

H. C. & A. KEATS.
Combined Insole and Welt for Boots and Shoes.

No. 214,666.

Patented April 22, 1879.

Fig. 1.

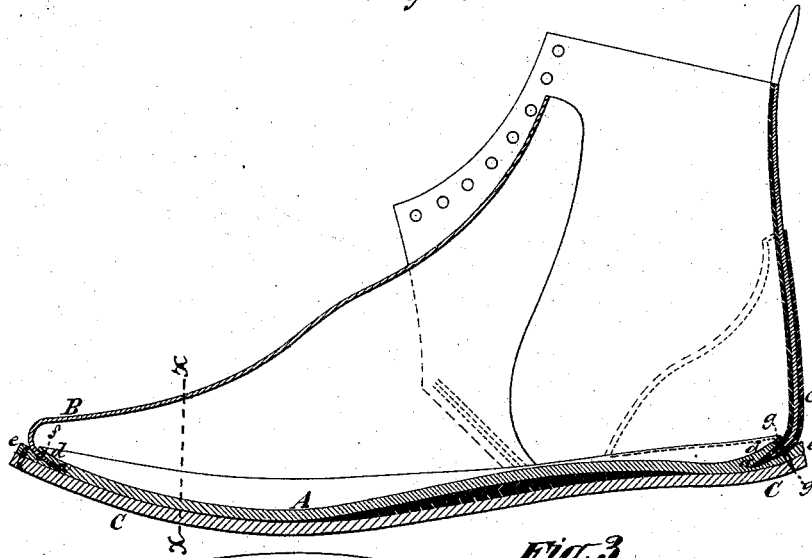


Fig. 3.

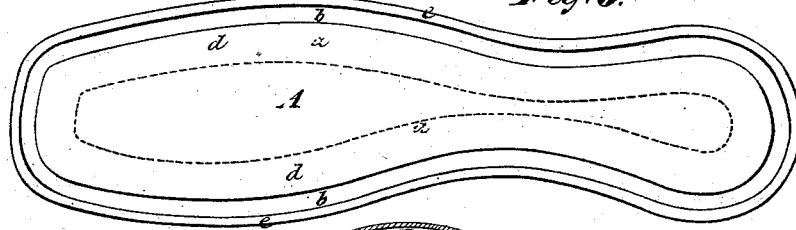


Fig. 2.

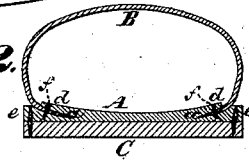
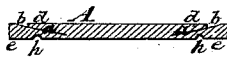


Fig. 4.



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HORATIO C. KEATS AND ALPHONSO KEATS, OF NEWCASTLE, ENGLAND.

IMPROVEMENT IN COMBINED INSOLE AND WELT FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **214,666**, dated April 22, 1879; application filed May 28, 1878.

To all whom it may concern:

Be it known that we, HORATIO CHARLES KEATS and ALPHONSO KEATS, both of Newcastle, in the county of Stafford, England, have invented certain new and useful Improvements in Boots and Shoes; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to welted boots and shoes of a novel construction, which enables them to be soled by machine-sewing with the employment of less skilled labor than it has been heretofore practicable to use in the manufacture of welted boots and shoes, and which saves stock in the manufacture.

In carrying out our invention we use what may be termed a "welted insole," the outer margin of which serves the purpose of a welt. This welted insole we produce by cutting or splitting a sole from a line parallel, or thereabout, with its outer edge on the inner face thereof toward its center, and thereby forming a margin projecting beyond said cut or split, to serve the purpose of a welt for the attachment of the outer sole, and the inner portion of leather above said cut or split forming a feather to cover the edges of the upper, which are inserted into the said cut or split, and sewed therinto by sewing through the said feather, through the portion of the insole below the said cut or split, which latter portion, with its projecting margin, may, for convenience of description, be termed the "welt," and through the upper. The outer sole is sewed to the welt thus formed in the same manner in which it has been sewed to welts as commonly employed.

