

(No Model.)

H. H. V. LILLEY.  
METHOD OF LASTING.

No. 482,016.

Patented Sept. 6, 1892.

Fig: 1.

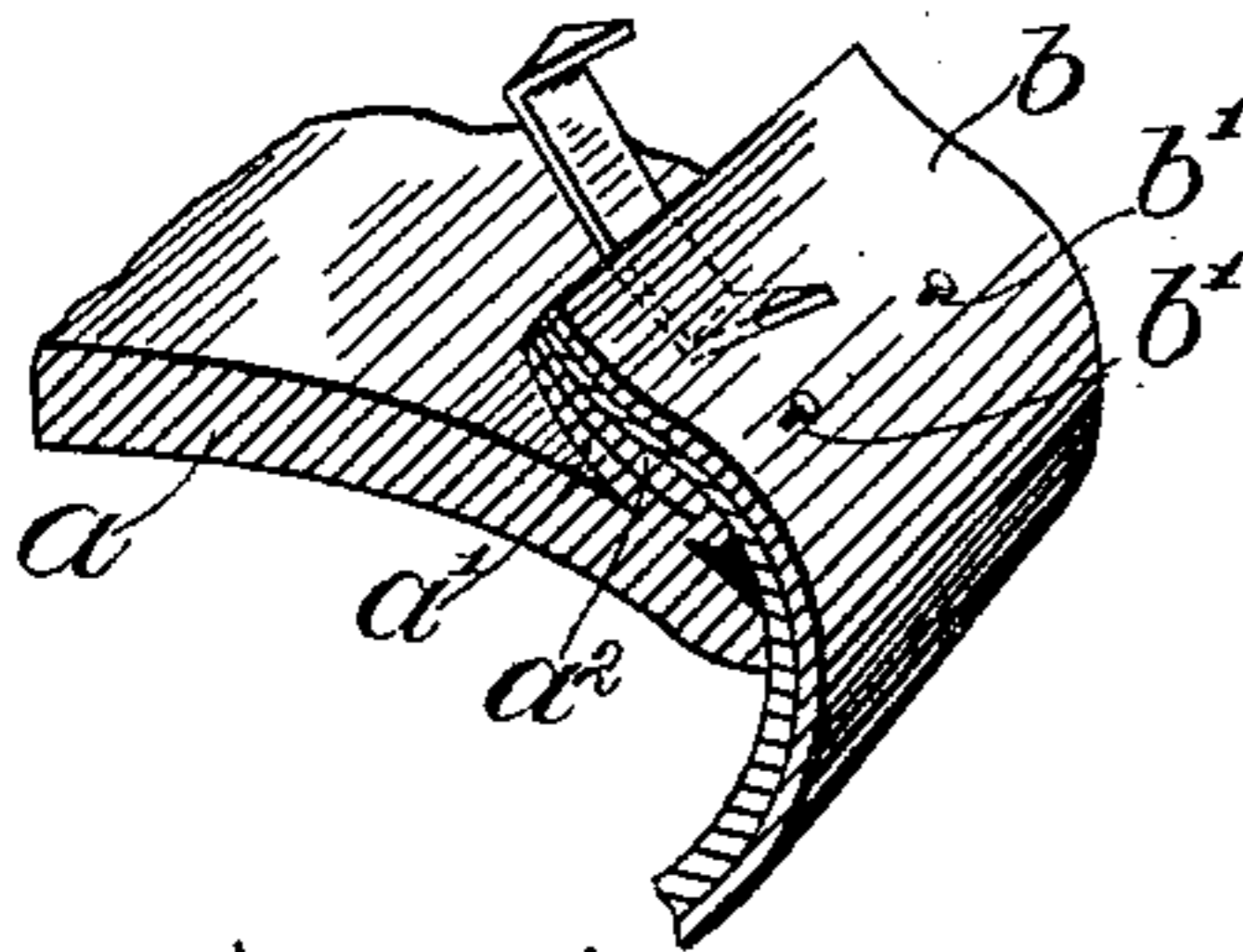


Fig: 2.

