

(No Model.)

W. FIRMAN.  
LAST.

No. 594,174.

Patented Nov. 23, 1897.

Fig. 1

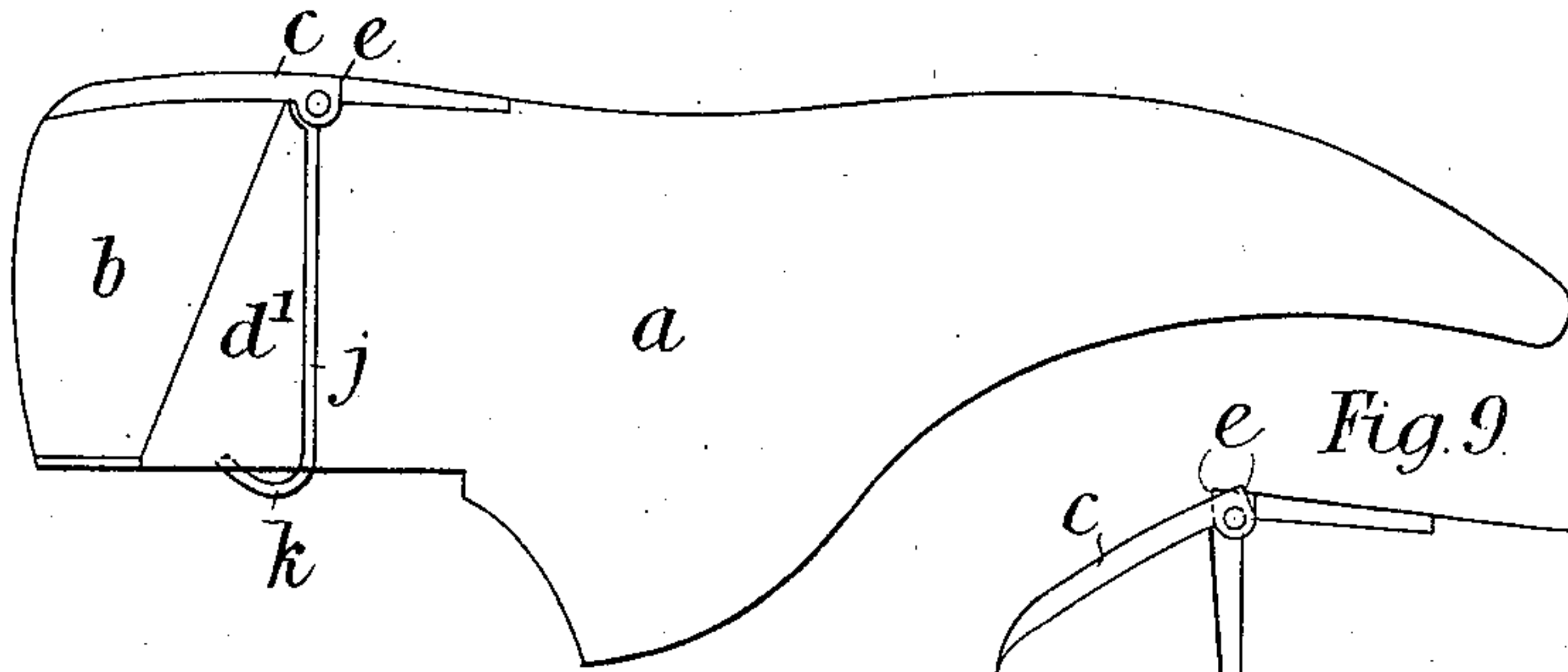


Fig. 2

