

No. 817,355.

PATENTED APR. 10, 1906.

C. YAHRAUS & F. A. HAMMER.
RUBBER HEEL FOR BOOTS AND SHOES.

APPLICATION FILED NOV. 14, 1904.

FIG. 1.

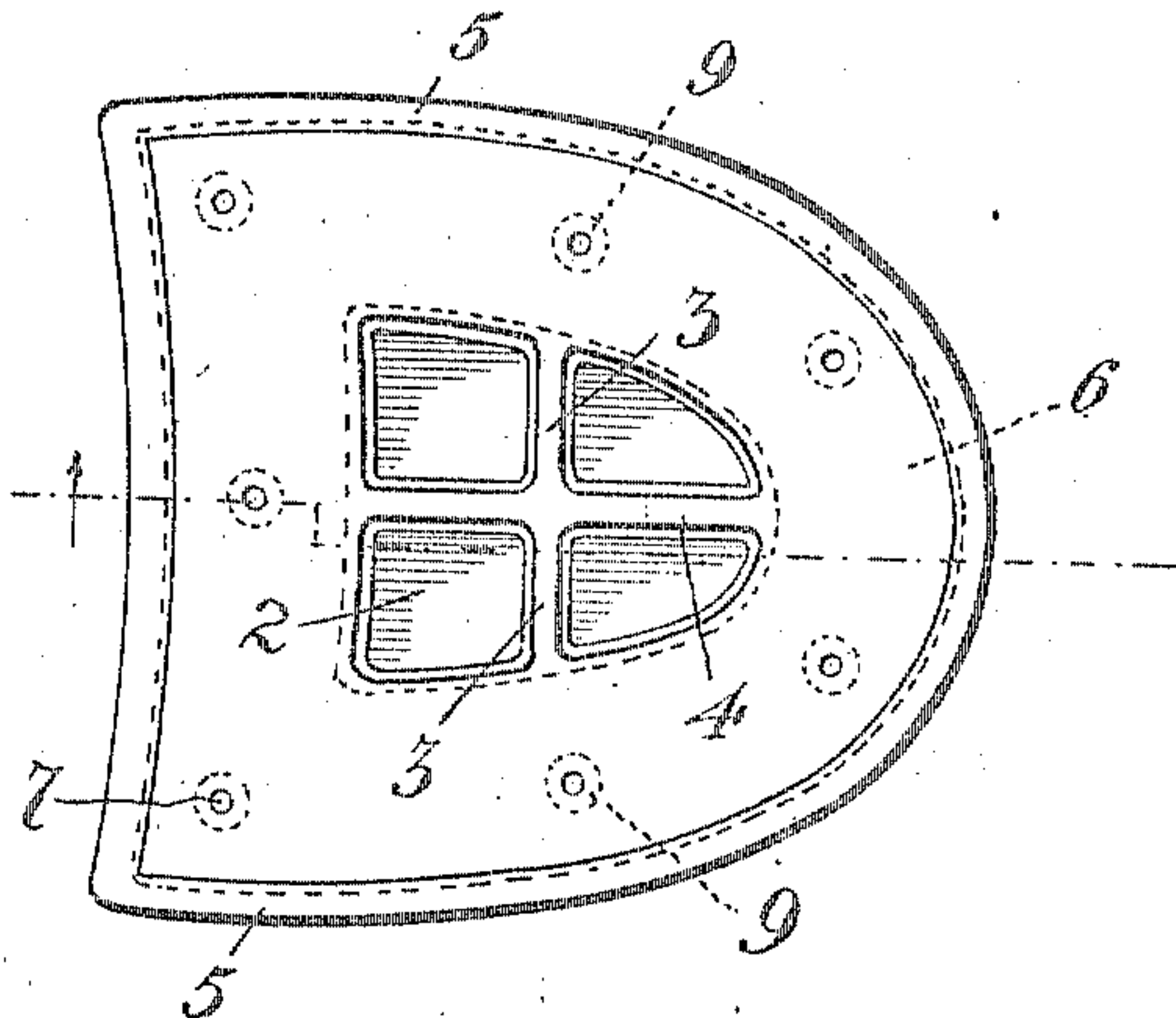


FIG. 3.