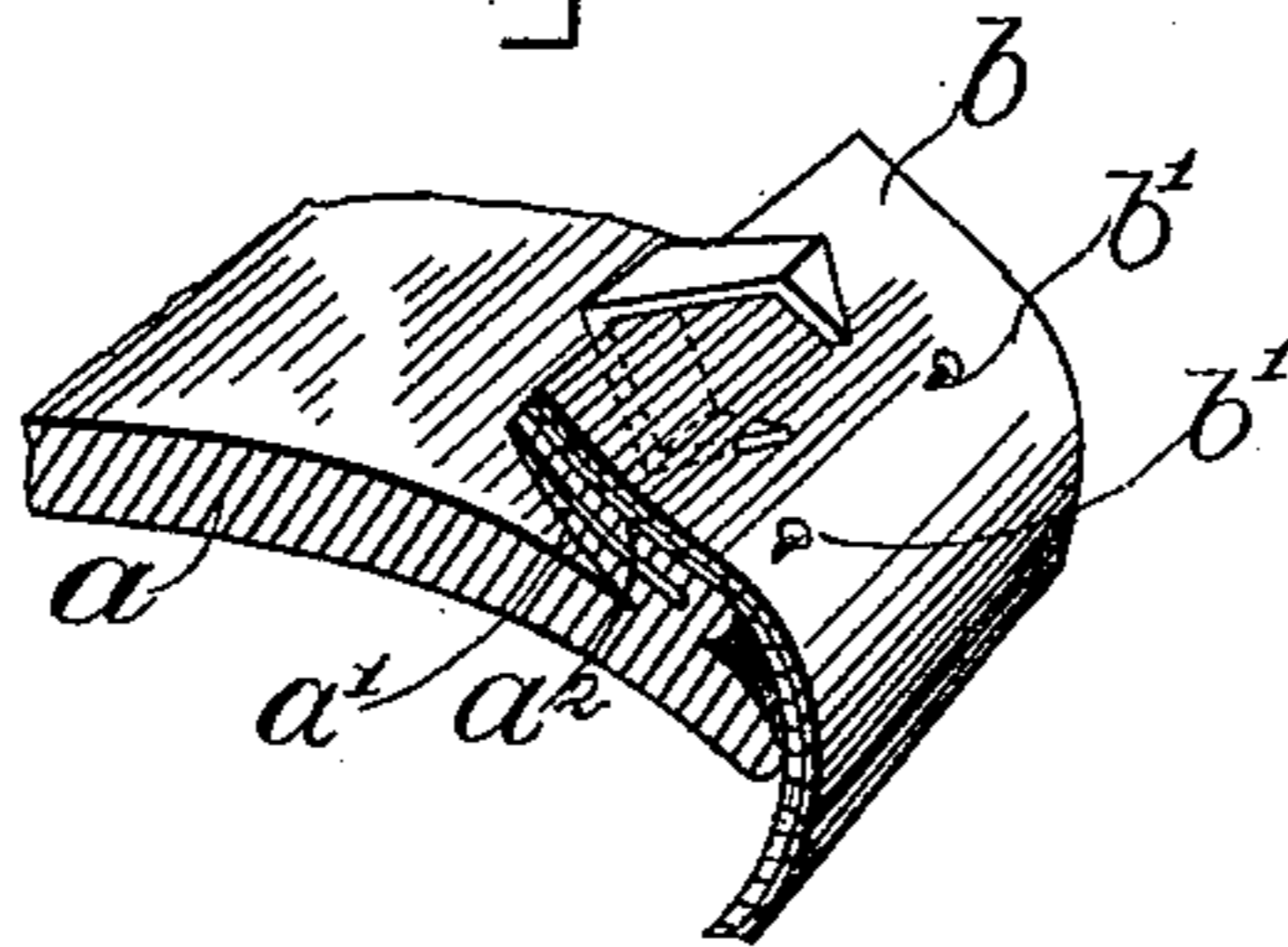


Fig: 3.

