

(No Model.)

3 Sheets—Sheet 1.

J. F. FULLUM.
SHOE STRETCHER.

No. 503,742

Patented Aug. 22, 1893.

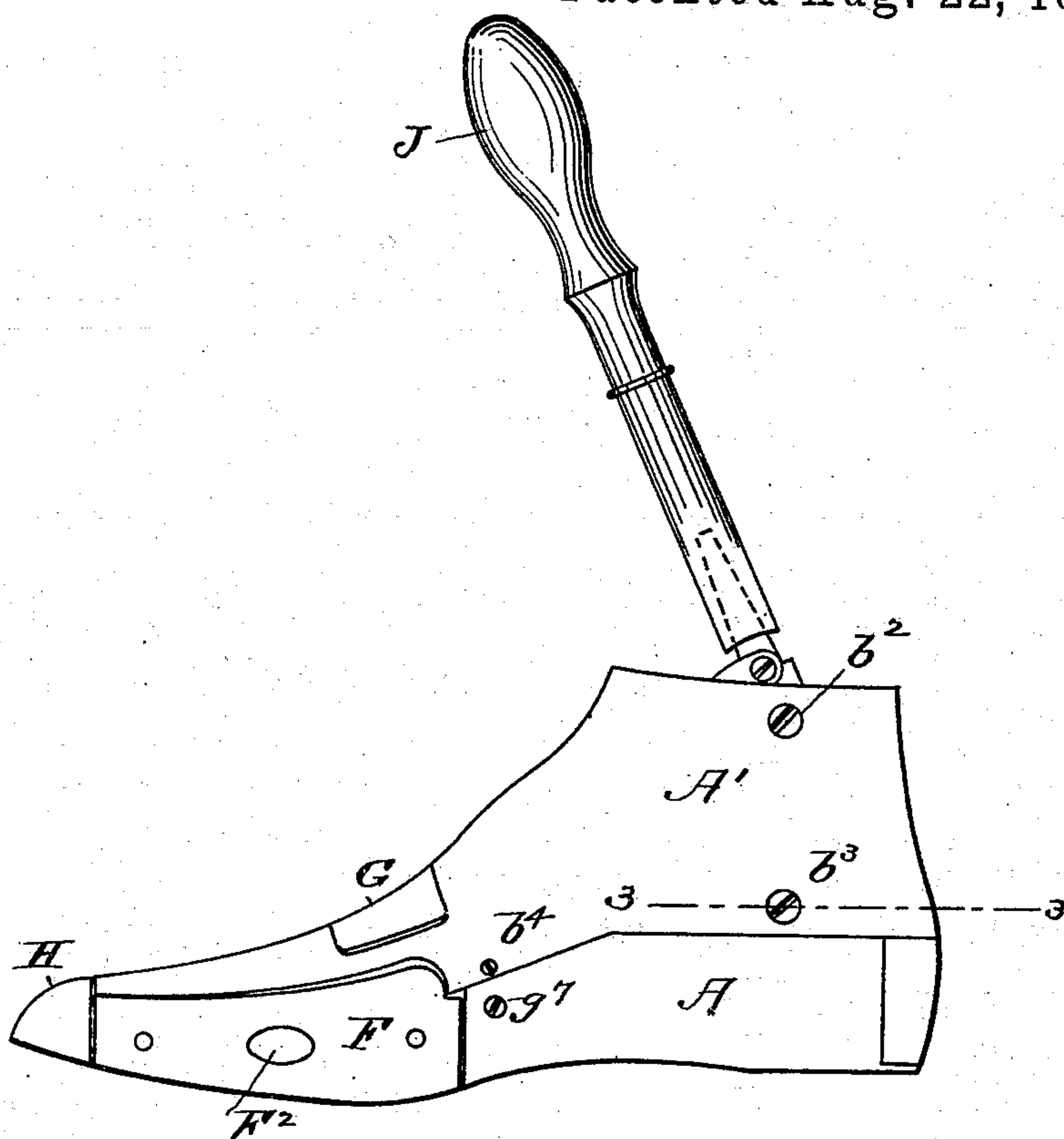


Fig. 1.

