

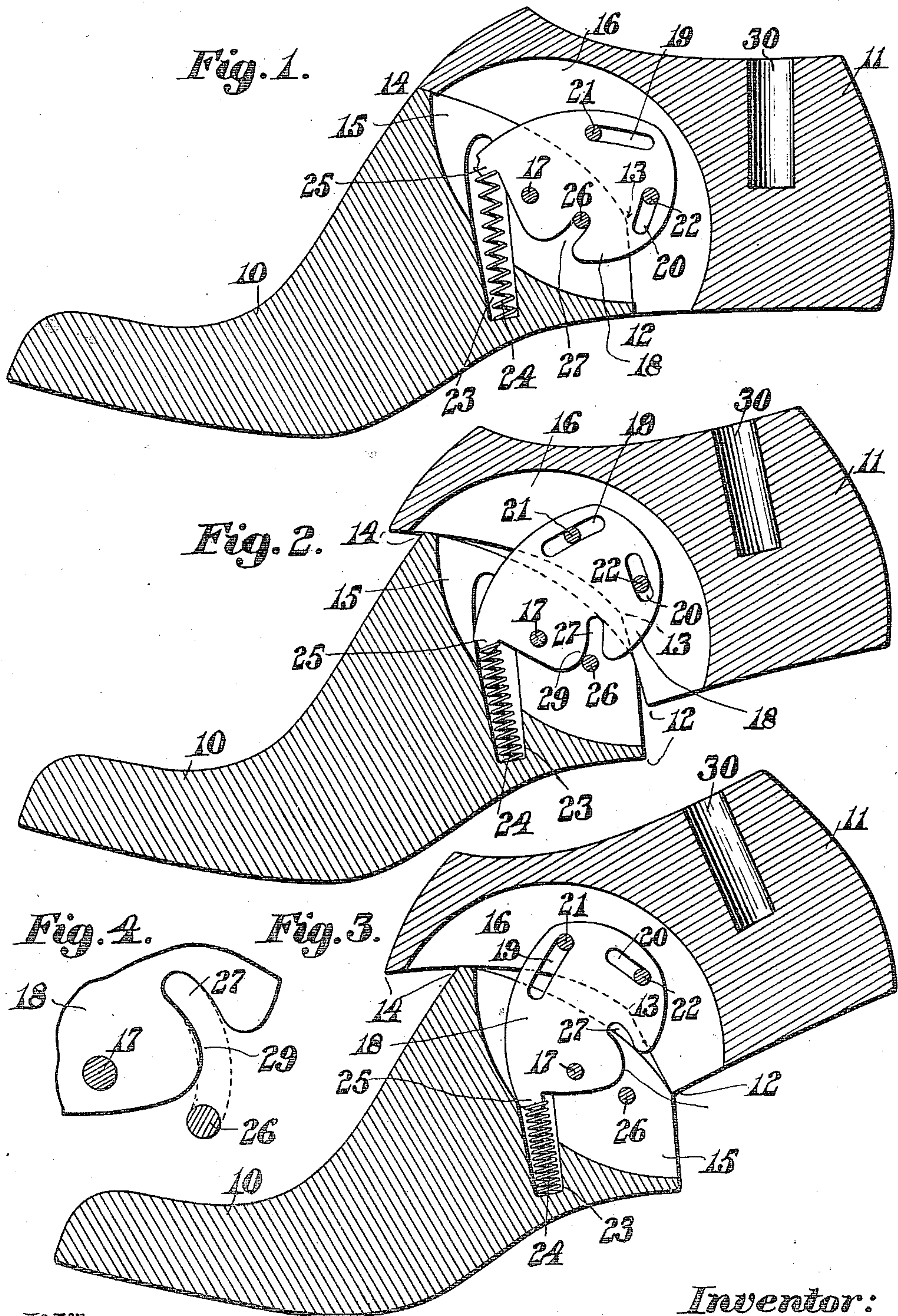
J. D. WINCHESTER.

DIVIDED LAST.

APPLICATION FILED JULY 3, 1909.

959,672.

Patented May 31, 1910.



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UNITED STATES PATENT OFFICE.

JAMES D. WINCHESTER, OF BEVERLY, MASSACHUSETTS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES D. WINCHESTER, a citizen of the United States of America, and a resident of Beverly, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Divided Lasts, of which the following is a specification.

