

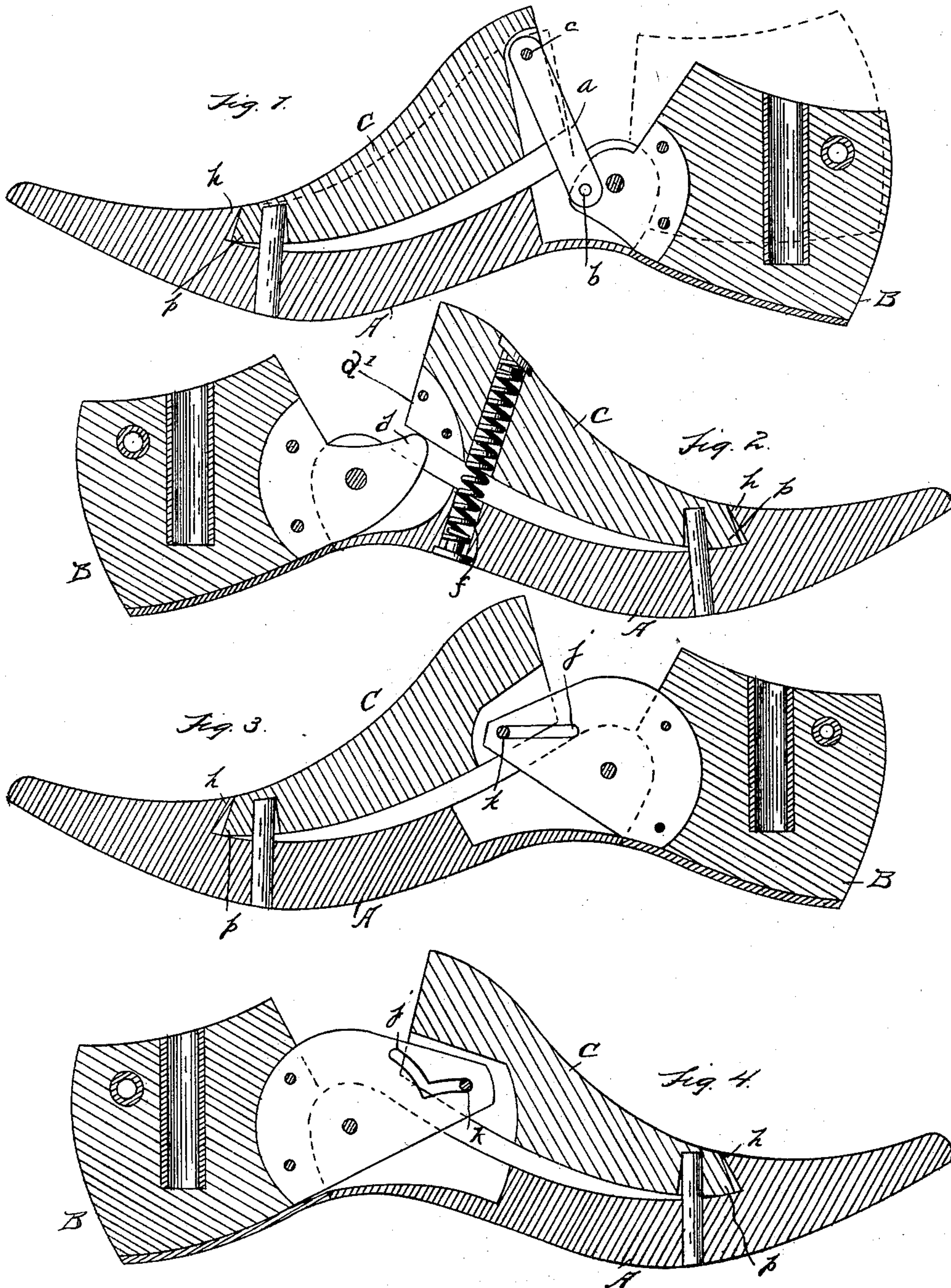
No. 673,889.

Patented May 14, 1901.

C. F. PYM.
LAST.

(Application filed Nov. 21, 1898.)

(No Model.)



WITNESSES

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LAST.

SPECIFICATION forming part of Letters Patent No. 673,889, dated May 14, 1901.

Application filed November 21, 1898. Serial No. 696,977. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. PYM, a citizen of Canada, residing at Windsor, county of Essex, Province of Ontario, Canada, have
5 invented a certain new and useful Improvement in Lasts; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and
10 use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to lasts, and has for its object an improved form of last adapted
15 especially to be used with fine goods, and more especially with that class of goods known as "turned" work. However, its use is not restricted to that class of goods, as it may be used with any goods whatever.

20 In making shoes (especially of the fine class of goods) the upper preparatory to being lasted is laced in order that the instep portion of the shoe may be held firmly in position to the shape which is desired for the
25 finished shoe. After lacing the last is inserted in the upper, and with lasts of ordinary construction there is a strain on that portion of the upper which lies directly below the instep at the waist between the instep and the ball of the foot. The last being
30 thicker through vertically from the point of the instep to the sole than it is immediately in front of the instep, a last of ordinary construction when forced into a shoe, especially
35 at the second lasting, crowds and strains the upper and frequently produces a bulge or improper enlargement at the under part of the shoe at the hollow of the foot and strains the leather at the meeting edges of the lacing-
40 opening and at the instep. This is especially noticeable with turned work.