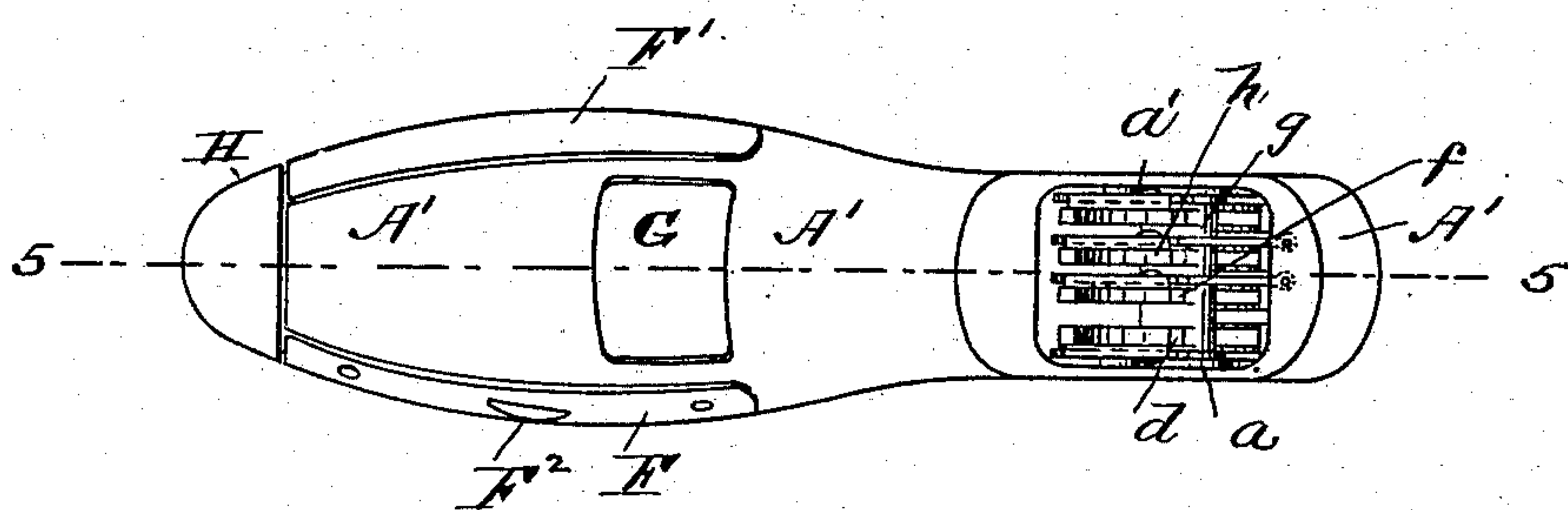


Fig. 2.

WITNESSES.

C. J. Freeman
John R. Snow

INVENTOR.

James F. Fullum,
by his attorneys,
Margaret V. Beach.

(No Model.)

J. F. FULLUM.
SHOE STRETCHER.

3 Sheets—Sheet 2.

No. 503,742.

Patented Aug. 22, 1893.

