

(No Model.)

G. W. SLEEPER.
BOOT OR SHOE.

No. 563,083.

Patented June 30, 1896.

Fig. I.

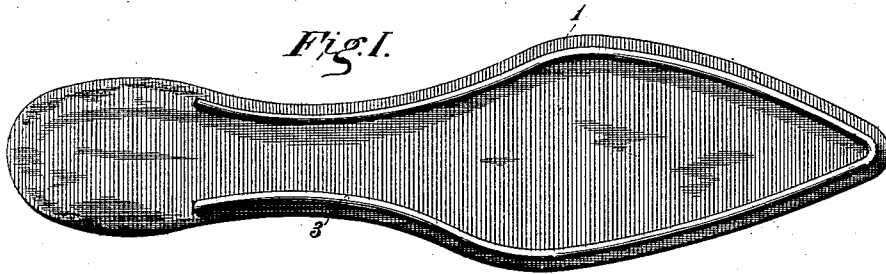


Fig. II.

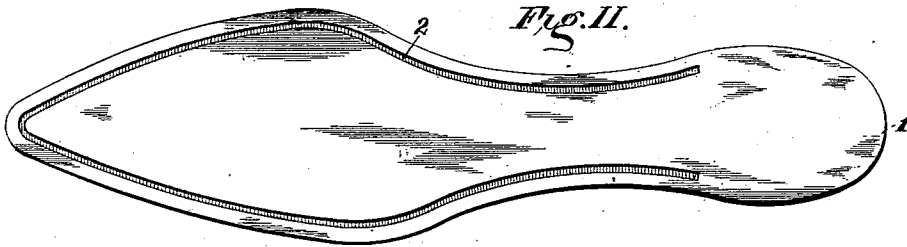


Fig. III.



Fig. IV.

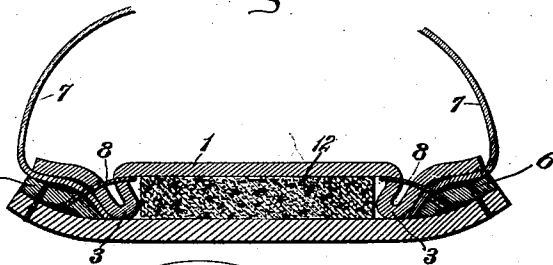


Fig. VI.



Fig. V.

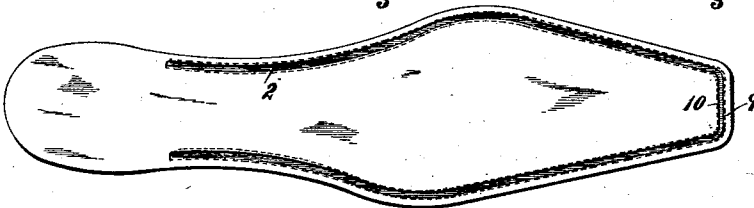
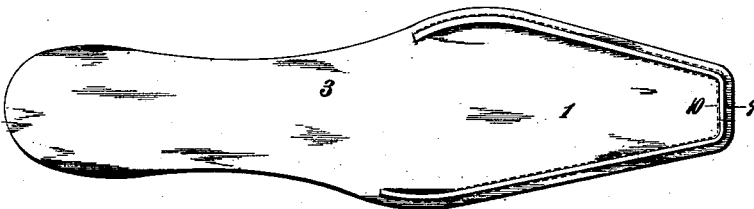


Fig. VII.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE W. SLEEPER, OF DETROIT, MICHIGAN, ASSIGNOR OF TWO-THIRDS
TO HENRY S. ROBINSON AND ANDREW W. COMSTOCK, OF SAME PLACE.

BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 563,083, dated June 30, 1896.

Application filed August 17, 1895. Serial No. 559,691. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SLEEPER, of Detroit, county of Wayne, State of Michigan, have invented certain new and useful
5 Improvements in Boots or Shoes, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce, by an improved method, improved means of
10 fastening the sole of a shoe to its insole; and it consists, specifically, in improvements in insoles, whereby the seam-channel in general ordinary use may be dispensed with, and whereby a rib is formed in a novel manner
15 designed to overcome the objections to a rib formed by folding the insole.

