

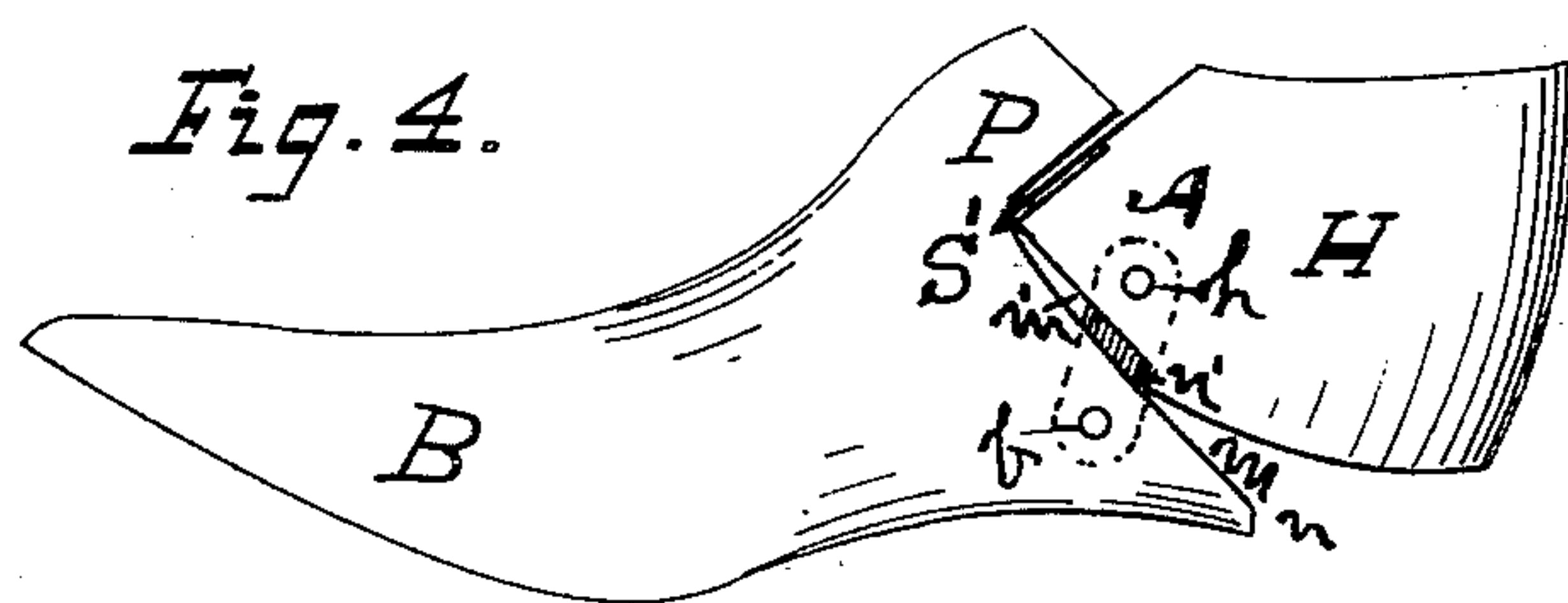
