

No. 829,656.

PATENTED AUG. 28, 1906.

W. A. KNIPE.
SOLE CENTERING MACHINE.
APPLICATION FILED DEC. 10, 1904.

FIG. 1.

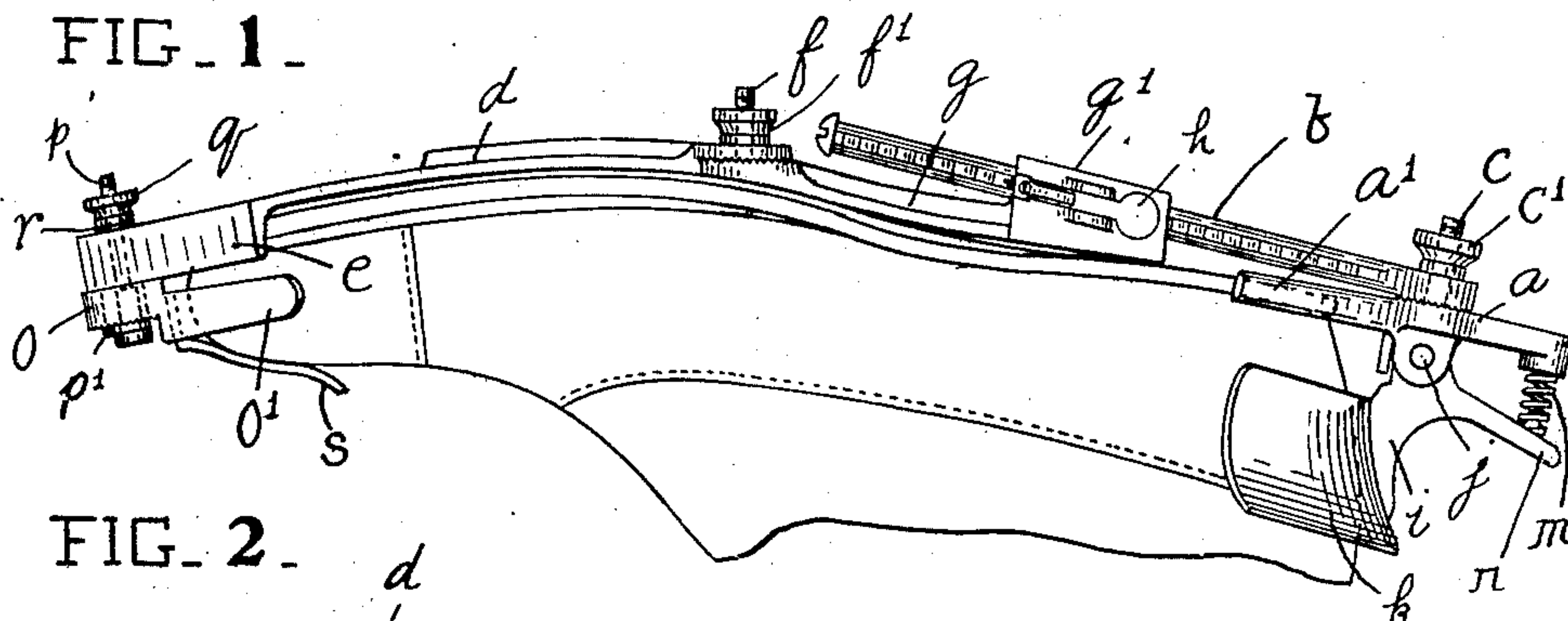


FIG. 2.

