Fig. 1.

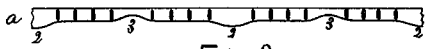


Fig. 2.

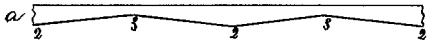


Fig. 3.

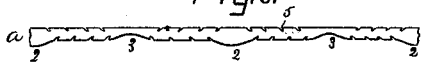


Fig. 7.

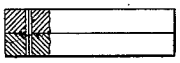


Fig. 6.

Fig. 4.

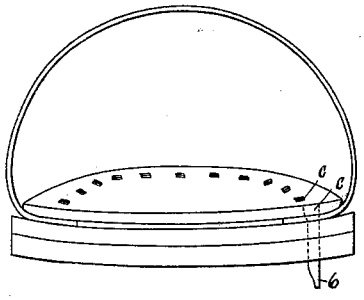
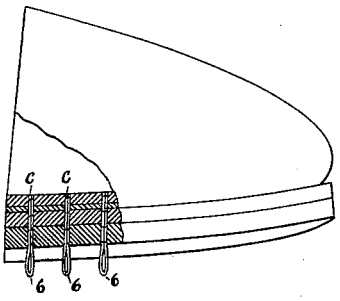


Fig. 5.



Witnesses.

E. C. Perkins.

W. J. Pratt.

Inventor.

Elton F. Richardson

by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

ELTON F. RICHARDSON, OF READING, MASSACHUSETTS.

IMPROVEMENT IN BOOTS AND SHOES.

Specification forming part of Letters Patent No. **206,041**, dated July 16, 1878; application filed December 19, 1877.

To all whom it may concern:

Be it known that I, ELTON F. RICHARDSON, of Reading, in the county of Middlesex and State of Massachusetts, have invented Improvements in Boots and Shoes, of which the following is a specification:

This invention relates to improvements in boots and shoes and fastenings for uniting their soles to their uppers.

The invention consists in a metallic fastening-strip composed of a series of fastenings joined head to head, the central portion of each fastening being reduced to form portions of less strength than the material at the wider portions of the strip. Such a fastening strip preferably cut from sheet metal (but it may be cut from rawhide or leather) is adapted to be drawn by a hooked needle or to be pushed by a crotched needle into and through holes made in the soles and upper. The material forming the fastening will be engaged at its smallest portion, and be drawn or pushed in, (preferably drawn in from the inner sole outward,) the fastening being doubled in the stock and being permitted to project beyond the outer sole more or less according to the thickness of the stock composing the soles and upper. If the length of the fasting is in excess of twice the thickness of the stock plus the distance of one from the next fastening when drawn into the stock, then the strip need not be severed as each fastening is drawn in; but otherwise the strip will be divided at its wider part, as or just before the fastening is doubled and drawn in, and then the strip will be fed far enough to bring the reduced or narrowest portion of the next fastening in position to be caught by the needles. The fastenings may be clinched at one or both sides of the stock.

Figure 1 represents my improved fastening-strip of a length to show two fastenings; Figs. 2 and 3, modifications; Fig. 4, a cross-section of a shoe having its double outer sole, upper, and inner sole connected with my improved fastening; Fig. 5, a side elevation of a part of a shoe, a portion of the edge of the sole and the upper being cut away to show the fastenings in place; Fig. 6, a view showing a fastening in the act of being bent as it would be when being drawn into the leather by a hooked needle, and Fig. 7 represents two pieces of leather united by the fastening shown in Fig. 2.

The fastening-strip shown at *a* is cut from a sheet of metal, rawhide, or leather, preferably soft metal will be employed. These strips will have broad portions 2 to be divided transversely to separate the fastenings, and between each of the adjacent wide portions 2 I reduce the size of the fastening by removing a portion of the material, thereby forming narrow portions 3, to be engaged by the hooked needle *b* of a sewing-machine, or a crotched or forked needle. The sides of this strip *a* may be corrugated or roughened, as at 4, Fig. 1, or be notched or barbed, as at 5, Fig. 3, or be left plane, as at Fig. 2, or be both corrugated and notched on its face and edges.

The shoe being lasted in any well-known way, may be placed on the horn of a McKay or other well-known shoe-machine, provided with a feeding and strip presenting device adapted to present the smallest or reduced portion of a strip of indefinite length in position to be caught by the hooked needle as it commences to ascend through the inner sole, upper, and outer sole, the needle drawing the fastening up through the stock in the form of a loop, as represented in Fig. 5, the material at the same time being preferably cut or separated by a suitable cutter in the horn, it operating upon the strip near the center of the wide portion 2. The hooked needle will draw the cut material far enough through the outer sole to permit the needle to be disengaged therefrom, and after that the projecting ends 6 may be cut off by a suitable tool. The ribbed and notched portions meeting the leather afford additional means for holding it together firmly.

The fastenings *c* inserted in the shoe are, it will be noticed, double, and have two contiguous head-forming portions buried in the inner sole, whereas, in ordinary practice, the metallic heads are commonly buried in the outer sole.

If my cut strip-fastenings having contiguous heads and contiguous points should be driven into the shoe-sole from the outer sole by a crotched or forked needle, the heads would then be buried in the outer sole. I, however, prefer the heads in the inner sole.

In some instances I contemplate that the tapering metallic fastening caught near its free end by a hook might be drawn into the stock partly double, the free end being drawn substantially through the stock, leaving a single fastening in a needle-hole.

I do not claim a fibrous thread increased in diameter at intervals by the addition of fiber; nor do I claim a fibrous thread of any kind.

I claim—

1. As an improved article of manufacture, a shoe having its sole united to its upper by tapering fastenings separated from a strip of non-fibrous material, substantially such as described, reduced in width, and drawn or forced doubled into openings in the sole and upper, substantially as described.

2. The improved non-fibrous fastening-strip made broad to form contiguous heads, and reduced between the heads to form points, substantially as described.

3. A metallic fastening for uniting thicknesses of leather, it being composed of two members, each having a head, and adapted to be bent at its narrow central portion to form two contiguous members when in place in the leather to be united, substantially as described.

4. The improved non-fibrous fastening-strip herein described, made broad to form contiguous heads, reduced at intervals to form points and corrugated or roughened to afford additional hold in the leather, substantially as described.

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

ELTON F. RICHARDSON.

Witnesses:
G. W. GREGORY,
W. J. PRATT.