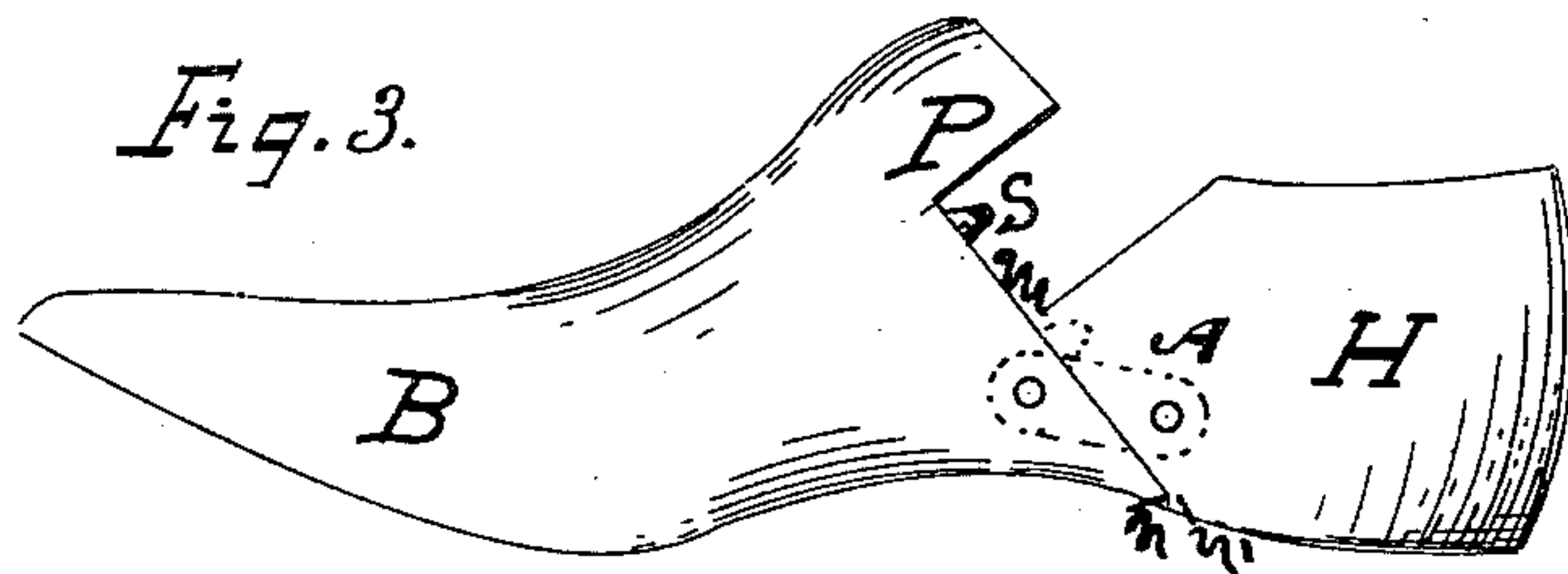
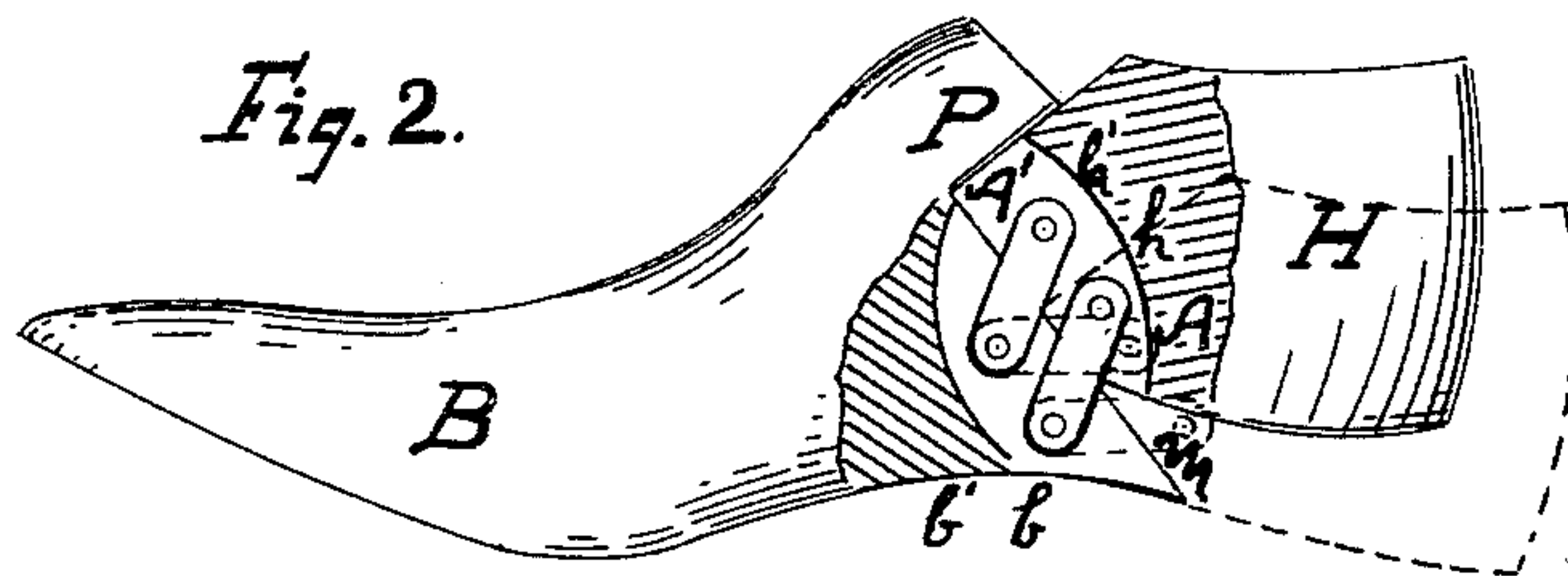
