T. R. HYDE.

WOODEN-SOLED SHOES.

No. 183,675. Patented Oct. 24, 1876.

Fig. 1.

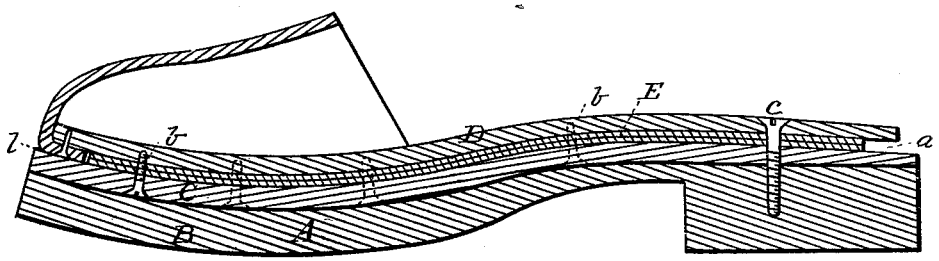


Fig. 2.

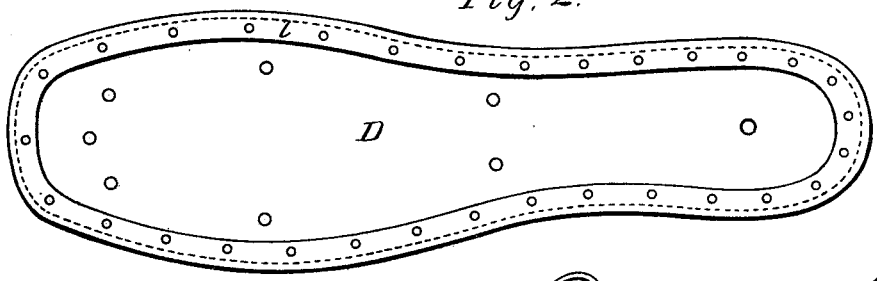
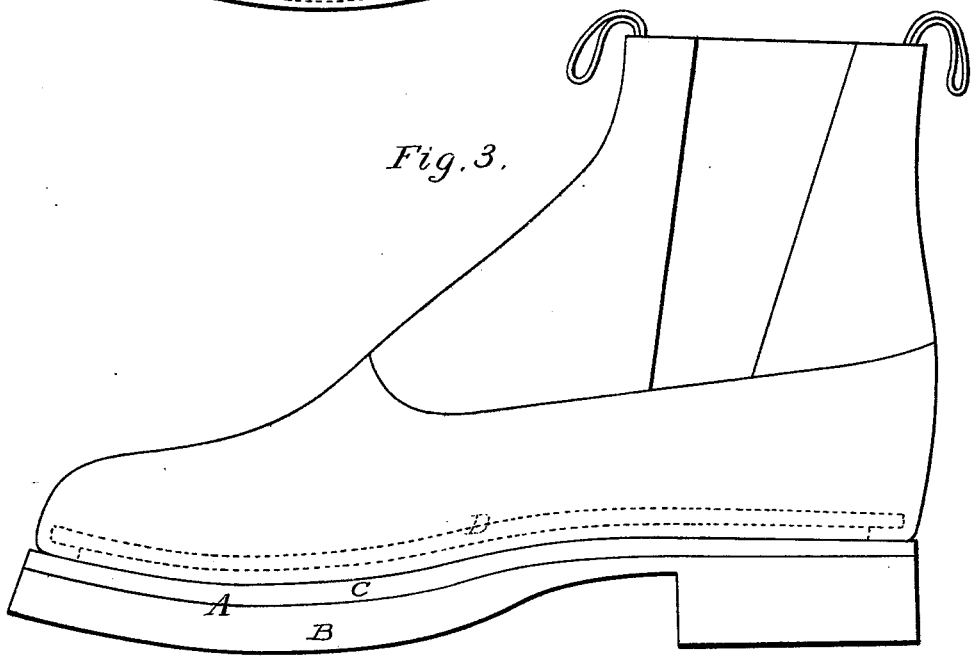


Fig. 3.



WITNESSES

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THEOPHILUS R. HYDE, OF WESTERLY, RHODE ISLAND.

IMPROVEMENT IN WOODEN-SOLED SHOES.

Specification forming part of Letters Patent No. **183,675**, dated October 24, 1876; application filed September 2, 1876.

To all whom it may concern:

Be it known that I, THEOPHILUS R. HYDE, of Westerly, in the county of Washington and State of Rhode Island, have invented a new and valuable Improvement in the Manufacture of Wooden-Soled Shoes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical longitudinal section through the sole-layers and front upper. Fig. 2 is a bottom view of the insole, showing the edge of upper attached. Fig. 3 is a side view of shoe complete.