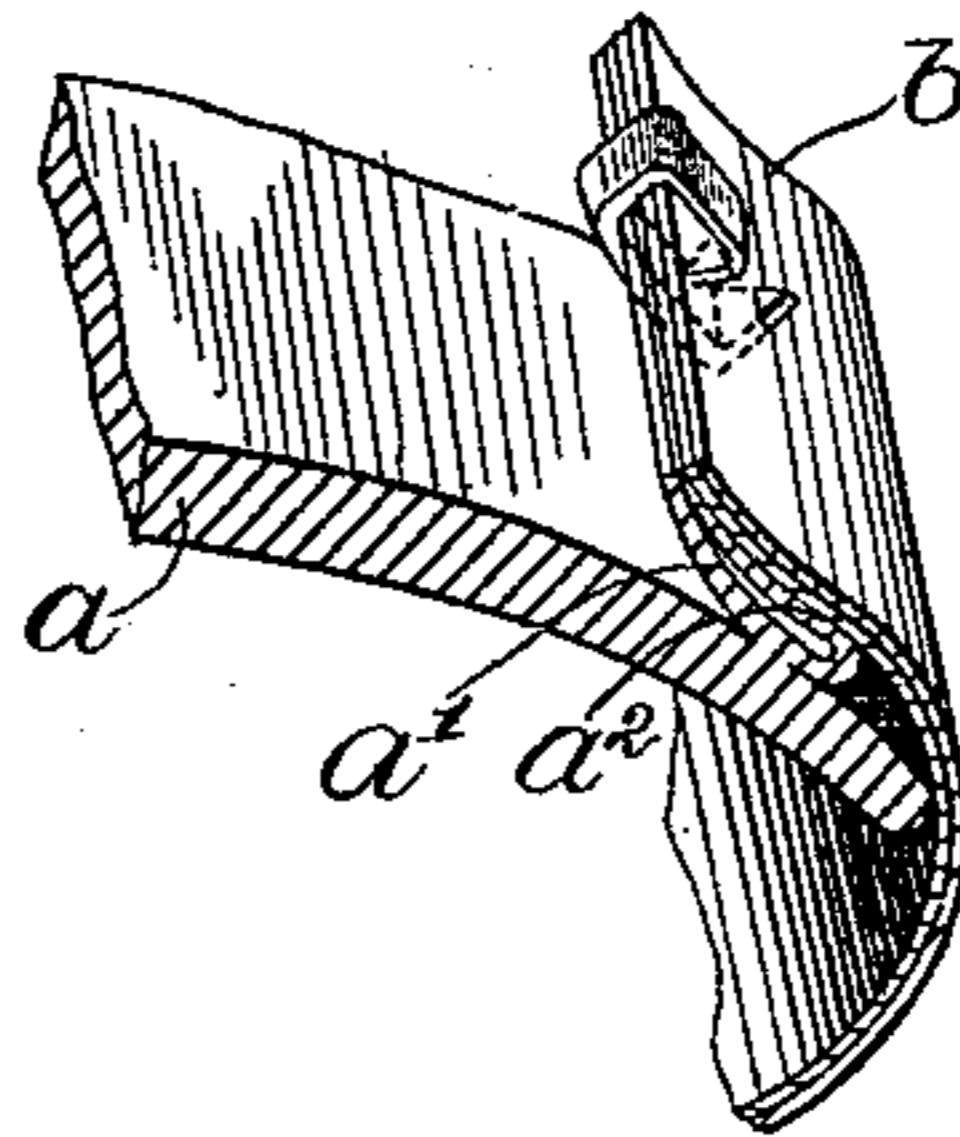


Fig: 4.

