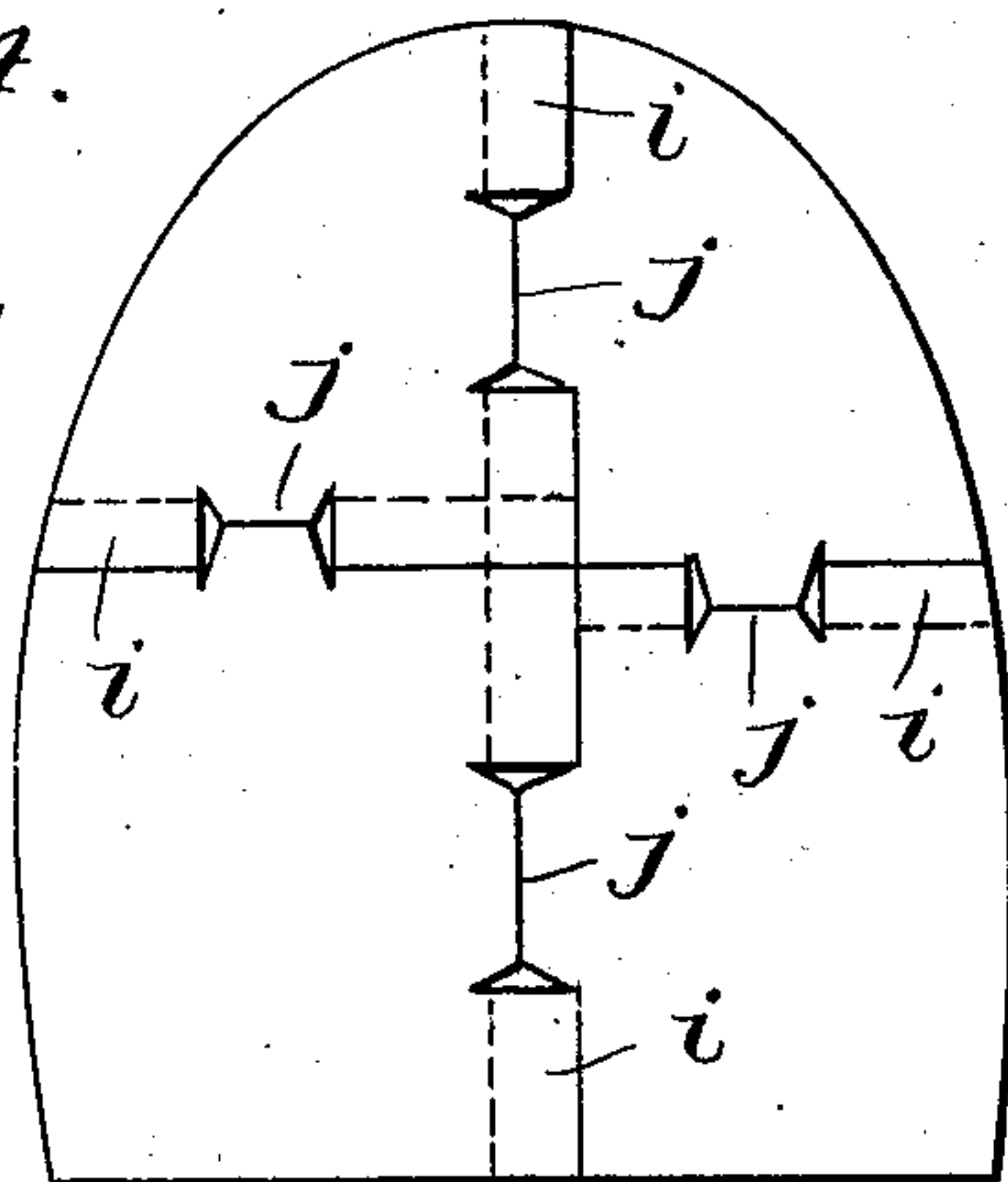