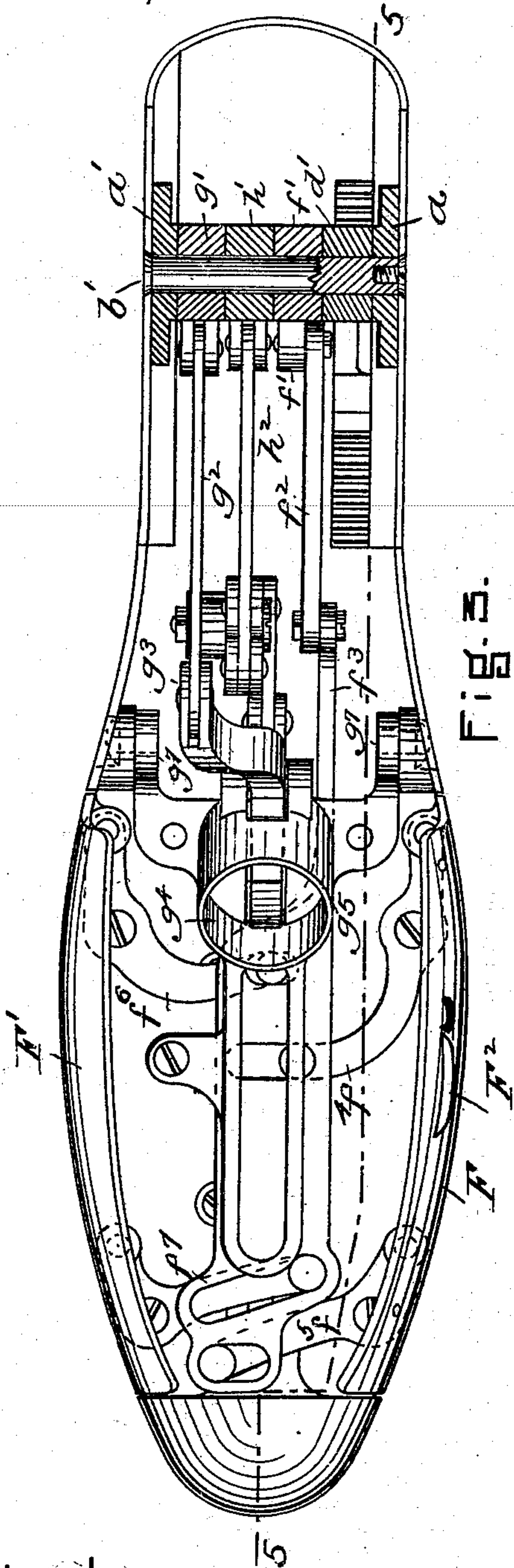


Fig. 3.

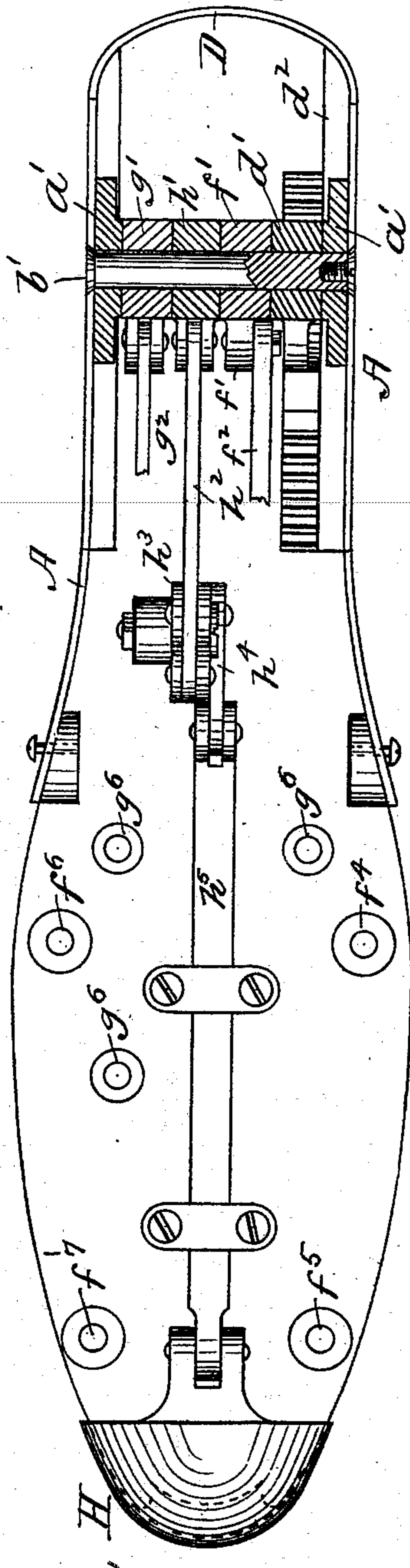


Fig. 4.