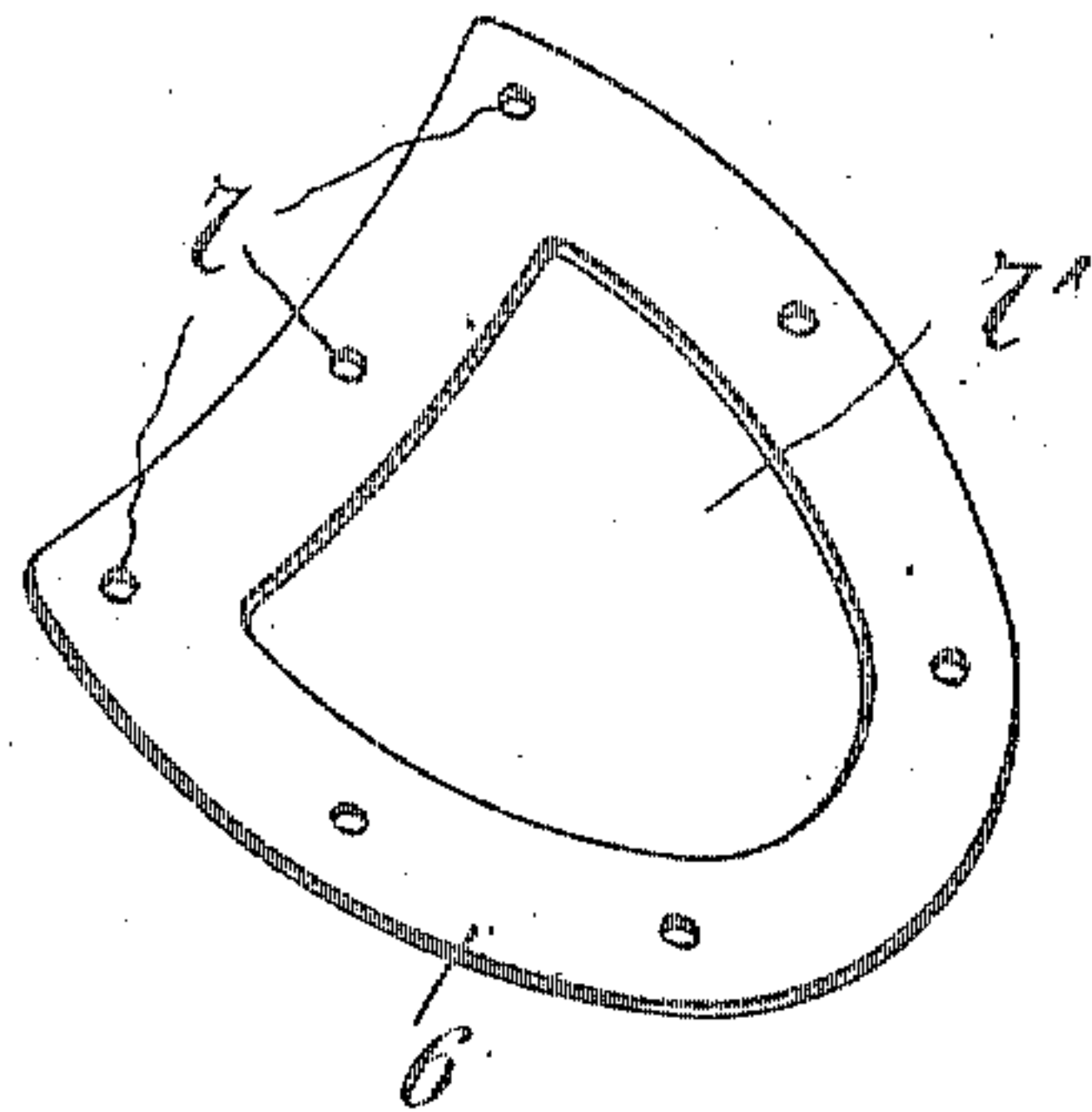


FIG. 2.

