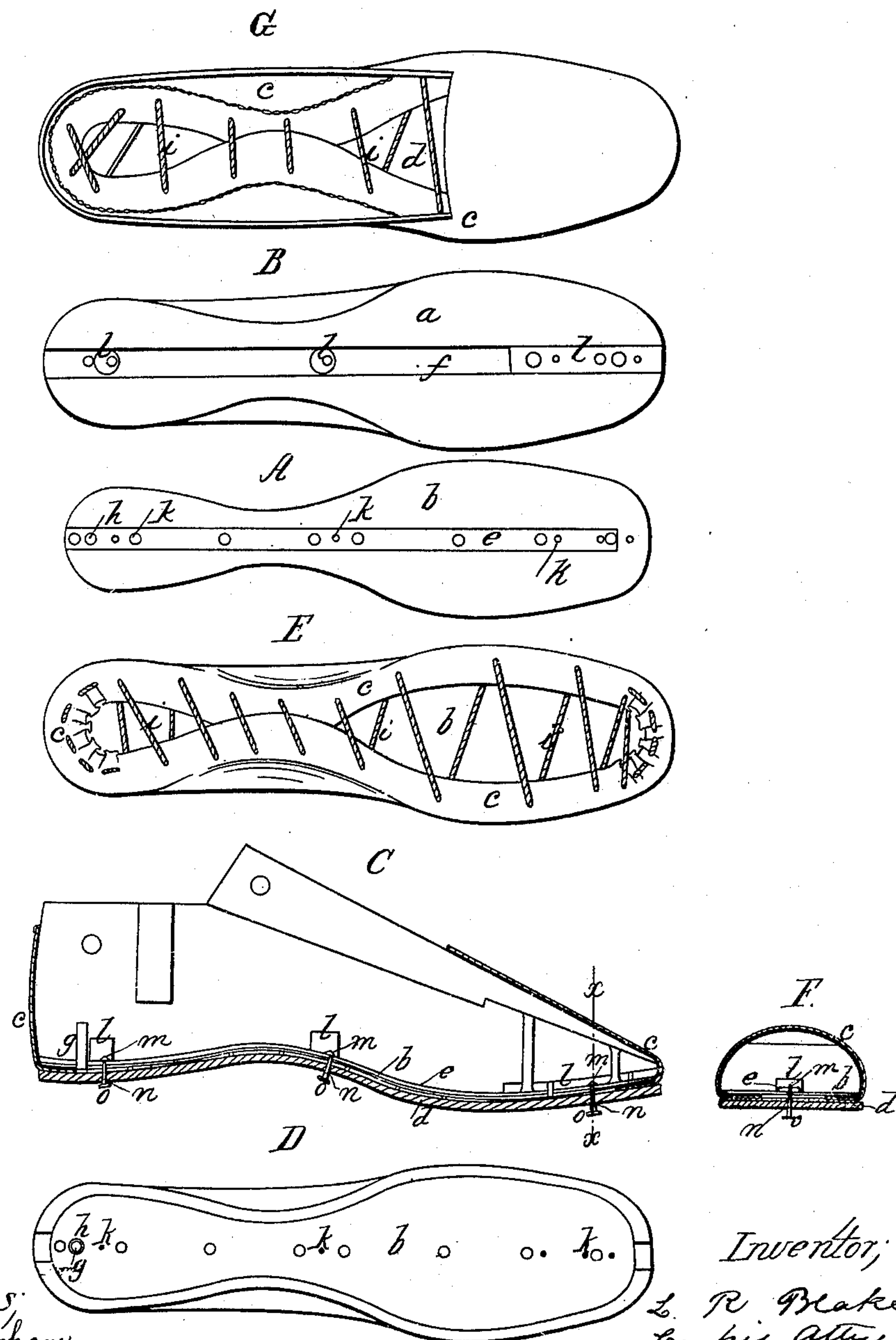


L. R. BLAKE.
MANUFACTURE OF BOOTS AND SHOES.

No. 90,225.