WITNESSES.

Ed. Luman
John R. Snow.

INVENTOR.

James F. Fullum,
by his attorneys,
Masquaden & Beach.

(No Model.)

3 Sheets—Sheet 3.

J. F. FULLUM.
SHOE STRETCHER.

No. 503,742.

Patented Aug. 22, 1893.

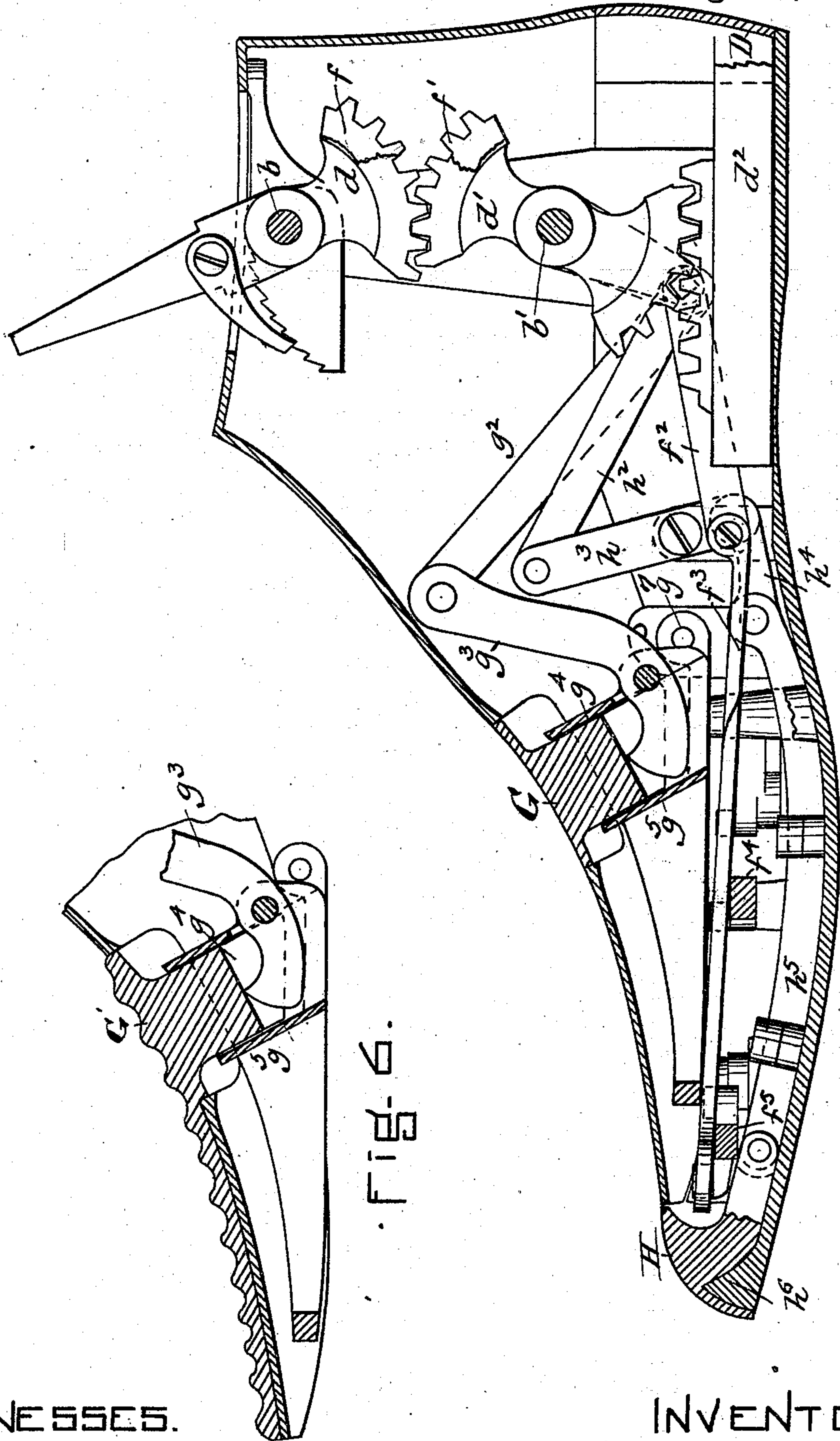


Fig. 5.

