

HEEL.

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979,241.

Patented Dec. 20, 1910.

Fig: 1.

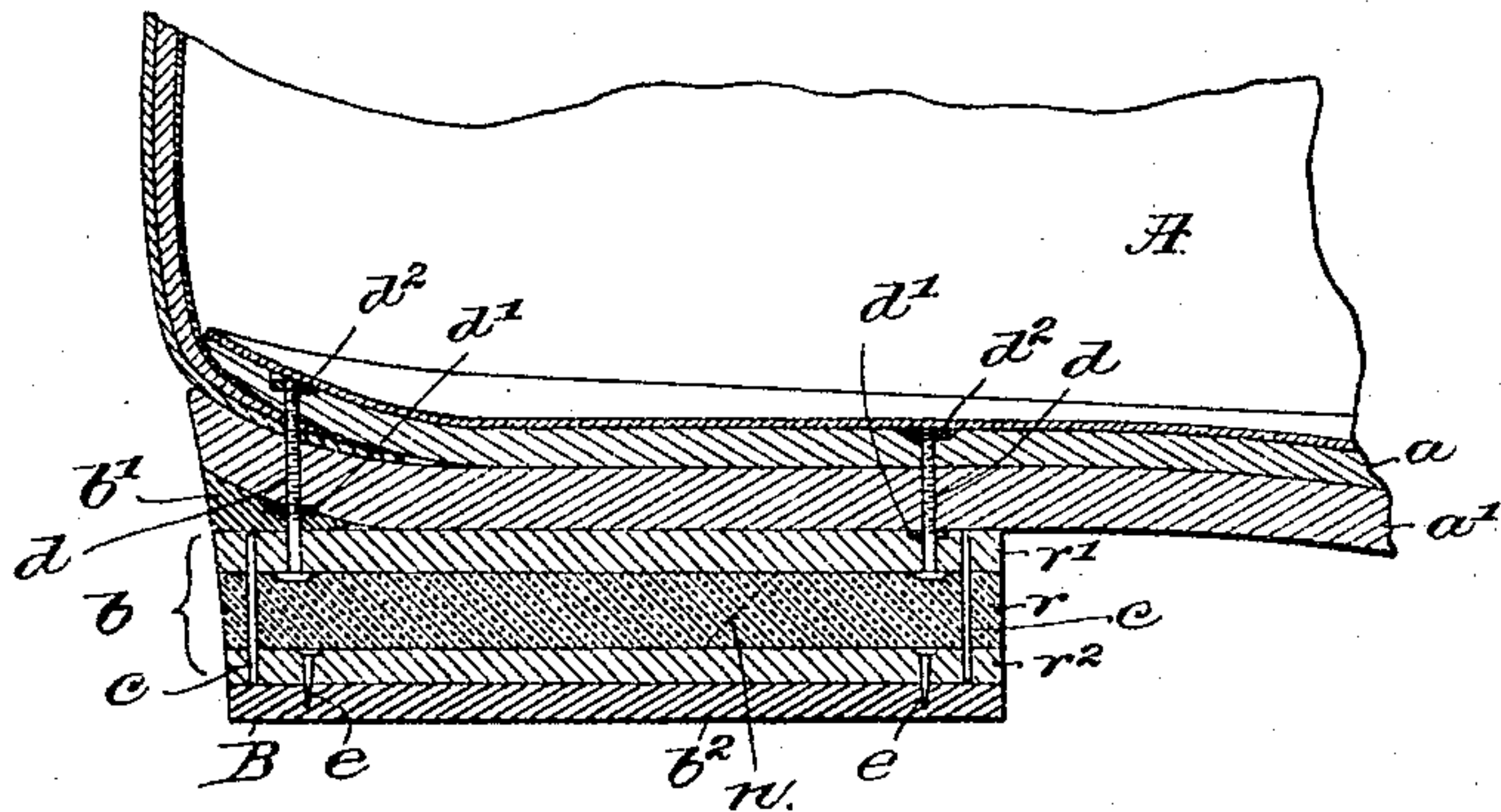


Fig. 2.

