(No Model.) 2 Sheets—Sheet 1.

R. J. McNALLY.

PROCESS OF MANUFACTURING TURNED SHOES.

No. 473,851. Patented Apr. 26, 1892.

Fig. 1.

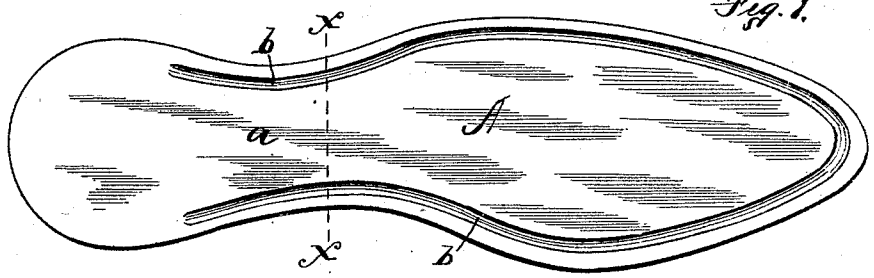


Fig. 2.

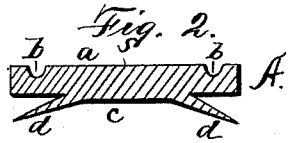


Fig. 3.

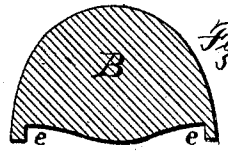
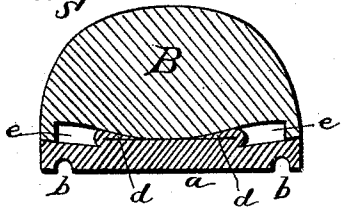


Fig. 4.



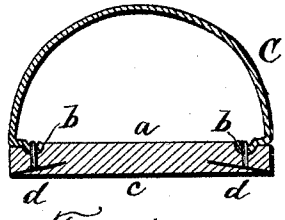


Fig. 6.

Fig. 7.

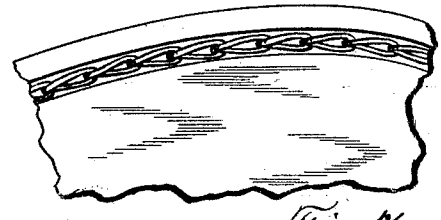
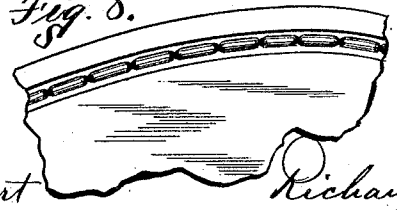


Fig. 8.



WITNESSES:
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his ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

R. J. McNALLY.

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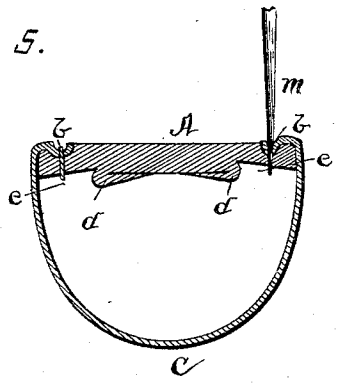
Fig. 5.



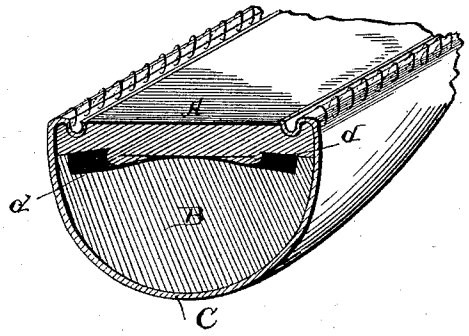


Fig. 4a.

Witnesses:
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UNITED STATES PATENT OFFICE.

RICHARD J. McNALLY, OF UTICA, NEW YORK, ASSIGNOR TO A. CHARLES LUCE AND ROBERT R. GIBBS, OF SAME PLACE.

PROCESS OF MANUFACTURING TURNED SHOES.

SPECIFICATION forming part of Letters Patent No. 473,851, dated April 26, 1892.

Application filed June 20, 1891. Serial No. 396,953. (No specimens.)

To all whom it may concern:

Be it known that I, RICHARD J. McNALLY, of Utica, in the county of Oneida, in the State of New York, have invented new and useful Improvements in the Process of Manufacturing Turned Shoes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to the process of manufacturing turned shoes.

