No. 675,187. Patented May 28, 1901.

A. H. BAKER.

BOOT OR SHOE STRETCHER.

(Application filed Jan. 30, 1901.)

(No Model.)

Fig. 1.

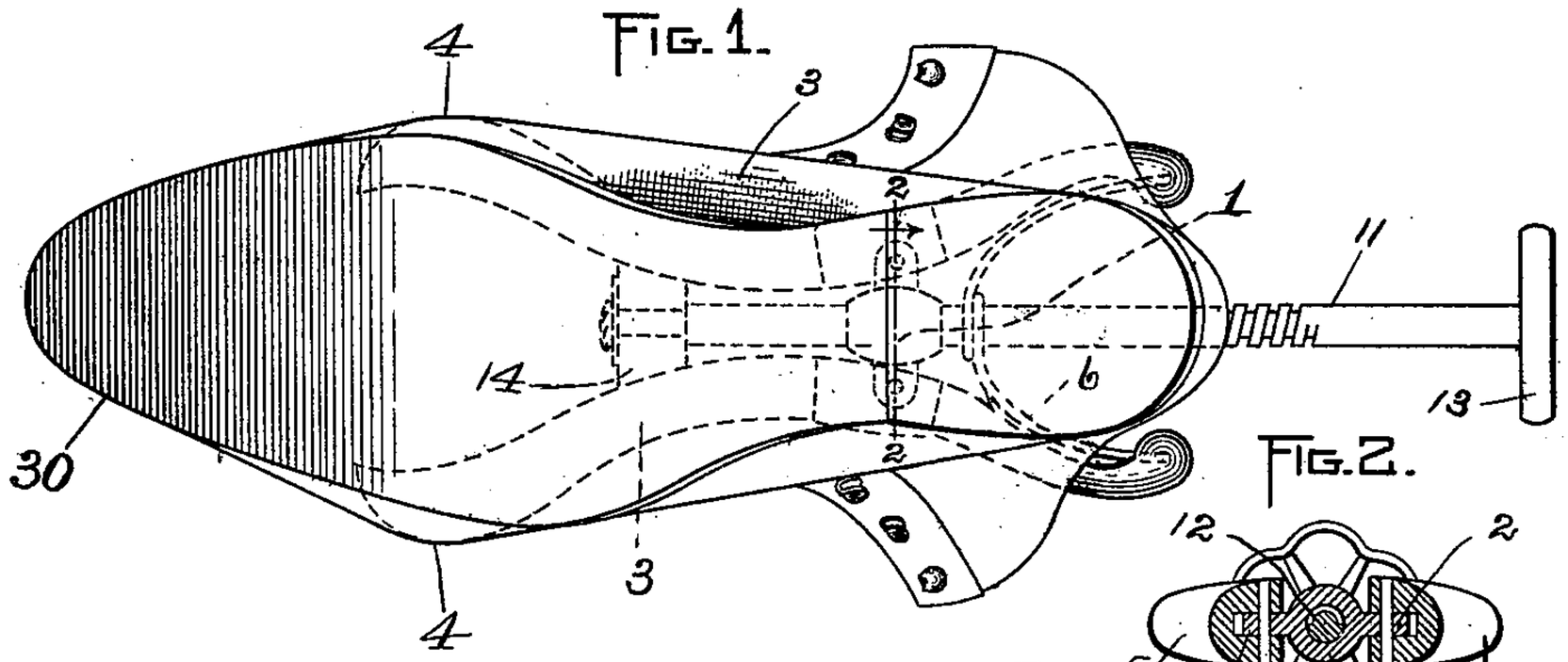


Fig. 2.

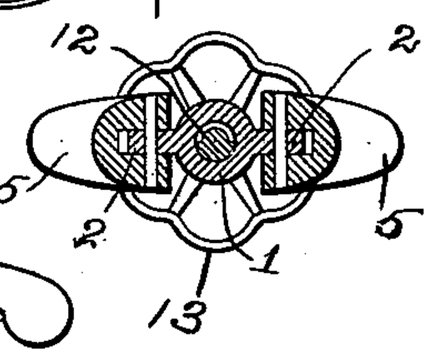


Fig. 3.