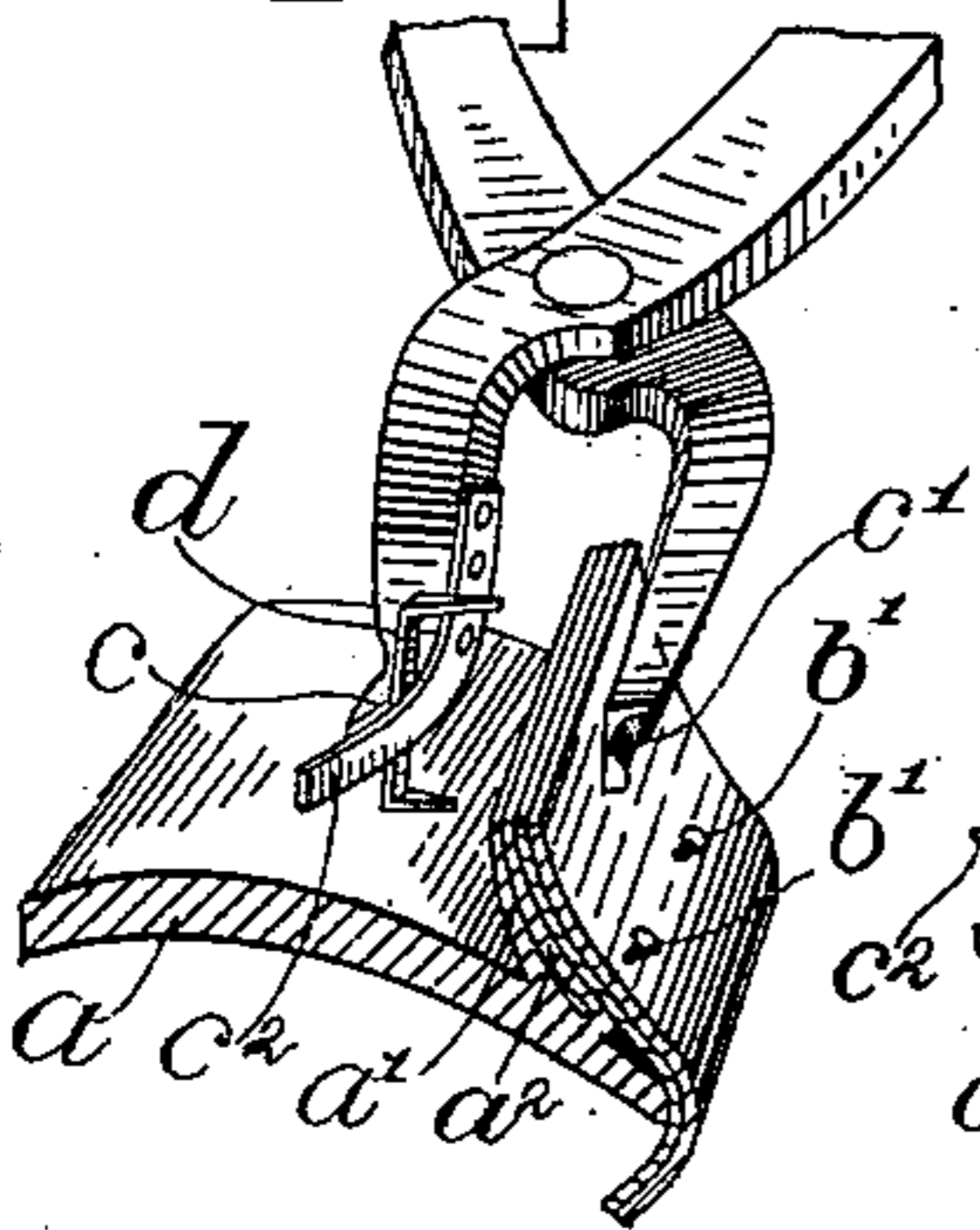


Fig: 5.