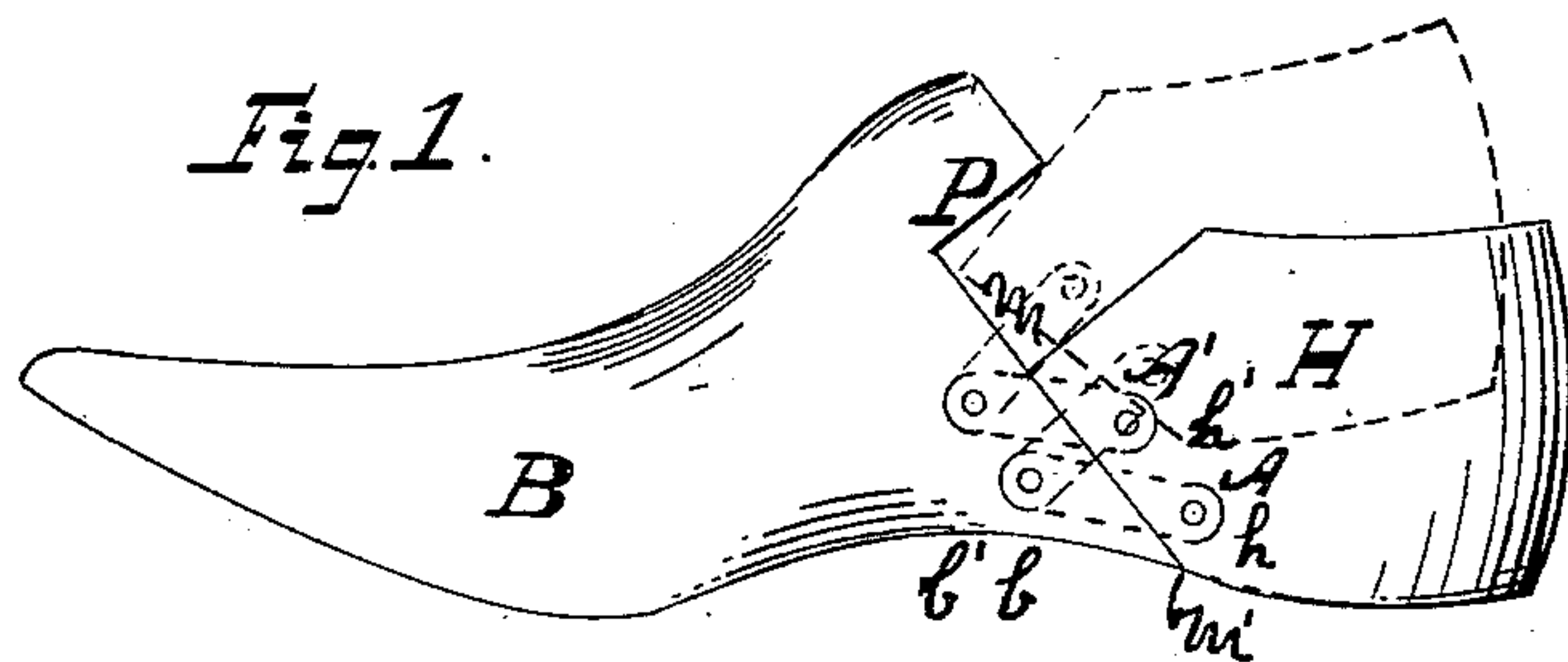
No. 632,994.

