

D. HARRIS.
Boot-Stretchers.

No. 139,671.

Patented June 10, 1873.

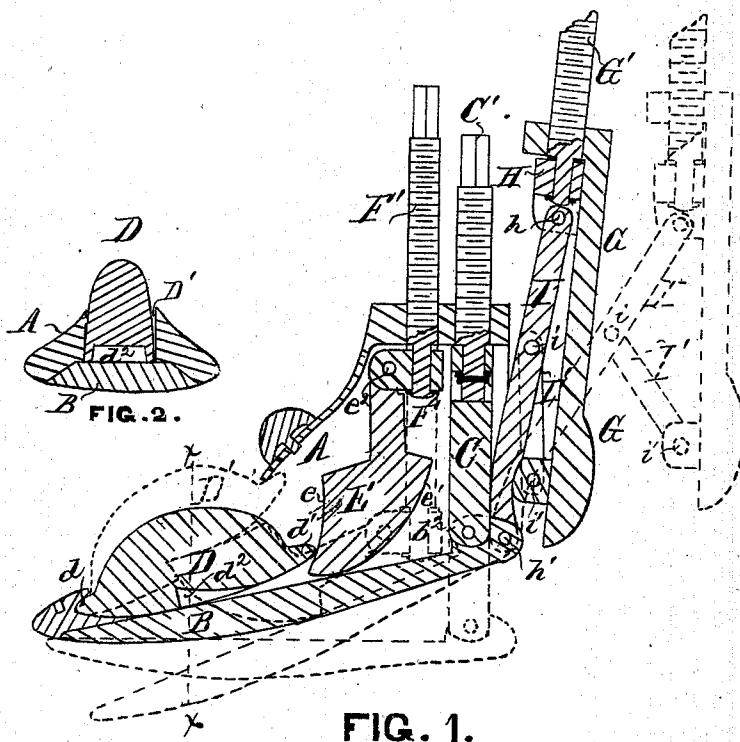


FIG. 1.

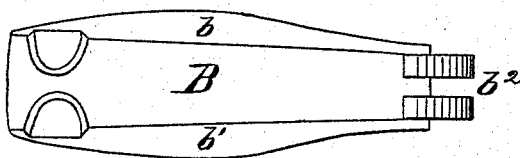


FIG. 3.

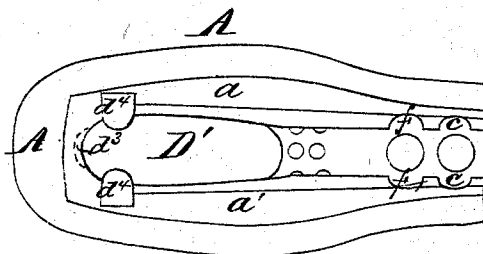


FIG. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

DAVID HARRIS, OF LITCHFIELD, ILLINOIS, ASSIGNOR TO HIMSELF AND
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IMPROVEMENT IN BOOT-STRETCHERS.

Specification forming part of Letters Patent No. **139,671**, dated June 10, 1873; application filed
February 12, 1873.

To all whom it may concern:

Be it known that I, DAVID HARRIS, of Litchfield, in the county of Montgomery and State of Illinois, have invented a certain new and useful Improved Boot-Stretcher; and I do hereby declare that the following is a full and true description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The object of this invention is to provide a simple, ready, and efficient machine whereby the stretching of boots and the like is accomplished combinedly for all the parts of the boot proper, or independently at any desired part of same. The nature thereof relates, first, in providing the body of the stretcher with a pivoted sole or bottom plate, connected and operated adjustably by hand-screw, for purpose of stretching the instep; secondly, in combination with bottom plate, and with the hollow of the body, to the peculiar arrangement and construction of parts, consisting of a movable hump, wedge-shaped lever, and screw-connections, operated adjustably, to stretch any part from instep to toe; thirdly, to the peculiar construction and operative connection of a counter or heel plate, by means whereof the process of lengthening or stretching longitudinally is accomplished; fourthly, to the arrangement and combination of all parts and their operative connections with the body of the stretcher, by means whereof the combined operation of stretching the instep, toe part, and lengthening the boot, can be accomplished at one and the same time.

To enable those herein skilled to make and use my said improvements, I will now more fully describe the same, referring to—

Figure 1 as a sectional elevation, dotted lines representing adjustable position of the movable parts. Fig. 2 is a detail transverse section on line *xx*. Fig. 3 is a top plan of bottom plate; Fig. 4, a bottom plan of the body of the stretcher.