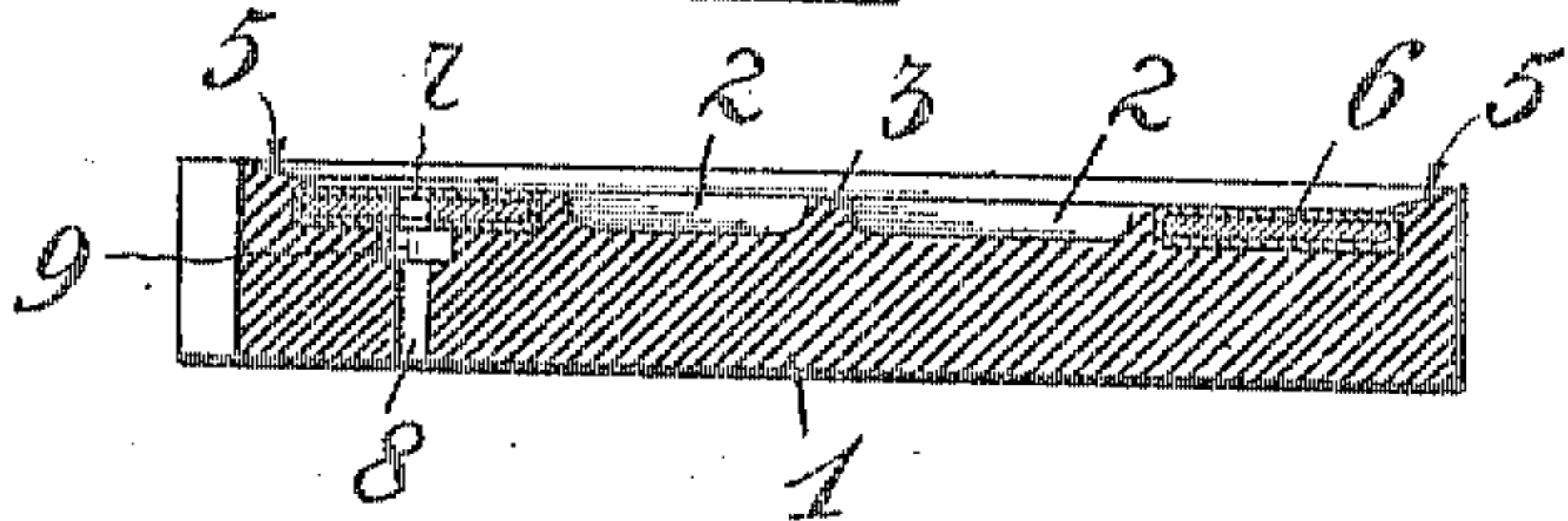


FIG. 4.

