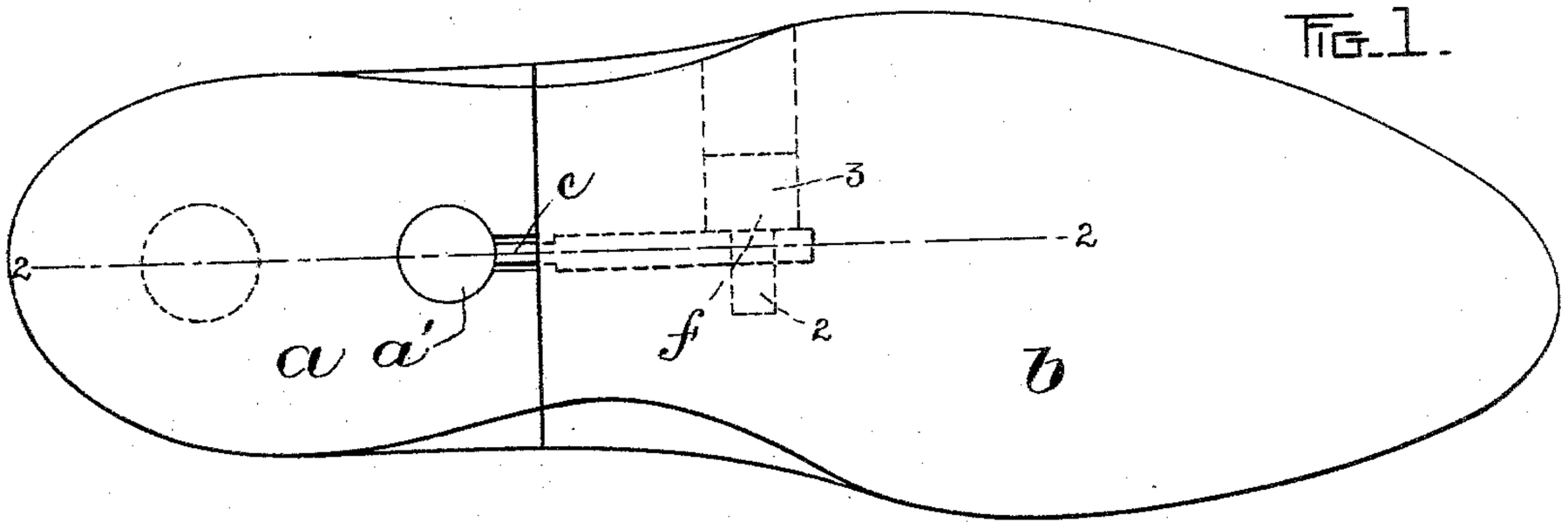
(No Model.)

O. A. MILLER.

LAST.

No. 597,779. Patented Jan. 25, 1898.

FIG. 1.



