(No Model.)

F. D. HAYWARD.

METAL PLATED RUBBER HEEL FOR BOOTS OR SHOES.

No. 368,584. Patented Aug. 23, 1887.

Fig. 1.

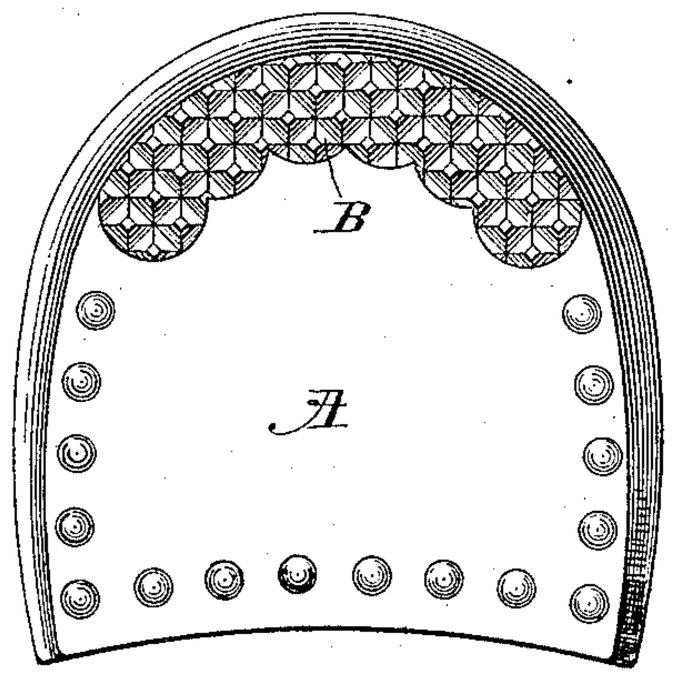


Fig. 2.

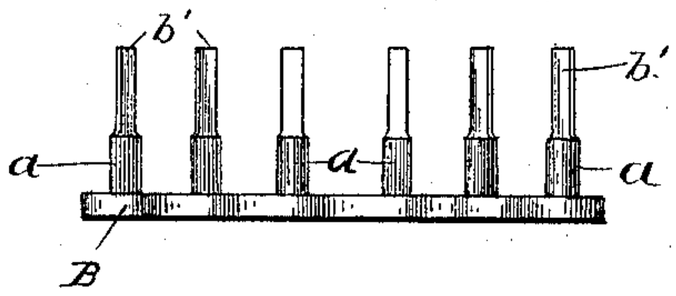


Fig. 3.

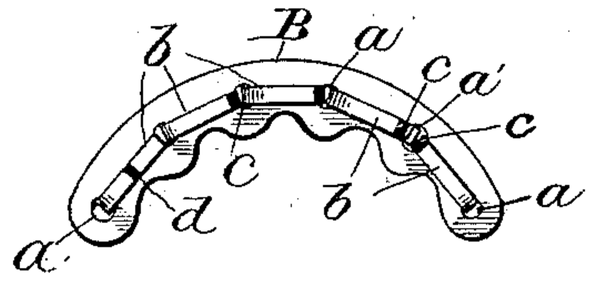
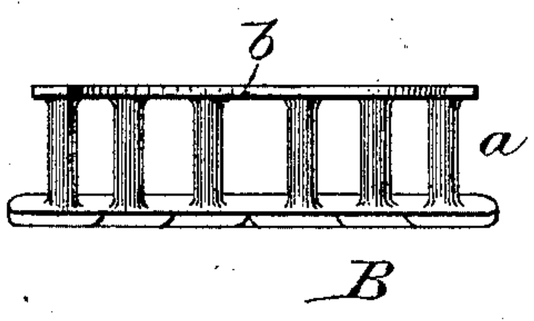


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANCIS D. HAYWARD, OF MALDEN, MASSACHUSETTS.

METAL-PLATED RUBBER HEEL FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 368,584, dated August 23, 1887.

Application filed April 7, 1886. Serial No. 198,049. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS D. HAYWARD, a citizen of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Metal-Plated Rubber Heels for Boots or Shoes, (for which I have not obtained a patent in any country,) of which the following is a specification.

The object of my invention is to provide a metal heel-plate having upwardly-projecting studs provided at their upper ends with horizontal projections practically connecting said studs together and adapted to securely anchor said plate to the rubber heel, the plastic substance of which is pressed around and between said studs and horizontal projections in the process of manufacturing said heel for the purpose of retaining said plate in position flush with the bottom of said heel.

My invention also includes the combination of the metal plate constructed substantially as described with the rubber heel.

The nature of my invention will be more fully understood from the description which follows.

In the accompanying drawings, which form a part of this specification, Figure 1 is a bottom plan view of my metal-plated rubber heel. Fig. 2 is a front elevation of the heel-plate, showing it as cast and before having the ends of its studs bent into a horizontal position. Fig. 3 is a top plan view, and Fig 4 a front elevation, of the same, both showing the upper horizontal projections in place and practically connecting the upper ends of the vertical studs.

Similar letters of reference indicate corresponding parts in all the figures.

A is a rubber heel having its rear wearing-surface provided with the heel-plate B. The said heel-plate B is provided with upwardly-projecting studs *a a*, having, when cast, elongations *b'* at their upper ends, as shown in Fig. 2. These elongations, when bent over, form the horizontal projections *b b*, connecting the tops of said studs *a*, as shown in Figs. 3 and 4, and practically forming a continuous rim joining the tops of said studs.

In forming my metal-plated heel, the heel-plate, constructed substantially as described, is placed in proper position in the mold, the bottom of the heel-plate against the bottom of the mold. The plastic rubber composition of which the heel is formed is then placed in the mold. The upper plate of the mold is brought down on said plastic rubber composition, which, by means of pressure, is forced between and around said studs *a* and horizontal projections *b* and fills every portion of the mold not occupied by said metal plate with its projections. The heel is then subjected to the vulcanizing process and comes out of the mold a metal-plated vulcanized rubber heel, the plate flush with the surface of the heel, and occupying the rear wearing-surface thereof, as shown in Fig. 1.

It is evident that the horizontal projections *b* will securely anchor the plate B and prevent the possibility of the same being torn away from the rubber heel. At the same time a metal-plated heel formed in the manner described presents a neater and more finished appearance, and is also cheaper and much more substantial and durable than is the case with a heel to which a plate has been attached by riveting or otherwise after the heel or the boot has been finished. Furthermore, the anchoring studs and projections being entirely embedded in the rubber, it is evident that moisture cannot penetrate to the interior of the boot by reason of the use of this plate.

As shown in Fig. 3, the horizontal projections *b*, extending from their respective studs *a*, approach or abut against the adjacent studs. The ends of said projections are shown at *c*.

I do not herein claim the process of manufacturing the metal-plated rubber heel herein described, since I claim that in my application for a patent filed April 7, 1886, Serial No. 198,048.

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

1. The heel-plate provided with vertical

studs having projections bent horizontally and connected together, substantially as described, forming practically a continuous rim around the upper part of said studs, for the purpose set forth.

2. A rubber heel having a portion of its wearing-surface provided with a metal heel-plate, said heel-plate being provided with vertical studs having projections bent horizontally and connected together, and practically forming a continuous rim around the upper part of said studs, said studs and projections finding secure anchorage in the substance of said heel, substantially as described.

FRANCIS D. HAYWARD.

Witnesses:
WILLIAM ROBINSON,
DAVID C. HENNESSY.