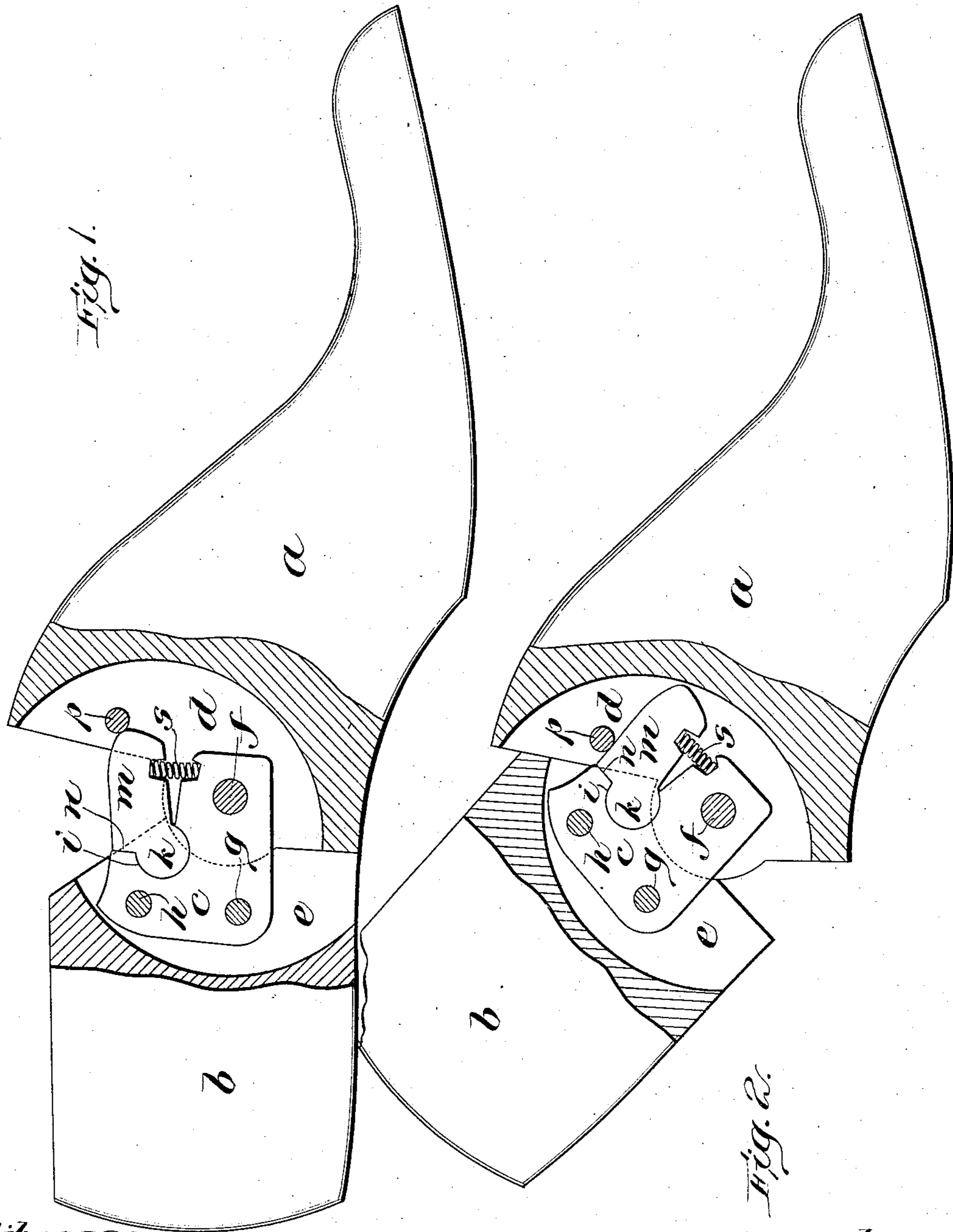


F. J. SHAINSEY, Sr.
 LAST LOCK.
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938,903.

Patented Nov. 2, 1909.



Witnesses:

Arthur E. Randall
 M. A. Jones

Inventor:

Frederick John Shainsey Sr.,
 by Geo. S. Maxwell,
 Attorney.

