

No. 894,730.

PATENTED JULY 28, 1908.

J. DION.

LAST.

APPLICATION FILED JAN. 26, 1903.

Fig. 1.

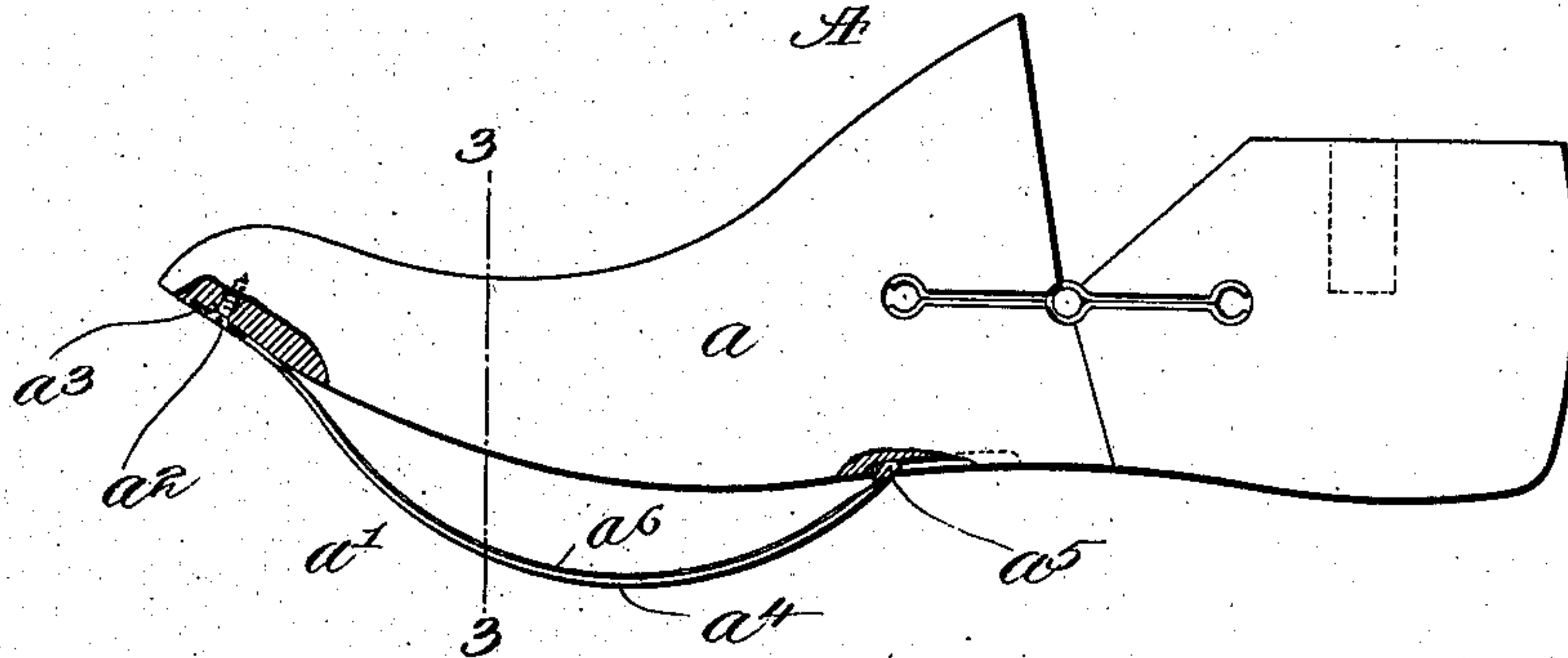
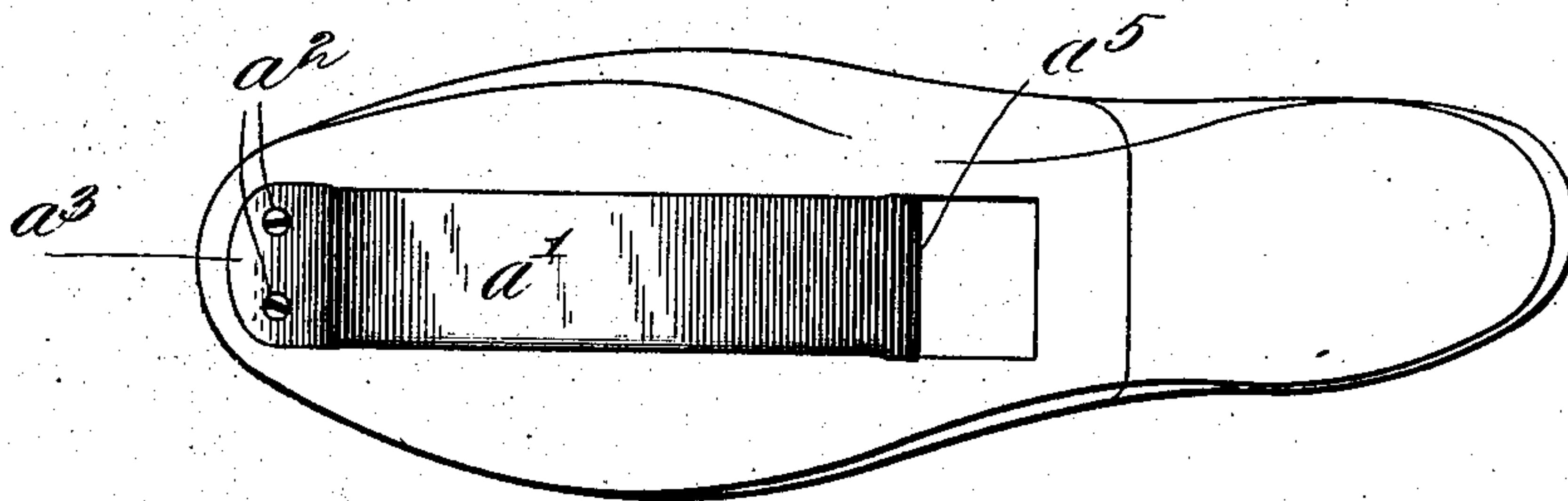


