

F. M. Shepard,

Rubber Shoe Sole.

No. 100,678.

Patented Mar. 8. 1870.

Fig: 1.

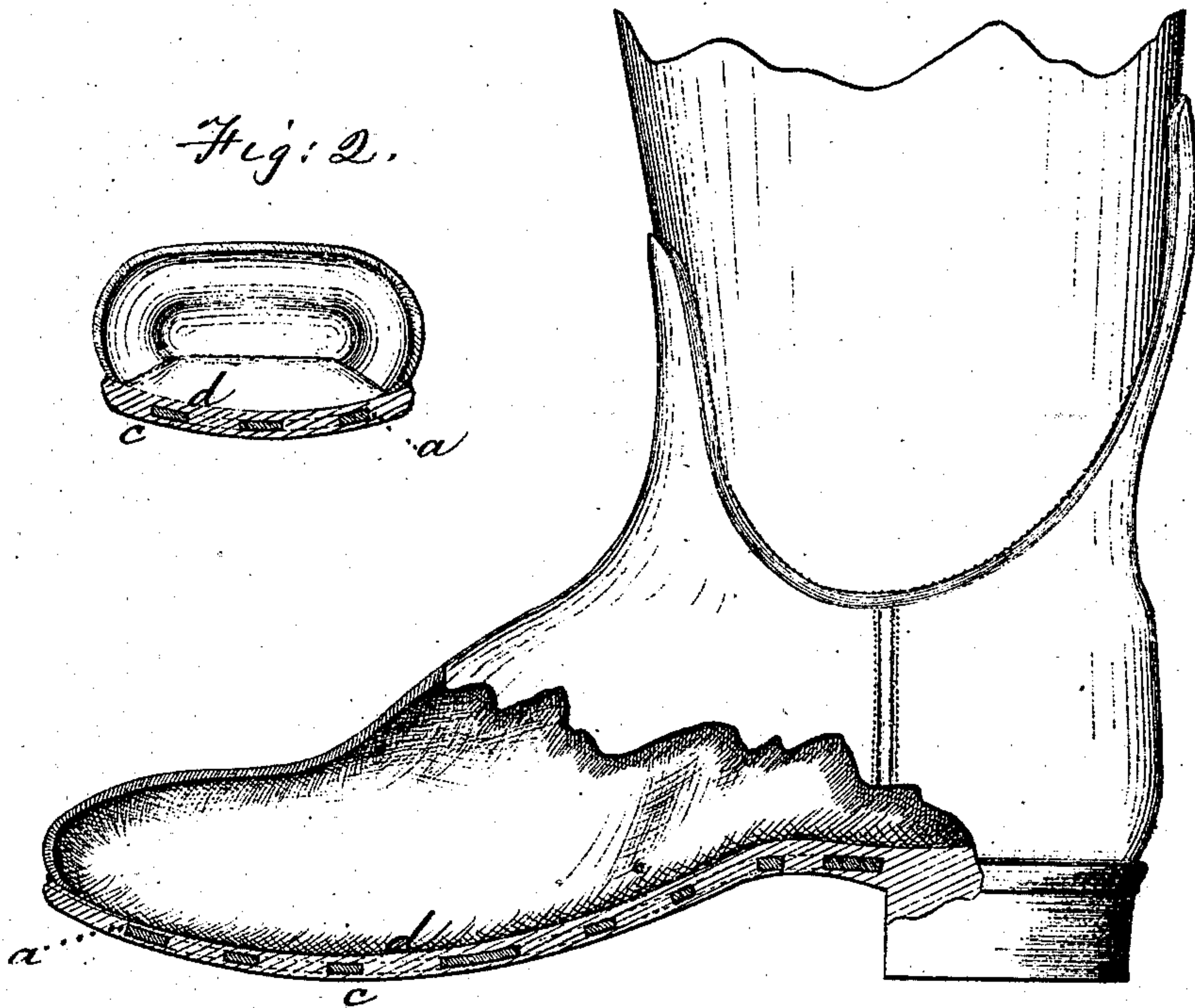


Fig: 2.