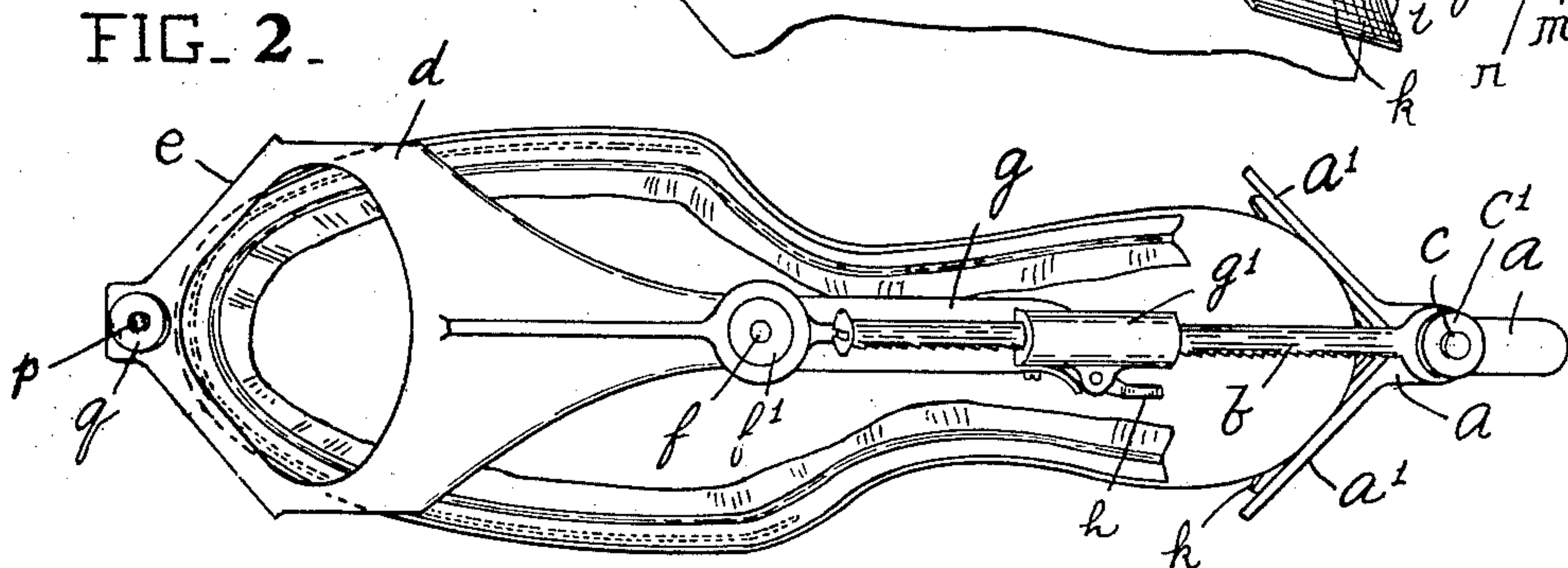


FIG. 3.