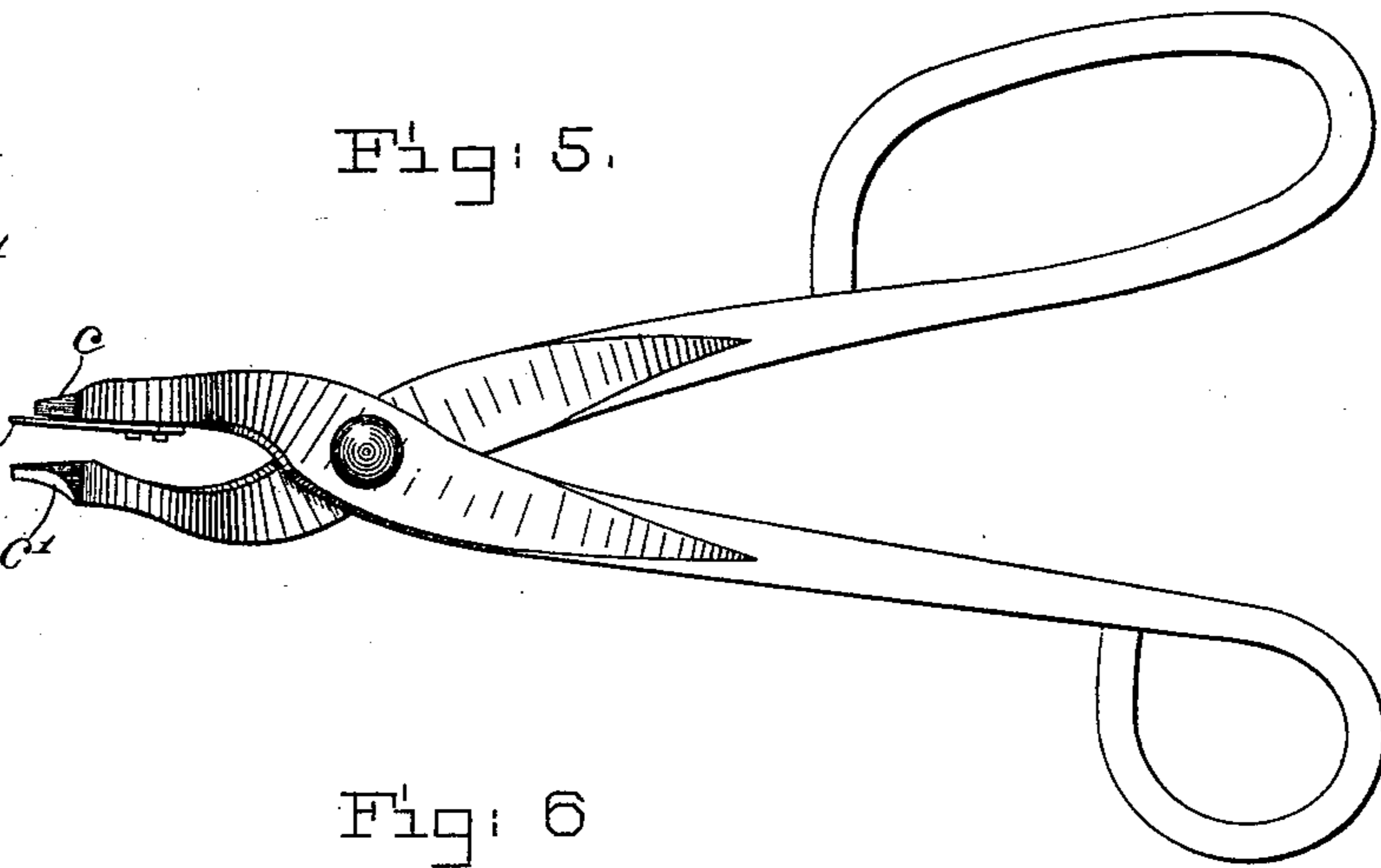


Fig: 6