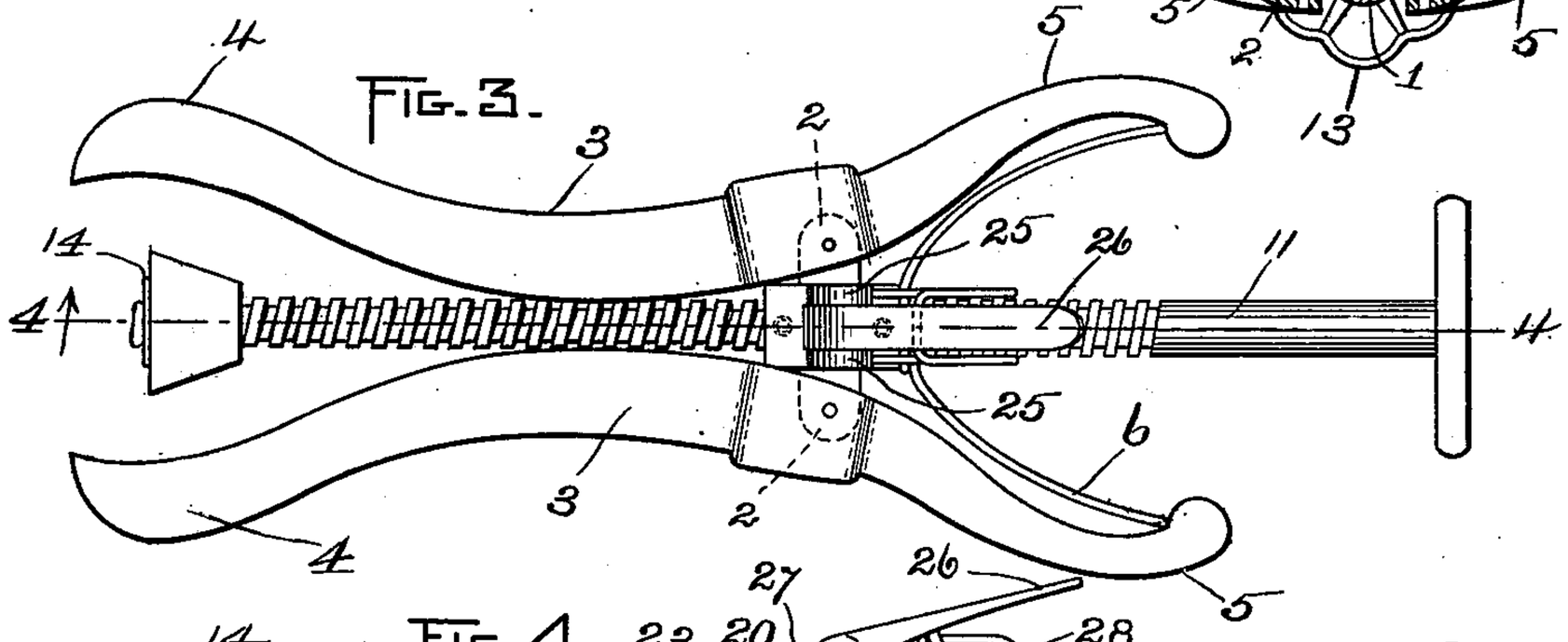


Fig. 4.

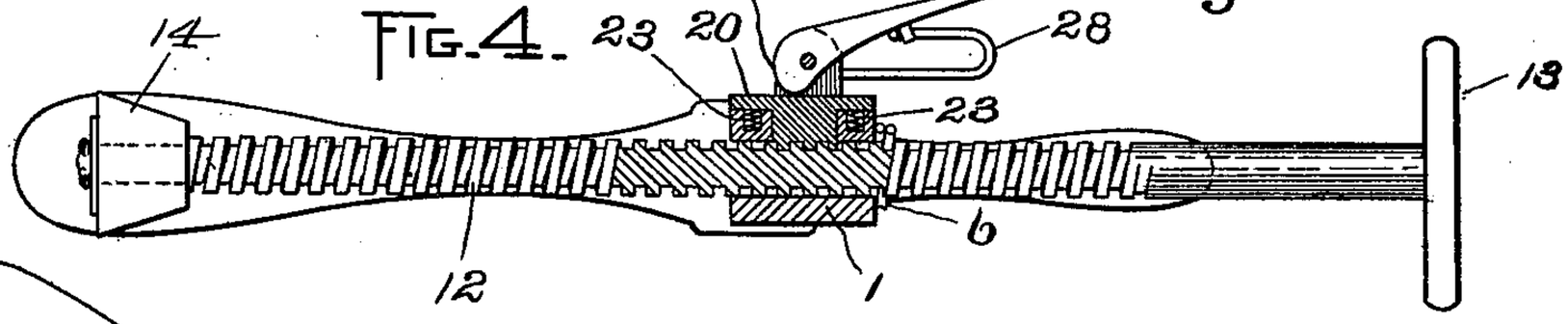


Fig. 5.