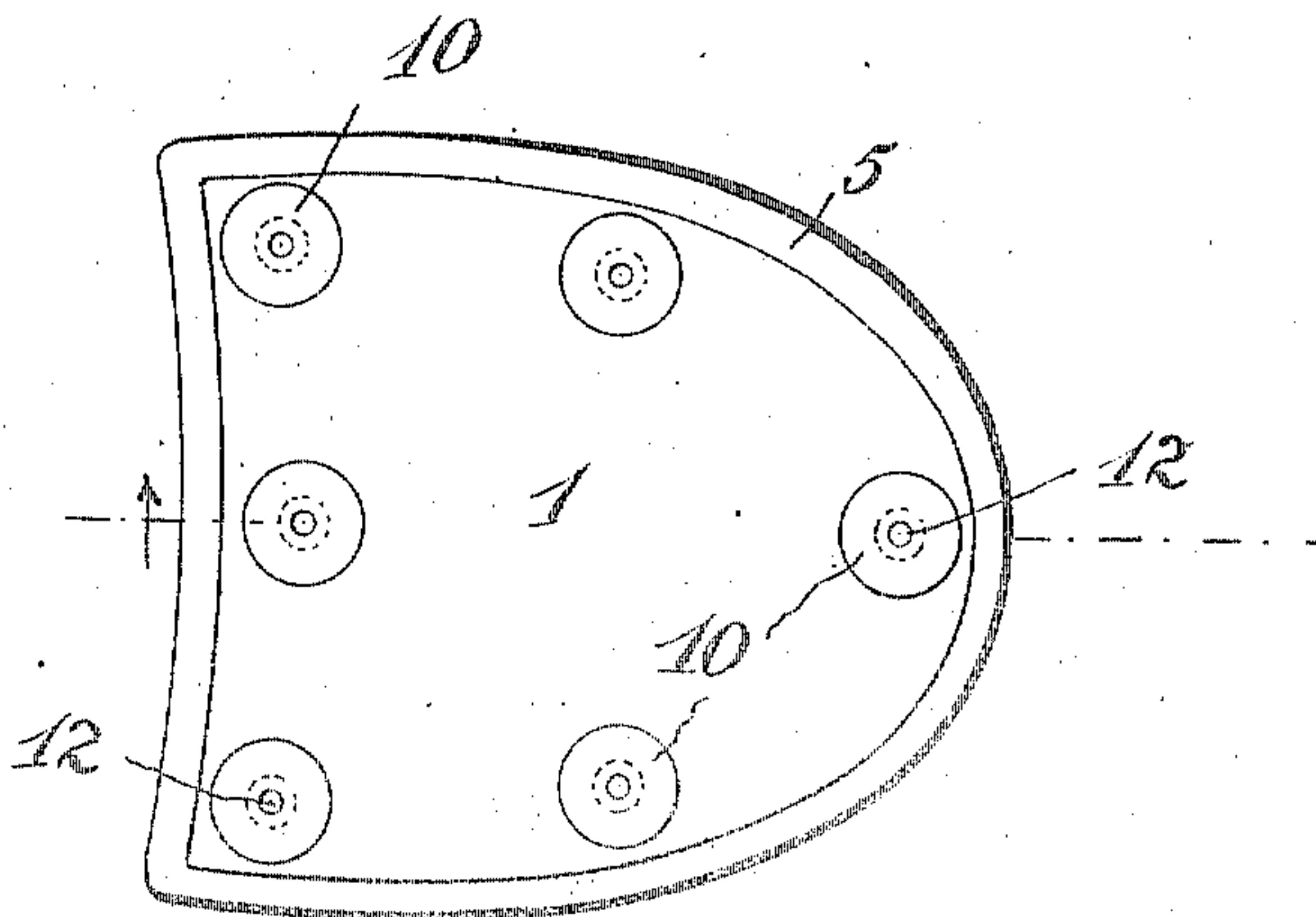
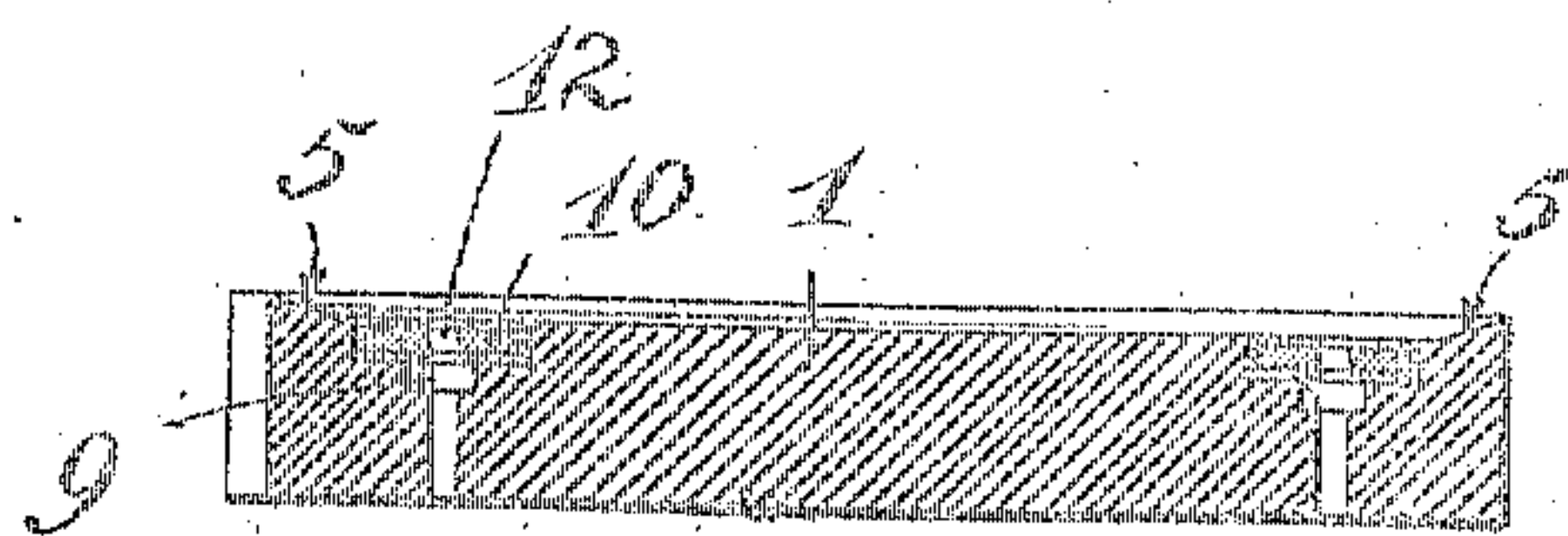


FIG. 5.



Witnesses

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RUBBER HEEL FOR BOOTS AND SHOES.

No. 817,355.

Specification of Letters Patent.

Patented April 10, 1906.

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To all whom it may concern:

Be it known that we, CHARLES YAHRAUS and FRANK A. HAMMER, citizens of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Rubber Heels for Boots and Shoes; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in rubber heels for boots and shoes.

The object of the invention is to provide an elastic heel having arranged therein and connected thereto one or more attaching and strengthening plates, said plates being attached to the heel in such manner that they cannot become separated.