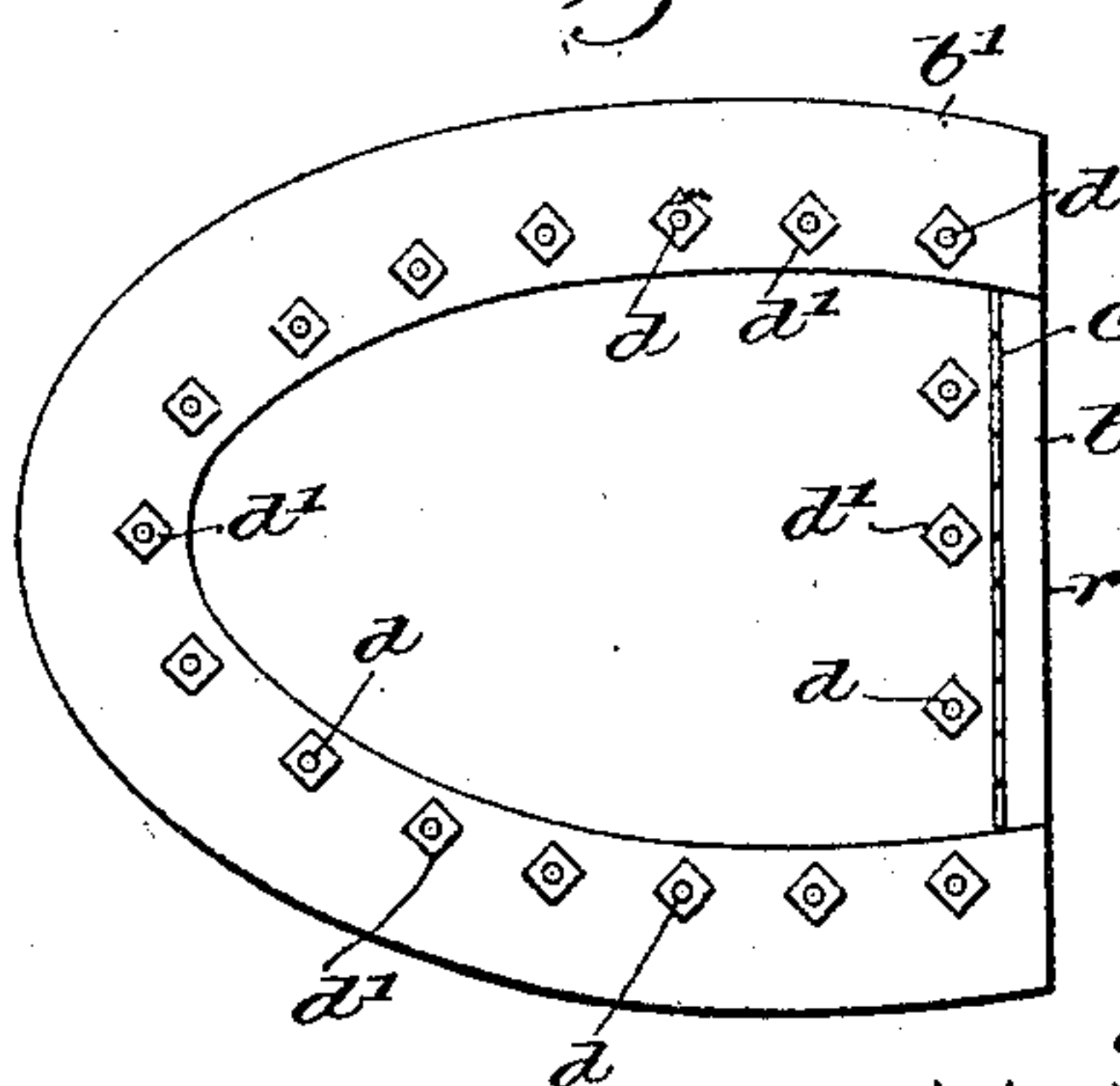


Fig: 3.