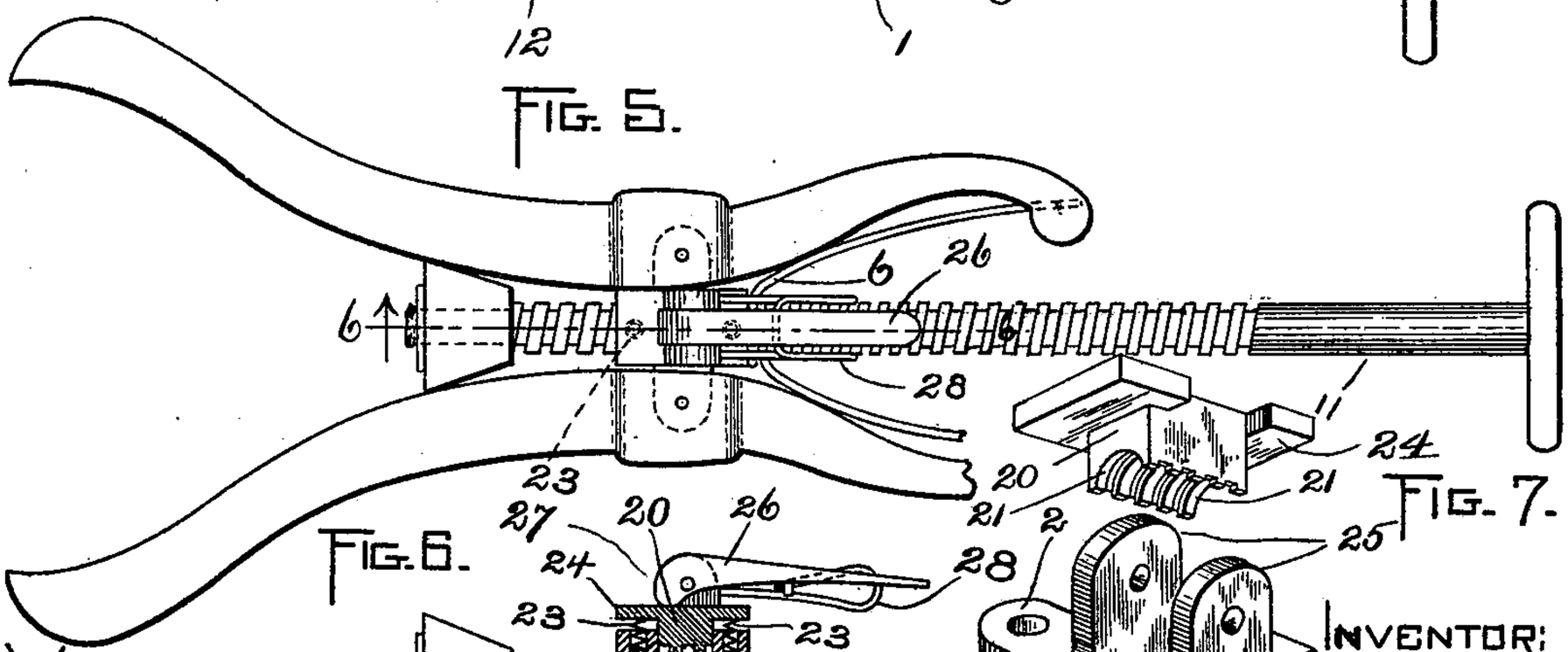


Fig. 6.

