

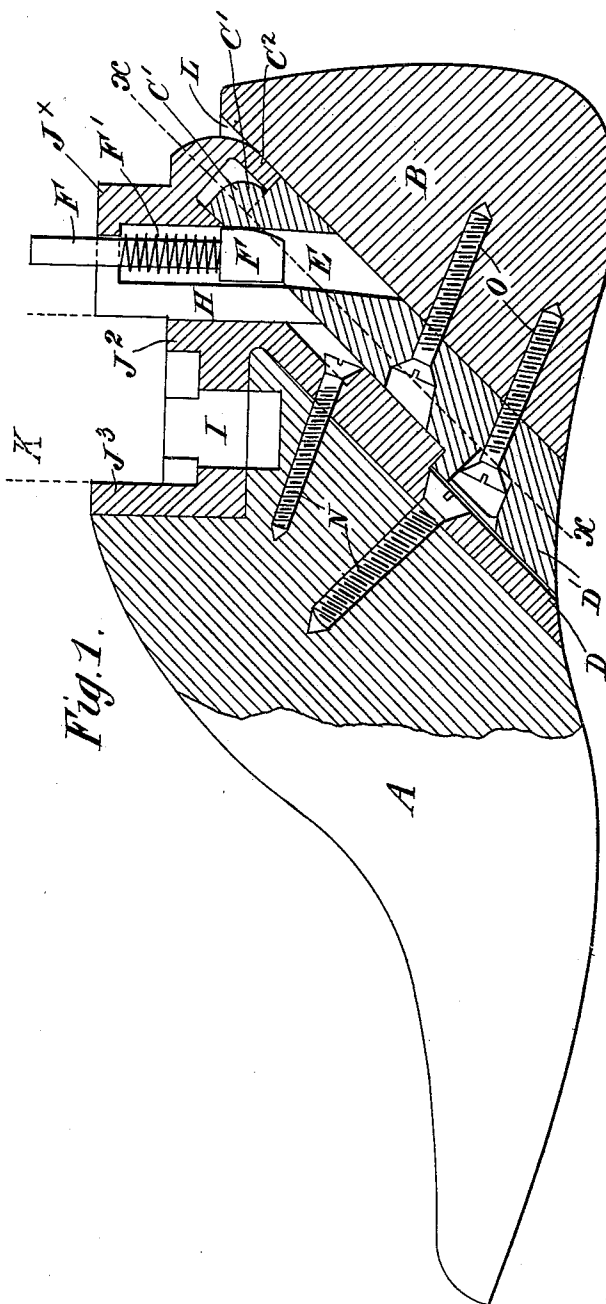
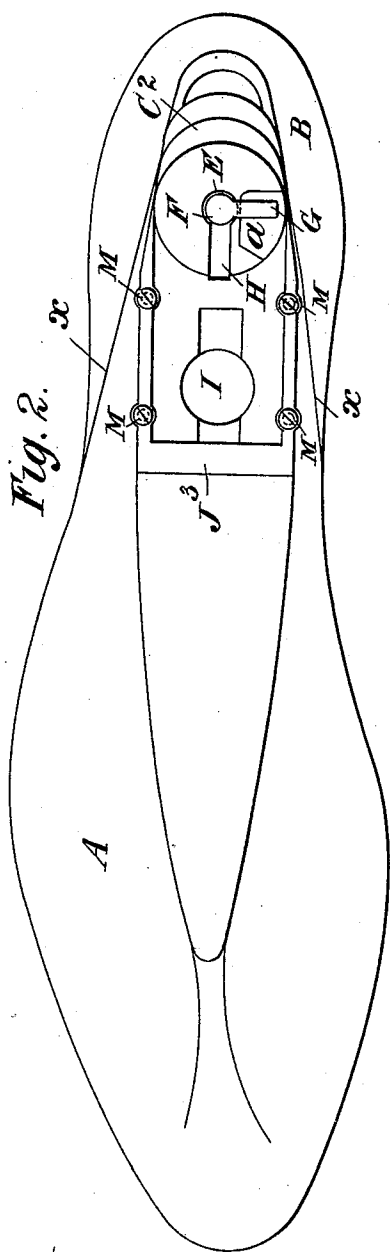
(No Model.)

T. BRINING.
LAST.

2 Sheets—Sheet 1.

No. 583,138.

Patented May 25, 1897.



Witnesses.
William Sadler
Alan Balch.

Inventor.
Thomas Brining
by
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Attorney.

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Fig. 3.

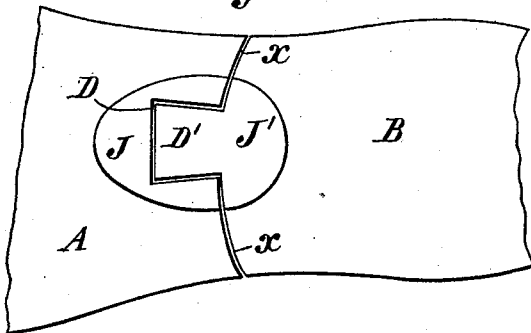


Fig. 11. Fig. 10. Fig. 12.