In the ordinary channeled shoe the stock from which the insole is made is cut to form the channel, thereby materially weakening
20 the insole and tending to prevent the requisite strength of union between the insole and the welt, or else a rib is formed upon the insole by folding the material upon itself, the primary objection to the latter method being,
25 first, that the insole must be trimmed twice, namely before and after the folding, as the folding cannot be accomplished with sufficient accuracy to bring the previously-formed insole to the exact contour desired; second, that
30 the material forming the fold or rib being bent back upon itself has nearly the same tendency to yield, or instability, that a single piece of the same thickness would have; third, that only a very thin insole can be folded to form
35 a rib of varying contour; fourth, that the foregoing objections render it necessary to cut off or trim the edge of the fold or rib to reduce its size and in a measure to overcome its tendency to yield.

By my invention I produce in the stock of the insole a molded channel or groove, passing through the walls of which the stitches
40 that unite the insole to the sole, or as is customary to the intermediate welt and to the upper, pierce through and through two thicknesses of material and thereby, without impairing the strength and durability of the insole, secure a strong and durable union of the
45 parts.

50 The terms "channel" or "groove" as em-

ployed by me are defined as an elongated hollow, the sides of which are not in close proximity, as distinguished from a fold, the inner sides of the material in the latter instance being generally understood as in contact, or substantially so. 55

In heavy shoes, such, for example, as those intended for men's wear, the insole, being made of heavy stock, is strong enough in itself to hold without further provision the stitches. 60 In shoes of lighter weight, or more delicate manufacture, it is customary to make the insole of lighter material, in which case I provide an insole made of double thickness of material, the upper one affording a smooth
65 tread on the inside of the shoe for the foot, and the lower one carrying the rib formed by the groove or channel in it. The lower insole is made in the same way as that previously referred to; but the two thicknesses of material are firmly united together by a seam or
70 row of stitches, one on each side of the rib, passing through and through both thicknesses of material and securely uniting the parts together, the upper or reinforcing insole being
75 necessary not only to afford a smooth tread for the foot, but serving the additional purpose of maintaining the exact shape of the rib by preventing the contraction or expansion of the channel or groove. By this means a
80 durable insole may be made, answering all requirements, by the employment of very light material, such, for example, as of thin leather, of canvas, or other fabric.

Heretofore attempts have been made to
85 produce a ribbed insole, but such attempts have been practically unsuccessful, owing to the fact that they have been confined to the use of a rib defined not by molding, but by stitching, in which case the rib was either
90 made by a narrow strip secured to the insole proper, or if stitches of any kind were employed they were located so that the welt-machine, or machine for sewing the welt to the insole, would cut a number of the stitches
95 and so impair the quality of the shoe.

In the accompanying drawings, Figure I is a top plan view of my insole. Fig. II is a bottom plan view thereof. Fig. III is a cross-section of the same, showing the groove 100

therein. Fig. IV is a cross-section of a portion of shoe complete embodying my invention and including a cork reinforcement. Fig. V is a top plan view of my insole, illustrating its preferred form when thin material is used. Fig. VI is a cross-section of the same to show the arrangement of the seams or stitches. Fig. VII is a top plan view of my insole as applicable to the ordinary turned shoe for women, showing the groove extending only half-way around the sole.

Referring to the figures on the drawings, 1 indicates my insole. It may be made of any suitable material, as, for example, leather or other fabric, like canvas. Leather, as previously suggested, is employed in shoes for heavy wear and, as is well understood in the art of leather-working, is usually of sufficient body to retain a shape that may be given to it by molding. Therefore in such classes of shoes I may, without further provision, complete the insole by forming in it at a suitable distance from its edge a clearly-defined groove or channel 2. This groove is preferably produced by the use of dies, or in any other suitable way. The groove or depression on the one side of the insole produces on the other side thereof a rib 3, while the remaining material of the insole lies perfectly flat and smooth. Consequently, while the grooved side of the insole might be used directly for the tread, I prefer to employ a finishing or reinforcing layer 5, as of smooth leather, which, being secured to the grooved side of the insole by suitable adhesive material or cement, not only forms a smooth tread for the insole itself, but also affords a reinforcement to the insole, so that in insoles manufactured according to my method entirely from leather the rib 3 resembles a solid rib projecting from one insole, the cement serving to unite the parts together and to make a strong, complete, and durable means for securing the outer or wearing sole to the upper.

It is evident that a molded channel or groove, the sides of which are separated, will define a rib upon the opposite side of the insole, which, by reason of its width, is much more stable and less liable to yield than a rib formed by stitching a single piece upon the insole, or a rib or wale formed by folding a thin insole upon itself. Not only is a more substantial rib obtained by molding, but it is possible to mold a rib in stock many times heavier than that which can be efficiently formed by folding.