Fig. 6.

WITNESSES.

C. J. Truman
John R. Snow

INVENTOR.

James F. Fullum
by his attorneys,
Maguadon & Beach

UNITED STATES PATENT OFFICE.

JAMES F. FULLUM, OF EVERETT, MASSACHUSETTS, ASSIGNOR TO THE
FULLUM SHOE STRETCHER COMPANY.

SHOE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 503,742, dated August 22, 1893.

Application filed March 7, 1892. Serial No. 423,974. (No model.)

To all whom it may concern:

Be it known that I, JAMES FRANCIS FULLUM, of Everett, in the county of Middlesex and State of Massachusetts, have invented a new and useful Stretching-Last, of which the following is a specification, reference being had to the accompanying drawings, making part hereof, in which—

Figure 1 is an elevation; and Fig. 2 a plan of a stretching last embodying all the features of my invention. Fig. 3 is a plan with a portion removed and a portion in section on line 3—3 of Fig. 1. Fig. 4 is a plan like Fig. 3, except that other portions are removed. Fig. 5 is an elevation, partly in section on line 5—5 of Fig. 3; the shell and toe piece being in section on line 5—5 of Fig. 2. Fig. 6 is a sectional elevation showing a modified form of instep piece.

My invention relates to that class of lasts used in shoe stores mainly for easing shoes or boots to suit customers and the main feature of the invention is the combination with the body of a last of two pairs of levers, fulcrumed on the body of the last; two side pieces hinged each to the outer ends of a pair of levers; a slotted plate engaging pins on the inner ends of both pairs of levers, and devices for moving the slotted plate endwise.

My invention includes other features set forth hereinafter.

In the drawings A A' are the two main parts of a hollow last, which with the uprights a a' constitute the frame by which the moving parts are supported.

In the best form of my invention the cross-rods b b' serve as fulcrums for four pairs of levers; one pair d d' to actuate the heel piece D; another pair f f' to actuate the side pieces F F'; a third pair g g' to actuate the instep piece G or G'; and a fourth pair h h' to actuate the toe piece H. The levers d and d' are connected by toothed segments, and the lever d' has a toothed segment at its lower end which meshes with the rack fast to the guide d² of heel piece D; so that when the tang which forms the upper end of lever d is moved (by means of the socketed handle J applied as shown in Fig. 1), the heel piece is also moved; for motion of the upper end of lever d in one

direction moves the lower end of lever d' in the same direction, and the heel piece D moves in the same direction as the lower end of lever d', the segment on the lower end of d' being in mesh with the rack on guide d² of heel piece D. The levers f and f' are also connected by toothed segments so that when the lever f is moved the lever f' is also moved; and the lever f' by means of link f² moves slide f³, which actuates through the levers f⁴ and f⁵ side piece F; and through levers f⁶ f⁷ side piece F'. The studs which form the fulcrums for levers f⁴ f⁵ f⁶ f⁷ are fast to the sole of the last, as indicated in Fig. 4. The levers g and g' are also connected by toothed segments, and lever g' is connected by link g² with lever g³, which actuates instep piece G. In some cases the instep piece should be corrugated on its upper surface, as indicated in Fig. 6, and I therefore make the instep piece so that one, G, can be readily removed and another G' used instead. This is done by making each instep piece with a tang which fits loosely in a socket g⁴, that socket being formed in a casting g⁵ which is rigidly secured on posts g⁶ fast to the sole of the last; and for greater stiffness also connected by screws g⁷ to sides of part A, as clearly shown in the drawings. The levers h and h' are also connected by toothed segments, and lever h' is connected by link h² with lever h³ which is connected by link h⁴ with slide h⁵ which carries toe-piece H. In order to give toe-piece H a slight upward motion as it is forced outward I form a projection h⁶ on the toe part of the sole of last A, and hinge toe piece H to its slide h⁵. Each of the levers d f g and h is supplied with a pawl and ratchet as shown, when it is desired to hold the strain. The pieces A and A' are shown as held together by the cross rods b b' and screws b² b³; in addition a screw b⁴ may be used on each side to connect piece A with A'.