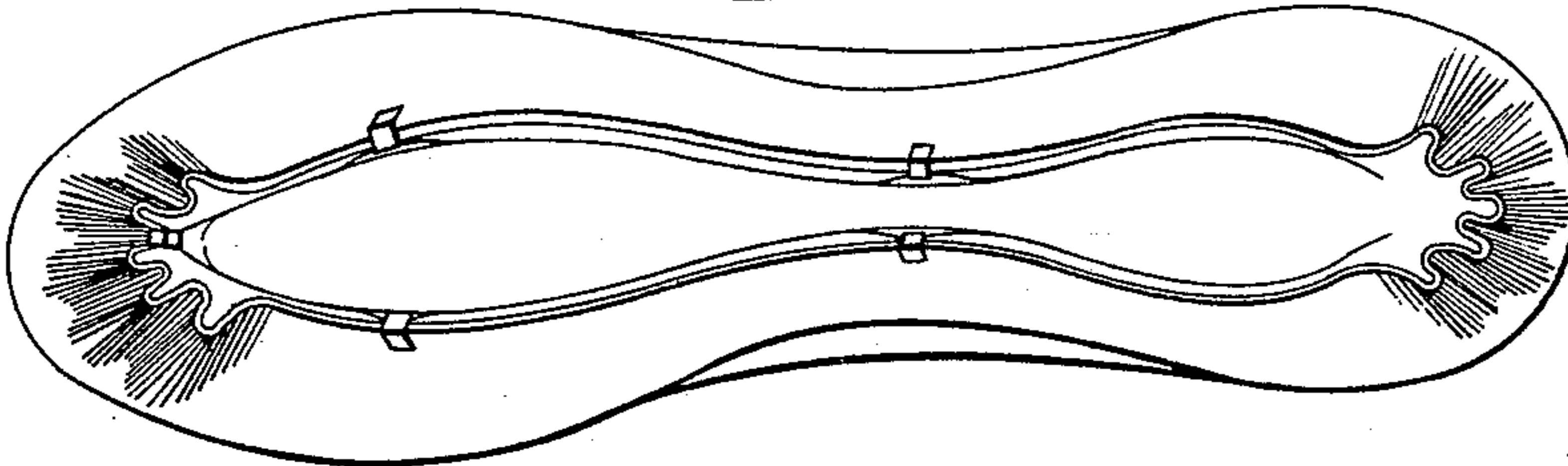
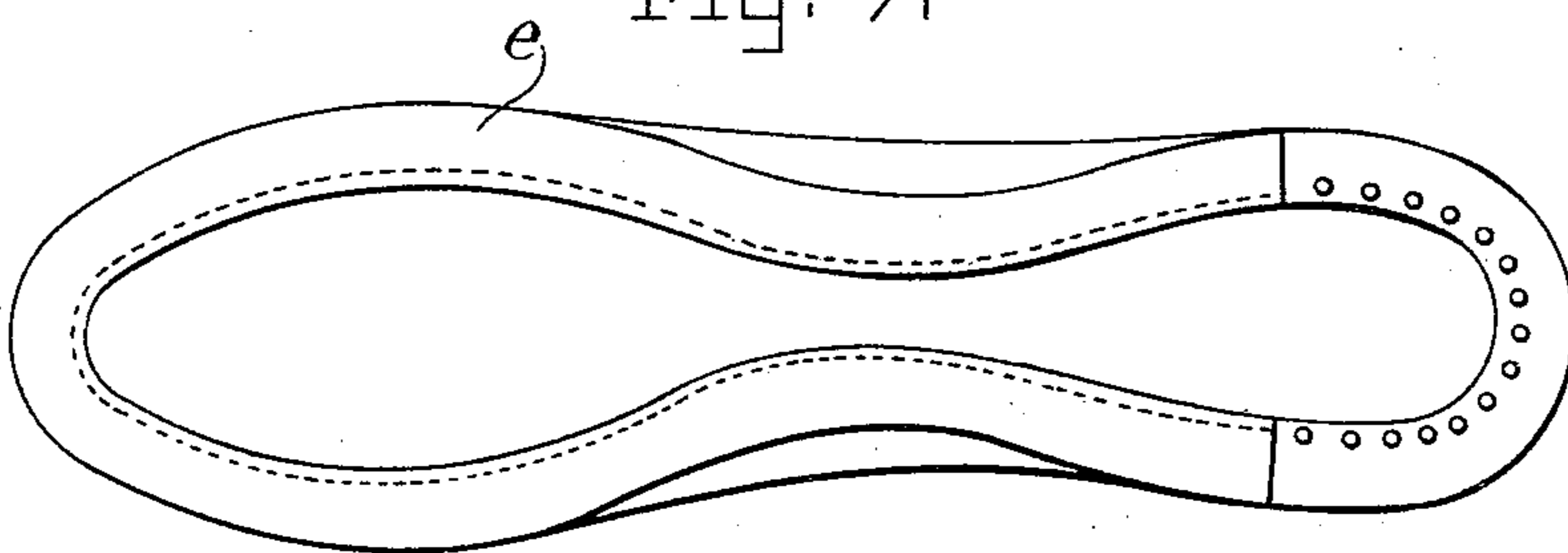