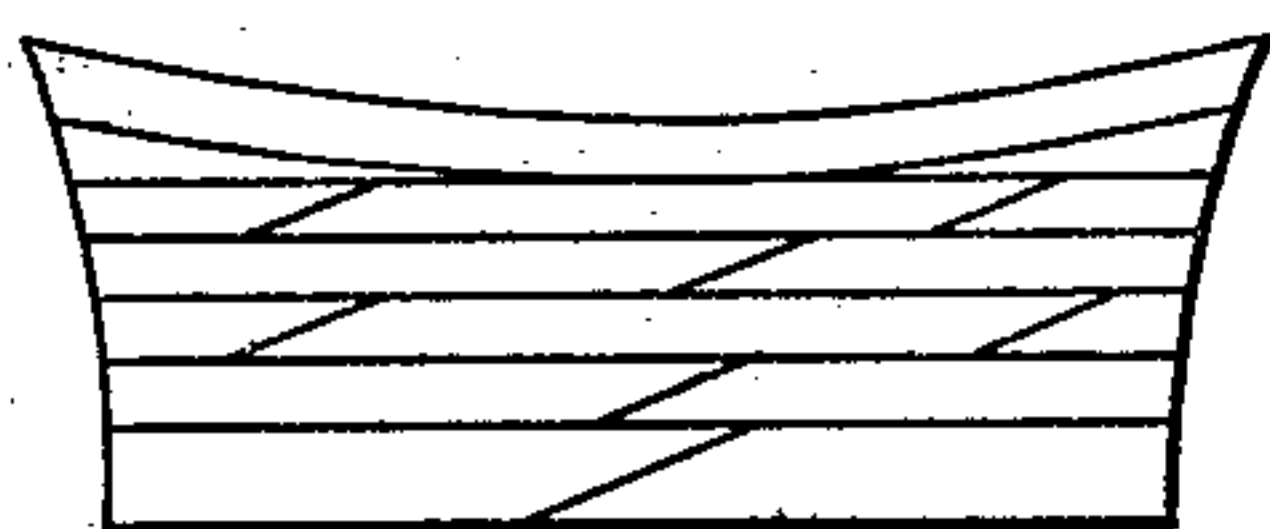