A represents the last or body of stretcher. This is cast hollow, according to pattern, so as to receive the operating parts. B is the bottom plate. This plate has outward-inclined sides *b b'*, Fig. 3, so as to conform to the inwardly-inclined sides *a a'*, Fig. 4, of the bot-

tom of body A, and thus form, when closed in same, a neat closing fit, Fig. 2. Further, the bottom plate B is formed with bearings *b²*, by means whereof it is pivoted to turn on the end of a follower, C. The follower C is arranged to slide vertically within the body A, being guided in its action by its side grooves *c*, Figs. 1 and 4. Further, to vertically adjust and operate the follower C the same is connected to a hand-screw, C'. The hand-screw C' is guided and passes through the top of the body A, and at its lower end the connection to follower C is such that to same is imparted the forward and return movement of said screw, as shown in Fig. 1. The bottom plate B, thus connected to hand-screw C', can, therefore, be made capable of assuming any adjusted position required for the stretching of the instep.

The construction, arrangement, and operation of devices to stretch the "toe part" are as follows: A movable solid hump, D, is cast or formed with projecting ends *d d'*, and at bottom face having a recess, *d²*, and, further, being of the curved outline, all shown in Figs. 1 and 2. The projection *d* of hump engages a recess, *d³*, in the toe part of the body, and the latter is further provided with lugs *d⁴*, to support said forward part of the hump. (See Figs. 1 and 4.) Sufficient bearing and play are thus afforded the hump to allow and accommodate the motions to be imparted chiefly to the rear part thereof. The end *d'* of hump is first acted upon, and this projection serves also to estop the full completed action of hump. Thus formed, the hump D protrudes through the opening D', Fig. 4, when placed in the body A. The adjustable operation of the hump D is accomplished by the movements of a lever, E, follower F, and hand-screw F'. The lever E is partly wedge-shaped, its constructive design being clearly shown in Fig. 1, the object of the face *e* of the lever E being to operate against the bottom face of hump D, while the opposite face *e'* of said lever simultaneously engages the top face of bottom plate B. The lever E by its shank is pivoted at *e²* to the bearing of the follower F. The follower F is arranged to operate vertically in the body A, which, for this purpose, has side grooves *f*.

(See Fig. 4.) The follower F is also connected properly to the hand-screw F', to be acted upon as well as follow up all movements of same, as illustrated in Fig. 1. The screw F' thus operates the follower F and lever E vertically, and the latter at the same time, by its bottom face *e* coming in contact with the top face of the bottom plate B, adjusts the same outward from body A. Simultaneously with this action, the lever E, by its upper face *e'* engaging the recess or bottom of hump D, forces the same upward. Thus the required movements for stretching the toe part of the boot are achieved.

To lengthen or stretch the boot lengthwise the heel-plate G is provided. The heel-plate G is constructed to conform outwardly to the counter, and at top to form a bearing through which a hand-screw operates. G' is the hand-screw; this connects to a socket-bearing or follower, H, so as to impart to same a vertical motion, and in return motion to follow the screw. Pivoted at *h* to follower H is a connecting-lever, I, the other end thereof being pivoted at *h'* to the bearings of the bottom plate. Further, to the lever I two side links, I', are connected, so as to be pivoted, respectively, at *i* and *i'*, the connection at *i'* being made with a bearing or lug projecting from the inside face of the counter or heel plate G. (See Fig. 1.)

By the action of the hand-screw G', therefore, the counter or heel plate G is forced away from the body A in the operation of stretching, and drawn to said body in the release movement. Thus the boot can be stretched lengthwise, and this done without operating the remaining devices.

By the combined operation of all the ad-

justing devices it is plain that the entire boot can be enlarged and stretched at the same time in length, across the toes, and around the instep; also, it will be seen that the independent operation of effecting the stretching at any given part of the boot can similarly be effected by working the proper hand-screw.

The body of the stretcher is provided with proper holes to receive the inserted rounded lugs, or imitation corns, bunions, and the like.

Having thus fully described my said invention, what I claim is—

1. The bottom plate B, follower C, and hand-screw C', arranged and constructed to operate, in combination with body A of stretcher, substantially as and for the purpose set forth.

2. The bottom plate B, hump D, wedge-acting lever E, follower F, and hand-screw F', arranged and constructed to operate, in combination with body A of stretcher, as and for the purpose set forth.

3. The heel-plate G, hand-screw G', follower H, lever I, and side links I', in combination with bottom plate B and body A of stretcher, as and for the purpose set forth.

4. The combination and arrangement of bottom plate B, follower C, hand-screw C', hump D, wedge-shaped lever E, follower F, hand-screw F', heel-plate G, hand-screw G', follower H, connecting-lever I, side links I', and body A, all constructed to operate as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

DAVID HARRIS.

Witnesses:

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JOHN TREMLETT.