Fig: 7.



Witnesses:  
Oscar F. Hill  
Edward F. Allen.

Inventor  
Hugh H. V. Lilley.  
By Crosby & Maynard  
Attys.

# UNITED STATES PATENT OFFICE.

HUGH H. V. LILLEY, OF MILFORD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
TO THOMAS LILLEY, OF SAME PLACE.

## METHOD OF LASTING.

SPECIFICATION forming part of Letters Patent No. 482,016, dated September 6, 1892.

Application filed August 22, 1891. Serial No. 403,389. (No specimens.)

*To all whom it may concern:*

Be it known that I, HUGH H. V. LILLEY, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Boots and Shoes and the Method of Securing Uppers to Channeled Inner Soles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of boots and shoes it is now common to secure the inner sole upon the last and then draw the upper over the last upon the inner sole and secure it by tacks. The welt is then sewed on by a welt-sewing machine, which welt substantially covers the tacks. In sewing on this welt the needle of the sewing-machine frequently strikes one of the tacks and is broken, and it oftentimes happens that such breakage of the needle injures the welt and surrounding stock in such a way that the welt is destroyed and must be removed and a new one applied. In factories where large quantities of welted boots and shoes are made the loss occasioned by such breakage of the needles, by destroying welts, and by the additional time consumed by the operator in repairing the injuries done by breakage of the needle is considerable. Turned shoes are lasted in substantially the same manner, and although a welt is not used the needles are broken in sewing the upper to the sole by striking the tacks, and hence difficulties similar to those above mentioned arise and must be overcome. I have endeavored to overcome these difficulties, and in doing so I have secured the upper to the edge of a channeled and slitted inner sole by tacks in the usual way. I then temporarily fasten the edge of the upper to the flaps formed by channeling and slitting the inner sole by staples or other equivalent fastenings, and thereafter remove the tacks. The staple-like fastenings are removed before finally securing the outer sole to the upper. The welt may then be sewed on, or in turned shoes the upper may then be sewed to the sole, without danger of breaking the needle, because the tacks have been removed and the staples or other fastenings are at the extreme edge of the upper and out of the path of the needle, and also a free and unobstructed passage is left back of the channel-flap.