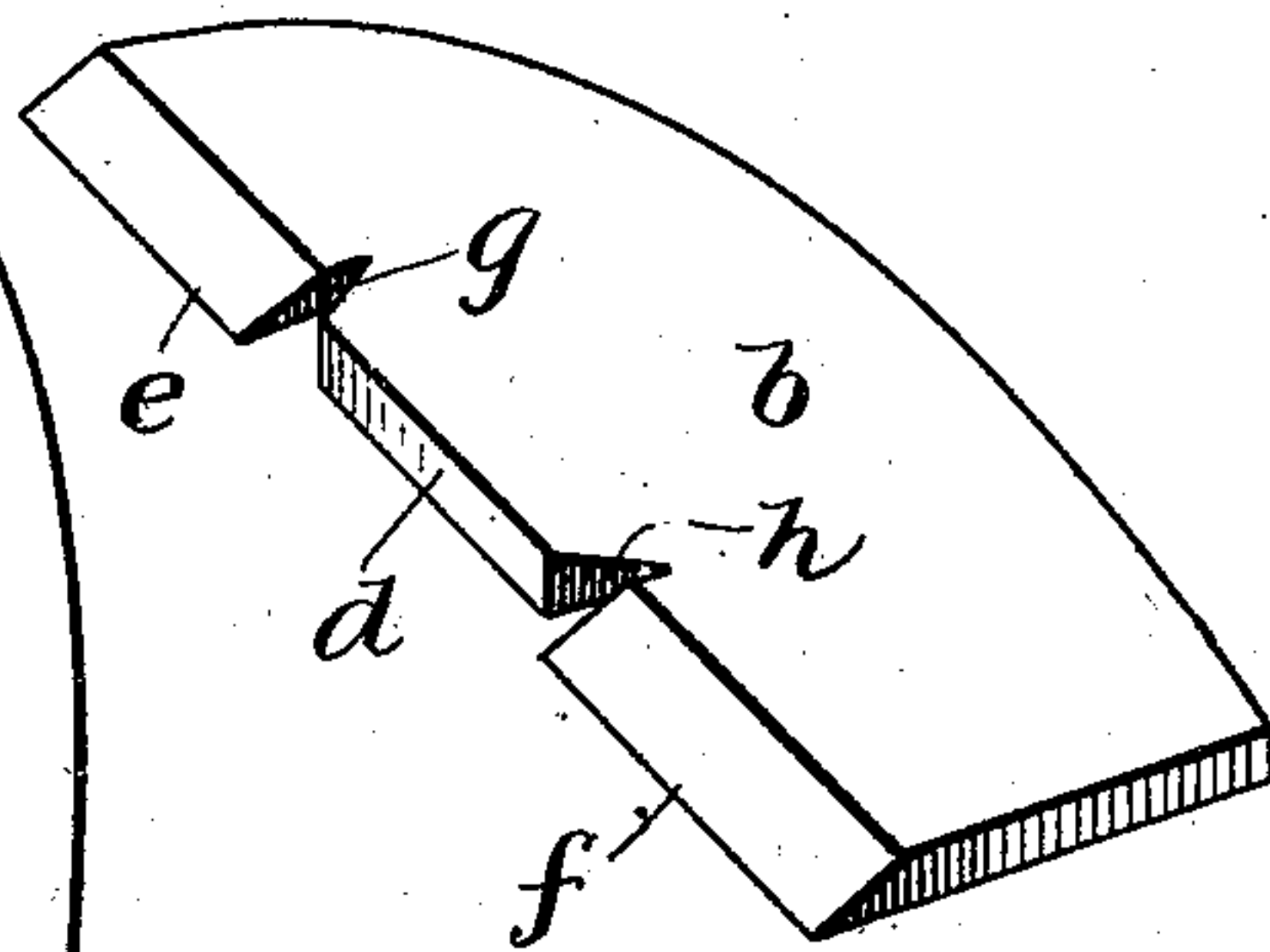
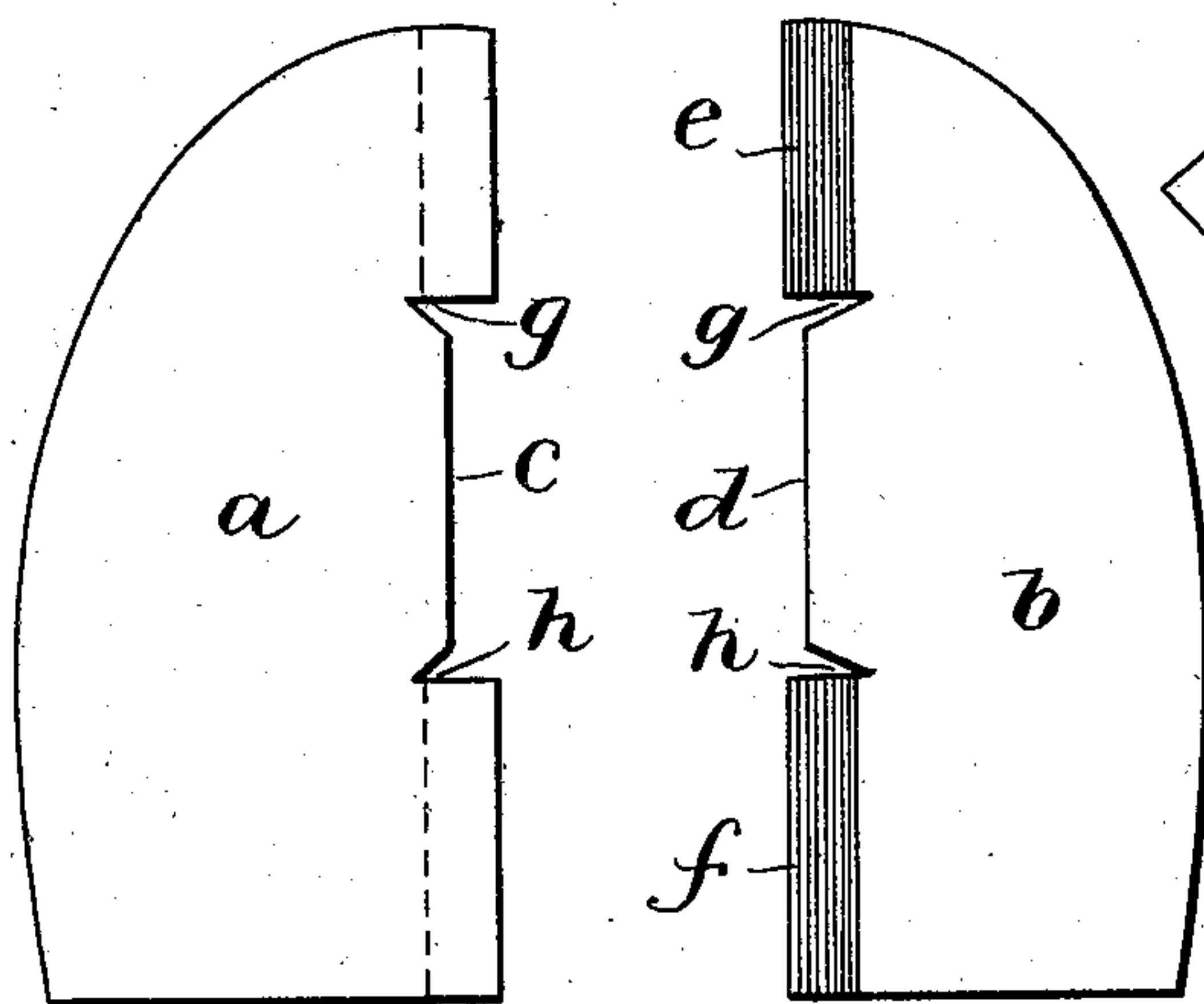