UNITED STATES PATENT OFFICE.

FREDERICK JOHN SHAINSEY, SR., OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO KRENTLER-ARNOLD HINGE LAST COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

LAST-LOCK.

938,903.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, FREDERICK JOHN SHAINSEY, Sr., a citizen of United States, residing at Dayton, county of Montgomery, State of Ohio, United States, have invented an Improvement in Last-Locks, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In that class of divided lasts in which the heel-part has a swinging movement with relation to the forepart it is sometimes desirable to maintain the last in unyielding lengthened position, and for this purpose various forms of locking devices have been devised, many of them being more or less complex and liable to wear out rapidly, difficult of accurate insertion, or expensive. My present invention aims to obviate the above named disadvantages while at the same time providing an automatic device which cannot readily get out of order.

The structural details of my invention will be pointed out more at length in the course of the following description, reference being had to the accompanying drawings, in which is shown a preferred embodiment of my invention.

In the drawing, Figures 1 and 2 are views in side elevation, showing the last in lengthened position and collapsed or shortened position respectively, the middle portion of the last being broken away to show the hinging and locking construction in detail.

The forepart *a* and heel-part *b* are herein shown as jointed in the manner commonly known as the "2-piece last" construction or knuckle joint, as shown in Patent 608,006 of July 26, 1898, the forepart having twin knuckles seating in a recess in the heel-part, and joined by a hinge-plate *c* set vertically in opposite kerfs *d*, *e*, in the respective last parts. Extending transversely through the knuckles and hinge-plate is a heavy pivot pin *f*, the rear end of the hinge-plate being secured by transverse pins *g*, *h*. The upper side of the hinge-plate is cut out in the arc of a circle, as indicated at *i*, and receives the circular end *k* of a tongue or plate *m*, whose shoulder *n* is caused to normally engage the adjacent portion of the hinge-plate by reason of a spring *s* held in notches between the normally separated lower edge of the

plate *m* and top edge of the plate *c* so as to engage a transverse stop-pin *p* in the kerf *d* of the forepart *a*.

The above construction affords an absolutely positive and exceedingly strong lock, without material cost. The plate *m* is simply a portion of the original plate from which the hinge is stamped or died out, and is held in place by the converging circular walls of the opening *i*, so that it cannot pull out lengthwise, and is held in place against lateral shifting by the walls of the kerf *e*, which the hinge-plate *c* snugly fits. No lateral twisting or springing of the locking plate *m* can take place, because its forward end is retained in the kerf *d*. The spring *s* cannot get out of place because it is retained, not only by the upper and lower holding notches, but also by the side walls of the kerf *d*, and yet it is always free to exert its upward pressure.

In use the jack is provided with a suitable finger, which enters the gap between the two parts of the last and depresses the tongue *m* slightly, whereupon the last may readily be collapsed into the position shown in Fig. 2. Upon straightening out or lengthening the parts of the last from the position shown in Fig. 2 to the position shown in Fig. 1, the tongue *m* immediately springs up into locking engagement with the pin *p* when the last is fully lengthened. Preferably the arrangement is such that the pin *p* and the center of the socket portion *k* are in a line tangential to the pivotal center *f*, the strain being in a direction between the two pins *h* and *g*, thereby distributing the strain to the best advantage.

It will be understood that my invention may be applied to any of the various hinged last connections employing a vertical kerf and bonding means moving therein. By having the locking tongue or compression brace *m* and the hinge-plate in one and the same plane and bearing directly against each other, according to my preferred embodiment I attain at once great strength and simplicity and avoid undue wear of the parts. There is no wedging part bearing on the wood of the last, and hence the locking device will endure as long as the last.

The interlocking arrangement may be varied in shape of parts, as long as the main features, as above pointed out, remain. It

will be understood that my invention may be carried out in a wide variety of embodiments within the spirit and scope of the appended claims.

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

1. In a transversely divided last, having its heel-part movable relatively to the fore-
10 part, said two parts having vertical kerfs in their adjacent ends, connecting means including a rigid plate secured in said kerfs to said forepart and heel-part respectively, and a rigid compression member pivoted in the
15 plane of said kerfs, carried by and movable with and also relatively to said plate and adapted to lock the parts of the last rigidly extended when in one position, and to permit the free collapsing movement of said
20 last-parts when in another position.