This invention relates to lasts and particularly to that class of lasts known as divided lasts, the heel parts and foreparts of which are connected together by a pivoted hinge plate or latch.

It has for its object the production of a last of this class which will have considerable rigidity when in use, this rigidity being secured primarily by the peculiar formation of the divisional cut dividing the last into the forepart and heel part which permits the opposing faces of these two parts to be in contact throughout their entire length when the last is in use, additional rigidity being also secured by the peculiar formation of the hinge plate or latch and its manner of mounting in the two parts of the last.

Another object of the invention is to dispense with the usual V spaces between the toe and heel part, thus overcoming many objections arising from the use of lasts having this space on account of the opportunity for tacks and other articles collecting therein and interfering with the operation of the last.

A further object of the invention is to provide a means for resisting the initial movement of the two parts of the last relative to each other when the last is being broken.

The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims hereinafter given.

Of the drawings: Figure 1 represents a central section through a last embodying the features of this invention, the forepart and heel part thereof being shown in their normal position relative to one another. Fig. 2 represents a similar section showing the heel part moved a limited distance about its pivotal connection with the forepart. Fig. 3 represents a similar section showing the heel part moved to its extreme limit about its pivotal connection with the forepart, and

Fig. 4 represents a detail showing the peculiar pin-engaging notch in the hinge plate.

Similar characters designate like parts throughout the several figures of the drawings.

The general shape and construction of the last itself may be of any usual or preferred form, the forms herein shown consisting of a forepart 10 and heel part 11 divided along a straight line extending from the point 12 in the shank of the last in a substantially vertical direction to a point 13 intermediate the bottom and top of the last and then in a curved line to the point 14 on the instep. By dividing the last on the lines 12, 13, and 14 when the last is in operation the shank end of the forepart is supported and given considerable rigidity by the curved face 13—14 of the forepart 10, being in contact with the faces 13—14 of the heel part 11. The rear portion of the forepart 10 is provided with a vertical groove 15 while the heel part is similarly provided with a vertical groove 16 in the same plane. Pivotaly mounted in the groove 15 on the pivot pin 17 is a hinge plate or latch 18, this hinge plate being provided with two slots 19 and 20 therethrough substantially at right angles to one another and eccentric to the pivot pin. Through the slot 19 extends a pin 21 embedded in the heel part 11 and in a similar manner a pin 22 embedded in said heel part extends through the slot 20. In a suitable socket 23 in the forepart is mounted a spring 24, the free end of which bears against a projection 25 upon the hinge plate 18 and normally retains the heel part 11 in its normal position, as shown in Fig. 1 of the drawing.

In addition to the pivot pin 17, the forepart 10 is provided with another pin 26 which extends through a notch 27 formed in the lower edge of the hinge plate 18 and by coming into contact with the inner end of said notch serves as a stop to limit the movement in one direction of said hinge plate 18 about the pivot pin 17. The curvature of the notch 27 is eccentric to the pivot pin 17 so that as the hinge plate 18 is moved about its pivot 17 to break the last initial movement of one part 10 or 11 upon the other will cause a binding of the pin 26 against the eccentric raised portion 29 of the slot 27 to retard the initial movement of these parts 10 and 11 relative to each

other until the pin 26 has passed the eccentric portion 29 of said slot 27, when the hinge plate 18 will be free to move about the pin 17 against the tension of the spring 24 in the forepart 10.

It is obvious from an inspection of the drawings that the slot 19 is substantially parallel with the shank of the last and that when the parts 10 and 11 are in their normal positions any vertical pressure brought to bear upon the rear portion of the forepart 10 will be transmitted through the hinge plate 18 to the pin 21 and taken up thereby. A portion of this vertical strain will also be taken up by the inclined wall of the slot 20 in the hinge plate 18 bearing against the pin 22. It is obvious therefore that when the last is inverted and the spindle socket 30 mounted upon the usual jack spindle the rear portion of the forepart is not only supported by the forwardly projecting portion of the heel part extending from 13 to 14 but still greater rigidity and strength to overcome the downward pressure thereon is afforded by means of the action of the side walls of the slots 19 and 20 upon the pins 21 and 22 rigidly secured to the heel part. When downward pressure is thus exerted on the shank of the forepart the resultant action of the inclined face of the slot 20 upon the pin 22 would be to more firmly retain the toe and heel parts 10 and 11 in contact with one another and prevent any separation thereof. It is therefore self evident that when in use the last is practically a whole last without any spaces cut therein between the parts which form the last that might be capable of collecting any tacks or other articles which would be liable to interfere with the operation thereof. At the same time the two parts of the last are locked rigidly together thus making the last substantially as well adapted to resist any downward pressure thereon as if the last was undivided. When it is desired, however, to break the last and pressure is applied to one of the parts to accomplish this object the pin 26 will be moved from the end of the slot 27 and will immediately come into contact with the eccentric portion 29 of said slot over which, as the fore and heel parts of the last are moved relative to each other about the pivot 17, it will be obliged to pass, retarding the initial breaking movement. When the pin 26 has passed this obstruction, however, the plate 18 may freely move about the pivot against the tension of the spring 24 while at the same time the pins 21 and 22 will be moving along the slots 19 and 20 through which they extend. These slots 19 and 20 are so positioned in the plate 18 relative to the pivot 17 and to the divisional cut 12, 13, and 14 between the forepart and heel parts 10 and 11 that as the plate 18 moves about the pivot 17 and