The side pieces F F' are usually formed with one or more holes to receive the tang of additional pieces F² so that the outer surface of either side piece can be varied as desired by shifting these additional pieces F².

When stretching the toe of a boot or shoe with my last the heel piece is first adjusted

so that both heel and toe piece come to a bearing in the shoe; and then the toe piece is forced farther forward, stretching the toe part of the boot or shoe in a manner not hitherto attained.

The instep-piece and mechanism to force it bodily away from the last are also features of my invention.

So far as relates to construction, the last in the form of a shell with the cross rods each supporting a set of levers, with their opposed ends, toothed segments and intermeshing, and the lower ends of the inner set of levers suitably connected to the parts to be moved is a feature of my invention. And the shell last with the inner casting g^5 fast to the sole of the last, and forming a frame for the instep piece and for a portion of its operating mechanism is also a feature of my invention. Also the pair of levers $f f'$ link f^2 slide f^3 levers f^4, f^5 (or $f^6 f^7$) and side piece F (or F') are a sub-combination which is a substantial and material part of my invention; as is the sub-combination of the levers $g g'$ link g^2 lever g^3 and instep piece G ; and the sub-combination of levers $h h'$ link h^2 lever h^3 link h^4 slide h^5 and toe piece H ; and the sub combination of levers $d d'$, rack d^2 and heel piece D .

What I claim as my invention is—

1. In a stretching last the combination with the body of the last of two pairs of levers, fulcrumed on the body of the last; two side pieces hinged each to the outer ends of a pair of levers; a slotted plate engaging pins on the inner ends of both pairs of levers, and devices substantially such as are shown for moving the slotted plate endwise; all substantially as set forth.

2. In a stretching last, two cross rods, across

the rear portion of it; two sets of levers with toothed intermeshing segmental parts; movable portions for stretching the desired parts of the last or shoe; and connections between the inner sets of levers and the movable portions; all substantially as described.

3. A stretching last composed of three main parts $A A'$ and g^5 , each substantially as shown, and forming a hollow shell with an interior strengthening piece; movable portions for stretching the desired parts of the boot or shoe; and mechanism substantially such as is described for actuating the movable portions; the hollow shell $A A'$ and the interior strengthening piece g^5 forming a frame for such mechanism; all substantially as set forth.

4. In combination a last; levers $f f'$; link f^2 ; slotted slide f^3 , levers $f^4 f^5, f^6, f^7$; and side pieces $F F'$; all substantially as described.

5. In combination a last; levers $g g'$; link g^2 ; lever g^3 ; and instep piece G ; the link g^2 connecting lever g' with lever g^3 , and lever g^3 engaging the instep piece G ; all substantially as described.

6. In combination a last; levers $h h'$; link h^2 ; lever h^3 ; link h^4 ; slide h^5 ; and toe piece H ; the link h^2 connecting lever h^3 and slide h^5 ; all substantially as described.

7. In combination a last; segmental lever d ; double segmental lever d' ; rack d^2 ; and heel piece D ; the lever d meshing with the outer segment of lever d' , and the inner segment of lever d' meshing with heel piece rack d^2 , all substantially as described.

J. F. FULLUM.

Witnesses:

J. E. MAYNADIER,
JOHN R. SNOW.