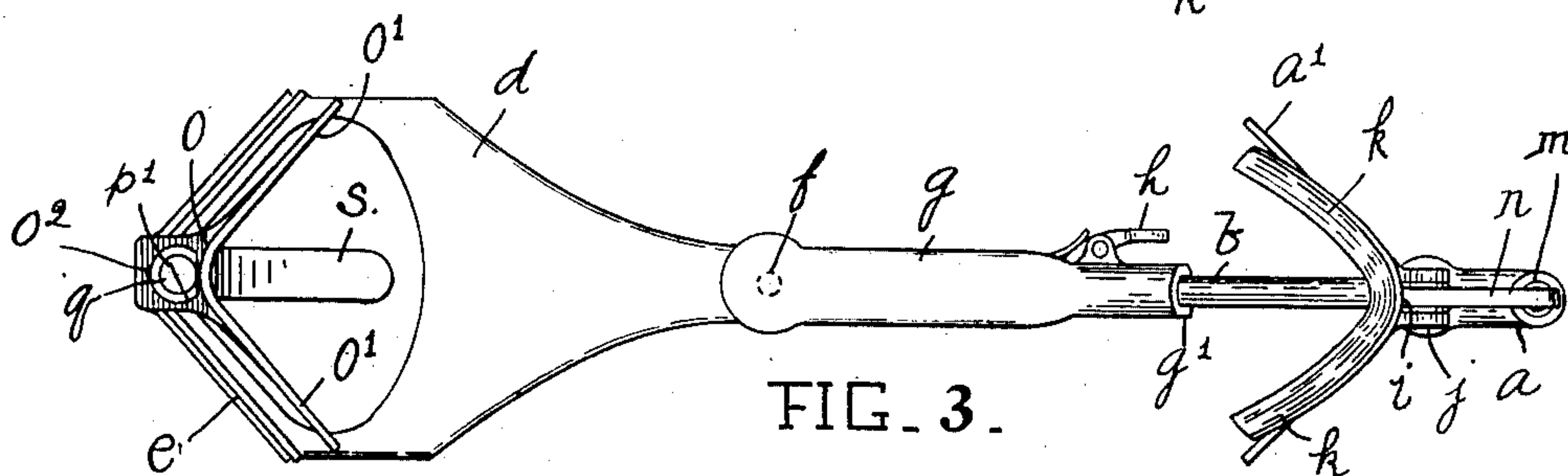


FIG. 4.