Patented May 18, 1869.



Witnesses:
M. W. Frothingham
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United States Patent Office.

LYMAN R. BLAKE, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 90,225, dated May 18, 1869.

IMPROVEMENT IN THE MANUFACTURE OF BOOTS AND SHOES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LYMAN R. BLAKE, of Boston in the county of Suffolk, and State of Massachusetts, have invented an Improvement in the Manufacture of Boots and Shoes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention, sufficient to enable those skilled in the art to practise it.

United States Letters Patent, No. 44,388, were granted to me on the 27th of September, 1864, on an improvement in the manufacture of machine-sewed boots and shoes, which improvement consisted in a boot or shoe having the upper and vamp united by stitches which passed through the vamp and outer sole, and around the edge of, but not through an inner sole, which narrow inner sole was used for the temporary purpose of lasting, though it might also serve the ulterior purpose of an inner, or sock-sole.

My present invention also relates to the employment of a narrow inner sole, for the purpose of lasting boots or shoes, with particular reference to uniting the vamp and sole upon a McKay sewing-machine, the invention relating to the construction of the inner sole with reference to its use as a support to which to temporarily attach the outer sole, and as a pattern to preserve the form of the shoe after its removal from the last, and during the sewing-operation.

The invention consists, primarily, in the employment of a narrow metal insole, so braced that it is practically inflexible, or possesses such rigidity that it will not yield or bend under the strain of the shoe, the operation of the sewing-mechanism, or the manipulations of the operator.

The invention also consists in the employment of a rib-plate, or narrow metal strip on the inner side of the inner sole, which strip sets in a groove in the sole-face of the last, and prevents lateral displacement of the narrow insole; also, in the employment of a steady-pin, or steady-pins, projecting from the sole, or from the last, and entering a corresponding hole, or holes, made in the last, or through the lasting-sole, such pin, or pins, retaining the sole in position in the direction of the length of the last.

The invention further consists in combining with the last and the lasting, or narrow metal sole, held in place upon the last by suitable guides, metal anvil-blocks, or plates, which correspond in position to holes made through the lasting-sole, or pattern, so that when the outer sole is laid upon the metal sole, and tacks or nails are driven through corresponding holes punched through the outer sole, and through the holes in the lasting-sole, their points will strike the anvil or metal plate, and be turned thereby, so as to clinch against the inner face of the lasting-sole, thereby securing the outer sole to the lasting-sole, (and to the upper, lasted thereto,) so that the last being removed, the vamp, outer sole, and lasting-sole will be secured together,

and in proper relative position for the union of the vamp and outer sole, by a series of stitches running around and beyond the edge of the metal, or lasting-sole.

The drawings and the description thereof will serve more clearly to illustrate and define my improvements.

A shows a view of the inner side of the metal, or lasting-sole.

B is a view of the sole-face of the last.

C is a vertical and central section of the last.

D shows, in plan, the metal sole upon the last.

E is a similar view, but with the upper drawn over and lasted to the last.

F is a section on the line *xx*, the outer sole being tacked in place.

G is a plan of the shoe as it appears after the sewing has been effected and the metal sole has been withdrawn.

a denotes the last;

b, the narrow metal sole;

c, the vamp; and

d, the outer sole.

The lasting-sole *b* is preferably made of plate or sheet-metal, bent to a form corresponding to the curved sole-face of the last, the nature and thickness of the metal being sufficient to maintain this form, excepting under severe strain.

The better to preserve its form, however, I rivet to the under surface of the metal sole a narrow central curved strip or rib of steel, *e*, this rib entering a groove, *f*, in the sole-face of the last, the rib and groove serving to maintain the sole in position (laterally) upon the last.

Projecting from the last is a guide or steady-pin, *g*, (one or more of which may be employed,) and this pin passes through a hole, *h*, in the metal sole, this pin keeping the sole *b* from endwise displacement.

When positioned upon the last, the edge of the sole *b* falls short of the edge of the last, as shown at D.