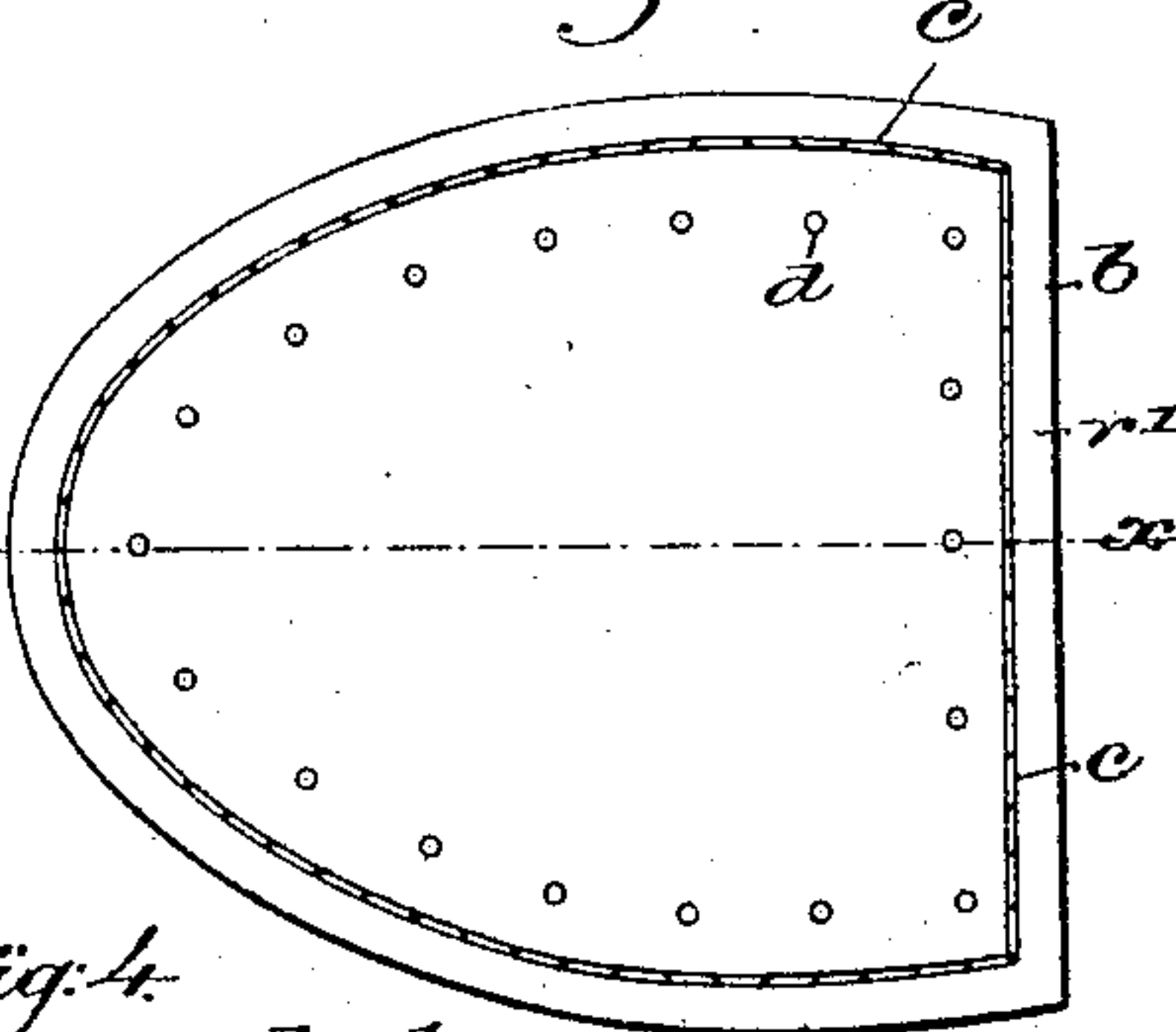


Fig: 4.

