F. M. Shepard.

Rubber Shoes.

No. 84,650. Patented Dec. 1, 1868.

Fig. 2.

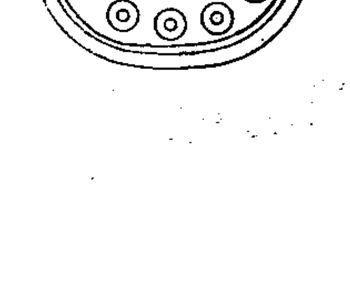


Fig. 3.

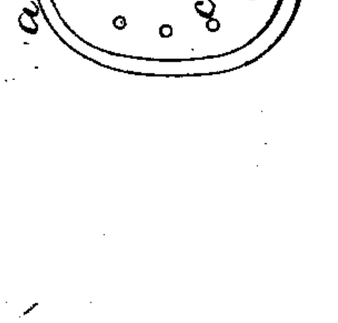


Fig. 5.

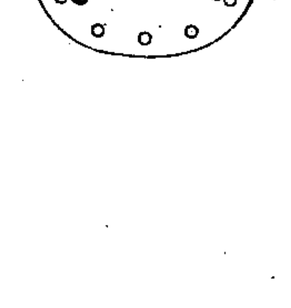
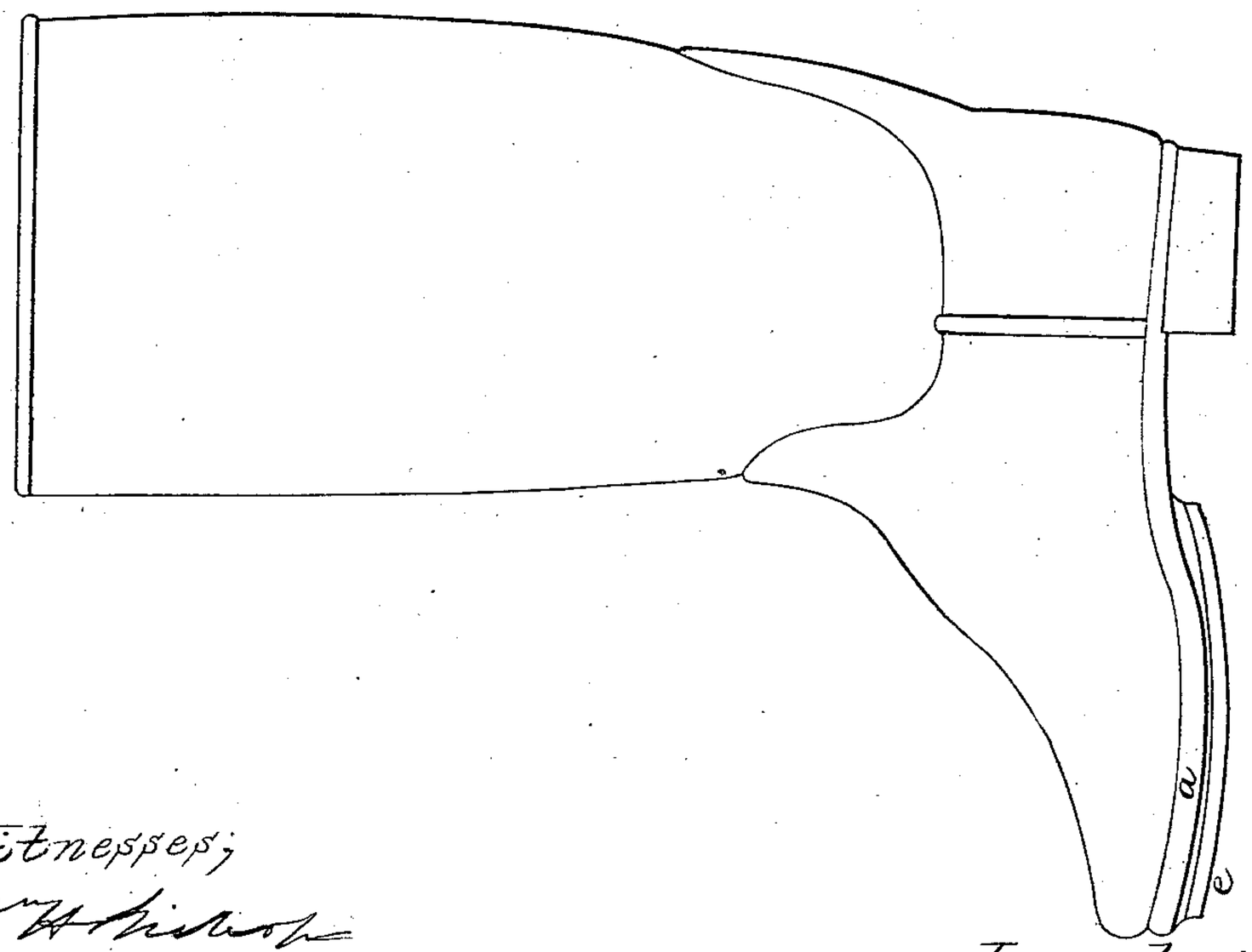


Fig. 4.