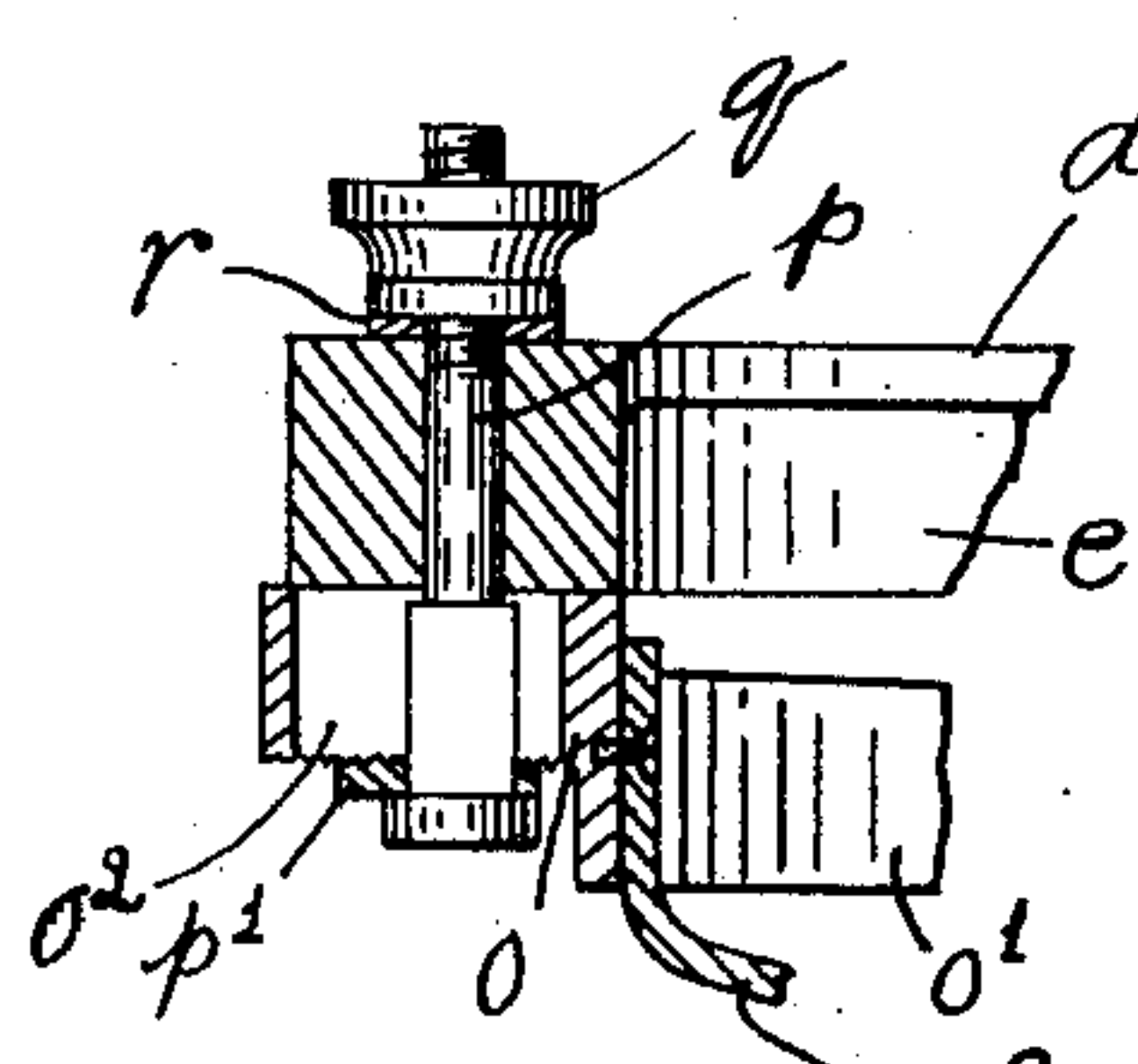


FIG. 5.