A further object is to provide a heel of this character having means whereby the outer edge of the same will have a perfectly tight engagement with the heel, thereby excluding water and all foreign matter from between the rubber heel and the heel of the shoe.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of the inside of the heel. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a detail perspective view of the attaching-plate removed from the heel. Fig. 4 is a view similar to Fig. 1, showing a modified construction of heel; and Fig. 5 is a vertical longitudinal sectional view of the same.

Referring more particularly to Figs. 1, 2, and 3 of the drawings, 1 denotes the body portion of the heel, which is constructed of rubber or other elastic material and has formed on its inner or upper face a centrally-disposed depression 2, which is divided by longitudinally and transversely disposed ribs 3 and 4 into four compartments or air-chambers, as shown. Around the edge of said face is formed an upwardly-projecting sealing-flange 5.

Secured to the inner face of the heel and countersunk into the same is a metallic plate

6, in the central portion of which is formed an opening 7, which corresponds to the shape of and alines with the depression on the heel. In the plate 6 are formed nail-holes 8, which are arranged in alinement with the nail-holes 8, formed in the body portion of the heel. The inner end of the nail-holes 8 are enlarged to form a seat 9 for the head of the nail after the same has been driven through the holes 8, the flexible walls of the holes 8 giving or yielding to permit the heads of the nails to pass therethrough, and after said heads have entered the enlarged seat 9 the walls of the holes 8 will again contract, thus preventing the nails from working loose. A suitable tool is employed for driving the nails through the holes 8 in the heel. The plate 6 is adapted to lie flush with the inner face of the heel within the sealing-flange 5, so that when said heel is applied to the shoe the sealing-flange 5 will be brought into tight engagement with the sole of a shoe, thus preventing the entrance of water or foreign matter between said heel and the sole of the shoe.

In forming the heel as herein shown and described the plate 6, which has been formed in the desired shape, is treated with a chemical solution, such as oil of vitriol, and is then copper-plated by electricity or by being immersed in a solution of sulfate of copper, which process causes the rubber to adhere firmly to the metal plate. After the plate has been thus chemically prepared the same is treated with a thin solution of dissolved unvulcanized rubber. The rubber-coated plate is then placed in a mold and layers of unvulcanized rubber placed thereon to the desired thickness, the top portion of the mold containing the nail-hole forms is then applied, and the rubber is then shaped and vulcanized together under heat and heavy pressure into a compact mass, the plate 6 being thus vulcanized securely to the upper surface or face of the heel, from which it will be impossible to remove the same.

By coating the plate 6 with a solution of unvulcanized rubber and then vulcanizing the plate thus treated in the heel the plate is held firmly in place and does not wear out the surrounding rubber by moving back and forth in walking, as would be the case were the plate merely embedded without coating in the body of the heel.

The arrangement of the plate upon the inner face of the heel will permit the rubber body portion of the same to wear down the entire thickness, the heel being held onto the sole of the shoe by means of its vulcanized connection with the plate, the nails being employed to hold the plate in place on the shoe.

By forming the depression 2 in the upper face of the shoe increased elasticity or cushioning properties is given to the heel. The ribs or bars 3 and 4, which divide said depression into compartments, will form supports or braces, which will prevent the tread of the heel from becoming concaved from shrinkage or other causes, thus keeping the heel square and level while the same is being worn away by use.

In Figs. 4 and 5 of the drawings is shown a modified arrangement of the attaching-plates, the same being shown in these figures in the form of rubber-coated disks 10, each of which is provided with a centrally-disposed nail-hole 12. Said hole 12 is adapted to aline with nail-holes formed in the body of the heel, as shown and described in connection with the first figures of the drawings. In this latter form the heel is provided with an upwardly-projecting marginal sealing-flange 5, as hereinbefore described. The disks 10 may be in any suitable shape, but are here shown as of circular form, the same being chemically treated and prepared in the same manner as described in connection with the single plate 3 and are countersunk and vulcanized to the

inner face of the heel in the same manner as described in connection with said Fig. 3.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A heel for boots and shoes consisting of an elastic body portion provided with a series of nail-holes therein and having formed on its inner face a depression having an upwardly-projecting sealing-flange formed around the edge of said inner face, a rubber-coated plate seated in said depression and vulcanized into the body of the heel, said plate having formed therein a series of nail-holes which aline with the nail-holes in the body of the heel, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CHARLES YAUHRAUS.
FRANK A. HAMMER.

Witnesses:

FRANK D. BRIGGS,
ALBERT H. SHERMAN.