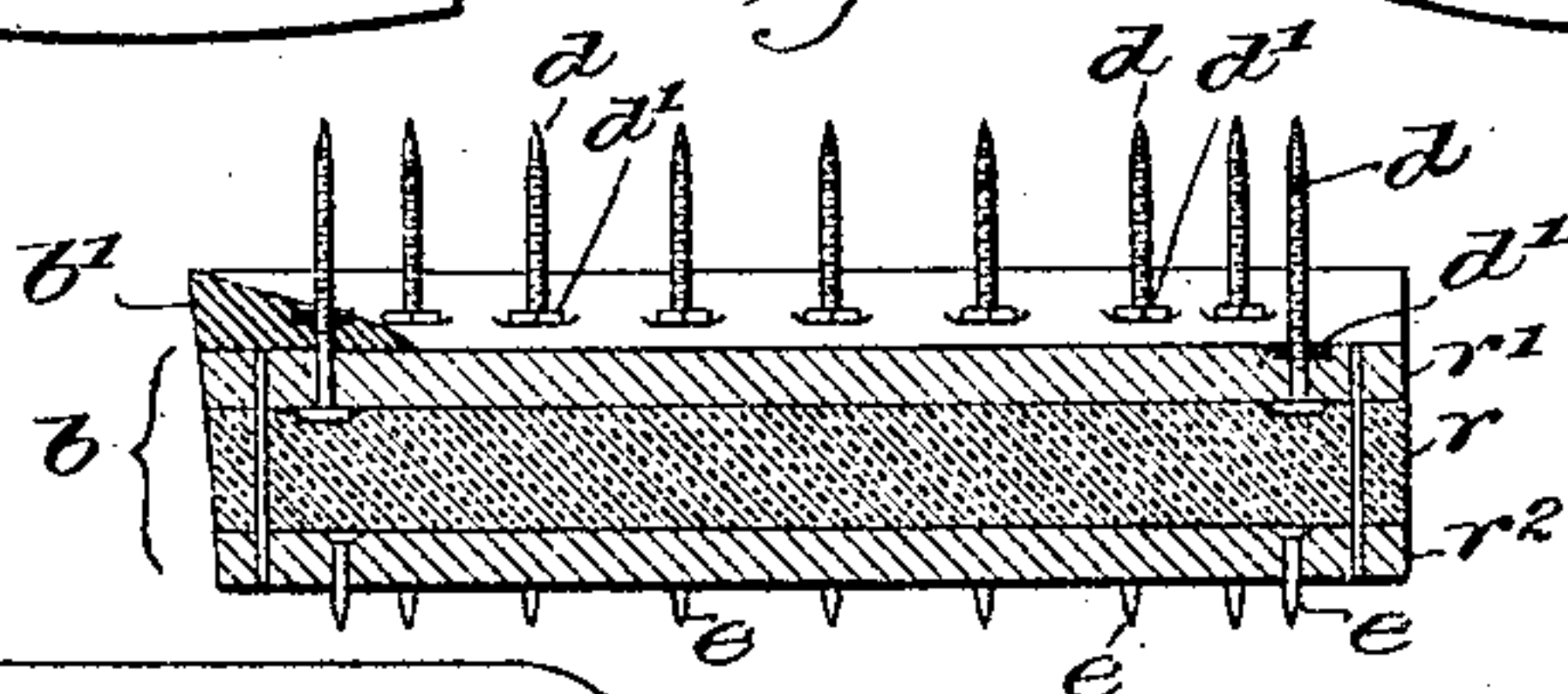


Fig. 5.