The last which forms the subject of this invention has for its leading feature a loose block so connected to the body of the last as
45 to be retained thereto, yet so connected to the body of the last as to be adjustable or variable in vertical thickness, so that when inserted in the shoe it may have a narrow vertical thickness, thus being easily inserted,
50 and after insertion may be spread to the full

thickness desired. So, also, after the lasting has been finished and it is desired to withdraw the last the block is dropped and the last easily withdrawn. The last is of the form known as a "broken" or "hinged" last, 55 in which the heel part is hinged to the toe part with a hinge connection of such form and arrangement that when the last is bent at the hinge its total length is shortened, thus permitting the last to be withdrawn from 60 within a shoe in which the back of the shoe draws in above the heel, as shoes are ordinarily constructed.

In the drawings, Figure 1 shows my improved last, in which the arrangement for 65 vertical adjustment of the block with respect to the body of the last is produced by a link connection. Fig. 2 shows a form in which the arrangement to produce the adjustment is a cam and spring. Fig. 3 shows a slotted 70 cam arrangement. Fig. 4 shows another form of slotted cam arrangement.

In all of the forms the central idea consists in an arrangement to actuate the block so that the vertical distance from the top of the 75 block to the bottom of the last may be varied.

A indicates the toe part of the body of the last. B indicates the heel part. The toe part and the heel part are hinged together by a hinge-pin, so located that the distance along a 80 line passing from the toe through the hinge-pin to the rear of the heel is slightly longer than a broken line passing from the toe to the hinge-pin and from the hinge-pin to any other part below said center line—that is, the arc 85 of curvature of the rear bounding-line (below said center line) of a vertical section through the heel is of shorter radius than the distance from the hinge-pin to a point straight back through the hinge-pin from the toe, so that 90 when the last is bent on the hinge-pin its length over all shortens.

C indicates the block of the last. The toe part of the last has at its front end for a distance back from the extreme point of the 95 toe a gradually-increasing thickness and at a proper distance back from the point of the toe is abruptly cut downward, and the upper part from the abrupt downcut is cut away to receive the block C. At the front end of 100

the cavity made to receive the block the toe part overhangs the cavity somewhat, and the block is made with a corresponding point p to engage under the overhang h of the toe.

5 The block is held by a pin passing through a vertical hole in the block and through a vertical hole in the body of the last. The pin is fixed in one part and loose in the other. As shown, the pin is fixed in the vertical part of
10 the last, and the hole through the block is large enough to permit the block to be moved thereon somewhat in the way it would be moved if there were a hinge of ordinary construction connecting the block and the body
15 of the last. A hinge of ordinary construction might be used in place of the form described, but would be more difficult and expensive to make and no better. To that part of the hinge which is made fast to the heel
20 part of the last is connected an actuating device, which may be in any one of the forms shown or in any one of several other forms which might be shown. It consists, essentially, of a part adapted to engage with the
25 block and lift the block when the body of the last is straightened, so that the heel part takes its position with respect to the toe part for lasting purposes.

As shown in Fig. 1, the lifting arrangement
30 is a link a , connected to an eccentric pin b on the knuckle of the heel part of the hinge. The link a reaches to and connects with a pin c on the block, and the movement of the heel part of the last with respect to the toe part
35 actuates the block to throw it upward when the last is straightened and to draw it downward when the last is bent.

In Fig. 2 in place of the link a there is a
40 horn or prong d , which engages under the block of the last and lifts it when the last is straightened. When the last is bent, a spring f draws the parts together, the spring being a draw-spring held to the body of the last and to the block and arranged to be put under
45 strain by the spreading of the one from the other. In this form there is a rubbing engagement between the end of the horn d and the block, and a plate of metal d' is secured to the block in a position to engage the end
50 of the horn and prevent injury from too-rapid wear.

In the form shown in Fig. 3 a prong or horn, similar in character to the form d , extends up
55 into a slot in the block and is itself provided with a slot through which engages a pin k . When the last is bent at the hinge, the walls of the slot j force the block to move correspondingly. The bending of the last at the hinge closes the block down toward the body
60 of the last. The straightening of it throws

the block up. In the form shown in Fig. 4 the same construction is employed, except that the slot is curved instead of straight, the results being substantially the same as the results attained by the use of the device
65 shown in Fig. 3, except that the movement of the block to and from the body of the last is not constant during the entire movement of the heel part. During the first of the closing movement of the heel toward the toe the block
70 C closes toward the body of the last; but as soon as the pin k enters that part of the slot which is concentric with the hinge-pin the block ceases to be actuated, but is held from opening out from the body part of the last. 75

In all the forms employed the united thickness from the instep to the hollow of the foot through the block and the body part of the last is less than that which is necessary to fill out the shoe which is to be made on the last, 80 and when in use for lasting purposes in its distended form there always intervenes between the two an open space in which the block may sink, either when the last is inserted in the shoe or when it is withdrawn 85 therefrom.

What I claim is—

1. In a last made with a toe part and a heel part hinged together, a block movably held in the cavity of the toe part, and means actuated by the movement of the heel part for producing movement of the block, substantially as described. 90

2. A hinged follower, comprising a heel-section, a sectional distensible fore part, a hinge 95 connecting the fore part to the heel part, and means for contracting the fore part in a vertical direction as the heel-section is thrown upward.

3. A hinged follower, comprising a heel 100 part, a horizontally-divided fore part, and means for contracting the fore part by the upward movement of the heel part.

4. In combination with a hinged last, a block movably held to the toe part of the last, 105 and a link connection between the block and the heel part whereby the bending of the last actuates the block, substantially as described.

5. A hinged follower comprising a heel-section, a fore-part section having a distensible 110 portion, a hinge connection between the sections, and means for distending the distensible portion as the heel-section is thrown backward.

In testimony whereof I sign this specification in the presence of two witnesses. 115

CHARLES F. PYM.

Witnesses:

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