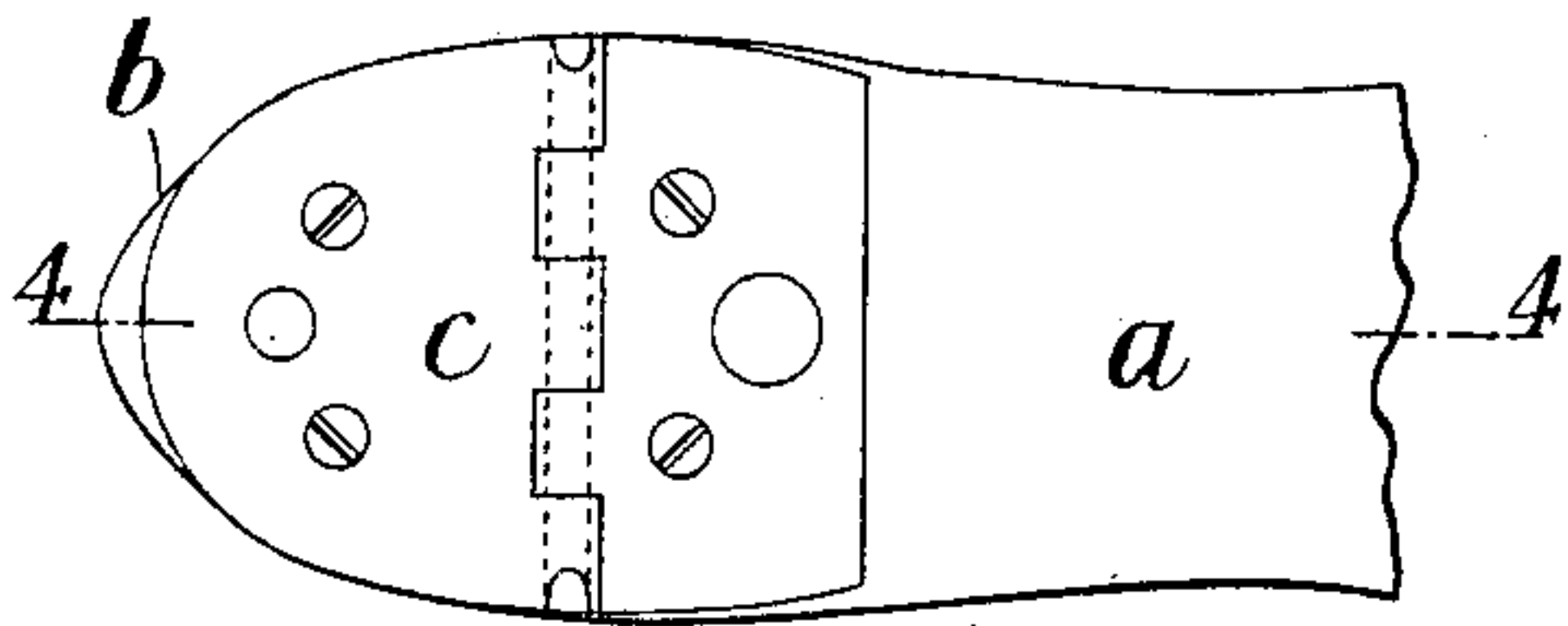


Fig. 3

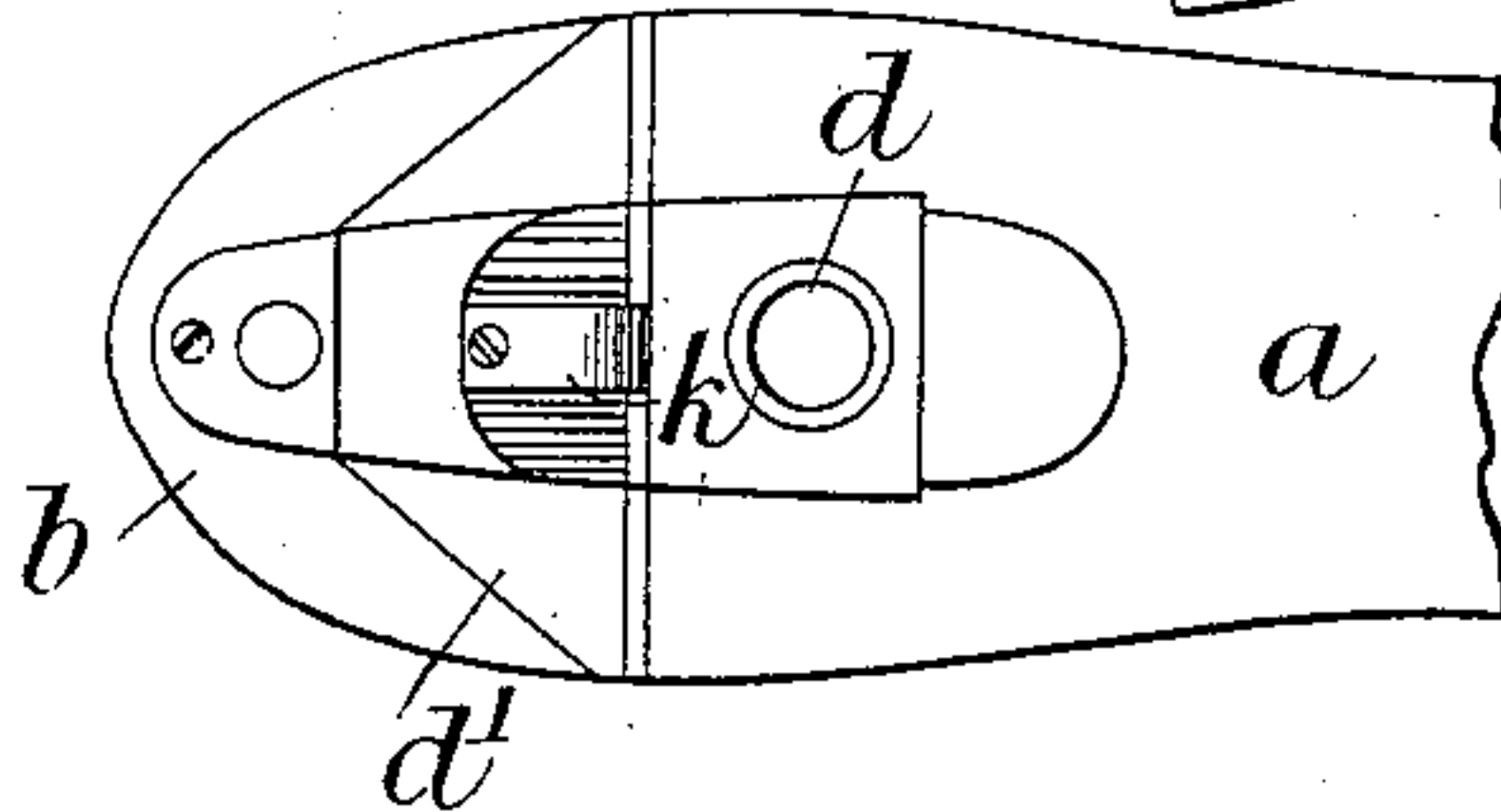


Fig. 5

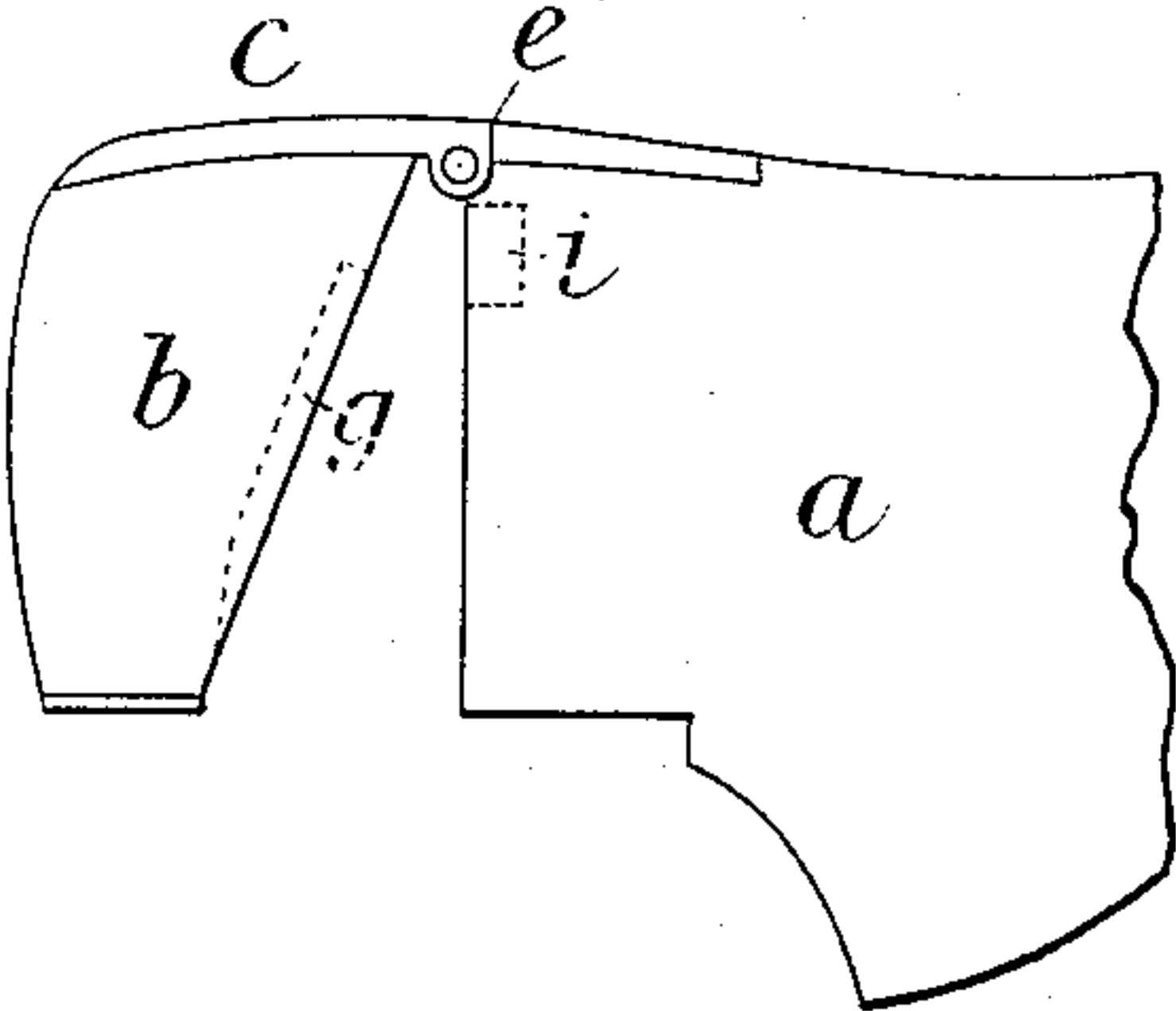


Fig. 4