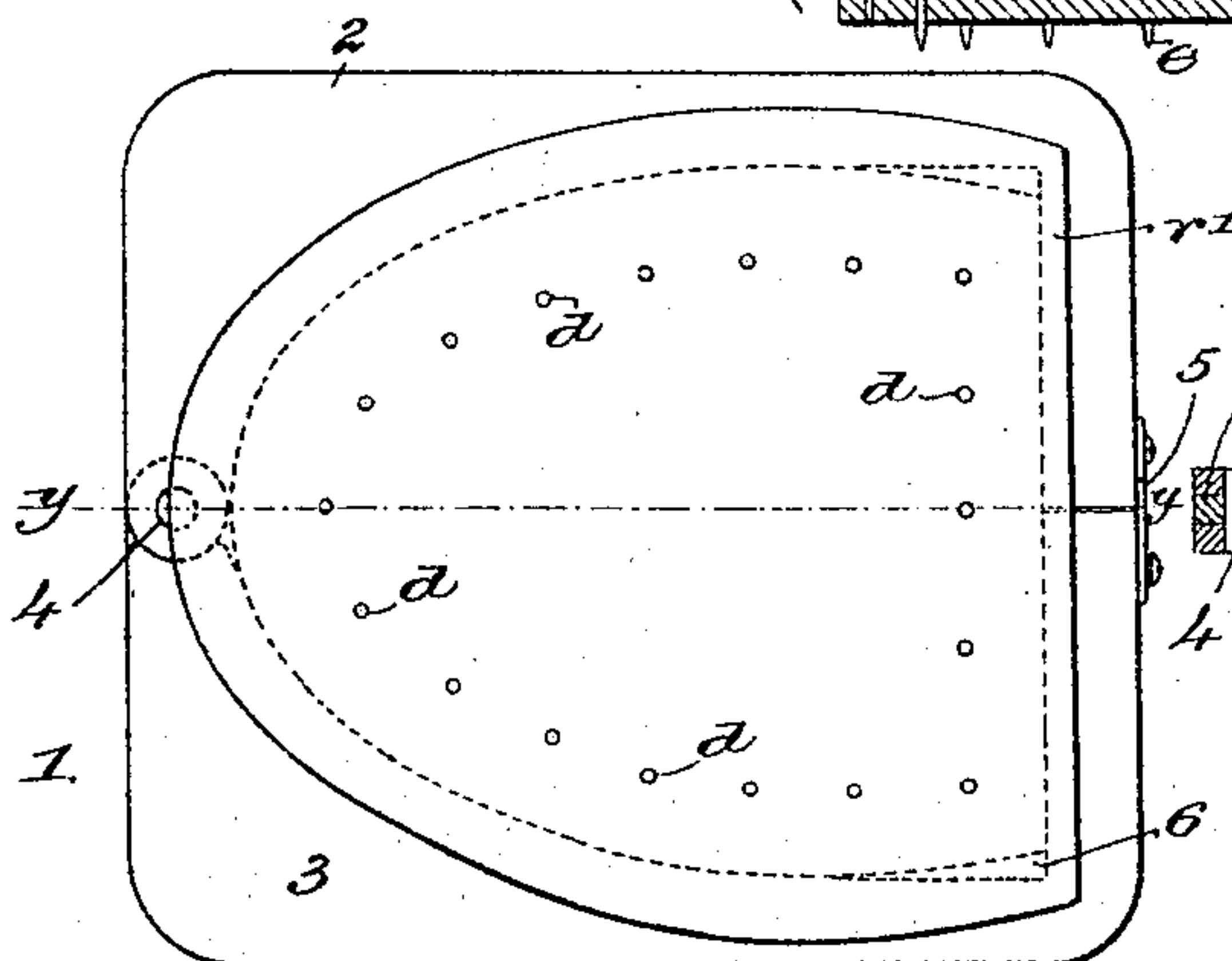
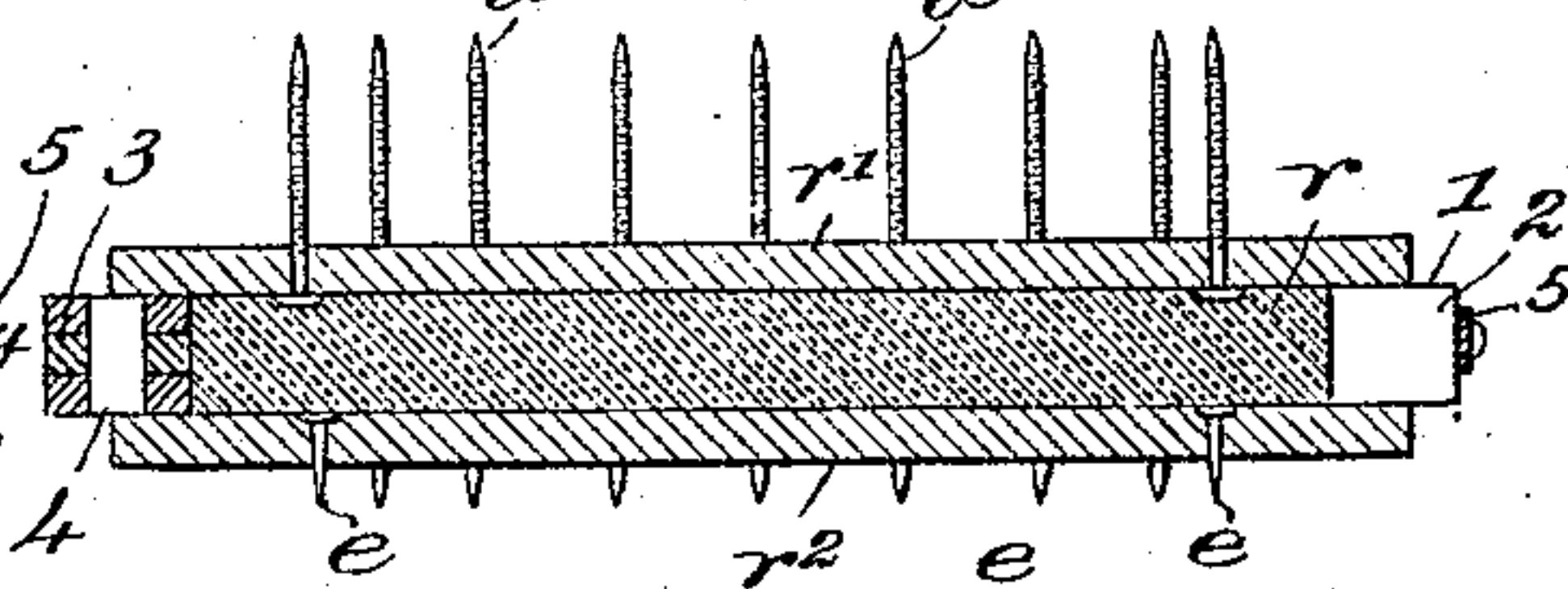