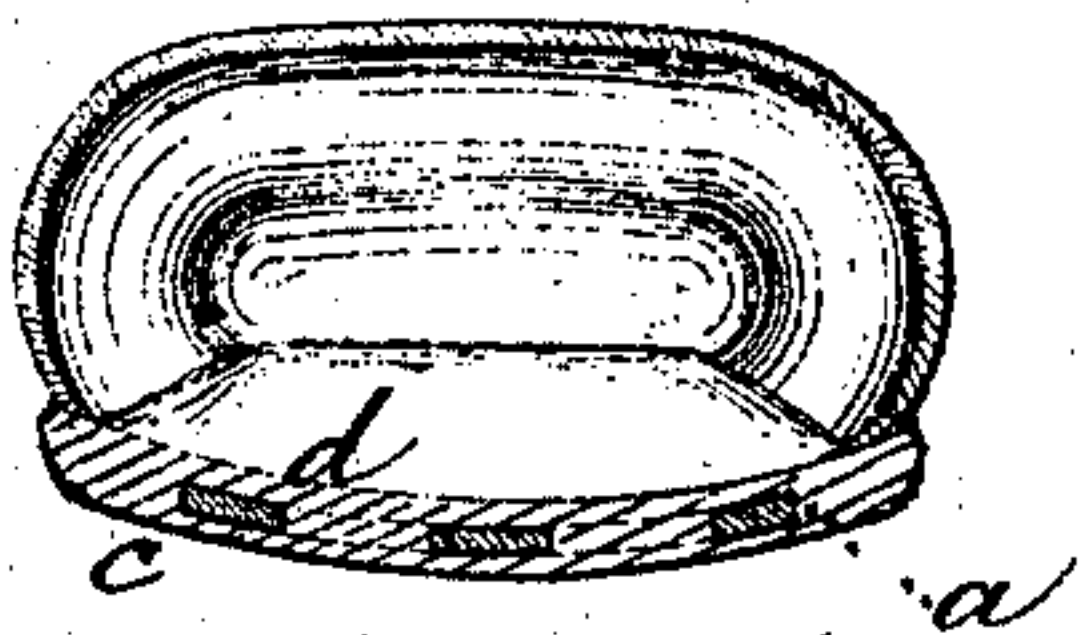
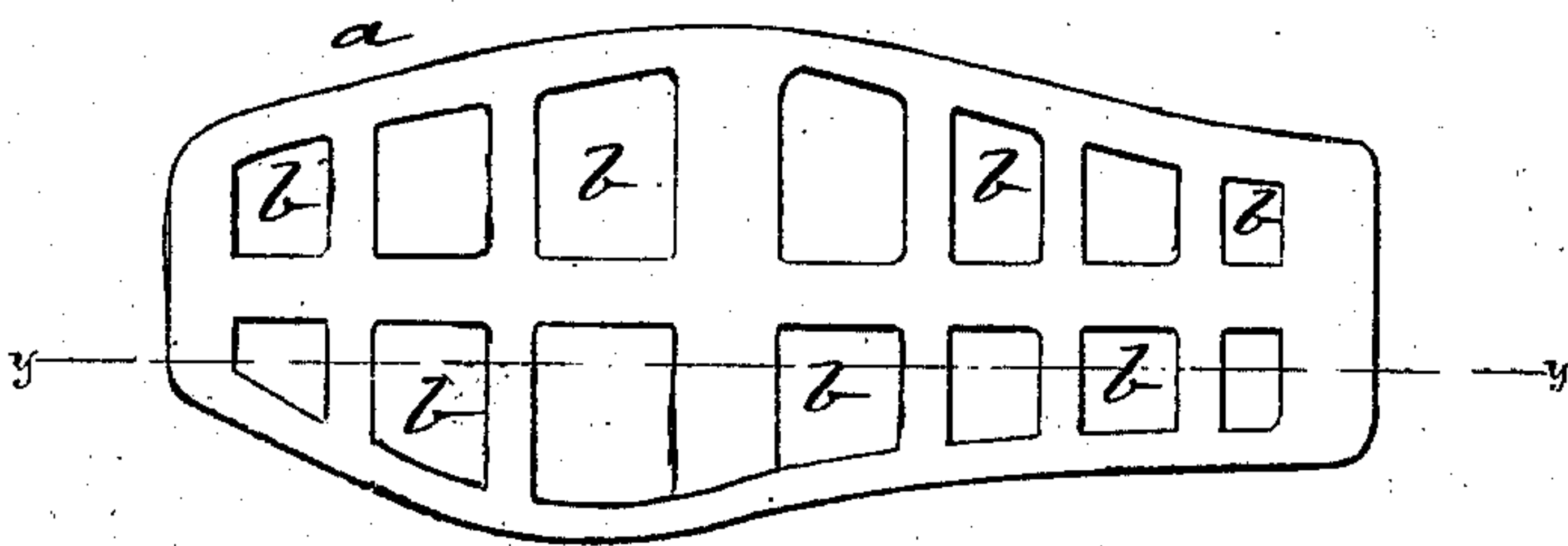


Fig: 3.



Witnesses:

Wm H. Pirkon
John B. Bishop

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Inventor:

United States Patent Office.

FREDERICK M. SHEPARD, OF NEW YORK, N. Y.

Letters Patent No. 100,678, dated March 8, 1870.

IMPROVEMENT IN SOLES OF RUBBER 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, FREDERICK M. SHEPARD, of the city, county, and State of New York, have invented a new and useful Improvement in the Soles of India-Rubber Boots and Shoes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a longitudinal section of the sole of a boot on my improved plan;

Figure 2, a cross-section of the same; and

Figure 3, a separate view of the perforated metallic plate which makes part of the sole.

The same letters indicate like parts in all the figures.

The object of my said invention is to render the India-rubber soles of India-rubber boots and shoes more rigid than when made of India rubber alone. This is important, as such boots are usually employed by persons who, in their business, are often required to walk on rough surfaces, and to perform duties, such as forcing a spade into the earth, requiring a more rigid sole than can be made of India rubber alone; and to this end,

My said invention consists in combining with a vulcanized India-rubber sole for a boot or shoe, a perforated metal plate interposed between two layers of India rubber, so that the surfaces of the two layers shall become united in the apertures or meshes, and around the edge of the metallic plate, while in the

green or plastic state, and become permanently united by the process of vulcanization.

In the accompanying drawings—

a represents a metallic plate, by preference made of sheet-iron, of a form and length sufficient to extend from the heel to within a short distance of the toe, and a little narrower than the intended sole.

Square or other-formed holes, *b*, are made in the said plate at given distances apart.

While the India rubber intended for the sole is yet in what is known as the green or plastic state, and before the outer layer, *c*, of the sole is put on, the metal plate *a* is applied to the surface of the main part *d*, and then the outer layer *c* is applied, taking care, by suitable pressure, to cause the two surfaces of India rubber to unite around the edges, and in the apertures of the plate. After this, the rubber is vulcanized.

The sole of a boot or shoe thus made will be more rigid, and hence better suited for many purposes than if made of India rubber alone.

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

A vulcanized India-rubber sole for boots or shoes, strengthened by a perforated metallic plate interposed between the inner and outer layers before vulcanizing, and secured substantially in the manner set forth.

FREDERICK M. SHEPARD.

Witnesses:

WM. H. BISHOP,
ALEX. B. BISHOP.