

(No Model.)

C. CALTON.
LAST BLOCK FASTENER.

No. 536,799.

Patented Apr. 2, 1895.

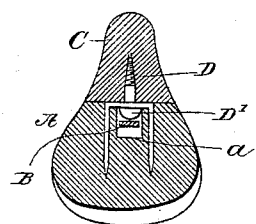
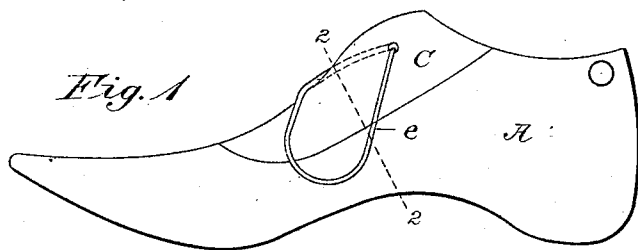


Fig. 2

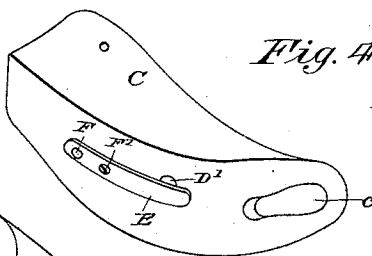
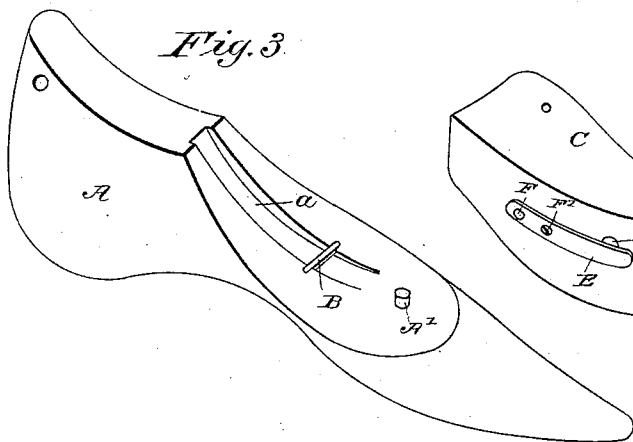


Fig. 4

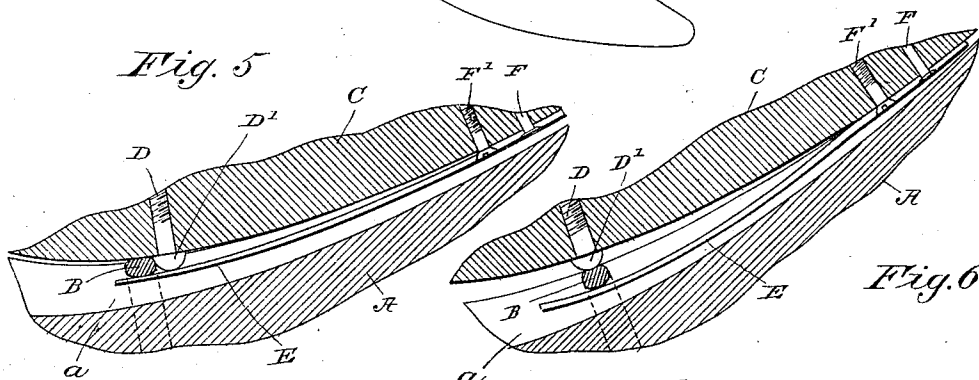


Fig. 5

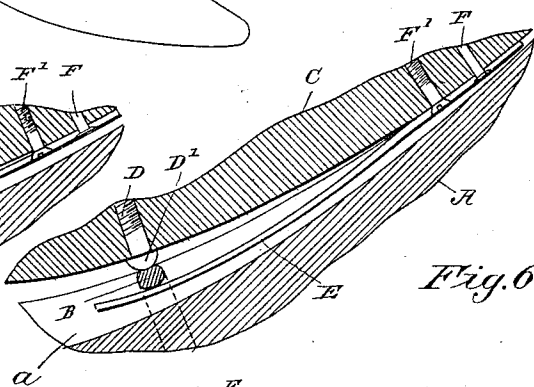


Fig. 6

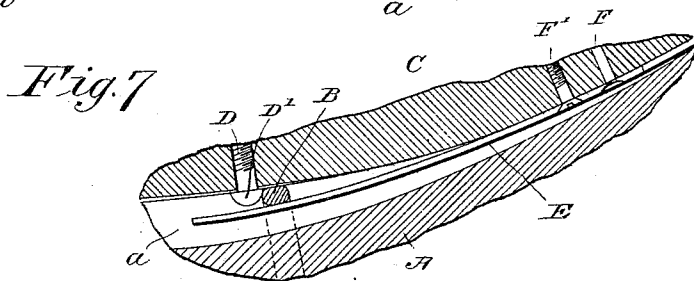


Fig. 7

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES CALTON, OF BROOKLYN, NEW YORK.