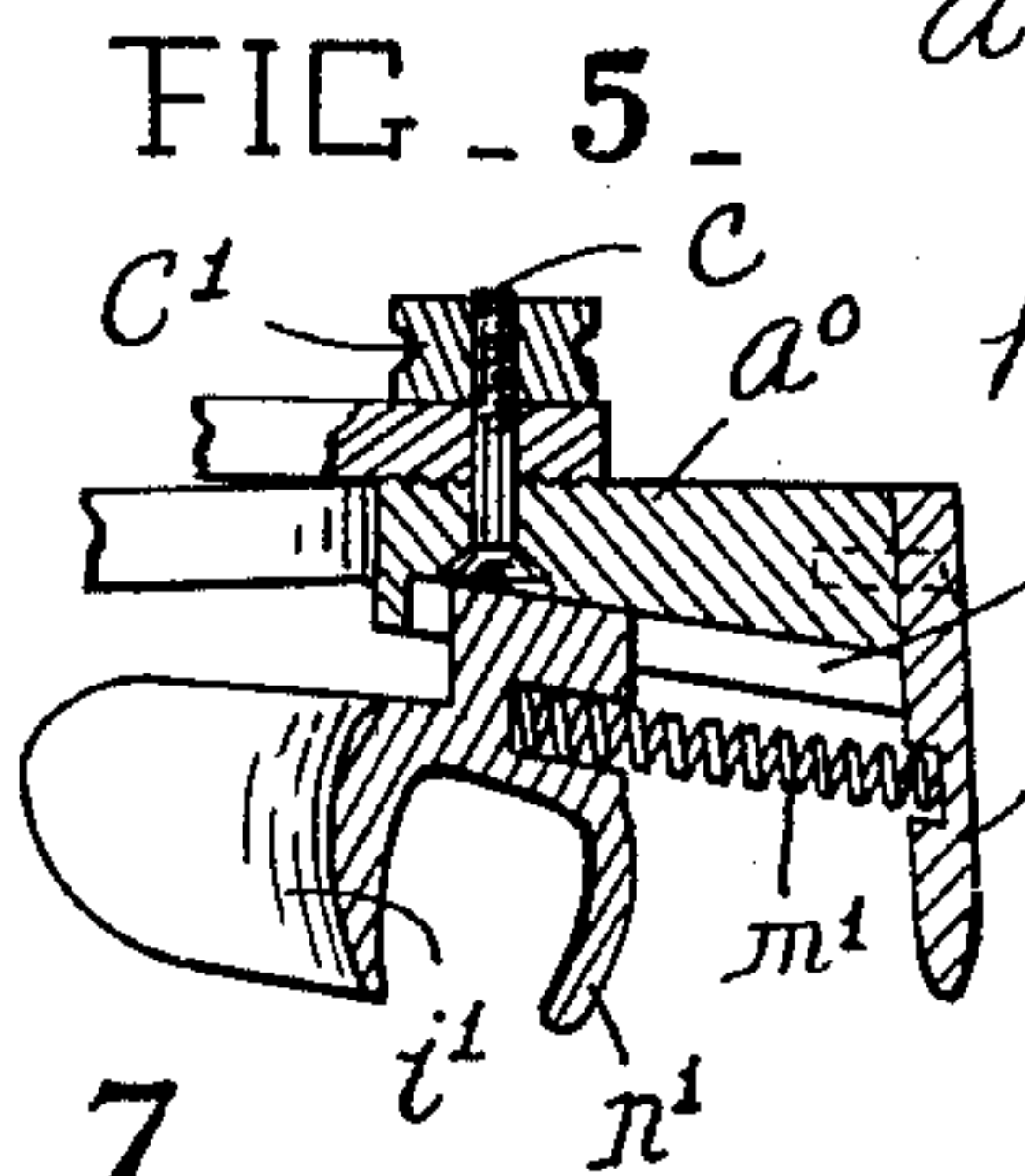
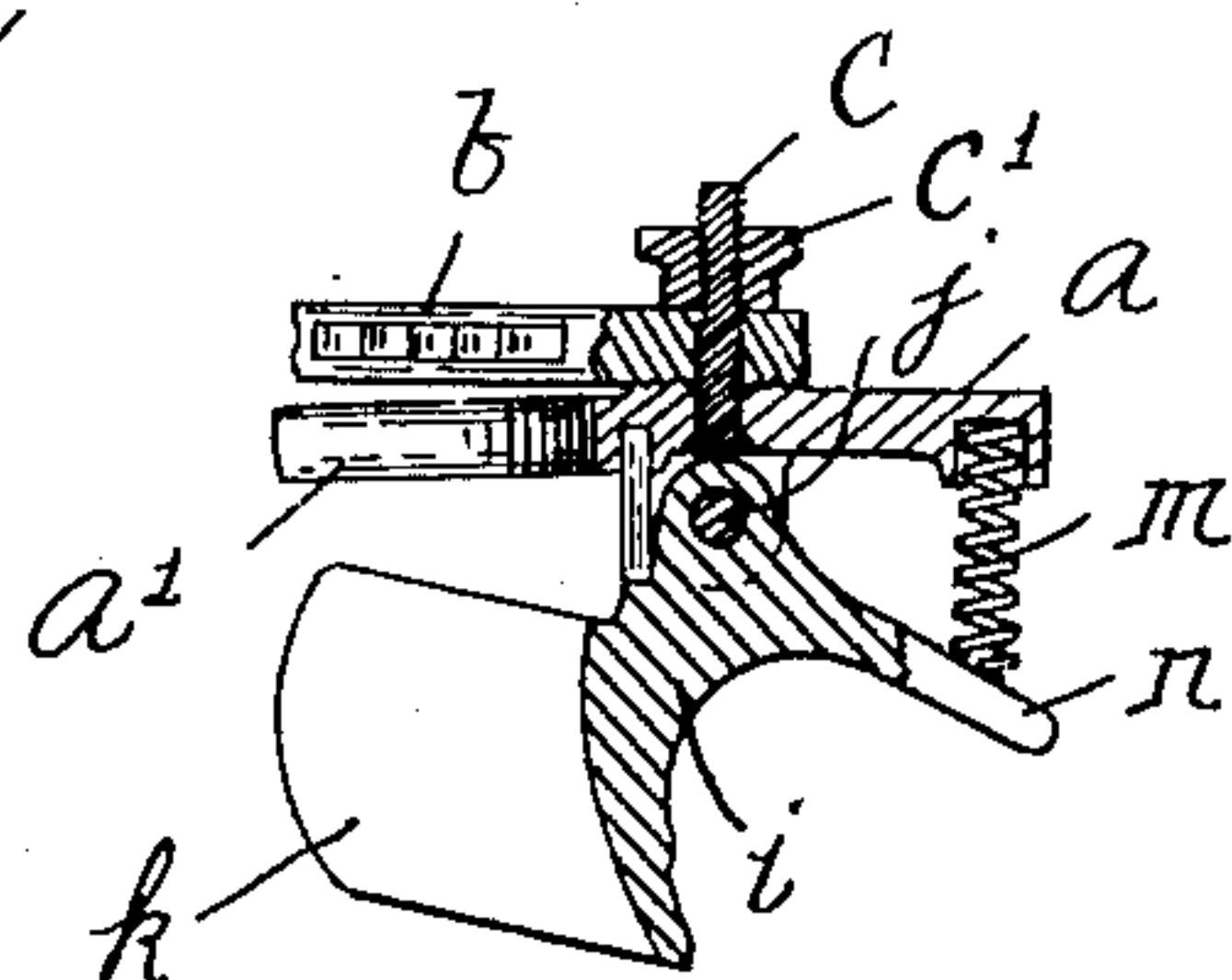


FIG. 6.