My object is to manufacture shoes in such a manner that no insole is necessary and in which the lock of the stitch is protected from wear by a sequence of steps, consisting in, first, preparing the sole with a fly on one face and a groove in its other face adjacent to the edges and extending from the heel on one side around the toe to the heel on the other side; second, the tacking this sole onto a last with the grooved side outermost; third, then lasting the upper inside out onto the last; fourth, then whip-stitching together the sole and upper while upon the last from the heel on one side around the toe to the heel on the other side, then removing the last and stitching together the sole and upper from the heel on one side around the toe to the heel of the other side with a needle operated perpendicularly to the sole in a McKay machine, locking the stitch in the groove in the sole, and drawing the edge of the upper down into the groove, said groove being deep enough to receive the edge of the upper and the lock of the stitch, so that the stitch-lock will not project above the plane of the body of the sole inclosed by the groove and leaving the heel portion unstitched; fifth, then turning the shoe, closing the heel-opening previously left unstitched, and finishing the shoe in the usual way.

My invention consists in the process of manufacturing shoes embodying the steps and sequence of steps hereinafter described, and which is specifically set forth in the claim hereunto annexed.

In the accompanying drawings, Figure 1 is a bottom plan view of the sole, showing the groove therein. Fig. 2 is a vertical transverse section of the sole on line X X, showing the fly not fastened down. Fig. 3 is a vertical transverse section of the last, showing the bottom grooved to fit over the fly on the sole. Fig. 4 is a vertical transverse section of the last and sole placed together, with the fly in the groove. Fig. 4ª is a perspective view looking toward the toe in transverse section and partly broken away, showing the whip-stitching of the sole and upper together while on the last. Fig. 5 is a vertical transverse section of the sole and upper, both inside out, as when in the sewing-machine being stitched, the stitching being done by the vertical needle (shown in elevation) operated perpendicularly and making the lock of the stitch in the stitch-groove in the sole and upon the upper, said groove then being uppermost and the folded back fly being upon the then inner face of the sole. Fig. 6 is a vertical transverse section of the sole and upper stitched, the last removed, the shoe turned, and the fly fastened down. Fig. 7 is an enlarged top plan of part of the sole, showing one style of lock-stitch wholly within the groove in it. Fig. 8 is another like view showing another style of stitch.

In the drawings I illustrate the construction of the sole and last and the mode of stitching.

A is the sole, provided on one face *a*, eventually the inner face of the shoe, with a groove *b*, extending adjacent to the edge from a point at or adjacent to the front of the heel on one side around the sole to the like point on the other side, and further provided on its other face *c*, eventually the outer face of the shoe, with a fly *d* of the usual construction.

B is the last, provided in its bottom with a groove *e* of about the same length as the groove in the sole, the inner wall of which is beveled or scarfed off, so that it will fit over the fly when it is turned back, and that part exterior to said groove will support and steady the outer edges of the sole close up to the upper.

C is the upper, of any ordinary construction.

In manufacturing a shoe by my process, using a last of the above construction, I first cut the groove and the fly in the opposite faces of the sole; second, secure the sole upon the bottom of the last with the face *a* outermost and the fly in the groove therein; third, I last the upper, bending its edges over onto the sole and over the groove therein, and whip-stitch the sole and upper together, if desired, sufficiently at least to hold them in proper po-

sition relative one to the other for the machine-stitching after the last has been removed; fourth, I place the shoe, the last being removed, in a McKay machine, which operates the needle *m* with a reciprocating movement perpendicular to the sole, using the style of needle common to that machine, and stitch the upper and sole together, which stitching draws the edges of the upper down into the groove, and the lock of the stitch is on top of the upper material, with its surface flush with the face *a* of the sole or a little below it, carrying said stitching around the toe and back substantially to the ends of the groove *b* in the sole, leaving the heel portion unstitched; fifth, I turn the shoe through the heel-opening, close this opening in any ordinary manner, and then finish the shoe.

It will be seen that I whip-stitch the shoe after it is removed from the last, and also that I stitch it with a needle perpendicular to the plane of the body of the sole and that in my shoe the stitching and the edges of the upper are all within the groove and do not rise above the plane of the body of the sole, so that no insole is necessary, and these are the principal points of novelty in my process. It will also be seen that the whip-stitching together of the sole and upper leaves the shoe just as flexible, makes it more durable, and it is virtually a double-stitched shoe when removed from the machine and turned.

What I claim as my invention, and desire to secure by Letters Patent, is—

The herein-described process of making shoes without insoles, consisting, first, in preparing the outer face of the sole with the usual fly and the inner face with a groove running from a point near the front of the heel on one side around the toe and to a similar point on the other side; second, tacking said sole with its inner face outward onto a last properly shaped to receive and hold the fly when turned back out of the way of the operating-needle; third, lasting both sole and upper while in turned position onto the last and whip-stitching said sole and upper together; fourth, removing the last and perpendicularly stitching together the sole and upper, with the edge of said upper and stitching confined within the groove, leaving the heel unstitched, and, fifth, turning the upper, closing the heel, and finishing the shoe.

In witness whereof I have hereunto set my hand this 17th day of June, 1891.

RICHARD J. McNALLY.

In presence of—
ROBERT R. GIBBS,
A. C. LUCE.