the pins 21 and 22 move along the slots 19 and 20 the corner 13 on the rear face of the forepart 10 will travel along the front face 12 and 13 of the heel part 11 while the corner 14 of the forepart will travel along the curved face 13 and 14 of the heel part, these corners being constantly retained in contact with these faces, as indicated in Fig. 2, by means of the travel of the pins 21 and 22 in the slots 19 and 20. By dividing the last on the lines 12, 13, and 14, and so constructing the hinge plate interposed between the forepart 10 and heel part 11 that the corners 13 and 14 travel along and in contact with the front faces of the heel part, no opportunity is given for any of the linings or other parts of the shoe to be caught between two opposing faces, to the injury of the shoe being operated upon or to interfere with the operation of the last.

A last constructed as herein described affords great strength to resist any pressures to which it is liable to be subjected while at the same time it is simple in construction and easy to operate.

It is believed that the operation and many advantages of the invention will be fully understood from the foregoing.

Having thus described my invention, I claim:

1. A last, divided on an irregular line from top to bottom thereof and thereby forming two sections, the opposing faces of which are normally in contact; a movable latch pivotally secured in one of said sections and projecting into the other section, said latch being provided with two slots therethrough substantially at right angles and the upper one normally nearly horizontal; and two pins in said other section extending through said slots in said latch, one of said pins being normally on the same horizontal line with said pivot pin while the other is above said line and intermediate the other pin and said pivot pin.

2. A last, comprising two sections, the opposing faces of which are normally in contact; a movable latch pivotally secured in one of said sections and projecting into the other section, said latch being provided with two slots therethrough substantially at right angles and the upper one normally nearly horizontal; two pins in said other section extending through said slots in said latch; and a spring acting on said latch to retain said sections in their normal unbroken position.

3. A last, comprising two sections, the opposing faces of which are normally in contact; a movable latch pivotally secured to one section and provided with a curved notch extending from one edge and slightly eccentric to said pivot and a slot therethrough extending transversely to said notch; a pin in the pivot section adapted to enter said notch; a pin in the other section extending

through said transverse slot; and a spring acting upon said latch to normally retain said pin at the inner end of said notch.

4. A last, comprising two sections, the opposing faces of which are normally in contact; a movable latch pivotally secured to one section and provided with a curved notch extending from one edge and slightly eccentric to said pivot and a slot there-
10 through extending transversely to said notch; a pin in the forepart adapted to enter said notch and a pin in the other section extending through said transverse slot.

5. A last, comprising a forepart and a heel
15 part, the opposing faces of which are normally in contact; a movable latch secured to the heel part and pivotally secured in the forepart and provided with a curved notch extending from one edge, the engaging wall
20 of which, at its outer end, is farther from the latch pivot than at its inner end; and a pin

in the forepart adapted to enter said notch and engage said wall.

6. A last, comprising a forepart and a heel
part, the opposing faces of which are nor- 25 mally in contact; a movable latch secured to the heel part and pivotally secured in the forepart and provided with a curved notch extending from one edge, the engaging wall
30 of which, at its outer end, is farther from the latch pivot than at its inner end; a pin in the forepart adapted to enter said notch; and a spring acting upon said latch to nor-
mally return the parts to a position in which the pin contacts with the eccentric portion of 35 the wall of said notch.

Signed by me at Beverly, Mass., this 1st day of July, 1909.

JAMES D. WINCHESTER.

Witnesses:

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