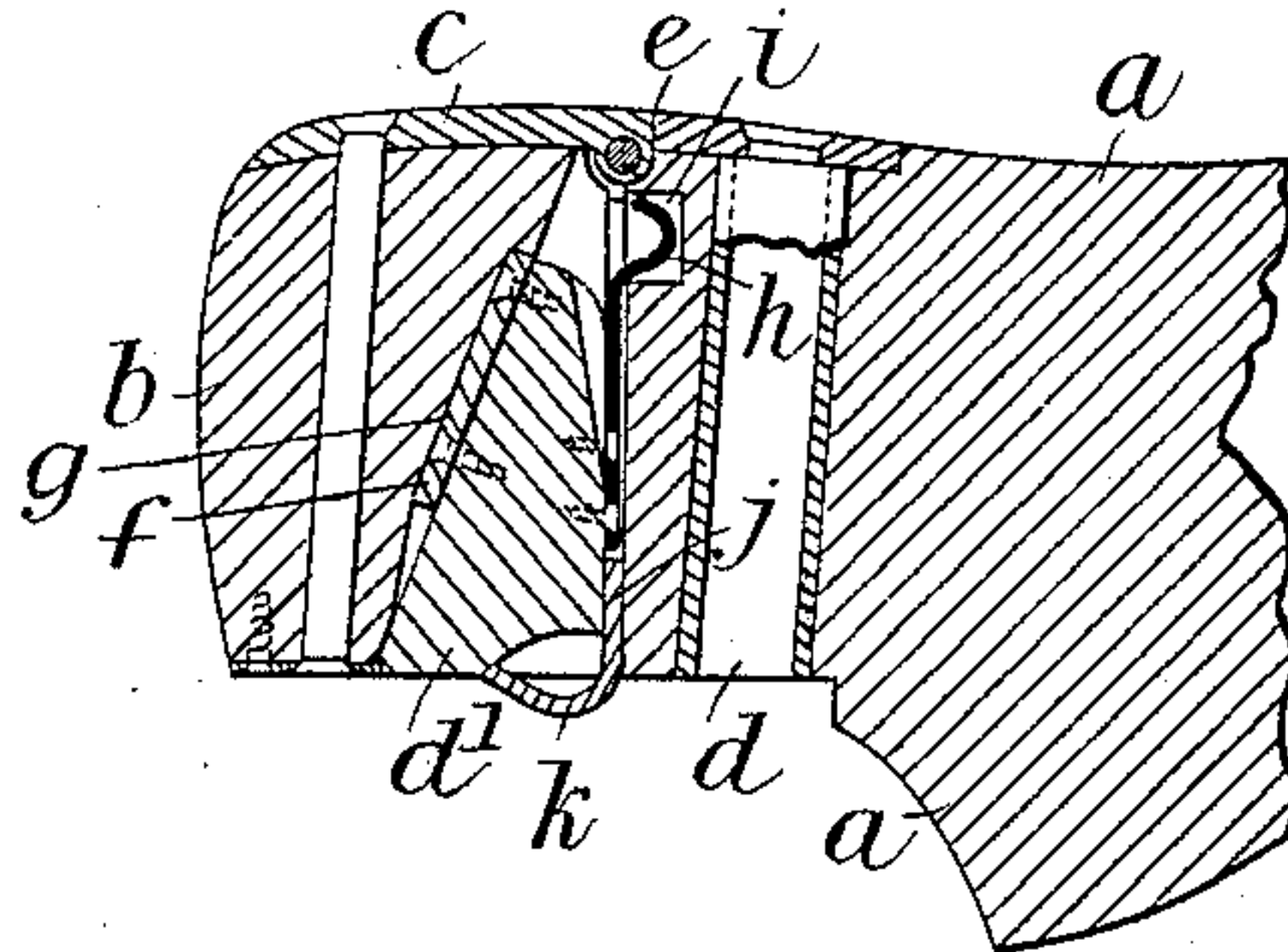


Fig. 6

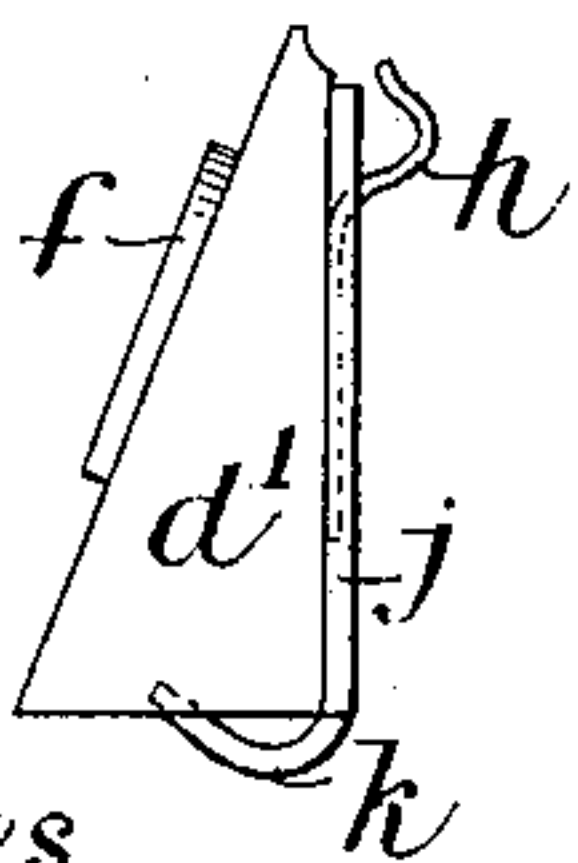


Fig. 7

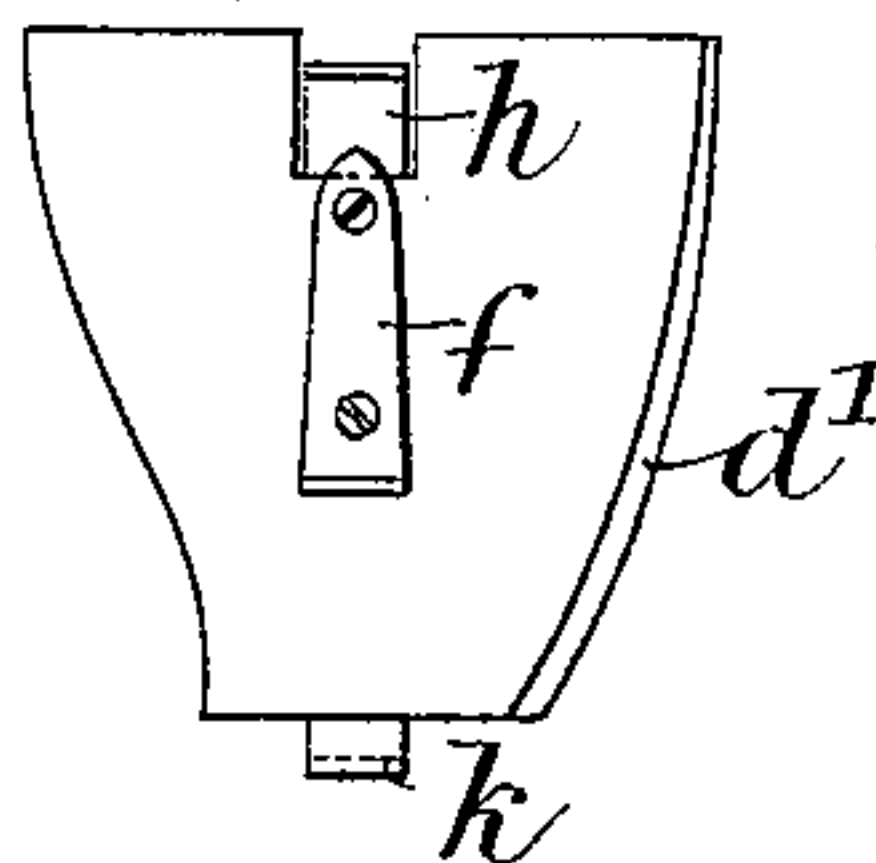
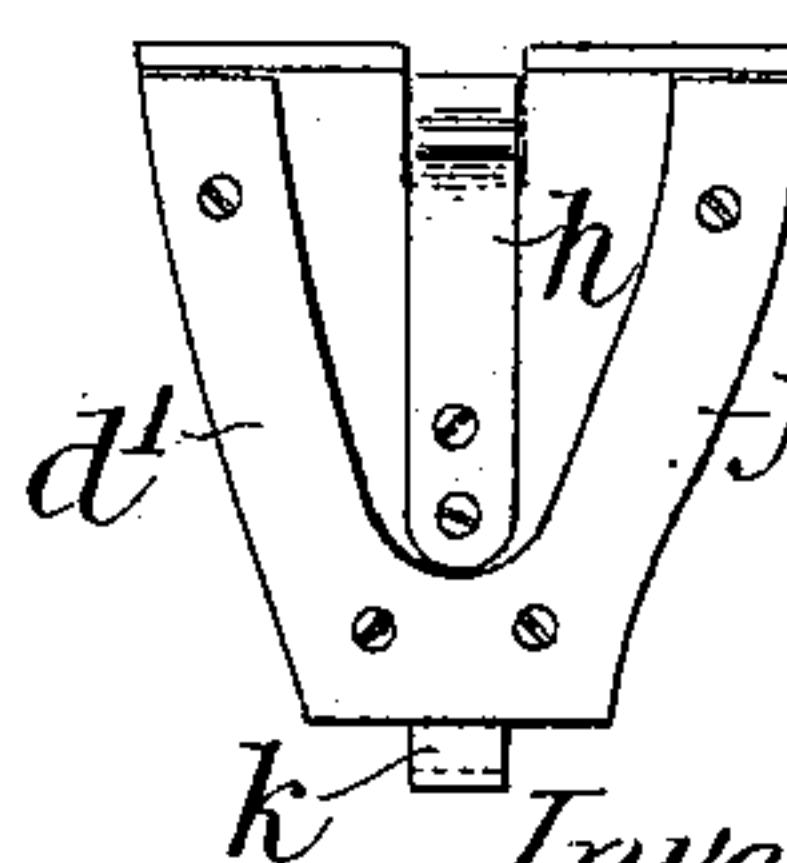


Fig. 8



Witnesses  
J. D. Kinsbury  
L. A. Pambrochmitt,

Inventor:  
Walter F. Firman  
by  
Whitaker & Brewster atty.



# UNITED STATES PATENT OFFICE.

WALTER FIRMAN, OF RUSHDEN, ENGLAND, ASSIGNOR TO JOHN CAVE & SONS, OF SAME PLACE.

## LAST.

SPECIFICATION forming part of Letters Patent No. 594,174, dated November 23, 1897.

Application filed November 14, 1896. Serial No. 612,042. (No model.) Patented in England April 11, 1896, No. 7,680.