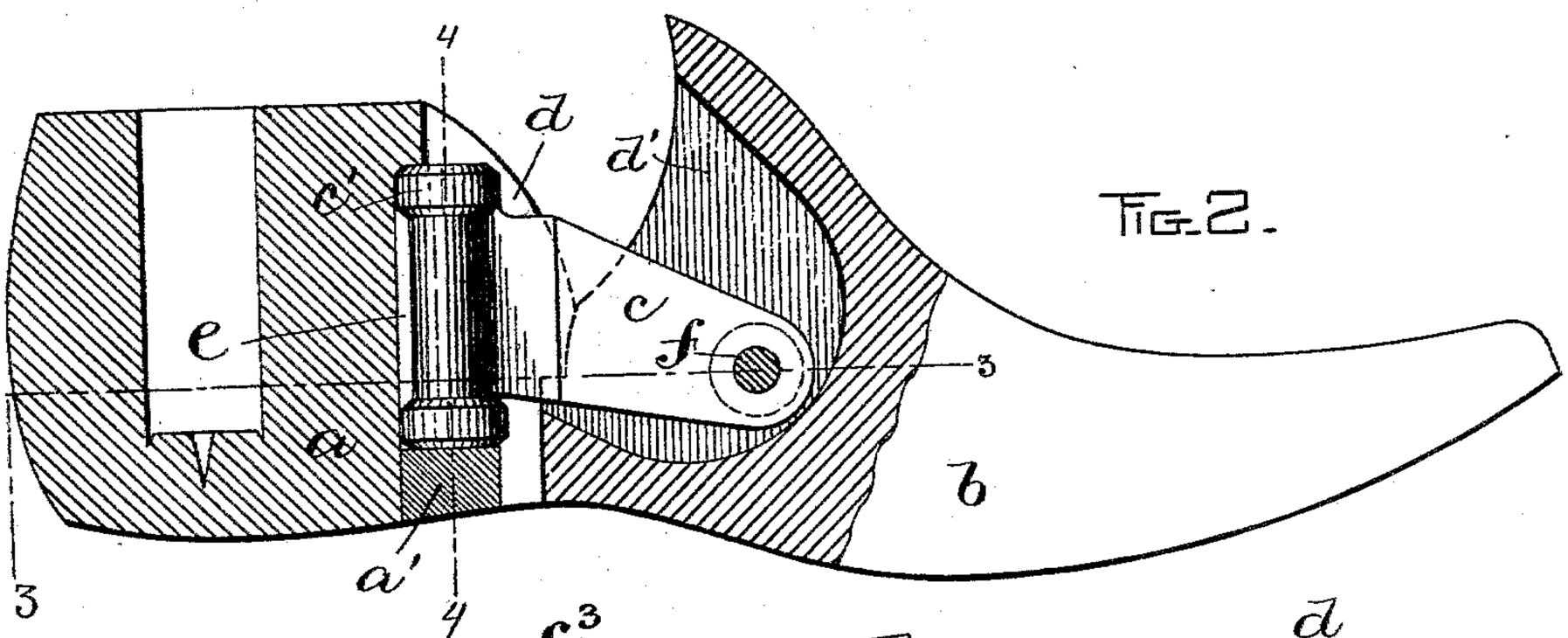


FIG. 2.

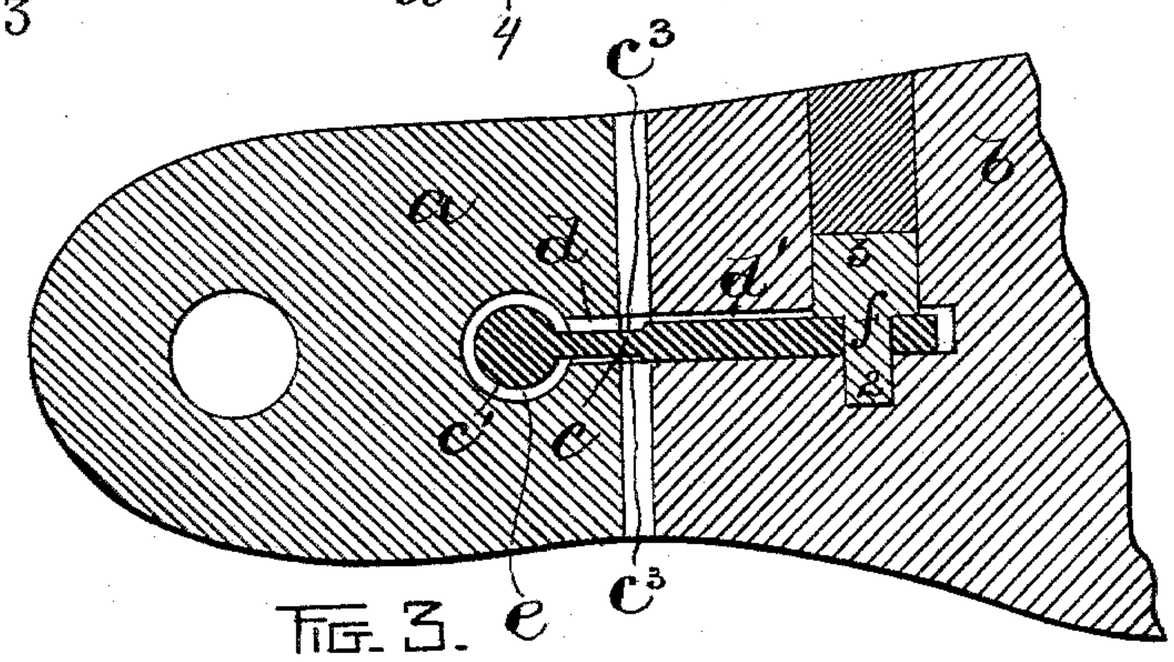


FIG. 3.

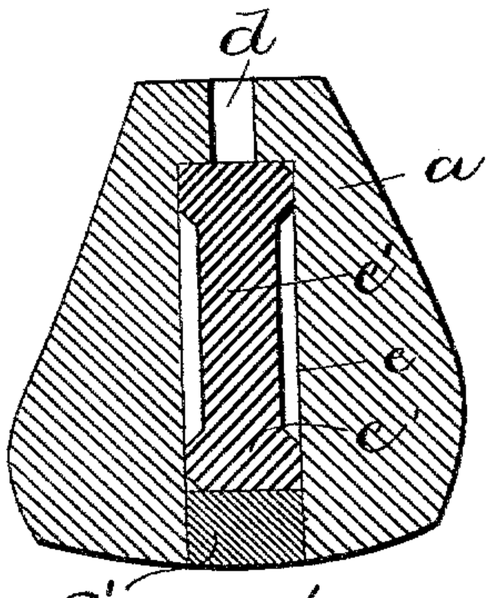


FIG. 4.