Fig. 2.



*Fig. 3.*

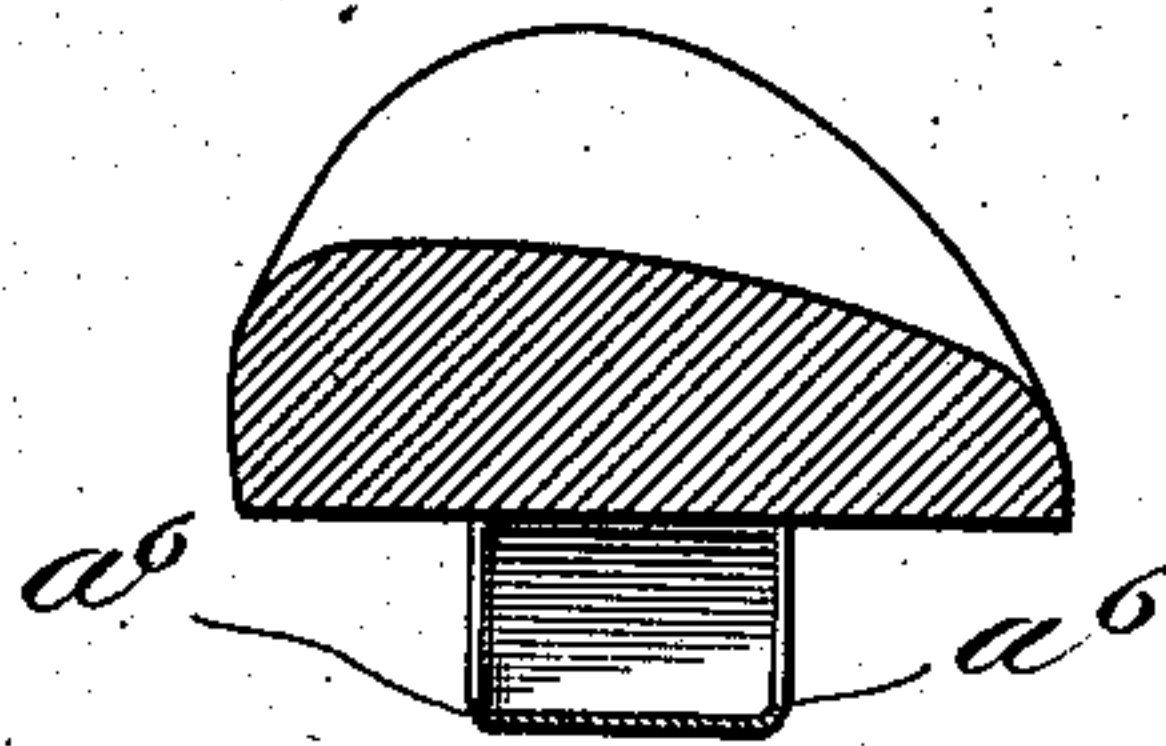
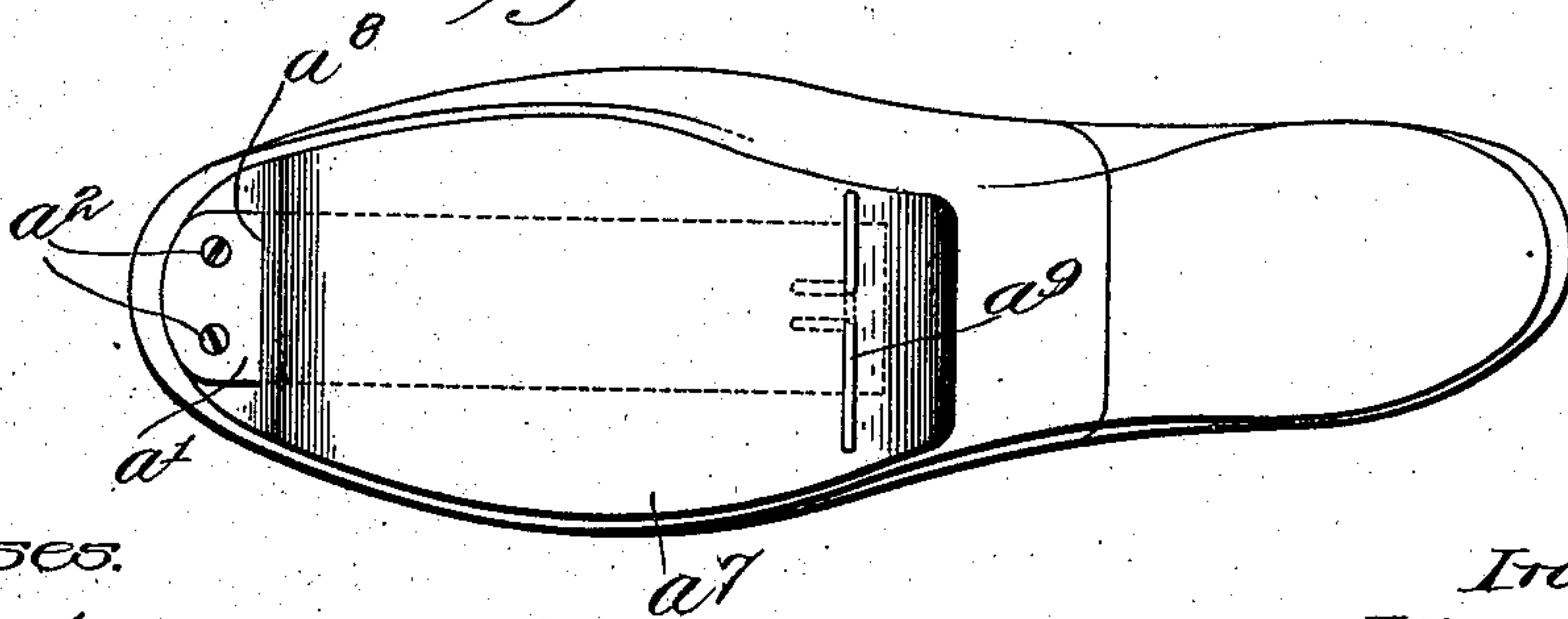


Fig. 4.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JOHN DION, OF NORTH ABINGTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO KRENTLER-ARNOLD HINGE LAST COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

## LAST.

No. 894,730.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed January 26, 1903. Serial No. 140,453.

*To all whom it may concern:*

Be it known that I, JOHN DION, a citizen of the United States, residing at North Abington, county of Plymouth, State of Massachusetts, have invented an Improvement in Lasts, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to lasts, and is more particularly intended for a follower or second-last, sometimes called a filler or shoe-form, being a cheaper and usually less accurate form of last than those on which the shoe is made.

After a shoe has been put together and is ready for the finishing operations, it is necessary that it should be maintained in its desired shape and prevented from collapsing, shrinking, and otherwise changing its form and losing its "style", and yet the cost of first-lasts is so great as to render it inexpedient to keep on hand the very large number thereof which would be necessary if they were used in all the operations, and accordingly various forms of followers have been provided, many of which have expansible fore-parts, thereby permitting the same follower to be used with slightly different shapes and sizes of shoes, so that it is unnecessary to go to the expense of changing all the followers each time the first-lasts are changed in style or shape.