Fig. 1.



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

Letters Patent No. 84,650, *dated December* 1, 1868.

IMPROVEMENT IN WATER-PROOF 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 Water-Proof Boots, Shoes, and Gaiters; 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 an elevation of a boot on my improved plan;

Figure 2, a bottom view of the sole;

Figure 3, a bottom view of the outer sole removed: and

Figure 4, a section through the sole and metal plate.

Boots, shoes, and arctic gaiters, made of vulcanized India rubber, are thoroughly water-proof, but it is well known that that material will not resist the cutting-action of sharp edges, particularly when wet, and for that reason the soles of such articles, when used by miners and others who are liable to walk on sharp stones, shells, &c., particularly when wet, are cut through in a short time, thereby destroying their water-proof quality, so essential in such articles.

Leather, or other equivalent material, suitable for resisting such cutting-action, has not heretofore been used for the outer soles of boots, &c., because, if attached thereto while the India rubber is in the green or plastic state, it will not stand the heat required for vulcanizing.

The object of my invention is to produce water-proof boots, shoes, gaiters, &c., with an outer sole which will resist the cutting-action of sharp edges; and to that end,

My said invention consists in inserting within the India-rubber sole a plate, or parts of a plate, of metal or other equivalent material, which will resist the vulcanizing-heat, and to which, after vulcanization, an outer sole of leather, or equivalent material suitable for an outer sole, is applied, to resist the cutting-action of sharp stones, &c.

Having thus stated the general character of my said invention, I will particularly describe the mode of application thereof which I deem to be the best.

After the boot or shoe has been formed of India rubber, or allied gum, prepared for vulcanization, but with the sole *a* of less than the ultimate thickness required, I take a plate, *b*, of thin sheet-metal, cut of the required form, as represented by Figure 5, and formed with projecting rivets *c*, or having such rivets brazed or otherwise secured to it, and over this metal plate I apply a sheet, *d*, of prepared rubber, or allied gum, while in the green or plastic state, so that it shall adhere to the surface of the inner sole, all around outside of the outer, and inside of the inner edge of the metal plate *b*, the rivets *c* extending through holes in the said sheet of prepared gum. In this condition the boot or shoe is vulcanized, and when it comes out of the heater vulcanized, it is thoroughly water-proof; but there is embedded within the India-rubber sole a metallic plate, with rivets extending out beyond the outer surface of the vulcanized India rubber, to which I secure, by riveting, an outer sole of leather, *e*.

If desired, the heel may be prepared in like manner.

I have thus described and represented the mode of construction which I deem the best; but I do not wish to be understood as limiting my claim of invention to such mode of construction, as my invention is susceptible of many modifications so long as there is embedded in the India-rubber part of the sole before vulcanization, a plate, or sections of a plate, with projecting pins or rivets extending through or beyond the outer coating of India rubber, to which an outer sole can be secured; or rivets with large heads may be substituted, if the heads be made of such size that, in walking, they will not be forced through the inner India-rubber sole; or the plate, or sections of a plate, instead of having projecting pins or rivets, may be formed with holes tapped in them, so that an outer sole may be secured by screws passing through the leather, and the outer coating of India rubber, and screwed into the enclosed plate or sections of a plate; or two thicknesses of metal may be embedded, the one nearest the outside being pierced with small holes, so that the outer sole may be secured by driving nails through the leather, the outer coating of India rubber, and through the holes in one of the metal plates, and clinched by striking against the surface of the inner plate. And although I prefer metal for the part to be embedded in the India-rubber part of the sole, I do not wish to be limited thereto, as other and equivalent substances may be substituted, provided such substitute will stand the vulcanizing, and is sufficiently strong to hold the rivets, screws, or equivalent fastening. And so for the outer sole I prefer to use leather, but other and equivalent material may be substituted, provided it will resist the cutting-action of sharp edges better than vulcanized India rubber or allied gums.

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

A boot, shoe, or other such like article, made of vulcanized India rubber or allied gum, with a plate, or sections of a plate, or the equivalent thereof, made of metal or equivalent material, embedded in the India-rubber sole while in the green or plastic state, to which, after vulcanization, an outer sole can be secured, substantially as and for the purpose specified.

FREDERICK M. SHEPARD.

Witnesses:

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