2. In a transversely divided last, having its heel-part movable relatively to the fore-
part, said two parts having vertical kerfs in their adjacent ends, connecting means in-
25 cluding a rigid plate secured in said kerfs to said forepart and heel-part respectively, and a movable locking mechanism pivotally mounted in the plane of said kerfs, carried by and movable with and also relatively to said
30 plate and adapted to lock the parts of the last rigidly extended when in one position, and to permit the free collapsing movement of said last-parts when in another position, said locking mechanism having its pivot and
35 its opposite locking end both substantially in the arc of swinging movement of the last-parts, being externally operable and including a spring normally tending to move the same into locking position.

40 3. In a transversely divided last, having its heel-part movable relatively to the forepart, said two parts having vertical kerfs in their adjacent ends, connecting means including a rigid plate secured in said kerfs
45 to said forepart and heel-part respectively, and a rigid compression member pivoted in the plane of said kerfs, carried by and movable with and also relatively to said plate and adapted to extend from one last part
50 to the other and to brace against said last part and thereby to lock the last rigidly extended when in one position, and to permit the free collapsing movement of said last-parts when in another position, said
55 locking mechanism being externally operable.

4. In a transversely divided last, having an open space at the top in the line of di-
60 vision and vertical kerfs in the adjacent ends, connecting means secured in said kerfs to the forepart and heel-part respectively, a locking device mounted in said kerfs and extending across said open space into both
65 last parts, and a transverse pin in one of said kerfs above said connecting means, said

locking device, when the last-parts are in extended position, bracing rigidly between said pin at one end in one last-part and the connecting means at the other end in the other last-part, said locking device being
70 adapted to be deflected downwardly within the last to permit the parts of the last to have movement one relatively to the other.

5. In a transversely divided last, having an open space at the top in the line of di-
75 vision and vertical kerfs in the adjacent ends, connecting means secured in said kerfs to the forepart and heel-part respectively, a locking device mounted in said kerfs and extending into said open space, a transverse
80 pin in one of said kerfs above said connecting means, and a spring normally tending to move said locking device outwardly, said locking device, when the last-parts are in
85 extended position, bracing rigidly between said pin at one end in one last-part and the connecting means at the other end in the other last-part, said locking device being
90 adapted to be deflected downwardly within the last in opposition to said spring to permit the parts of the last to have movement one relatively to the other.

6. In a transversely divided last, having an open space at the top in the line of di-
95 vision and vertical kerfs in the adjacent ends, connecting means secured in said kerfs to the forepart and heel-part respectively, a locking device mounted in said kerfs, having pivotal connection at one end with said
100 connecting means to move with one of said last-parts, and extending into said open space, a transverse pin in the other of said last-parts in position to be engaged by the front end of said locking device when the
105 last-parts are in extended position, and a spring normally tending to move said locking device into said engaged position to lock the last-parts unyieldingly together when in said extended position.

7. A divided last, having a vertical hinge-
110 plate pivotally joining the parts of the last, containing a socket in one edge of said plate, a rigid locking tongue movably retained to swing in said socket adjacent one last part, and a transverse stop-pin extending trans-
115 versely through the opposite last part across the end of said tongue when the last is in lengthened position.

8. A divided last having a vertical hinge-
120 plate pivotally joining the parts of the last, containing a socket in one edge of said plate, a locking tongue movably retained to swing in said socket, a transverse stop normally in the path of said tongue and a
125 spring between the adjacent edges of said tongue and plate, normally holding said tongue in position to engage said stop.

9. A divided last having a vertical hinge-
plate and a rigid locking plate attached to
130 said hinge-plate, said locking plate and

hinge-plate being movable relatively and
also together and both standing in the same
vertical plane in the last, and opposite kerfs
in the forepart and heel-part respectively,
5 constituting the entire means of holding said
combined hinge and lock against relative
lateral movement out of said vertical plane,
said locking plate lying above the top edge
of the hinge-plate and engaging at all times

both last parts at its opposite ends respec- 10
tively.

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

FREDERICK JOHN SHAINSEY, SR.

Witnesses:

W. H. H. ECKI,

MAY B. MATHER.