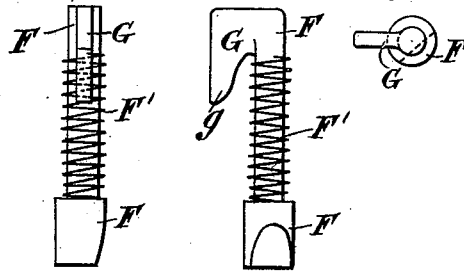


Fig. 9.

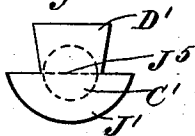


Fig. 8.

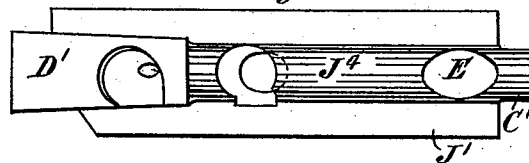


Fig. 6.

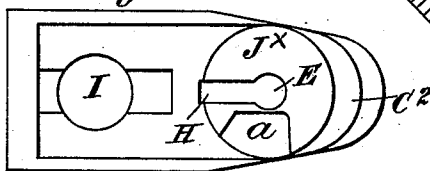


Fig. 7.

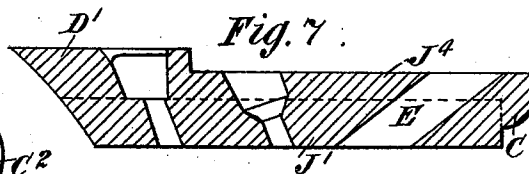


Fig. 4.

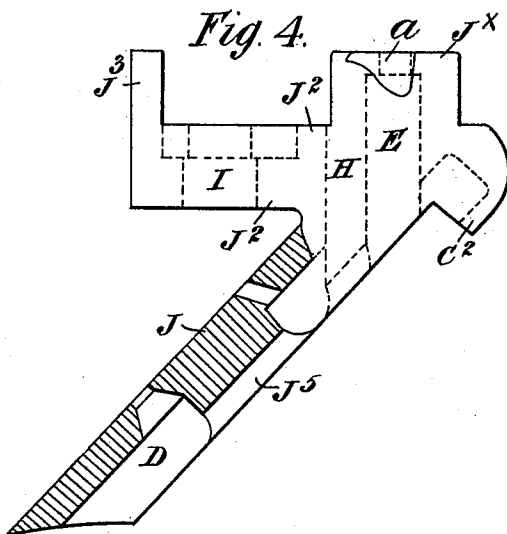
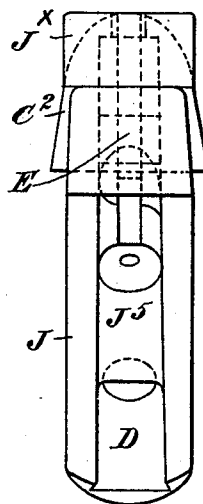


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS BRINING, OF LEEDS, ENGLAND.

LAST.

SPECIFICATION forming part of Letters Patent No. 583,138, dated May 25, 1897.

Application filed March 30, 1896. Serial No. 585,463. (No model.) Patented in England January 12, 1895, No. 795.

To all whom it may concern:

Be it known that I, THOMAS BRINING, a subject of the Queen of Great Britain, residing at 36 Sussex Street, Richmond Hill, Leeds, in the county of York, England, have invented new and useful Improvements in or Relating to Lasts for Use in the Manufacture of Boots or Shoes, (for which I have obtained a patent in Great Britain, No. 795, bearing date January 12, 1895,) of which the following is a specification.

This invention relates to improvements in that class of lasts for use in the manufacture of boots and shoes in which the heel and toe pieces are divided. Hitherto many attempts have been made, with more or less success, to secure the separate parts of a so-divided last firmly together, so that when the said parts are put together and placed within the boot or shoe they will be rigid and even for hammering, lasting, and other purposes. Great difficulty has also been experienced either in securing or locking the parts together or in releasing them when placed inside of the boot or shoe, pokers or other releasing-tools having to be employed for separating the parts, thereby pulling the boot or shoe out of form.

Now the object of the present invention is to construct a divided last so as to be easily and firmly put together yet readily released and its parts removed from the boot or shoe without stretching or displacing the "upper" and without using a poker or releasing-tool.

The present invention may be applied to a wood last; and it consists, essentially, in combining one or more dovetails and single or double interlocking catches or hooks with a last divided at such an angle that in separating and releasing, say, the toe portion from the heel part the former is caused to slide toward the heel—that is, within its total length—thereby preventing the stretching of the upper, a spring pin or bolt (hereinafter termed a "spring-pin") being employed for the purpose of preventing the two parts from sliding apart.