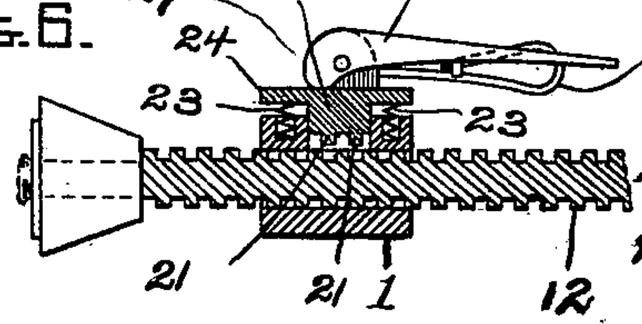
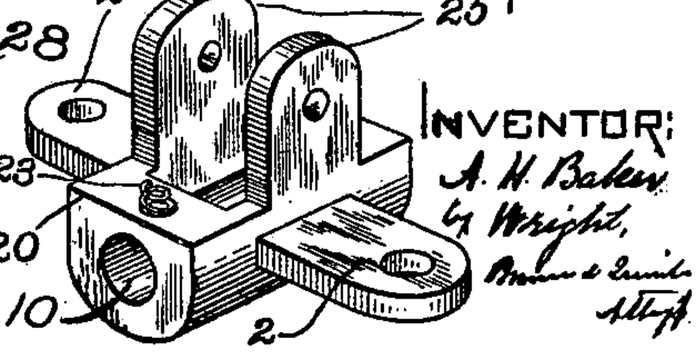


Fig. 7.



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UNITED STATES PATENT OFFICE.

ANDREW H. BAKER, OF BROCKTON, MASSACHUSETTS.

BOOT OR SHOE STRETCHER.

SPECIFICATION forming part of Letters Patent No. 675,187, dated May 28, 1901.

Application filed January 30, 1901. Serial No. 45,361. (No model.)

To all whom it may concern:

Be it known that I, ANDREW H. BAKER, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Boot or Shoe Stretchers, of which the following is a specification.

This invention relates to a new, useful, and improved boot or shoe stretcher; and it consists in the novel features of construction and arrangement of parts hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this application, and to the figures of reference marked thereon, the same reference characters designating the same parts or features wherever they occur.

Of the drawings, Figure 1 represents a reverse plan view of a boot or shoe upper, showing one form of my improved stretcher in operative position. Fig. 2 is a cross-section on the line 2 2 of Fig. 1, showing the manner of connecting the stretching-arms to the hub. Fig. 3 is a top plan view of my stretcher, showing the stretching-cam out of operative engagement with the arms. Fig. 4 is a longitudinal sectional view on the line 4 4 of Fig. 3, showing the cam-nut in engagement with the screw-threads on the spindle. Fig. 5 is a view similar to Fig. 3, but showing the stretching-cam in engagement with the arms. Fig. 6 is a longitudinal sectional view on the line 6 6 of Fig. 5, showing the cam-nut out of engagement with the screw-threads of the spindle. Fig. 7 is a detail perspective view of the hub and the cam-nut.

My improved stretcher is designed for use in connection with boots or shoes or slippers, and is arranged to stretch a boot or shoe at any given spot or place where stretching is required, instead of, as heretofore, stretching the whole shoe-upper, in order to relieve the upper strain at a particular point only. My invention, however, is not limited to this local stretching; but such a mechanism may, if desired, be employed in connection with the stretching of any desired surfaces of the boot or shoe upper.

1 represents a hub formed with two lugs 2 2 on opposite sides. To each one of these lugs is pivoted a stretching-arm 3. These arms have stretching contact extremities 4 4 upon one side of their pivotal connection and handles 5 5 upon the opposite side of the pivotal connection or hub, the handles being normally forced apart by a spring 6, whose free ends engage the ends of the handles, the spring being either connected to the hub 1 or to the spindle, hereinafter described. The hub 1 is formed with an aperture 10, here shown as circular. In this aperture in Figs. 3 to 7 is slidingly mounted a spindle 11, provided with screw-threads 12. In Fig. 1 the aperture is screw-threaded and the spindle has a rotative motion only. The spindle upon one end is provided with a handle 13 and upon its opposite end with a stretching-cam 14, arranged between the arms 3 and adapted by engagement with said arms to force the ends 4 of said arms outward against the tension of the spring 6, as shown in Figs. 1 and 5, for the purpose of stretching the boot or shoe or slipper. The hub 1, Figs. 3 to 7, is recessed upon its upper side, and in this recess is arranged a cam-nut 20, provided on its lower side with teeth 21 or screw-threads arranged to engage the screw-threads on the spindle 11.

23 represents springs housed in chambers in the hub 1 and engaging the under side of the flange 24 on the cam-nut 20 and tending to force said cam-nut upward to bring its teeth 21 out of engagement with the screw-threads of the spindle, as shown in Fig. 6.

The hub in Figs. 3 to 7 is provided with ears 25, and between these ears is pivoted a cam-lever 26, whose operative end 27 is arranged to impinge upon the cam-nut 20 and force its teeth 21 into engagement with the screw-threads 12 against the tension of the springs 23. A spring 28 (see Fig. 4) keeps the cam-lever yieldingly in engagement with the cam-nut to maintain the latter in its operative position.