Fig: 6.



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UNITED STATES PATENT OFFICE.

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HEEL.

979,241.

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To all whom it may concern:

Be it known that I, FREDERICK L. ALLEY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Heels; and I do hereby 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.

The present invention relates to boots and shoes and more particularly to improvements in the heels of boots and shoes.

It has been found desirable to provide boots and shoes with resilient or elastic heels for the purpose of relieving a person from the shock incident to walking upon hard sidewalks and many forms of such heels have been produced, the most common form of such heels comprising a rubber or other elastic lift or heel section, arranged to be secured to the tread surface of a leather heel, and such elastic heel section is secured to the leather heel by means of screws or other metallic fasteners. In order to preserve the cushion effect desired, the heads of such fasteners should be buried quite deeply in the elastic heel section. This method of securing the elastic heel section to the boot or shoe necessitates that such section be quite thick and therefore they are quite heavy and expensive as compared with the ordinary and usual leather heel. The application of the rubber heel section to the tread face of the leather heel has been deemed objectionable by many persons for the reason that it deadens the foot-fall, conveying the impression that the wearer of shoes provided with such heels, is wearing rubbers. Moreover, the rubber not being as capable of resisting wear as leather, is constantly wearing out by reason of its contact with the sidewalk and has frequently to be renewed.