Figure 1 shows a portion of an inner sole and upper tacked thereto and a staple in the act of being clamped to the upper and flaps formed by cutting a channel and slit at the edge of the sole; Fig. 2, a similar view, the staple being turned over; Fig. 3, a similar view, the staple being finally clinched and the tacks removed; Fig. 4, a similar view showing the tool which may be employed to drive and clinch the staple; Fig. 5, a plan view of the tool; Fig. 6, an under side view of the lasted shoe, the tacks being removed and the edge of the upper secured to the flaps formed by channeling and slitting the sole; Fig. 7, a view of the under side of the shoe, showing a welt secured in place.

The inner sole *a*, slitted to present the channel-flap *a'* and also slitted at the edge inwardly to present a flap *a''*, is temporarily secured to the last in any usual or suitable way and the upper *b* drawn over upon it and secured thereto by tacks *b'*, as shown. This having been done, the boot or shoe will have been lasted, it will be seen, in the usual way. The edge of the upper *b* is then secured to the flaps *a'* *a''* by staples or equivalent fastenings, which embrace and clamp the said edges. The staple-like fastenings are removed before applying and securing the outer sole to the upper.

I have herein represented a staple as such form of fastening, it being secured or driven by a suitable tool or implement—such, for instance, as that shown in Fig. 5. The implement shown comprises two jaws or nose-pieces *c c'*, formed on or attached to the pivoted hand-levers. To one of these nose-pieces, as *c*, a flat spring *c''* is secured. A staple *d* is held by its crown by the nose-piece *c* and flat spring *c''*, as that shown in Fig. 4, and one leg of said staple is driven through the flaps *a'* *a''* and the upper *b*, as represented in Fig. 1. The crown of said staple is then bent over the edges of the material, as shown in Fig. 2, by simply turning the implement in the hand, and thereafter the other leg is driven into the material, as shown in Fig. 3. The tacks *b'* are then removed by nippers or other suitable means.

I have found that I do not need to employ but a few staples—such as five, for instance, as shown in Fig. 6, although it is obvious that

any other desired number may be employed. The welt *e* is then sewed on in the usual manner by a welt-sewing machine, the stitches passing through the welt, upper, and flaps *a'* <sup>5</sup> *a*<sup>2</sup>, and it will be seen that there are no tacks to obstruct the passage of the needle, while at the same time the upper is held taut, or in case of a turned shoe the upper may be sewed to the sole in the usual way, with the difficulties above enumerated having been overcome. <sup>10</sup>

I claim—

1. In the manufacture of boots and shoes, the method herein described of securing up- <sup>15</sup> pers to channeled inner soles on a last, which consists in drawing the upper over the last and securing it to the inner sole by tacks, then temporarily securing the edge of the upper to the channel-flap by staple-like fasten- <sup>20</sup> ings, then removing the tacks, and thereafter connecting the upper to the channel-flap by a line of stitches.

2. In the manufacture of boots and shoes, the method herein described of securing up- <sup>25</sup> pers to channeled and slitted inner soles on the last, which consists in drawing the upper over the last and securing it to the inner sole by tacks, then securing the edge of the upper to

the edges of both of the flaps formed by chan- <sup>30</sup> neling and slitting the inner sole by suitable staple-like fastenings, then removing the tacks, and thereafter connecting the upper to the channel-flap by a line of stitches.

3. In a boot or shoe, the combination, with a channeled inner sole, of an upper the edge <sup>35</sup> of which overlies the channel-flap and pointed staple-like fastenings which embrace the edge of the upper and the edge of the channel-flap, the points of said fastenings entering the opposite ends of said upper and channel-flap to <sup>40</sup> thereby secure the said upper to said channel-flap, substantially as described.

4. In a boot or shoe, the combination, with an inner sole channeled and slitted to form <sup>45</sup> flaps *a' a*<sup>2</sup>, the former of which is turned over upon the latter, of an upper the edge of which is secured to said flaps *a' a*<sup>2</sup> by staple-like fastenings, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of <sup>50</sup> two subscribing witnesses.

HUGH H. V. LILLEY.

Witnesses:

BERNICE J. NOYES,  
FRANCES M. NOBLE.