LAST-BLOCK FASTENER.

SPECIFICATION forming part of Letters Patent No. 536,799, dated April 2, 1895.

Application filed January 17, 1895. Serial No. 535,218. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CALTON, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Last-Block Fasteners, of which the following is a specification.

The last and the block may be of any ordinary forms and materials. I can employ an ordinary pin or dowel set in the last and engaging in a groove in the under face of the block provided to receive it. In the rear face of the recess in the last I produce a groove running centrally up and down the incline and bridge across it by a stout bar, formed staple-wise and firmly set in the last flush with the face which meets the block. In the block adjacent to the point where the said bar stands in use, I set a rounded projection or stud, formed in my experiments, by inserting a convex-headed screw or nail, and allow the swell of the head to project, and farther rearward on the same under face of the block, and in the same central line, I set a flat spring lying in the central groove and extending forward under such projection. The block is applied to the last a little in rear of its final position and engaged by sliding it forward. In the movement forward the spring engages under the cross-bar or bridge.

In the act of sliding the block into place the rounded surface of its projection or stud strikes the cross bar or bridge and lifts the block in order to pass it. After the projection has passed this obstruction or bridge the block snaps down again with the energy due to the elastic action of the spring, and the projection rigidly set in the block now stands in front of the bridge, and locking the parts together by the direct contact of the stud with the bridge without subjecting the spring to any endwise strain, the block is effectively retained against all ordinary displacement. In this respect my fastening differs from any device for this purpose before known to me, as follows:—The block is securely held against being displaced backward by any force applied as the disturbing forces invariably must be in a direction pressing the block against the last. No matter how strong the force urging the block backward tending to unlock it, so long as it acts to also press the block upon

the last, it cannot displace the block, because the projection in the latter is unyielding and it is pressed against an unyielding bridge; but when it is desired to remove the block so as to allow the last to be removed from a shoe at the proper time, a sufficient force applied near the back end of the block in a direction to lift as well as to pull backward, will by aiding instead of resisting the rise of the block effect the unlocking, and the block may then be drawn backward and removed with the ordinary motion, leaving the last in the condition to be also easily lifted and removed.

My fastening device is simple and durable, and unusually reliable. The block is restrained by its form, and its engagement in the last, and also by the dowel-pin, against being moved farther forward; and it is held by the dowel in its proper groove and also by the spring in its groove against any movement laterally. It is held by the whole force of the spring against being lifted, and the locking due to the contact of the stud with the bridge while the block and stud are held down by the action of the spring under the bridge, while not so strong as to involve any serious difficulty when the shoe is finished and it is desired to remove the block so as to liberate the last, forms a very reliable fastening against all accidental forces either while the last is within the shoe or while it is out of use.

The following is a description of what I consider the best means of carrying out the invention.

Figure 1 is a side elevation of a last provided with my improvements. Fig. 2 is a cross section on the plane of the line 2—2 in Fig. 1. Fig. 3 is a perspective view of the last with the block removed showing the central groove and the bridge across it. Fig. 4 is an under side view of the block showing my block-fastener in position. Fig. 5 is an enlarged detail central section through the last and block showing the first position of applying the block to the last, the stud on the block resting against the bridge. Fig. 6 is a similar view showing the block pushed slightly forward and the stud riding over and upon the bridge. Fig. 7 is a corresponding view showing the block pushed forward to its limit and the stud lying in advance of the

bridge so as to prevent spontaneous rearward motion of the block, also illustrating how the spring by bearing against the under side of the bridge holds the block and its stud in position on the last proper.

Similar letters of reference indicate like parts in all the figures where they appear.