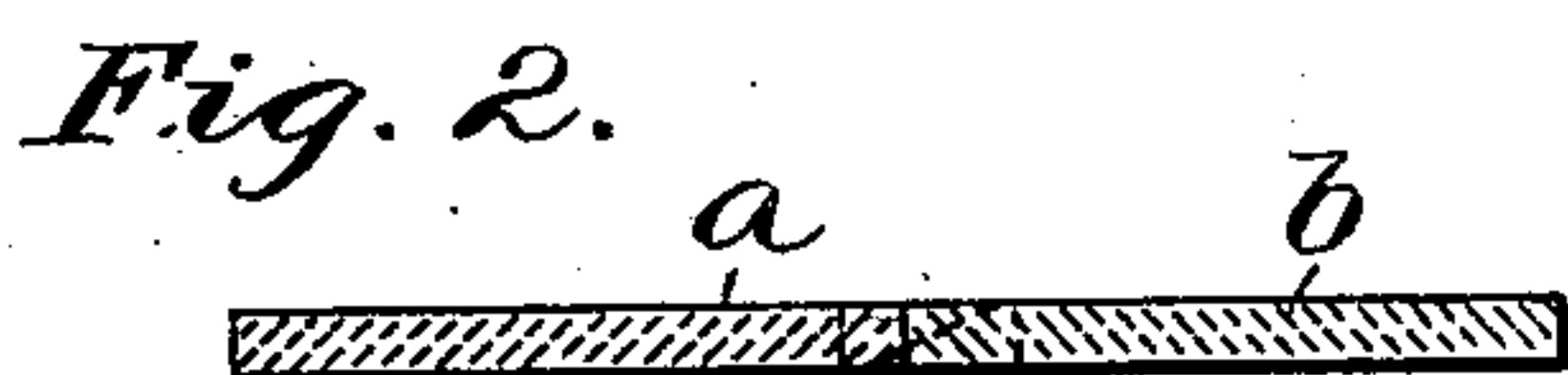