In the accompanying drawings, Figure 1 is a longitudinal section of a shoe made according to our invention. Fig. 2 is a transverse section of the same in the line *xx* of Fig. 1. Fig. 3 is an inside or upper face view of the welted insole, and Fig. 4 a transverse section of the same.

The welted insole *A* is made of a piece of leather, or may be of other suitable material, of suitable thickness, and of a form and size corresponding with the sole of the boot or shoe to which it is to be applied. It is prepared for

the cut or split *a*, which is to receive the edge of the upper *B*, by first cutting a V-groove in its upper surface, as shown at *b* in Figs. 3 and 4, at a suitable distance from its edge and parallel therewith, and the split *a* is formed by cutting inward from the said groove and slightly downward obliquely to the faces of the sole, thereby forming the feather *d* above the said split and the welt-like margin *e* below it, the latter margin, which forms or serves as a welt, projecting beyond the feather. The upper *B*, having been closed, is put on a last, and the welted insole is then applied to it by slipping the feather *d* under or inside of the edge of the upper, and the welted insole and the upper are nailed or tacked together to secure them for sewing, and they are then removed from the last.

The sewing together around the toe and along the sides to the commencement of the heel, as shown at *f*, may be performed with two waxed threads, forming a lock-stitch, by the machine which is the subject of United States Letters Patent of Keats, Greenwood, and Keats, No. 171,622, dated December 28, 1875. The upper and the welted insole are then again lasted, and the outer sole is tacked onto them, and the latter, which is of the same size and shape as the sole *A*, is then sewed to the welt, as shown at *f*, outside of the sewing which unites the upper to the sole. This sewing of the outer sole to the welt we prefer to do with two waxed threads, forming a lock-stitch, in a sewing-machine which is a modification of that hereinabove mentioned, a "post" being substituted for the horn of that machine. The last is then removed, and the boot or shoe is sewed around the heel, as shown at *g*, through the welt *e*, the upper and the feather *d*, and through the heel-stiffener *c*, which is inserted with the margin of the upper into the slit *a* of the welted insole.

In order to protect the outer faces of the stitches which unite the upper to the welted insole, we prefer to cut a slight groove, *h*, in the outer face of the said sole to receive the said stitches.

In the manufacture of boots and shoes in this way one advantage is, that the soles *A* and *C* being of exactly the same size and shape, the outer edge of the welt or welt-like por-

tion of the insole A serves as a guide for properly applying the outer sole, C, and it is impossible that the welt can be wrongly placed, as a welt made of a separate piece might be by an unskilled workman.

Other advantages are, that it saves the placing of a welt or a slip-sole onto the lasted upper or onto the outer sole, as in other machine-soled boots and shoes, also saves the trimming of the welt to suit the sole, thereby saving stock and labor, besides admitting of the employment of less skilled labor than is required in the soling of boots and shoes by machine-sewing as heretofore practiced.

It is also important that the welt thus obtained should be thickest at its outer edge, as the stitches by which the welt is secured to the outer sole are thereby forced well under the upper in a manner heretofore only obtained by hand-sewing and by the use of a curved awl, which cannot be conveniently used for machine-sewing.

Another important result which is obtained by the obliquity of the cut or split relatively to the faces of the sole is, that when the upper is inserted and sewed into it a concave surface is given to the inner face of the insole.

We claim—

1. The welted insole for a boot or shoe cut or split from a line on its inner face parallel, or thereabout, with its outer edge, in an in-

ward direction, and presenting an outer margin of full thickness projecting outside of the cut or slit to serve as a welt, substantially as herein described.

2. A welted insole for a boot or shoe which is cut or split from its upper surface in a direction obliquely downward toward the center, with its edge left of full thickness to serve as a welt, substantially as herein described.

3. The combination of a sole cut or split on its upper surface, to present a projecting margin of full thickness to serve as a welt, and an upper having its edge inserted within the said cut or split, and entering the sole on a line within the projecting margin or contour thereof, and secured by sewing, substantially as herein described.

4. The combination of an insole having a welt-like margin formed of the same piece therewith, and of full thickness thereof, as herein described, an upper united to the said sole by sewing, and an outer sole united by sewing to the said welt-like margin outside of the sewing which unites the said insole to the upper, substantially as herein described.

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