It should be of the very first importance that a follower should keep the upper in the same shape as the first-last, especially in the forward portion of the fore-part, and yet when a fore-part is split or made laterally expansible in some manner it is evident that it tends to distort the shoe upper, and this is especially true when it has to expand very much; and accordingly one chief purpose of my present invention is to provide means, which, while permitting the follower to occupy varying space in the shoe, will always keep the same shape or contour of last in contact with the upper. I accomplish this object by providing below and independent of the hinged portion or connection a yielding bottom or section, preferably in the shape of a broad, flat spring, which tends to lift the larger body portion of the last and hold the same in snug contact with the shoe upper.

In the accompanying drawings, Figure 1 shows my invention applied to an ordinary

hinged last, partly broken away for convenience of illustration; Fig. 2 is a bottom plan view thereof; Fig. 3 is a cross-sectional view on the line 3—3, Fig. 1; Fig. 4 is a bottom plan view showing a further feature of construction.

In practice, my invention is designed to be employed with a non-expansible hinged follower A.

As herein shown the fore-part *a* is provided with a broad leaf-spring *a'* secured to the bottom of the fore-part *a* in any convenient manner, as by screws *a*<sup>2</sup>, the end of the spring being preferably set in to recess *a*<sup>3</sup>.

The spring *a'* is curved downwardly at *a*<sup>4</sup> below the normal bottom line of the last, so as to normally give great depth from the top of the fore-part to the bottom of the spring, and the latter is preferably rounded or bent inwardly at its inward end *a*<sup>5</sup> so as to permit it to slide back and forth on the bottom of the last as it is compressed when inserted in a shoe, the bend *a*<sup>4</sup> being vertically below the ball of the last for cooperating with the full-shaped last to the best advantage.

As already stated, my invention is for use in manufacturing and is to be distinguished from display forms and shoe trees or fillers used after the shoe is manufactured for displaying the same in show windows or preventing the shoe from curling up when removed from the foot of the wearer, my invention requiring a regular last having a heel-part hinged to turn up against the forepart and both parts being full-size and together having the full contour of a complete first-last. The edges thereof are rounded or bent as indicated at *a*<sup>6</sup>, Fig. 3, to prevent its creasing the innersole or sock-lining.

For certain purposes it is desirable that the yielding bottom should be coextensive with the bottom of the last, and accordingly in Fig. 4 I have shown the spring *a'* as provided with a section or plate *a*<sup>7</sup>. This may be leather board or other material capable of accommodating itself to the changing shape as it is forced in a shoe with the last, and it may be held in any suitable manner, being herein shown as extending beneath the front end of the spring, which projects through a slot *a*<sup>8</sup> therein, and as secured to the rear end of the spring by a wire or staple *a*<sup>9</sup>.

I intend my invention to be restricted to lasts capable of use in manufacturing shoes and to include the provision of a yielding



and flexing bottom, or any means for yieldingly holding the body of the last upwardly against the shoe upper, intending herein to distinguish from the previous constructions, 5 in which the bottom of the last has been hinged to the heel-part, and the upper portion has been yieldingly connected to said hinged bottom part to move against the sides and top of the upper.

10 Having described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A last comprising a forepart and a heel-part together having the full contour of a 15 complete first-last, the bottom of the forepart of the last being integral with said forepart, and means held longitudinally and vertically yielding at the bottom of the forepart of the last located mainly beneath the 20 ball of the forepart and capable of moving the entire forepart upwardly in parallelism to itself when in a shoe, said forepart, above said yielding means, being hinged to said heel-part.

25 2. A last having a wide leaf spring extending longitudinally along its bottom with a

downward curve vertically below the ball of the last, and having its opposite ends contacting respectively with the toe and shank of the last, and one end fast and the other of 30 said ends loose on the last, being slidably retained in the last.

3. A last having a full size forepart, and a full size heel-part hinged to turn up against said forepart, and a yielding, flexible bottom 35 part secured to the bottom of the forepart of the last and free to slide at one end lengthwise of said bottom, being held normally in a curve extending longitudinally of the last, projecting at its intermediate portion in line 40 with the ball of the last below the normal bottom line of the last, and engaging the said bottom at its opposite ends, for pressing said forepart bodily in a vertical direction away 45 from the bottom of the shoe.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOHN DION.

Witnesses:

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EDWARD F. MANLEY.