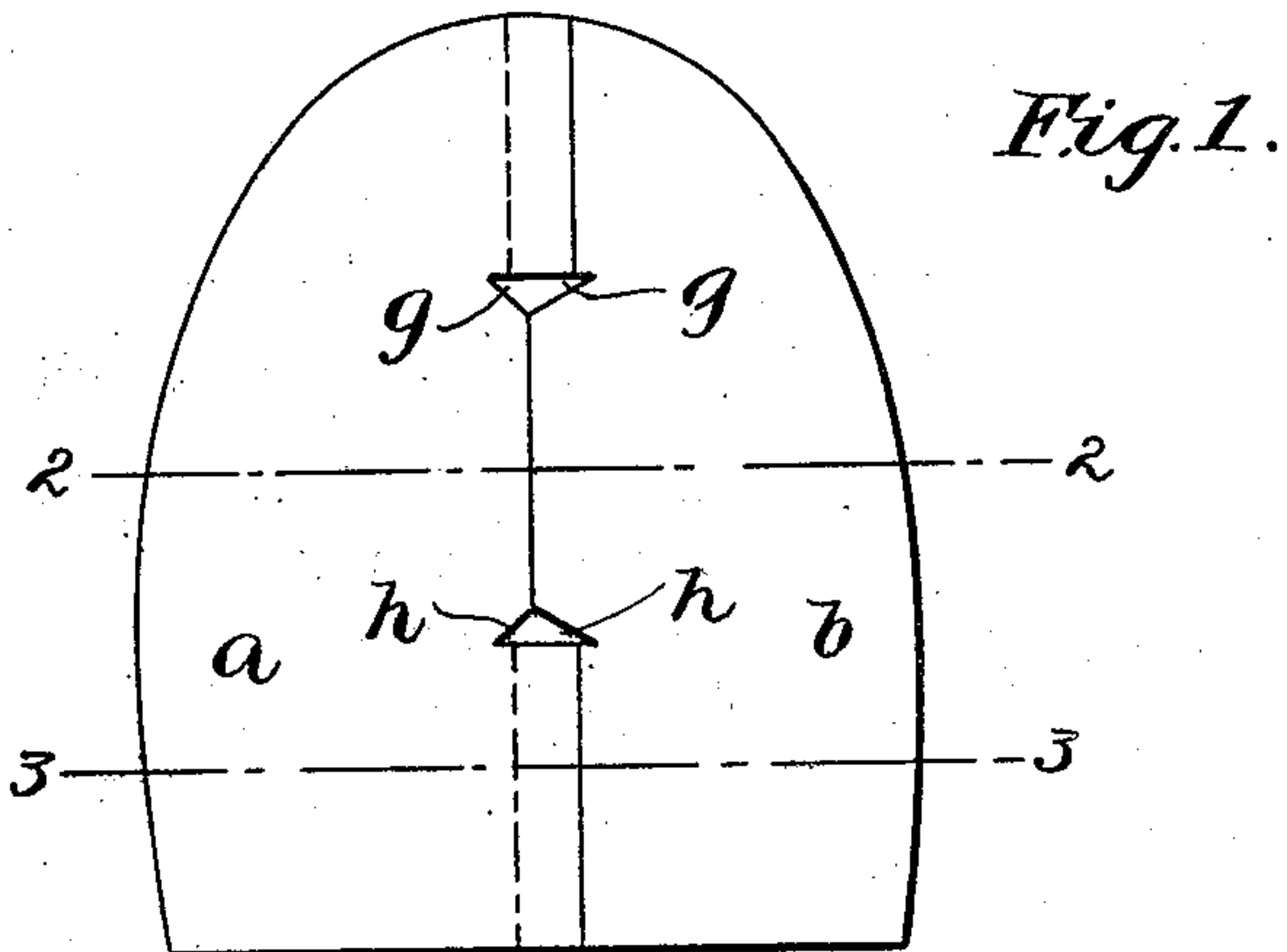


