

(No Model.)

2 Sheets—Sheet 1.

A. MÜLLER & L. SCHULZ.  
STRETCHING BLOCK.

No. 523,541.

Patented July 24, 1894.

Fig. 1

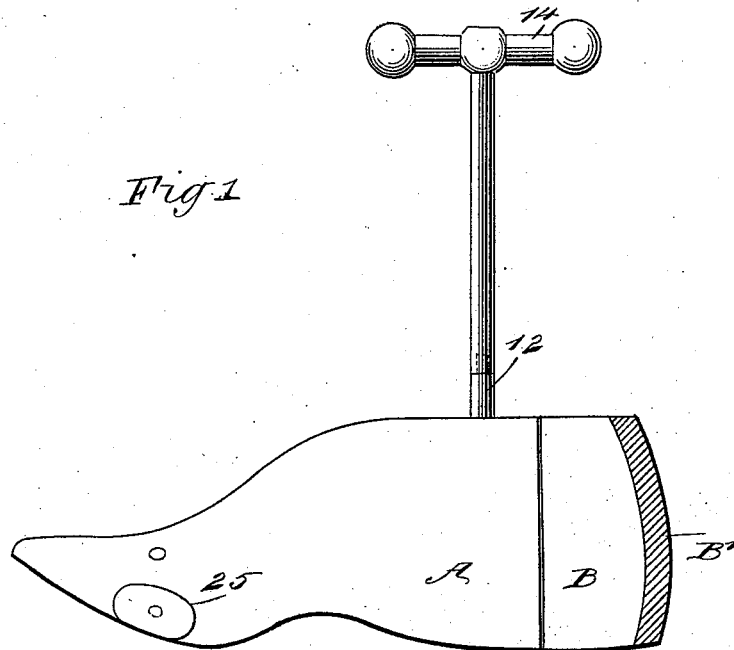


Fig. 2

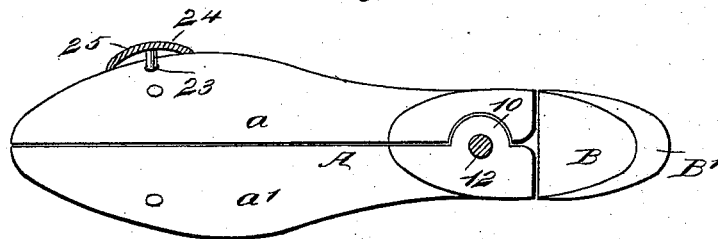
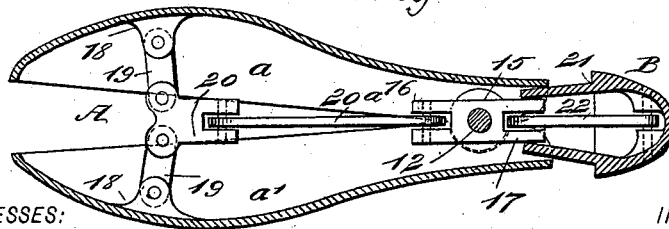


Fig. 3



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Fig 4.