The object of the present invention is to produce an elastic or cushion heel which shall overcome the objections to the ordinary rubber heel as now made, and shall possess all the advantages possessed by the usual leather heel.

To the above end the present invention consists of the elastic heel, which will be hereinafter described and claimed.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 shows in longitudinal vertical section a fragment of a boot or shoe with my improved heel attached thereto. Fig. 2 illustrates a top plan view of a heel removed from the shoe. Fig. 3 illustrates a bottom plan view of the heel with the top lift removed. Fig. 4 shows a longitudinal vertical section through the heel on line $x-x$ Fig. 3. Fig. 5 represents a tool or device used in manufacturing the elastic section of the improved heel and Fig. 6 illustrates a section taken on the line $y-y$ Fig. 5.

In the drawing A represents a fragment of a boot or shoe comprising the usual insole a and outsole a^1 .

The improved heel is shown at B and preferably comprises a cushion section b , a rand b^1 , and a top or tread lift b^2 . The cushion section b consists of a rubber or other elastic lift r inclosed between two substantially non-elastic lifts r^1 and r^2 , the whole being united or secured together by means of a marginal line of stitching c .

The heel B is provided with fastenings by means of which it may be fastened to the shoe, and such fastenings in the illustrated embodiment of the invention consist of threaded bolts or screws d which are passed through the lift r^1 of the cushion section b and through the rand b^1 , the heads of the said bolts d being received between the lift r^1 and the rubber lift r . The bolts d receive on their threaded ends burs or nuts d^1 and d^2 , the nuts d^1 being screwed down tightly against the upper surface of the rand b^1 , and the nuts d^2 being adapted to be screwed down tightly against the upper surface of the insole a in securing the heel to the shoe.

For the purpose of attaching the top lift b^2 , the lift r^2 is provided with a plurality of pointed tacks e which are driven through from the under side so that the heads thereof are between the lift r^2 and the rubber lift r , and the top lift b^2 is "spanked" on to the projecting points of the tacks e in the usual manner of attaching top-lifts.

In manufacturing the improved heel, the fastenings d and e are put through the respective lifts r^1 and r^2 and said lifts are placed upon each side of the rubber lift r so as to bring the heads of the fastenings

next to the said rubber lift, and the lifts r , r^1 and r^2 are then united by stitches c preferably formed by means of some suitable sewing machine. After the lifts of the cushion section have been sewed together as described, the rand b^1 is placed over the ends of the bolts d and the nuts d^1 screwed down tightly. The heel in this condition is secured to the shoe by passing the ends of bolts d through the apertures made in the soles a^1 and a of the shoe and the nuts d^2 screwed down tightly against the upper surface of the insole, after which the projecting ends of the bolts are cut off and covered up by the usual sock lining of the shoe. After the body of the heel has been attached, the top lift is spanked on, or if desired it may be attached before the heel is secured to the boot or shoe.

It will be noted that by arranging the fastenings d and e in the manner shown, the elasticity of the rubber lift r is not impaired. It will be further noted that by interposing the elastic lift between the non-elastic lifts that the heel possesses every appearance of the usual leather heel, that a comparatively thin rubber lift may be employed, greatly lessening the weight of the heel and cheapening its cost of production as compared with the rubber heel, now in general use.