The last having been inserted in an upper, the edges of the upper *c* are drawn over the edges of the sole-face of the last, and the sole *b* and the opposite edges of the vamp are stitched together, or connected by a lacing-thread, *i*, as seen at E, the thread simply running across and through the edges of the vamp, but having no connection with the last or with the sole *b*. This having been effected, the outer sole *d* is laid upon the last, and is preferably secured to the sole *b* as follows:

The lasting-sole *b* has a series of holes, *k*, punched or bored through it, such holes extending through the rib *e*.

In the sole-face of the last, at the bottom of the groove *f*, are sunk metal plates, or blocks *l*, in the top surface of each of which is a recess, *m*, each recess corresponding in position with one of the holes, *k*, through the lasting-sole *b*.

Through the outer sole *d* corresponding holes *n* are

punched or pierced, and when the sole *d* is laid upon the last, these holes *n* being brought over the holes *k*, a nail or tack, *o*, is driven through each hole *n*, and the point of this tack passing through the hole *k*, is turned over by the metal surface of the plate or anvil *l*, and clinches against the inner surface of the rib *e*, the head of the nail being left projecting, as seen at *F*. The recess *n*, in which the point of the nail turns, may be made in the inner surface of the rib-piece *e*.

The edge of the outer sole *d* extends out to the edge of the last, or beyond the edge of the lasting-sole *b*, and it will be obvious that the outer sole *d*, the lasting-sole *b*, and the upper are now connected, the inner and outer sole by the nails, and the vamp by its edges being enclosed between the edges of the inner and outer soles, so that the last being now removed, the parts of the shoe are in position for the stitching-operation, in which operation the row of stitches passes outside of the edge of the sole *b*, and equidistant, or about equidistant, therefrom.

The stitching having been completed, the tacks *o* are drawn out, thus releasing the sole *b*, which having now no attachment to the outer sole, or to the vamp, is readily drawn from the shoe, leaving the latter in the perfect form imparted to it by the last, which form is preserved by the metal inner sole *b* until the stitching of the sole is completed.

Instead of fastening the outer sole temporarily in place by the tacks or nails *o*, other means may be used for effecting the temporary union, such, for instance, as sharp spurs projecting up from the metal sole; but the tacks are, in my opinion, the best fastenings, as they afford a secure temporary connection, while they can easily be withdrawn after the sewing is effected.

Although I have spoken throughout this specification of stitches, it will be obvious that shoes may be similarly lasted and prepared for union of their vamps and outer soles upon the nailing-machine patented by

myself and A. S. Libby, No. 76,150, March 31, 1868, nails being the equivalent of the stitches herein described.

I claim, in combination with a narrow lasting-sole, the rib *e*, acting as a guide to keep the lasting-sole from lateral displacement, and as a brace to retain said sole in form, substantially as described.

Also, in combination with means for preventing lateral displacement of the lasting-sole, a steady-pin or pins, *g*, for fixing the sole in position in the direction of its length, substantially as described.

Also, in combination with a last upon which such lasting-sole is used, the clinching-blocks *l*, attached to the last, and acting to turn the points of the tacks or nails driven through the outer sole and lasting-sole, substantially as described.

Also, in combination with the narrow rigid metal lasting-sole, the lasting-thread, passing only through the edges of the upper, without passing around or being attached to pins extending above the surface of said sole, as herein described.

Also, the process of making a shoe without a permanent or stitched inner sole, said process consisting in first lasting the edges of the upper over a narrow and rigid lasting-sole, (which sole fits upon the face of the last, and is so held in place thereon that the last can be slipped out from the shoe and off from the lasting-sole, the lasting-stitches passing across the last, and through, and only through the edges of the upper,) then temporarily fastening the outer sole accurately in position, and then withdrawing the last and uniting the outer sole and vamp by a series of stitches, or other fastenings, passing through the sole and vamp, outside of the edge of the lasting-sole, said latter sole being left free to be withdrawn from the shoe by drawing out the lasting-tacks.

LYMAN R. BLAKE.

Witnesses:

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