The operation of my improved device is as follows: It being desired to stretch a boot or shoe upper 30 at a given point, (with the form of stretcher shown in Figs. 3 to 7,) the cam-lever 26 is depressed to permit the teeth 21 of the nut to move out of engagement with the spindle. The spindle is then pressed forward, carrying its stretching-cam 14, rotatively mounted, outward toward the position shown in Fig. 3, thus permitting the spring 6

to force the ends 4 of the stretching-levers inward. In this position the stretcher is inserted in the boot or shoe upper. The ends 4 are then located at about the point where the stretching is to be made. The lever 26 is again depressed to release the spindle 11 and the latter drawn backward to bring its stretching-cam 14 into engagement with the arms 3, (see illustration in Fig. 5,) the stretching-cam automatically seating against the arms, owing to its being rotatively mounted on the spindle. In the described position the ends 4 are seated against the upper at a point where the stretching is to take place. The lever 26 is released to let its teeth 21 engage with the screw-threads 12 of the spindle and the spindle turned to draw its stretching-cam 14 toward the hub, thereby forcibly extending the parts 4 of the arm against the upper and stretching the latter. When the upper has been stretched as much as desired, by depression of the lever 26 the pressure is instantly released and the parts can be brought to a removable condition by sliding the spindle forward to bring its stretching-cam 14 into the position shown in Fig. 3.

By the use of my invention uppers may be readily stretched at the points desired and the device, by reason of its construction, admits of ready and instant manipulation and adjustment. While, as stated, the mechanism shown is specially designed for stretching the uppers at a particular point or points only, I do not intend to limit my invention to such a construction, but design it to include devices of this general character where the described mechanism is employed.

The cam-nut serves not only as a means of adjustment, but as a holding member to maintain the parts in any desired position of adjustment.

In the form shown in Fig. 1 the spindle has no sliding engagement with the hub, but its screw-threads 12 engage complemental screw-threads in the hub. In this form the spring 6 serves at all times to tend to throw the extremities 4 4 inward toward the stretching-cam 14, so that as said cam is thrown forward to a position corresponding to the position occupied by the cam in Fig. 3 the extremities 4 leave the side of the shoe automatically and are always in a position for ready insertion in the shoe when the stretching-cam 14 is forward in its inoperative position, as shown in Fig. 3, the action of the spring thus being the same in both forms. The form shown in Fig. 1 differs from that shown in the other figures in that the spindle has no sliding engagement with the hub.

Having thus explained the nature of my invention and described a way of constructing and using the same, although without having attempted to set forth all the forms in which it may be embodied or all the modes of its use, what I claim is—

1. A stretching device, comprising a hub, stretching members carried thereby, a screw-threaded spindle having a sliding engagement with said hub and provided with means for engagement with said members, a nut carried by said hub, and means for throwing it into and out of engagement with the spindle.

2. A stretching device, comprising a hub, stretching members carried thereby, a screw-threaded spindle having a sliding engagement with said hub and provided with means for engaging said members, means on said hub arranged for engagement with said spindle, whereby the latter may be adjusted and locked in adjusted position.

3. A stretching device, comprising a hub, stretching members carried thereby, a screw-threaded spindle having a sliding engagement with said hub and provided with means for engaging said arms, a nut member, and means for putting it into and out of engagement with the spindle, whereby the latter may be slid for preliminary adjustment or removal, and afterward rotated for the stretching operation.

4. A stretching device, comprising a hub, stretching members carried thereby, a screw-threaded spindle having a sliding engagement with said hub and equipped with means for engaging said members, means on said hub arranged for engagement with said spindle, whereby the latter may be adjusted independently of said means or in conjunction therewith, said stretching members having operative ends adapted to engage the upper at predetermined points only.

5. A stretching device comprising a hub, stretching-arms pivoted to the sides thereof and formed at one end with stretching members adapted to engage a shoe-upper at two predetermined points only, handles formed upon the rear ends of said arms, a screw-threaded spindle extending through said hub, a stretching-cam carried upon the inner end of said spindle and arranged between said stretching members, and a spring between the handles to press them apart and thereby collapse said stretching members toward each other.

In testimony whereof I have affixed my signature in presence of two witnesses.

ANDREW H. BAKER.

Witnesses:
E. BATCHELDER,
A. D. HARRISON.