J. B. Johnson,

Lasting Machine.

No. 46,299. Patented Feb. 7, 1865.

Fig. 2.

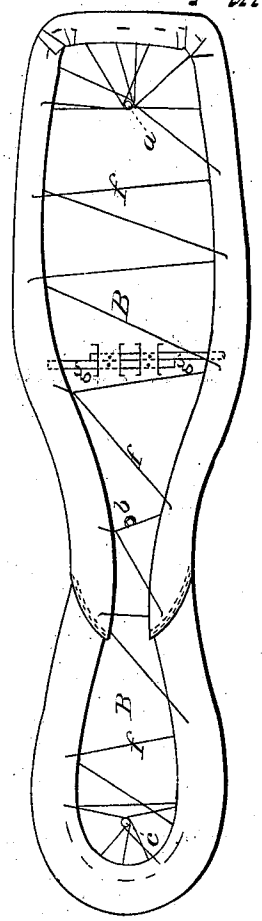


Fig. 1

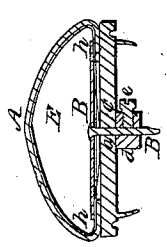
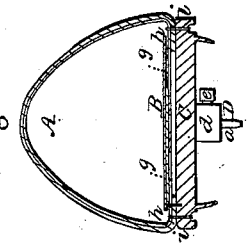


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH B. JOHNSON, OF LYNN, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CHARLES BUFFUM, OF SAME PLACE.

IMPROVEMENT IN SHOES.

Specification forming part of Letters Patent No. **46,299**, dated February 7, 1865.

To all whom it may concern:

Be it known that I, JOSEPH B. JOHNSON, of Lynn, in the county of Essex and State of Massachusetts, have made a new and useful invention having reference to the Manufacture of Shoes; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a transverse section of a shoe-upper, lasted and having an outer sole applied to it in accordance with my invention. Fig. 2 is an under side view of the shoe-upper as lasted. Fig. 3 is a transverse section of the said lasted upper, such section being taken through the spurs hereinafter described, for the purpose of maintaining the outer sole and the upper in their due relations, where the spurs pass into them and after the last may have been removed from the upper preparatory to the carrying on of the process of sewing the outer sole and the upper together.

My invention is particularly useful for applying a single sole to a "shoe-upper"—that is, the "upper-leather" of a shoe. Prior to my invention the connection of the outer sole and the upper by means of sewing performed by a sewing-machine—such as has been patented by Lyman R. Blake, and wherein the shoe, while being so sewed, is supported by a "horn" or arm projecting within it, has required the upper to be sewed or tacked to the insole in the process of lasting the two, and also that the sewing for the connection of the outer sole and the upper should not only be carried through them, but go through the inner sole. With my invention there is no sewing or tacking of the inner sole to the upper in the process of lasting the two. Neither is there any sewing of the inner sole to the upper-leather and the outer sole during the process of sewing the outer sole to the upper. My invention causes the inner sole (or what may be termed a "false" inner sole, as generally it is to be made of sheet metal) to be practically disconnected from both the outer sole and the upper, in consequence of there being no sewing going through the said inner sole. Furthermore, the said inner sole and the sewing by which the outer sole and the upper are united are so arranged that such sewing is carried around and outside of the periphery of the said inner sole.

My invention contemplates the removal of the false sole or false inner sole from the shoe after the outer sole and the upper have been sewed together, a piece of leather or cloth being subsequently pasted on the inner surface of the outer sole, and so as to cover the sewing by which such outer sole and the upper may be connected.

In the drawings, A denotes the upper, and B the false inner sole or metallic plate, while C is the outer sole, and E the shoe-last. From and through the metallic plate or false inner sole, B, three or any other suitable number of pins or studs, *a b c*, project, one of which—viz., *a*—is arranged at or about at the center of the toe, while another, *c*, is disposed at or near the center of the heel part of the said sole B, the same being as represented in the drawings, the remaining pin or pins being placed between the two pins *a* and *c*. Each of the pins is to be provided with a clamp or sole-holder, D, which consists of a cylindrical annulus, *d*, (to fit on the pin,) provided with a clamp-screw, *e*, going radially into it, and so as to be capable of being screwed against the pin. Instead of the clamp or holder D being so made, it may be a screw-nut to screw directly upon the pin, such pin under such circumstances having a male screw cut on it.