It is of course understood that the rubber lift should not be unduly compressed during the process of sewing the lifts r , r^1 and r^2 together, and in the drawings there is illustrated a simple device to be employed during the sewing operation to sustain the pressure exerted by the usual work clamping instrumentalities of the sewing machine and prevent the compression of the rubber lift. This device consists of a frame 1 made of some suitable rigid material, and preferably formed of two members 2 and 3 hinged together, as at 4, and provided with a suitable latch, as 5. The frame 1 has an opening 6 of a size and shape to receive the rubber lift r , it being as shown in Fig. 6 of substantially the same thickness as said rubber lift, so that when said lift is received in the frame its upper and lower surfaces will be in substantially the plane of the surfaces of the frame. The non-elastic lifts r^1 and r^2 are formed somewhat larger than the rubber lift, and when placed in position as shown in Figs. 5 and 6, the marginal edges of such lifts overlap and are supported by the frame 1, and such marginal edges and the frame 1 sustain the pressure exerted by the work clamping instrumentalities of the sewing machine during the operation of sewing the lifts together, whereby the rubber lift will not be compressed. After the heel is attached to the shoe, the leather lifts will be trimmed off to the size of the rubber lift and the heel finished in any suitable or usual manner.

If desired the rubber lift may be cut off as shown by the dotted line n in Fig. 1 and the front part of such lift formed of leather, thus permitting the driving through the front section of the heel of the usual heel attaching nails.

It is to be noted that by attaching the heel to the shoe by means of the upper inelastic lift or layer, the elastic lift is unaffected by said fastening means, and furthermore that the elastic lift is left uncompressed by the independent fastening means for holding the layers of the heel together, thereby preserving all of its natural elasticity.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States—

1. A heel for boots or shoes, having, in combination, three layers below the sole of the boot or shoe, of which the central one is composed of compressible material, and compressible means passing through the three layers along their marginal portions and securing them together independent of the sole of the shoe, with the central layer in uncompressed condition throughout its entire area, substantially as described.

2. A heel for boots or shoes, having, in combination, an elastic cushion layer, a relatively incompressible attaching layer on one side of the cushion layer adapted to be nailed or secured to a boot or shoe, and a relatively incompressible facing layer on the opposite side of the cushion layer, adapted not only to protect the cushion layer, but also to serve as a base of attachment of a top-lift, the said layers being connected by flexible stitches which are engaged with the attaching and facing layers and pass through the cushion layer, the flexibility of the stitches enabling them to slacken and permit the compression of the cushion layer, and the stitches being adapted to be returned to normal condition by the elasticity of the cushion layer after being compressed in use, substantially as described.

3. A heel for boots or shoes, having, in combination, an elastic cushion layer, relatively incompressible layers on either side thereof, and connecting means passing through the cushion layers and fixed in both incompressible layers, the said connecting means being of compressible but inextensible nature, substantially as described.

4. A heel for boots or shoes, having, in combination, an elastic cushion layer, relatively incompressible layers on either side thereof, connecting means passing through the cushion layers and fixed in both incompressible layers, the said connecting means being of compressible but inextensible nature, means engaging only the upper incompressible layer for securing the heel to a shoe, and means engaging only the lower

incompressible layer for securing thereto the top lift, substantially as described.

5 5. A heel for boots or shoes, having, in combination, an elastic cushion layer, relatively incompressible layers on either side thereof, and connecting means passing through the cushion layer and fixed to both incompressible layers, the said means securing the three layers together substantially without compression on the elastic layer and consisting of compressible but inextensible material, substantially as described.

10 6. A heel for boots or shoes, having, in combination, an elastic cushion layer, a relatively incompressible top layer secured thereto by stitching, and a top lift wholly secured to the heel by means independent of the stitching and engaging only the top layer, substantially as described.

20 7. A heel for boots or shoes, having, in combination, an elastic cushion layer, a rela-

tively incompressible attaching layer adapted to be nailed or secured to the boot or shoe, stitches passing through the said layers for securing them together, and a facing covering the bottoms of the stitches to prevent wear thereon, substantially as described.

8. A heel for boots or shoes, having, in combination, an elastic cushion layer, a relatively incompressible top layer secured thereto by stitching, and fasteners passed through the top layer from the inside and projecting at intervals therefrom around its entire perimeter for securing thereto the top lift, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

FREDERICK L. ALLEY.

Witnesses:

THOS. J. O'CONNOR,
HENRY DOWDEN, Jr.