In the drawings hereunto annexed, Figure 1 is a part sectional elevation of a wood last with this invention applied; Fig. 2, a plan of same, looking at the top; Fig. 3, a part plan

of the same, looking at the bottom. Figs. 4, 5, and 6 are respectively a part sectional elevation, an end elevation, and a plan, looking at the top of the toe portion of the interlocking arrangement for a wood last. Figs. 7, 8, and 9 are respectively a sectional elevation, a plan, and an end elevation, of the heel portion of the interlocking arrangement for a wood last. Figs. 10, 11, and 12 are respectively a side and end elevation and a plan of the spring-pin.

A is the toe part of the last, and B its heel portion.

J J' are the castings, which are respectively fixed to the toe and heel portions A and B. The castings J J' are preferably, though not necessarily so, made semicircular or nearly so, as shown at Figs. 6 and 9, although, owing to the angle at which they are fixed, they appear in an elliptical form at Fig. 3. The casting J is armed with a horizontal projecting piece J², which fits onto the top of the last, as shown at Fig. 1. The horizontal projecting piece J² is armed on its upper surface with an end or thrusting piece J³, between which and the boss J^x the last or pivot stand K (shown in dotted lines at Fig. 1) is passed to the hole I. Through the boss J^x is formed the vertical hole E, in which the spring-pin F works for preventing the toe and heel portions sliding apart. In the casting J is cast the dovetail recess D, (which has V sides in cross-section, as shown at Fig. 3,) into which fits the dovetail projection D' of casting J'. A pin C' is arranged on the casting J' to project beyond its upper end, as shown, and to fit into the cap or hood C², formed for its reception on the casting J. A projection J⁴, preferably semicircular in cross-section, is also provided on the casting J', which fits in a corresponding recess J⁵ in the casting J, and they are employed for aiding in preventing any lateral movement of the two portions A and B, while the dovetail D' and pin C', which enters the cap C², prevent any end-wise movement of the said parts.

A pin F, encircled by a helical spring F', (these two parts being hereinafter termed "the spring pin or bolt F") is passed into the vertical hole E, so that its end will pass into the portion of the vertical hole E located in the heel portion B. The spring pin or bolt F is

arranged to project beyond the top of the last, as shown, and its opposite end may be withdrawn from engagement with the heel portion B by any convenient arrangement or device—
 5 such as, for instance, say, by a knob or head or by a cord passed through it or by means of the device shown in the drawings, in which the spring-pin F is armed at its upper end with the projection G and so arranged that
 10 its under surface *g* acts upon a cam-path *a*, cast, cut, or otherwise formed in or on the toe-portion casting J. The projection G is passed through the hole H, cast or formed in the toe-portion casting J and which is made to communicate with the vertical hole E. When
 15 the projection G is passed through the hole H and turned at a right angle thereto, it performs the double function of first preventing the spring-pin F working out of position, and, secondly, of withdrawing the said spring-pin
 20 from its engagement with the heel portion B when pulled or rotated on the cam-path *a*.

I is a hole formed in the last for the reception of the last stand or pivot.

25 To fix the castings J and J' in position in the last, I proceed as follows: Before the last is divided into the two parts A and B along the line *xx* I bore a hole L at the required angle, into which is placed the barrel portions
 30 of the castings J and J'. The two said castings are then secured in position by the screws M, which pass through the horizontal projecting piece J² into the top of toe portion A, the casting J' being held temporarily in position by cement, glue, or the like. The last
 35 is then sawed or otherwise divided into the two portions A and B along the line *xx*, after which the castings J and J' are secured, respectively, in position by the screws N and
 40 O. The heel portion B and its casting J' are held in position by the spring-pin F, as already described.

To remove the divided last from the boot or shoe, the spring-pin F is first withdrawn, as
 45 hereinbefore described, from its engagement

with the heel portion B, and as soon as the heel part of the lasted boot or shoe is raised the two portions A and B of the last will readily and easily slide apart without stretching the upper and without using a poker or releasing-tool for separating the two parts of the last. 50

In the case of a wooden last with a sole-plate the sole-plate may be cast or attached by any suitable means to the hereinbefore- 55 mentioned castings J and J'.

Having now particularly described and ascertained the nature of the said invention, what I desire to secure by Letters Patent is—

In a boot and shoe last substantially such 60 as herein described and illustrated, the combination of the toe-piece A and heel B divided in an angular direction substantially as shown, the castings J J' fixed respectively in recesses in the toe-piece A and heel-piece B, 65 said casting J being armed with a horizontal projection J² which fits on the top of the toe-piece A, a vertical thrusting-piece J³ and a boss J^x both arranged on the projecting piece J², a longitudinal recess J³ formed in the casting J, a recess formed in the cap or hood C² 70 of the casting J, and a dovetail recess D formed at the base of the casting, the said casting J' being armed with the projecting pin C', a longitudinal barrel portion J⁴ adapted to fit the said recess J², and a projecting 75 piece D' adapted to fit and engage with the said recess D, the vertical hole E, the spring locking-pin F armed with a wing G, working in hole E, and a cam *a* formed in the said 80 boss J^x on which the said wing G slides, all arranged substantially as herein set forth.

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

THOMAS BRINING.

Witnesses:

ADAM C. HART,
 ALAN BALCH.