Patented Sept. 12, 1899.

A. G. FITZ.
LAST JOINT.

(Application filed Jan. 18, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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LAST-JOINT.

SPECIFICATION forming part of Letters Patent No. 632,994, dated September 12, 1899.

Application filed January 18, 1897. Serial No. 619,653. (No model.)

To all whom it may concern:

Be it known that I, AMOS G. FITZ, a citizen of the United States, residing at Auburn, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Last-Joints, of which the following is a specification.

My invention relates to an improved construction of the union between the heel part and fore part of a last in that class of lasts in which the heel part is moved upward and forward relatively to the fore part before removing the shoe from the last and before replacing it upon it. These lasts have been made in various ways; but in those which have hitherto met with the most approval the heel part and fore part are connected by a hinge near the bottom of the last, said hinge being pivoted in the fore part and rigidly secured to the heel part. The turning of the heel part on its pivot in the fore part does not shorten the bottom of the last, but merely doubles it up, and when this doubling up is carried far enough to be of any service the heel part stands at such an angle that it is very liable to act as a plow when the shoe is slipped over it and rip up the shoe-lining.

In the drawings, Figure 1 is an elevation of a last divided transversely and connected by two bars, each pivotally secured at one end to the fore part of the last and at the other end to the heel part, one above the other. Fig. 2 is an elevation, partly in section, showing a last in its shortened relation when the connecting-bars are of equal length and parallel. Fig. 3 is an elevation of a last divided transversely and provided with a single connecting-bar pivoted at one end to the fore part and at the other end to the heel part, the pivot in the heel part lying near the adjacent face and between the top and bottom thereof to keep the adjacent faces of the two parts of the last substantially parallel; and Fig. 4 is an elevation showing the same in the shortened relation.

Same letters refer to like parts.

The object of my invention is to provide a construction whereby the entire heel part of the last may move forward and upward, means for automatically locking the two parts temporarily in their lengthened and short-

ened positions, and means for causing the adjacent faces of the two parts to remain in all positions substantially parallel, thus rendering the last always ready to receive the shoe without special manipulation, except in its lengthened position. These results I attain by my invention.

For purposes of illustration I have shown two lasts involving different forms of my invention, but do not intend thereby to limit myself to the specific forms shown. In the form shown in Figs. 1 and 2 I attain the results by means of a plurality of connecting-bars, each pivotally attached at one end to the fore part of the last and at the other end to the heel part of the last and by the location of the pivots. In that shown in Figs. 3 and 4 I attain the same results by a single bar pivotally attached at one end to the fore part and at the other end to the heel part of the last and by the location of the pivots.

In the drawings, B is the fore part of the last, H the heel part, and m and m' the adjacent faces of the fore part and heel part, respectively. Connecting the two parts is a bar A, pivotally secured at one end to the fore part and at the other end to the heel part by pins b and h , respectively. In Figs. 1 and 2, A' is a second connecting-bar pivotally secured at one end to the fore part and at the other end to the heel part by pins b' and h' , respectively, arranged in a different horizontal plane and adapted to cooperate to control and regulate the movement of the heel part relative to the fore part. In Figs. 3 and 4, n and n' are faces at different angles to m and m' on the fore part and heel part, respectively, and serve to lock the two parts together against endwise pressure when in their lengthened relation. The two parts may be locked together against endwise pressure in other ways, as by locating the pivot h in bar A somewhat nearer the bottom of the last than pivot b .

To lock the two parts of the last together in their shortened relation, I provide a projection S on the face m of the fore part and a corresponding recess in the face m' of the heel part to engage said lug S when the two parts are in their shortened relation, as shown in Fig. 3. In Fig. 4 a metal plate S' on the heel part is adapted to engage a correspond-

ing socket on the fore part to lock the two parts in their shortened relation. In either case the heel part is released from the stop by pulling it at right angles to the line of division.