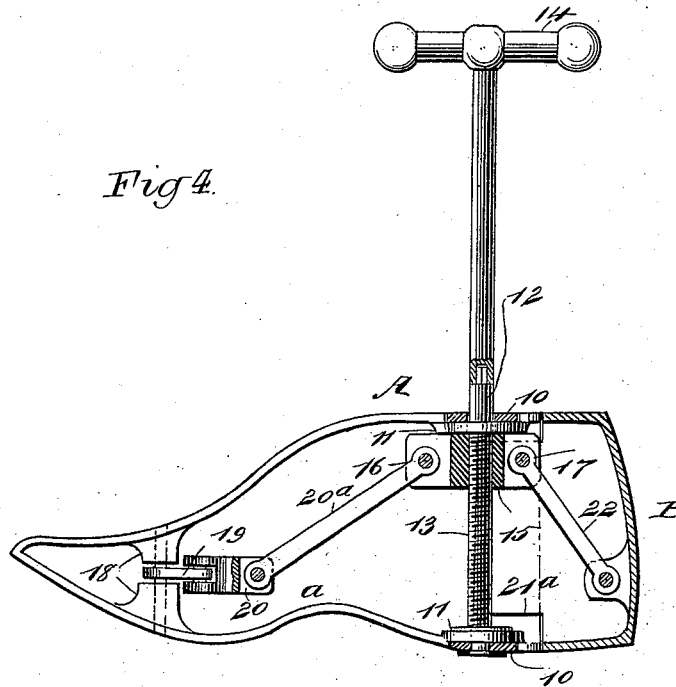
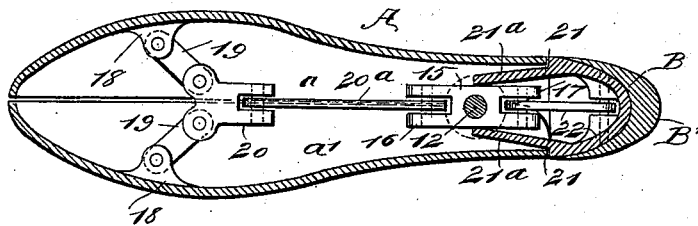


Fig 5



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# UNITED STATES PATENT OFFICE.

AUGUST MÜLLER AND LUDWIG SCHULZ, OF ALBANY, NEW YORK.

## STRETCHING-BLOCK.

SPECIFICATION forming part of Letters Patent No. 523,541, dated July 21, 1894.

Application filed February 27, 1894. Serial No. 501,719. (No model.)

*To all whom it may concern:*

Be it known that we, AUGUST MÜLLER and LUDWIG SCHULZ, of Albany, in the county of Albany and State of New York, have invented a new and useful Improvement in Stretching-Blocks, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in stretching blocks, especially to an improvement in stretching lasts for boots and shoes, and the object of the invention is to so construct the last that it will expand in direction of its length as well as in direction of its width, thus permitting the shoe to be stretched lengthwise as well as cross-wise.

A further object of the invention is to provide a means whereby the last may be made to fit so snugly to the shoe that the counter thereof may be readily straightened or rectified, should it become damaged, and whereby cement patches may be much more expeditiously and conveniently placed in position, and in fact the sole be much more conveniently repaired than where an ordinary last, or an ordinary stretching last is employed.

Another object of the invention is to provide one or more beveled heel sockets whereby a last of given length may be made to properly fit in a shoe of much greater length, and to provide a means whereby offsets may be readily placed upon the last to represent a corn or bunion, enabling a shoe while being stretched to be particularly enlarged at the point where the bunion, corn, or other protuberance upon the foot may have a bearing.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improved last, the heel socket being shown as applied and in section. Fig. 2 is a bottom plan view of the last closed and with the heel socket applied. Fig. 3 is a horizontal section through the last in its expanded position. Fig. 4 is a vertical section through the last, taken about centrally thereof; and Fig. 5 is a horizontal

section of the last when in its contracted position.

The last is of the ordinary shape and may be made of any approved material, metal being preferably employed. The last may be said to consist of a body A, constructed in two equal sections *a* and *a'*, and a heel section B, preferably in one piece, but which may be provided with a removable extension or socket B'. The body sections *a* and *a'* are provided at top and bottom, near their rear ends, with overlapping lugs 10 and 11, as shown best in Fig. 4; and through the medium of these lugs and a vertical shaft 12, the two sections of the body are pivotally connected, the shaft being made to pass downward through openings in both the top and bottom lugs 10 and 11; the lower end of the shaft being headed, or otherwise shaped to prevent it from being withdrawn.

Within the body of the last, the shaft 12 is provided with an exteriorly threaded surface 13, and at its extreme outer end is fitted with a detachable handle 14, through the medium of which the shaft is rotated. A nut 15, is held to travel upon the threaded surface 13 of the shaft, and this nut is provided with a forwardly-extending wing 16 and a rearwardly-extending wing 17.