*To all whom it may concern:*

Be it known that I, WALTER FIRMAN, a subject of the Queen of Great Britain, residing at Rushden, in the county of Northampton, England, have invented new and useful Improvements in Lasts, (for which I have obtained Letters Patent of Great Britain, No. 7,680, dated April 11, 1896,) of which the following is a specification.

This invention relates to lasts for use in the manufacture of boots and shoes; and it consists in the novel construction whereby the removal or introduction of the last is facilitated.

A last constructed according to the said invention is divided at the rear of the waist of the last on a line at or substantially at right angles to the sole of the last. The detached heel portion is connected to the main portion of the last by means of a hinge the movement of which in one direction is limited to insure that the heel shall not move beyond the proper position, and which has attached to or formed in one piece with it a socket for fitting onto the last jack or support. A portion of the heel part of the last is cut away to permit of its being turned in toward the main part of the last, and a wedge or equivalent device is provided for holding the heel portion in its working or normal position.

To enable the said invention to be fully understood, it is described with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a last constructed according to the invention. Fig. 2 is a plan view of the rear part of the same, and Fig. 3 is an under side view of the said part. Fig. 4 is a section on the line 4 4, Fig. 2; and Fig. 5 is a side view of the part shown in Fig. 1, with the wedge removed. Fig. 6 is a side view of the retaining-wedge detached. Fig. 7 is a rear view of the same, and Fig. 8 is a front view. Fig. 9 is a view similar to Fig. 5, but showing the heel-piece turned against the main part of the last.

Similar letters of reference indicate similar or corresponding parts in the several figures.

*a* is the fore part of the last, and *b* is the heel part.

*c* is the hinge for connecting the two parts *a b* together.

*d* is the socket for the jack or support, which socket is formed upon or attached to the hinge, and *d'* is the device for retaining the said parts in position for use.

In the arrangement of the invention shown in Figs. 1 to 9 the hinge *c* is arranged upon the surface of the last, and the dents of the hinge through which the knuckle-pin passes are made square, as shown at *e*, Figs. 1, 4, 5, and 9, so as to prevent the leaves of the hinge from moving beyond the position in which the two parts of the last are in their proper relative positions for use. In this arrangement also the device *d'* for retaining the two parts *a b* of the last in their proper position for work is in the form of a wedge having on one face a guide-rib *f*, designed to enter a corresponding groove *g* in the heel part, and on the other face a spring-catch *h*, which when the wedge is in position engages with a recess *i* in the fore part *a* of the last, as clearly shown in Fig. 4. The said wedge is also represented as provided on one face with a metal plate *j*, Figs. 6 and 8, which is bent up at one end to form an eye *k* for the attachment of a hook or the like for pulling out the wedge. It will be understood that after the wedge has been pulled out the heel part of the last can be turned down against the fore part, as shown in Fig. 9.

The socket *d*, which fits onto the top of the last-support, is, as shown in Figs. 3 and 4, in the form of a round tube, which is fixed to the leaf of the hinge attached to the fore part *a* of the last and inserted in a correspondingly-shaped hole formed in the said fore part, as will be clearly understood by reference to Fig. 4.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a last the combination with the toe and heel parts hinged together and having a tapering recess between them, one of said parts being provided with a guiding-recess, of a wedge-piece adapted to engage said tapering recess and provided with a guide for engaging said guiding-recess and a locking device for said wedge, substantially as described.

2. In a last the combination with the toe and

heel parts hinged together and having a tapering recess between them, of a wedge-block adapted to engage said recess, provided with a guiding device, and a spring locking-plate  
5 having a part adapted to enter a locking-recess in one of said heel and toe parts, substantially as described.

3. In a last, the combination with the heel and toe parts hinged together and forming a  
10 tapering recess between them, of the locking-wedge, provided with a spring-plate on one side, said plate having a projecting portion adapted to enter a recess in one of the parts of the last, and having a portion extending  
15 above the top of the last to assist in withdrawing the wedge, substantially as described.

4. In a last the combination with the heel and toe parts, of a hinge for uniting the same adjacent to the bottom, one of the hinge members being provided with a socket extending  
20 through the part to which it is attached to the top of the last, the locking-wedge having a guide adapted to engage one of said hinge parts and a spring locking-plate having a  
25 portion for engaging a locking-recess in the other part, and a projecting portion to assist in removing said wedge, substantially as described.

WALTER FIRMAN.

Witnesses:

A. ALBUTT,  
F. W. PRICE.