This invention has relation to wood-soled shoes; and it consists, mainly, in the construction and novel arrangement of the sections of the sole, sawed from each other, and thereby exactly and economically fitted together; in the combination, with the insole and outer sole, of a yielding and water-proof intermediate sole placed between the two; in the wooden welt-sole; and in the manner of sawing out, fitting, and connecting the sections together and to the upper, as hereinafter fully shown and described.

In the accompanying drawings, the letter A designates the outer sole, which I preferably make in two sections, B and C, sawed from each other, to secure an exact fit between their adjacent surfaces. Of these two sections, B represents the tread, and C the welt-sole. D indicates the insole, which is also sawed from the outer sole, to secure an exact adaptation in form to the upper surface thereof, and E represents a yielding and water-proof intermediate sole, made of rubber, prepared cloth, or other suitable material, and located between the insole and welt-sole. The insole E is trimmed off around its edge, so that it is smaller in length and breadth than the outer sole, and allowance is thus made for the leather of the upper. The intermediate sole is still less in diameter than the insole, and when secured between the latter and the welt-sole leaves a marginal space, *a*, around its edge, and within the edges of said insole and welt-sole, into which the edge *l* of the upper is received. In this manner the upper can be fitted to the wooden sole without rabbeting or chamfering its edge. The sections for the tread, welt-sole, and insole are sawed from each other out of hard wood. They are designed to be transversely straight, and to have an easy double curvature longitudinally, for the heel and ball of the foot, the front or ball curvature being circular, with a radius about the length of the sole. In this manner it is designed to secure ease and comfort in walking upon a sole of this character.

The parts are secured together in the following manner: The edge of the upper is tacked to and under the edge of the insole. The latter is then connected with the welt-sole, the water-proof intermediate sole being cemented between the two wooden sections, which are secured together by means of screws *b* passing upward through the welt-sole into the insole. The screws are neatly countersunk, and the tread is fitted to the welt-sole and secured by means of water-proof cement, for which the sawed surfaces afford a strong hold, and by means of a screw, *c*, which is put through the center of the heel.

The welt-sole, if the shoe is to be subjected to unusually hard usage, may be made of metal, sheet-copper or its equivalent being preferably employed. In this case the insole will be sawed directly from the tread, and the welt-sole will be attached to the latter by screws, inserted from the top or upper side around the welt exterior to the upper. In making children's shoes, the toe of the outer sole may be projected sufficiently to prevent wear of the upper.

This invention is designed to provide a cheap and comfortable shoe for the working-classes, who have at present very little knowledge of such a luxury. This shoe is adapted to the anatomy of the foot and its motion in walking, the curvature of the ball of the sole giving an easy movement. By means of the welt-sole the tread and the insole can be connected firmly and strongly without showing the screws; and as the welt-sole is protected by the tread from wear, it affords an additional advantage in repairing, as the tread can be separated at the cement-joint and a new tread

put on; or the upper can be detached and an entirely new set of soles connected therewith at small expense. The water-proof intermediate sole, laid in and covered by water-proof cement, serves to absolutely exclude all moisture, and also to fill the space between the insole and outer sole, which is necessary on account of the introduction of the edge of the upper, with a yielding substance, which will adjust itself to the thickness of the upper under the pressure of the soles when secured together. The introduction of the intermediate sole enables the insole and outer sole to be sawed out with straight edges, and avoids the necessity of chamfering or rabbeting for the reception of the margin of the upper.

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

1. In the manufacture of wood-soled shoes, an improved process, consisting, first, in shaping the block or blank to conform to the finished sole, and then sawing the same into sole-sections, with surfaces of curvature adapted to be united together to form two or more thicknesses of sole, substantially as shown and described.

2. The combination, with the insole D and outer sole A, of the yielding intermediate sole E, of smaller size than the insole, leaving a marginal space, *a*, between said insole and outer sole for the introduction of the edge of the upper, substantially as specified.

3. The combination, with an insole and tread-sole, sawed from the same block, of a welt-sole, C, located between the two, and screwed to the insole, substantially as specified.

4. A wood-soled shoe having the sections of its sole sawed apart to fit each other, and the yielding intermediate sole E laid in water-proof cement between the insole and outer sole, substantially as specified.

5. The wood-soled shoe consisting of the insole D, intermediate sole E, tread-sole B, and welt-sole C, connected, first, to the insole, and then to the tread-sole, said parts being arranged substantially as herein specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

THEOPHILUS RODGERS HYDE.

Witnesses:

FANNY H. HYDE,

JOSIE A. PENDLETON.