The last is changed from its lengthened and temporarily-locked relation to its shortened relation by pressure exerted more or less nearly in the direction of the line of division upward on the heel part or downward on the fore part.

To cause the two parts of the last in all possible positions to maintain a substantially normal relation, I use in the form shown in Fig. 2 the second connecting-bar A'. In this case where the two bars are used one above the other the course which the heel part will travel in passing from its lengthened to its shortened relation is determined and may be varied at will by the relative length of the connecting-bars and the angle at which they are placed relative to each other and the position of the pivot-pins. In Figs. 1 and 2, A and A' are shown of equal length; but it is obvious that their relative length can be varied, as desired, and if A' is made longer than A the bottom of the heel part will move forward somewhat faster than the top. The shortness of the connecting-bar permits the heel part, and with it the connecting-bar, to drop to an angle which locks the two parts securely together without requiring an amount of motion which would injure the shoe when the heel part is assuming its lengthened or shortened relation.

Having thus described my invention and its use, I claim—

1. In a last, a joint-surface on the fore part which has its upper edge nearer the toe than its lower edge, a heel part fitted thereto, a connecting-bar pivoted to both the heel part and fore part and set at such an angle that the pivot in the heel part will be lower than that in the fore part when the heel part is in its lowest or normal position, substantially as set forth.

2. In a last, a surface upon the fore part which has its upper edge nearer the toe than its lower edge, a heel part fitted thereto, a connecting-bar pivoted at one end to the heel part and at the other end to the fore part, and a second connecting-bar similarly pivoted in the heel and fore part, the pivots of one bar not lying in the same horizontal plane as those of the other.

3. In a last, the combination of a fore part, which has on its rear end a plane surface which makes an acute angle with the bottom, a heel part fitted to this plane surface, a connecting-bar working in slots in the heel and fore parts, a pivot in the fore part about which the connecting-bar turns, a second pivot in the heel part which is nearer the bottom of the last than the pivot in the fore part when

the heel part is closed upon the fore part in its lengthened relation.

4. In a last, the combination of a fore part which has at its rear end a joint-surface which makes an acute angle with its bottom surface, a heel part fitted to this joint-surface, a stop limiting the forward motion of the heel part when the last is in its working position, and a connecting-bar so pivoted to the fore part and heel part that the pivot in the heel is nearer the bottom of the last than the pivot in the toe.

5. In a last, the combination of a fore part and heel part, a connecting-bar pivoted to both the fore part and heel part, and a stop attached to the fore part which, when the heel part is in its shortened relation, is engaged with said heel part and holds it from sliding backward when the shoe is pulled on and off.

6. In a last, a joint-surface upon the rear end of the fore part which makes an acute angle with the bottom, a shorter corresponding surface upon the front end of the heel part, a connecting-bar pivoted to both the heel part and the fore part, and a second similar connecting-bar pivoted to both the heel part and fore part above the first.

7. In a last, a connecting-bar pivoted to the fore part a pivot in the other end of the connecting-bar about which the heel part turns, and a stop, as *n*, which arrests the forward motion of the bottom of the heel-piece, when the connecting-bar is in its lower position.

8. A last divided transversely, sockets in the adjacent faces, a union pivotally mounted at each end in the heel and fore parts of the last respectively and means for compelling the adjacent faces of the last to continue in all positions substantially parallel.

9. A last divided transversely and provided with recesses in the adjacent faces thereof and a plurality of connecting-bars located in said recesses one above the other, the ends of the links being pivotally mounted in the heel and fore parts respectively.

10. A last divided transversely and provided with recesses in the adjacent faces, a union pivotally mounted in said recesses in the heel and fore parts respectively, the length of the union and the location of the pivots being such that the projection of the adjacent face of the heel part above and below the pivot compels the two faces to remain parallel or nearly so in all positions whereby the parts of the last will always remain in proper position to readily receive the shoe.

In testimony whereof I have hereunto set my hand, in the presence of these witnesses, on this 30th day of December, 1896.

AMOS G. FITZ.

Witnesses:

N. M. EMERY,
ISAAC W. HANSON.