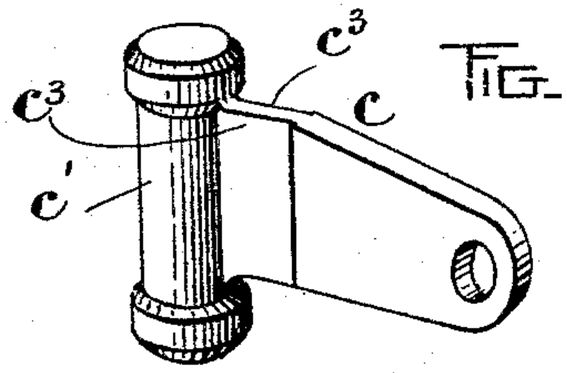


FIG. 5.

WITNESSES:
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UNITED STATES PATENT OFFICE.

OLIVER A. MILLER, OF BROCKTON, MASSACHUSETTS.

LAST.

SPECIFICATION forming part of Letters Patent No. 597,779, dated January 25, 1898.

Application filed November 20, 1896. Serial No. 612,885. (No model.)

To all whom it may concern:

Be it known that I, OLIVER A. MILLER, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Lasts, of which the following is a specification.

This invention relates to a transversely-divided last composed of a heel-section and a fore-part section hinged together in such manner that either section may be swung from its operative relation to the other section to shorten the last.

The invention consists in certain improvements relating to the hinge connecting the two sections to each other and to the manner of securing said hinge to the last.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top plan view of a last provided with my improvements. Fig. 2 represents a section on line 2 2 of Fig. 1. Fig. 3 represents a section on line 3 3 of Fig. 2. Fig. 4 represents a section on line 4 4 of Fig. 2. Fig. 5 represents a perspective view of the preferred form of hinge-plate detached.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents the heel-section, and *b* the fore-part section, of a transversely-divided last. Said sections have reciprocal bearing-surfaces which give each a firm end bearing on the other when the sections are in their operative relative positions and are formed to permit either section to swing out of its operative relation to the other and thereby shorten the last, the return of the displaced section lengthening the last.

The sections are connected by a hinge one member of which is engaged with the fore-part section and the other with the heel-section, the hinge being arranged to permit the above-mentioned last shortening and lengthening movements of either section.

In most lasts of this class now in use the hinge is composed of a plate inserted in a slot in the heel-section and projecting into a slot in the fore-part section and a transverse stud or pin driven into the fore-part section through an orifice in said plate, which is adapted to oscillate on the pin. It has been a common practice to secure the said plate to the heel-section by rivets driven through the heel-section and plate and headed on the exterior of the heel-section. This connection is objectionable for various reasons, among which is the fact that the finishing of the ends or heads of the rivets is expensive and if not carefully done is liable to result in burs or protuberances which will deface the linings of the boots or shoes in which the last is inserted in the operation of relasting.

In carrying out my invention I secure the hinge-plate to the heel-section by means of a vertical enlargement on the rear end of said plate and a vertical socket formed in the heel-section to receive said enlargement, the socket having a seat or stop at one end within the heel-section to properly position the plate when the enlargement is driven into the socket and being located in advance of the usual spindle-socket, so that the length of the slot in the heel-section and the consequent weakening thereof are reduced to the minimum.

c represents the hinge-plate, and *d d'* represent the slots which are formed in the sections *a b* for the reception of said plate.

e represents a cylindrical socket which is bored vertically from the bottom of the heel-section and communicates with the slot *d*, said socket terminating below the top of the heel-section to form a seat or stop *e'* for one end of the enlargement on the hinge-plate, as shown in Fig. 4. The socket *e* is located in advance of the usual jack-spindle socket *s*, so that there is a solid or uncut portion of the heel-section between the two sockets, which gives the said section sufficient rigidity to enable it to firmly hold the hinge-plate and its enlargement.

c' represents a cylindrical enlargement on the rear end of the plate *c*, said enlargement fitting the socket *e* and bearing at one end against the stop *e'*, so that the plate is accurately positioned by the operation of driving the enlargement into its socket. The enlargement is adapted to turn in the socket to the extent permitted by any lateral play of the plate *c* in the slots *d d'*. The plate *c* and its enlargement *c'* are preferably cast or otherwise formed in a single integral piece. The plate and its enlargement may be of any other suitable construction, however, and the enlargement may be made in a separate piece,

riveted or otherwise secured to the plate, if desired.

f represents a stud which is driven into an orifice formed for its reception in the fore-part section and, as here shown, has a reduced inner portion 2, which passes through an orifice in the forward portion of the plate *c*, and an enlarged portion 3, which bears against one side of the plate *c*.