No. 862,111.

PATENTED JULY 30, 1907.

L. H. SHAW.
HEEL FOR BOOTS AND SHOES.
APPLICATION FILED FEB. 15, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

LINUS H. SHAW, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO F. M. SHAW & SON, OF BROCKTON, MASSACHUSETTS, A CORPORATION OF MAINE.

HEEL FOR BOOTS AND SHOES.

No. 862,111.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed February 15, 1907. Serial No. 357,518.

To all whom it may concern:

Be it known that I, LINUS H. SHAW, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Heels for Boots and Shoes, of which the following is a specification.

This invention relates to heels of which the lifts are built up from a number of smaller pieces fitted together.

10 The objects of the invention are to improve the manufacture of such built-up heels so that the divisions between the several pieces will not be visible at the external edges of the lifts, and so that the lifts will be of substantially equal thickness throughout, with no
15 spaces left between portions of adjacent lifts.

In carrying the invention into effect to secure the above objects, I form the meeting edges of the pieces at those portions which extend to the periphery of the heel, with overlapping scarfs, and with abutting
20 shoulders inside the heel outline to retain the pieces in their proper relation and prevent too great overlapping or "telescoping" of the pieces.

Of the accompanying drawings,—Figure 1 represents a plan view of a heel lift made from two pieces,
25 constructed in accordance with my invention. Figs. 2 and 3 represent sections on lines 2—2 and 3—3 respectively, of Fig. 1. Fig. 4 shows the pieces of which the lift is composed, separated from each other. Fig. 5 represents a perspective view of one of the pieces,
30 being the right-hand piece of Fig. 4. Fig. 6 represents a plan of a lift made from four pieces embodying my invention. Fig. 7 represents an elevation of a heel made from such composite lifts.

The same reference characters indicate the same
35 parts in all the figures.

Each heel lift may be made of two, three, four or more separate pieces divided from each other on any suitable lines and each having one or more of its edges shaped to form part of the periphery of the heel. The
40 edges which lie contiguous to the adjacent lifts, however, are all formed on the same principle.

Figs. 1 to 5 inclusive, show a lift made of two pieces *a* and *b* between which the line of separation lies approximately in the longitudinal axis of the lift.
45 These lifts have in their meeting edges shoulders *c* and *d* respectively, which are either square, that is, perpendicular to the surface of the lift, or formed at such an abrupt angle that no such pressure as is employed in building heels, tending to press the pieces toward
50 each other, will cause one to ride up over the other. These abutting shoulders are located within the outline of the heel, that is, they do not extend to the heel edge so as to be visible in the completed heel, but the end portions of these meeting edges are beveled or

scarfed so as to present a dividing line, making a sharply acute angle with the division lines between the adjacent lifts. The scarfed portions of the piece *b* are designated by *e* and *f*, the corresponding bevels of the piece *a* being hidden in the plan views, but indicated by dotted lines.

In order to explain fully the object of forming the pieces as described, the previous methods of building heels may be briefly reviewed. Ordinarily pieced heels have been made either of butted or scarfed pieces. When the square butting shoulders extend quite to the heel edges, vertical cracks are sure to be developed during the process of forming the heel or of finishing it when on the shoe. To avoid this separation between the butting edges, the pieces have been beveled so as to overlap. Then the downward pressure applied to compress the heel has the effect of forcing the overlapping scarfs together and closing the joints between them so as to be almost invisible. This result is more perfect in proportion as the angle of the scarf approaches the plane of the lift, but with the increase of sharpness of the bevel, there is also an increase of the tendency of one piece to be pushed too far inward, causing what is known in practice as a "telescoping" effect, and making the lift too thick at the joint and too narrow as a whole. This telescoping takes place accidentally and frequently in spite of care to avoid it. It is only detected after the heel has been nailed and taken out of the forming cup. The heel is then worthless until taken apart and made over.