For securing the outer or wearing sole to the upper an ordinary welt 6 may be employed, secured to the insole and to the intermediate upper 7, as by stitches 8. In sewing the parts together the stitches 8 pass entirely through the welt, upper, and both walls of the rib 3, thereby serving not only to unite the base of the walls of the rib firmly, but securing a firm hold upon the stock of the insole without weakening it in any manner—

such, for example, as would be occasioned in the employment of an ordinary seam-channel cut into the stock of the insole.

As above stated, when the stock of which the insole is made is sufficiently heavy the rib when once formed in the material will hold its shape when stitched to the welt and upper without further provision. It may, however, be additionally secured by the employment upon each side of the rib of a row of stitches, which extend entirely through the different thicknesses of the material of which the insole is composed. These stitches are indicated at 9 and 10 in Figs. V, VI, and VII of the drawings, and they serve to permanently define and secure in place the rib 3 when it is made of yielding material which will not hold a molded shape, as leather or similar material would do. If thin material is employed, that portion of the insole of which the rib is formed may be made of double thickness and the rib or channel may be formed in it in the same manner in which it is formed in leather, namely, by the use of dies, for example. The rib may or may not be extended entirely around the insole. It may, for example, extend around from one side of the heel to the other, or it may only extend around that portion of the insole which supports the ball of the foot, as shown in Fig. VII of the drawings.

The rib 3 may be made of any required elevation, so that between its walls, that are sharply defined, there may be inserted a filling of suitable material, as cork, and the complete sole of the shoe may be built up to any thickness. This construction affords a specially-suitable means for providing under the tread any required thickness of cork, as is clearly indicated at 12. (See particularly Fig. IV of the drawings.)

What I claim is—

1. In a shoe, the combination with an insole provided with a rib-defining molded groove adjacent to the opposite edges of the insole, of an upper secured to the rib by stitches passing through both walls of the same, the molded rib being designed to permit of slight movement of the medial portion of the insole without permitting yielding of the upper, substantially as specified.

2. As a new article of manufacture, an insole provided with a rib-defining molded groove and with a flat reinforcing-piece secured upon the grooved side of the insole, substantially as specified.

3. In a shoe, the combination with an insole provided with a rib-defining molded groove adjacent to the opposite edges of the insole, of an upper secured to the rib by stitches passing through both walls of the same, and a filling of cork between the walls of the rib nearest the center of the sole, the molded rib being designed to permit of the lateral expansions of the cork without permitting yielding of the upper, substantially as specified.

4. The combination with an insole provided with a rib-defining molded groove, of a flat reinforcing-piece secured upon the grooved side of the insole by securing means extending longitudinally with respect to the rib and upon the opposite sides of the groove, substantially as specified.

5. An insole consisting of two parts one provided with a rib-defining molded groove and the other a flat piece united to the flat side of the ribbed part, and stitches passing through both parts of the insole upon each side of the groove the material of the flat piece adjacent to the groove and between the rows of stitches constituting stiffening to prevent the contraction of said groove or channel, substantially as specified.

6. In a shoe, the combination with an insole provided with a rib-defining molded groove, the sides of which are separated, parallel to each other and perpendicular to the insole, of a filling of cork or other material located between the walls of the rib and having its surface substantially flush with the top of the rib whereby the rib is permitted to yield slightly when the cork is expanded laterally by a weight superimposed upon the insole, substantially as specified.

erally by a weight superimposed upon the insole, substantially as specified.

7. In a shoe, the combination with an insole provided with a rib-defining molded groove, of a flat reinforcing-piece united to the flat side of the ribbed insole, stitches passing through the insole, and reinforcing-piece upon each side of the groove, an upper and vamp stitched to the rib, a cork filling partially surrounded by the rib, and a sole stitched to the vamp, substantially as specified.

8. In a shoe, the combination with an insole consisting of a plurality of layers and a rib-defining molded groove formed in said layers, a flat piece upon the grooved side of said insole and stitches passing through the reinforcing-piece and through both layers of the insole upon both sides of the rib, substantially as specified.

In testimony of all which I have hereunto subscribed my name.

GEORGE W. SLEEPER.

Witnesses:

CHAS. F. PELTIER,
H. J. ROBINSON.