The letter A indicates a suitable last having the ordinary recess or depressed surface therein, in which recess the block C fits, and A' is a dowel performing its usual function relatively to the parts A and C, the part C having a recess to receive said dowel.

B is a bridge or bar, which may be in the form of a rectangular staple driven into the last and extending across a sufficiently long and deep groove *a*, which may be of rectangular section extending centrally up and down the inclined face of the recess or depressed surface of the last.

The block C matches the last as usual, and has a groove *c* to receive the dowel A', and D is a projection, stud or screw, having a convex head D' which serves as a stop, and performs important functions.

E is a flat spring firmly held in the block C by screws or nails F, F', and extending forward under and past the stud D, the spring being adapted to pass under the bridge B, while the stud D passes over said bridge.

In applying the block to the last it is placed a little in the rear of its final position with the free end of the spring E located in the groove *a*, and engaged under the bridge B. Then a sufficiently strong pressure urges the block forward, causing the stud D to ride over the bridge B, the spring bending to allow this movement, the block rising until the rounded swell of the stud D moves over and past the bridge. The elastic force of the spring now sharply draws the block toward the last, causing the stud to be strongly locked in front of the bridge without subjecting the spring to any endwise strain. The last now may serve for any period in all the usual ways.

When it is desired to remove the block, it is drawn forcibly rearward and lifted a little to facilitate the mounting of the stud upon and its passage over the bridge in opposition to the force of the spring E, which latter, it will be understood, co-operates with the other parts and with the tension of the leather of the shoe stretched across over it, to hold the block locked until it is so lifted. The spring E, being in the groove *a* in the last acts to prevent lateral movement of the block in the last.

The advantages of my invention are that the spring has only to exert its force to hold the block and last yieldingly together, and is not subjected to any endwise strain, and the block is locked upon the last with unusual firmness being held absolutely against all the ordinary disturbing forces so that it will not move out of position while the shoe is being made or repaired. The spring E is sufficient to hold the block normally connected with the last when out of use. I may repeat that

when the last is to be removed from the shoe the block can be readily withdrawn by giving it a quick sharp pull by force applied to lift its rear end and to pull it rearward. This may be done by the usual hook or by a string *e* shown as attached to it.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. A nail can be used in place of the screw to constitute the stud D.

I claim as my invention—

1. In a shoe last, the combination of the last proper, with its block, one of said parts having a recess and a bridge thereover, the other part having a stud adapted to pass over said bridge, and a spring independent of the stud, arranged to pass under said bridge, whereby the block is held upon the last except when it is both urged backward and lifted, substantially as set forth.

2. In a shoe last the combination of the last proper, having a depressed portion and a centrally located longitudinally extending groove in the face thereof, and a bridge or bar extending over said groove, with a block adapted to fit upon said last proper, and having a stud or projection arranged to pass over and to lie in advance of said bridge, and a spring arranged to pass under said bridge, to draw the block and its stud toward the last, and to slide through the groove in the last, substantially as set forth.

3. In a shoe last the combination of the last proper having a centrally located longitudinally extending groove, and a bridge or bar passing over said groove with a block having a stud adapted to pass over and to lie in advance of said bridge, and a spring carried by said block and consisting of a flat piece of metal held at one end and left free at the end adjacent to and underlying said stud, whereby said spring can pass under the bridge while the stud passes over and lie in advance of the bridge, all arranged for joint operation substantially as set forth.

4. In a shoe last the combination of a last proper having a centrally located longitudinally extending groove, a bridge or bar extending across said groove, and a dowel pin, with a block having a groove to receive said dowel pin, and provided with a stud or projection to ride over and to lie in advance of said bridge, and with a spring adapted to pass under said bridge, the parts being so arranged that when the block is slid forward the spring will pass through the groove in the last and under the bridge, while the stud will pass over and forward of said bridge, the spring then acting to hold the stud in position in advance of said bridge to prevent spontaneous rearward movement of the block from the last, substantially as described.

5. A last-block fastening comprising a spring on one part arranged to engage under a cross bar or bridge on the other part by a longitudinal motion and to confine the parts

together by the aid of such spring, in combination with a partial-stop, as the head or stud D', on the part carrying the spring, adapted to offer resistance to the liberating motion of the parts by abutting against the bridge and thus hold the parts more reliably together, as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

CHARLES CALTON.

Witnesses:

ROBERT F. CRANFORD,
E. F. PHILLIPS.