My invention provides shoulders which absolutely prevent the pieces being pushed too far inward, while at the same time it enables the edges where they extend to the periphery of the heel to be beveled on an angle which is as acute as desired, so that at these portions, the lifts may overlap far and the compressing pressure will close the line of division between them tightly.

The economy effected by building up heels from small scraps is well understood, because the first cost per pound of scraps died out to fit together is only a fraction of the cost per pound of whole lifts, and the labor cost of assembling them is but trifling. On the other hand, the value of the built-up heel is approximately equal in both cases, whether the lifts are whole or pieced, but in order for equality of value to obtain, the pieced heel must not only be as good when first made, but also after being nailed to the shoe and subjected to the trimming and burnishing operations. The latter operations result in opening cracks between the pieces which abut squarely and between the lifts of scarfed pieces when the latter have been pushed too far together so as to ride up on each other. As a heel embodying my invention has no vertical divisions at the edges, and the pieces have abutments preventing tele-

scoping, neither of the defects of the previous types of heel are present, while the advantages of each are secured. The cost of forming the pieces is no greater than that of former methods, since they are first cut out 5 by dies to the outline shown in Fig. 4. After being so cut out, each piece is brought to the action of a knife having separated cutting edges, or two knives working in the same plane, which move at an angle to the surface of the piece and bevel off the ends portions of the square 10 edge at each side of the shoulders *c* or *d*. At the same time that the pieces are cut to shape, I form notches *g* and *h* separating the abutting shoulders from the parts to be scarfed. This enables the scarfing knives to trim the bevels without leaving fragments connected to the 15 central portions, and also without requiring the scarfing knives to have on their adjacent ends cutting lips to entirely remove the scraps.

The lines separating the pieces *a* and *b* may be diagonal or transverse as well as longitudinal, and there 20 may be three or more pieces, as shown in Fig. 6, where the lift is made of four separate pieces. Each piece, however, is constructed as above described, having overlapping beveled portions *i* at the ends of the meeting edges which extend to the outline of the heel and 25 square abutting shoulders *j* contained wholly within the external periphery.

I claim:—

1. A heel consisting of lifts, each of which is composed of a plurality of pieces provided at their contiguous edges,

within the periphery of the heel, with square abutting 30 shoulders, and with scarfed end portions so as to overlap at the edges of the heel.

2. A heel lift consisting of two or more pieces, which are scarfed or beveled on an acute angle so as to overlap at the 35 ends of their meeting edges and provided with square abutting shoulders intermediate the ends of such edges.

3. A heel lift composed of a plurality of pieces, each of which is scarfed or beveled on that end of its meeting edge 40 which extends to the periphery of the heel, and has an abrupt abutting shoulder at a distance from the heel edge.

4. A heel for boots and shoes consisting of lifts composed of a plurality of pieces, the peripheries of which together form the outline of the completed lift, each of which is scarfed or beveled on that end of its meeting edge which 45 extends to the periphery of the heel, and has an abrupt abutting shoulder at a distance from the heel edge.

5. A heel lift composed of a plurality of pieces together having the outline of a complete lift and having on their meeting edges acute-angled overlapping scarfed portions 50 and abrupt abutting shoulders, separated by notches.

6. A piece forming part of a composite heel-lift, conforming in part to the shape of a heel, and having an edge provided with an intermediate squared abutting shoulder and flanking beveled portions.

7. A piece forming part of a composite heel-lift, conforming in part to the shape of a heel, and having an edge 55 provided with an abrupt abutting shoulder and a beveled or scarfed portion separated from the shoulder by a notch.

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

LINUS H. SHAW.

Witnesses:

JOHN H. BARTLETT,
SEWALL P. HOWARD.