Besides the above there are two spurs, *g g*, affixed to the outer surface of the false inner sole, each of the said spurs consisting of a strip of spring-steel fastened at or near one end to the said sole, and having its free end bent at right angles to the rest of the spur and sharpened, so as to be capable of passing or hooking through the overlap of the upper and projecting beyond it and into the main sole a short distance. These spurs are arranged on the false inner sole in the positions shown in the drawings, such being the places where, if anywhere, there is danger of displacement of the upper with respect to the sole on removal of the shoe-last from the upper.

In lasting the upper, the last being placed within it and the false inner sole being arranged on the last, strong thread is to be sewed into the overlapping edges of the upper and across

the false inner sole, in manner as shown at *f* in Fig. 2, the heel and toe of the upper being stayed or drawn into place by carrying the thread more or less around the pins *a c*.

The false inner sole is not so large as the sole of the last, their perimeters being parallel, or about so, and there being a narrow space, *h*, extending entirely around the inner sole and between the perimeter thereof and that of the sole of the last. After the upper may have been lasted, as above described, the sole C is to be put in place, holes being made in it for the several pins *a b c* to pass through. Next the clamp should be put on the said pins, and the screws of the clamps should be turned up so as to fasten the clamps to the pins, care also being taken that the spurs shall be made to penetrate the overlaps of the upper and enter the sole. All this having been accomplished, the last may be withdrawn from the shoe, which will then be ready for being applied to the sewing-machine for the purpose of having the sole C sewed directly to the overlaps of the upper by sewing going through the said overlaps and sole, and in the space *h* around the entire outer edge of the false inner sole the same being as shown at *i*. The sole C may be channeled for reception of the sewing. After the sole and upper may have thus been sewed together, the clamps should be removed from the pins and they and the false inner sole should be withdrawn from the shoe, a covering to the inner face of the sole being subsequently cemented thereon and on the line of sewing, as well as on the sewing extending across the said face.

The advantages of my invention are, that it enables the manufacturer of the shoe to dispense with the usual permanent inner sole and a considerable portion of the upper that is required in the overlaps when such an inner sole is employed and sewed or tacked to the said overlaps of the upper. In this way the invention economizes material. It also effects a saving of labor as well as a saving in the expense and use of lasting-tacks. It opens the way for manufacturers to furnish a "machine-made shoe" capable of competing as to cost and quality with the usual hand-sewed shoes, especially light work of such kind.

I claim—

1. The above-explained improvement in lasting a shoe, the same consisting in the employment of a false inner sole, B, in connection with the last E and upper A, and drawing the upper on the said sole and last by means of thread or sewing, *f*, or the equivalent thereof, extended across the inner sole, but without going into or through it.

2. The combination of two or any other suitable number of pins and clamps, *a b c*, or their equivalents, with the false inner sole, B, and for the purpose of holding the main sole in place with respect to the upper, when the latter is confined to the false sole by thread or sewing, *f*, or its equivalent, going across the false sole, in manner substantially as specified.

3. The combination of the spurs *g g*, or their equivalents, with the false sole B and the upper A, when lasted as specified, such spurs being for the purpose of maintaining the said upper and the outer sole in their proper relation at or near the ball of the foot.

4. The combination of one or more pins, *a c*, or their equivalents, with the false sole B and the sewing *f*, extended across such sole and about the said pin or pins, substantially in manner as hereinbefore explained.

5. The arrangement of the inner sole B and the sewing *i*, by which the outer sole, C, and the upper A are united, the said sewing under such arrangement being carried around and outside of the periphery of but not through the inner sole.

JOSEPH B. JOHNSON.

Witnesses:

F. P. HALE, Jr.,

CHAS. BUFFUM.