Witnesses:

E. A. Jordan.

Max M. Piper.

FIG. 7.

Inventor:

W. A. Knipe
by Royet Hamman
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM A. KNIPE, OF HAVERHILL, MASSACHUSETTS.

SOLE-CENTERING MACHINE.

N. 829,656.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed December 10, 1904. Serial No. 236,316.

To all whom it may concern:

Be it known that I, WILLIAM A. KNIPE, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in Sole-Centering Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 In the process of manufacturing shoes in which the fastening devices for the outer sole pass through the inner sole and edge of the upper, as McKay sewed shoes or shoes in which the outer sole is secured by nails or
15 pegs after the shoe has been lasted, the outer sole is placed in the desired position thereon and is temporarily secured by tacks or nails, so that it will not be moved from this position when it is being secured permanently. In
20 thus adjusting and temporarily securing the sole it is customary for the sole-tacker to adjust the sole in the desired position upon the shoe-bottom while he holds the shoe right side up in his hands and then while thus
25 holding the sole in position to turn it over and press the bottom of the sole against the delivery-nozzle of a tack-driving machine, which is adapted to drive a tack through the sole into the inner sole. The sole is thus se-
30 cured at various points about its edge. Not only does it take a certain amount of time and skill, and care also, to adjust the sole upon the shoe, but it often happens in turning the shoe over and holding it while the
35 tacks are driven through the sole by the machine that the sole slips from the position in which it was placed, so that either the sole will be secured subsequently in an incorrect position or the workman must remove the
40 temporary securing-tacks and begin over again. The principal difficulty, however, is that the soles are often secured in a position not desired, so that the edge-finisher must remove surplus stock from one edge, while
45 the opposite edge will not be as wide as desired.

50 The object of my invention is to provide a simple apparatus which will assist the workman or sole-tacker in quickly and accurately adjusting or centering the sole upon the bottom of the shoe and which will securely hold the sole in the adjusted position until it has been temporarily secured in place, thereby
55 facilitating this operation and enabling it to be performed by comparatively unskilled labor.

In the drawings, Figure 1 is a side elevation of my apparatus in position upon a shoe. Fig. 2 is a top plan view thereof. Fig. 3 is a bottom plan view. Figs. 4, 5, and 6 are detail sectional views taken on the central longitudinal line of the apparatus. Fig. 7 is a sectional view of a modified form of heel-holding clamp.

The construction of my device may be described as follows:

A sole-engaging clip *a*, having two diverging centering-arms *a'*, is provided, said clip being pivotally connected to a ratchet-bar *b* by means of a bolt *c*, on which a nut *c'* is threaded, so that the bar *b* may be locked approximately parallel to the plane of said arms *a'* and at various angles with relation to the plane which bisects the angle between and is perpendicular to the plane of said arms. A skeleton frame *d* is provided with diverging centering-flanges *e*, which project vertically therefrom at one end, and is pivotally connected at its other end to one end of a flat bar *g* by means of a vertical bolt *f*, on which a clamping-nut *f'* is threaded, the engaging surfaces of frame *d* and bar *g* preferably being corrugated. The opposite end of bar *g* is provided with a lug *g'*, which is longitudinally bored to receive the ratchet-bar *b*. A spring-pressed pawl *h* is pivoted on the lug *g'* and is arranged to engage the ratchet-teeth upon the bar *b*, the teeth and pawl being respectively arranged so that the clip *a* may be pushed toward the frame *d*, but may not be moved in the opposite direction without pressing down the pawl *h*. It will be understood that the frame *d* and bars *g* and *b* practically constitute a jointed extensible base-plate.