Near the forward end of each section of the body, upon the inner face of said section, a lug 18, is produced, as shown in Fig. 5, and upon each lug 18 a link 19 is pivotally located. Each link 19 is pivotally connected with one end of a block 20, the attachment between the links and the block being made at each side of the center of the forward end of the block; and a longer link 20<sup>a</sup>, is pivotally connected with the inner end of the block 20 and the forward lug or lugs 16 on the nut 15, as shown in Figs. 3, 4 and 5.

The heel section B of the last is hollow, but is inclosed at top and bottom and is provided with shoulders 21 adapted to be engaged by the rear ends of the body section, said end portions being vertically straight, as are likewise the shoulders 21, and from each shouldered portion of the heel section an arm 21<sup>a</sup> is forwardly projected, the said arms being made to extend within the body, one at each side of the nut 15.

Near the lower portion of the heel section

B, a link 22, is pivotally connected with the inner face of the said section, and with the rear lug or lugs 17 of the nut 15, the rear link 22 being of less length than the forward link.

The extension section B' of the last consists of a block shaped to correspond to the shape of the main heel section B, being provided with a concaved face to receive the convexed end and side surfaces of the said main heel section, as illustrated in Figs. 1, 2 and 5, the said extension of the heel being employed when the last is several sizes too small for the shoe in connection with which it is to be used; and it will be understood that any desired number of extension blocks B' may be employed, and that they may be of any desired thickness.

In the operation of this last, the extension takes place first in direction of its length, since the rear link 22 is shorter than the forward one 20<sup>a</sup>; therefore, when the shaft 12 is revolved in such a manner as to cause the nut 15 to travel downwardly thereon, as the link 22 straightens out, or assumes substantially a horizontal position, the heel section will be forced outwardly and the last lengthened, as shown in Fig. 3; and about the time that the heel section has been forced outward to its full capacity, the link 20<sup>a</sup> will have commenced to act upon the spreading block 20 to force said block forward, thereby straightening out the spreading links 19 at the forward portion of the body and causing the said forward portion to open or widen, as shown also in Fig. 3. Thus it will be observed that a shoe or boot will be stretched both in direction of its length and in direction of its width, and that the last may be made to fill up the entire inside of the shoe in like manner as a foot, and will provide a firm surface against which patches may be placed, greatly facilitating the straightening of the counters when such action is required, it being understood that the heel extensions B' are not used except when the last is of much less length than the shoe or boot to be stretched.

It frequently happens that certain portions of the boot or shoe need to be stretched more than others, as for example where a corn, bunion, or other protuberance on the foot contacts with said boot or shoe, and in order that such an action may be secured apertures

23, are made in the exterior of the last, for example, at the wider portions of its body, to receive studs or pins 24, located upon convex plates 25, the latter representing the protuberance upon the foot to be fitted.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A last or block divided vertically and longitudinally from end to end; the two sections thus formed having vertically aligned apertured lugs at their rear ends, an operating screw swiveled in said apertures and forming the pivot or axis of the sections, a traveling nut on the said screw and a toggle connection between the nut and the forward portions of the two sections to move them laterally toward and from each other, substantially as described.

2. A last or block divided vertically and longitudinally from end to end and provided with vertically aligned apertured lugs at their rear ends, a vertical screw swiveled in said lugs and forming the pivot or axis of the said two sections, a longitudinally sliding heel piece at the rear ends of the sections, a nut traveling on the screw and operative connections between the nut, the forward portions of said two sections and the said heel piece, substantially as described.

3. In an expanding block or last, the combination, with a body divided vertically and longitudinally from end to end into two sections pivoted near their rear ends and provided with links pivoted thereto at their forward ends and connected by an expanding block, of a heel section capable of sliding to and from the body section, a screw shaft forming the vertical axis on which the two body sections pivot, a nut held to travel upon the screw shaft, a link connection between the expanding block and nut and the heel section and nut, the link connected with the heel section being of different length and at a greater incline than that connecting the nut with the expanding block of the body, as and for the purpose set forth.

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Witnesses:

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