The enlargement *c'* is shorter than its socket, so that when inserted in said socket its lower end is above the bottom of the heel-section. The enlargement may be retained in the socket against the stop *e'* by a plug *a'*, secured in the socket *e* below the enlargement, said plug constituting a seat or stop for the lower end of the enlargement.

It will be seen that the enlargement *c'* and socket *e* constitute a means of securing the plate *c* to the heel-section without the use of rivets, so that the objection above mentioned, caused by the presence of rivet-heads on the exterior of the last, is avoided. The said enlargement and socket also enable the plate to be adjusted laterally in the slots *d d'* to a slight extent, the enlarged portion of the stud or pin *f* being therefore enabled to force the plate against one side of the slot *d'*, as indicated in Fig. 3. This lateral adjustability enables the plate to be closely fitted in the fore-part section without lateral play therein in case the slot *d'* is so much wider than the thickness of the plate *c* as to cause a loose fit of the plate in the slot. I do not limit myself to the employment of a shouldered stud and may make the stud *f* of uniform diameter from end to end.

The enlargement *c'* is preferably reduced between its end portions, so that only the end portions will require to be milled or finished to accurately fit the socket. The cost of finishing the enlargement when it is cast with the plate *c* is thus materially reduced.

The portion of the plate *c* that occupies the slot *d* in the heel-section is preferably reduced in width, shallow indentations c^3 c^3 being formed in the sides of said portion. This reduction or neck compensates for any slight departure of the slot *d* from a position exactly central with the socket *e*. If the inner portion of the plate *c* were thick enough to fill the slot *d*, it would be difficult if not impossible to insert the plate and enlargement in the slot and socket when the slot is out of center with the socket. The reduced neck prevents this difficulty.

The plate *c*, with its enlargement *c'*, constitutes an article of manufacture which may be supplied to last-manufacturers for application to their lasts.

I claim—

1. A last of the character specified, comprising two sections having reciprocal bearing-surfaces and longitudinal slots opening on said surfaces, a vertical socket in one section, communicating with the slot therein, and having at one end a seat or stop, and a hinge member composed of a plate jointed to the other section and an enlargement formed on said plate and bearing at one end on said stop.

2. A last of the character specified, comprising two sections having reciprocal bearing-surfaces and longitudinal slots opening on said surfaces, a vertical socket in one section communicating with the slot therein, and having at one end a seat or stop, a hinge member composed of a plate jointed to the other section, and an enlargement formed on said plate and bearing at one end on said stop, said enlargement being shorter than the socket, and a plug inserted in the mouth of the socket and constituting a seat or stop for the other end of the enlargement.

3. A last of the character specified, provided with a hinge plate or ear which has a limited lateral play on a vertical axis in one section of the last, and is jointed to the other section.

4. A last of the character specified, comprising two sections having reciprocal bearing-surfaces and longitudinal slots opening on said surfaces, a socket communicating with the slot of one section, a hinge member composed of a metal plate *c* jointed to the other section, and a cylindrical enlargement *c'* formed on the plate, and engaged with the said socket, said plate having a reduced neck adjacent to the enlargement.

5. A last of the character specified, comprising two sections having reciprocal bearing-surfaces and longitudinal slots opening on said surfaces, a socket communicating with the slot of one section, a hinge-plate located in said slots and having an enlargement engaged with the said socket, and a stud or pin engaged with the other section and having a shoulder formed to exert lateral pressure on said plate.

6. As an article of manufacture, a last-hinge member composed of a plate formed to enter coinciding vertical slots in the sections of a transversely-divided last, and an enlargement on one end of said plate formed to enter a vertical socket in one of said sections, said enlargement being reduced between its end portions.

7. As an article of manufacture, a last-hinge member composed of a plate formed to enter coinciding vertical slots in the sections of a transversely-divided last, and an enlargement on one end of said plate formed to enter a vertical socket in one of said sections, said plate having a reduced neck adjacent to the enlargement.

8. As an article of manufacture, a last-hinge member composed of a plate formed to enter coinciding vertical slots in the sections of a transversely-divided last, and an enlargement on one end of said plate formed to enter a vertical socket in one of said sections, said enlargement being shorter than the height of the last, whereby it is adapted to cooperate with a stop or stops within the last.

9. A last of the character specified, comprising two sections having reciprocal bearing-surfaces and longitudinal slots opening on said surfaces, a vertical socket formed in the heel-section in advance of the usual jack-spindle socket, and separated from the latter by a solid or uncut portion, and a hinge member composed of a plate jointed to the fore-part section, and an enlargement on said plate inserted in said vertical socket.

10. A two-part last comprising a fore-part section, a heel-section, a plate pivotally connected at its forward end to the fore-part section, an enlargement on the rear end of said plate arranged in a complemental recess in the heel-section positioned to clear said enlargement from the action of the jack-spindle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of November, A. D. 1896.

O. A. MILLER.

Witnesses:
A. D. HARRISON,
P. W. PEZZETTI.