A clamping-lever *i*, having diverging heel-centering arms *k*, is pivotally connected at *j* to the under side of the clip *a*, the engaging faces of said arms *k* and *a'* being so arranged with respect to each other that the respective angles therebetween have a common bisecting-plane. A spring *m* is interposed between a rearwardly-projecting arm *n* on the lever *i* and the under side of the clip *a*. A clip *o*, having diverging centering-arms *o'*, is pivotally and adjustably connected to the under side of the frame *d* by means of a bolt *p*, having a nut *q* threaded thereon, said bolt *p* passing through said frame and through a longitudinally-extending slot *o²*, formed in the stem portion of the clip. The under surface of the clip *o* is preferably corrugated,

and a corrugated washer p' is provided between the head of the bolt and said corrugated surface, so that the clip o may be securely held in any longitudinal or angular position to which it may be adjusted. A friction-washer r is preferably provided between the nut q and the upper side of the frame d , so that the force necessary to swing the clip o with bolt p as a pivot may be varied. A toe-retaining spring s is secured to clip o at the vertex of the angle between its arms o' and extends midway of and at the opposite side of said arms from frame d .

The manner in which my device is employed is as follows: The outer sole is first placed on the frame d with its toe and heel ends, respectively, between the flanges e and arms a' , the clip a being pressed toward frame d until the sole is firmly clamped therebetween, separation of the sole-engaging devices being prevented by the pawl h . The toe of the shoe is then placed between the arms o' of the clip o and between the springs and sole and is pressed against the latter, and the arm n is pressed toward the clip a , moving the arms k away from the heel of the shoe, so that when arm n is released the spring m will force arms k against the heel of the shoe, firmly clamping the same between said arms and arms o' and pressing the outer sole and bottom of the inner sole firmly together and holding them in this position. As the arms a' and k are held in a fixed relation so far as their common bisecting-plane is concerned, the heel ends of the outer sole and the upper portion of the shoe will be automatically centered, and if it is desired to have the width of the edge on one side of a shoe the same as on the other in the fore part the clip o will be adjusted so that its arms are parallel to flanges e on the frame, so that the upper portion of the shoe and outer sole will also be centered at the toe end. In case, however, a wider extension edge is desired on the outer side of the shoe than on the inner, as is often the case, the workman may move the toe portion of the upper transversely upon the sole until the two are held in the desired relation, the friction-washer aiding in holding the parts in the adjusted position. The parts may then be locked, as a single adjustment will usually serve for similar shoes. The shoe may then be turned over and the sole secured in the usual manner, and as the frame d is made open, so that it covers but a small portion of the sole, ample space is provided in which the tacks may be driven through the sole to secure it to the inner sole, the apparatus securely holding the outer sole in the position in which it is placed while the nails are being driven. The apparatus is then removed by simply depressing the pawl h , so that the heel-section may be moved out of engagement with the heel of the upper and sole.

In shoes which are made as rights and lefts the longitudinal center lines of the heel and toe are often not coincident, the extent of variation of the degree of obliquity of these lines being very marked in many instances. In order that the bisecting-lines of the arms a' and flanges e may be respectively coincident with said center lines, the pivot-bolt f is provided in the frame, and the pivot-bolt c is employed to connect the rack-bar and clip a and permitting said parts to be adjusted according to the obliquity of said center lines, the nuts on said pivot-bolts being tightened when the desired adjustment has been secured.

Various changes may be made without departing from the spirit and scope of my invention. For example, the clip i' for engaging the heel of the upper may be slidably mounted on the under side of clip a' , as shown in Fig. 7, instead of being pivoted thereto, the ways j' , in which the clip is mounted, being inclined so that it may move obliquely toward the arms a' . A finger-piece n' is formed with said clip i' , and a spring m' is interposed between a transversely-projecting lug a^3 and said clip i' . The action of the heel-engaging clip thus slidably mounted is substantially the same as if it were pivoted, except that it may be moved through a greater distance.

While the part designated as the "frame" is shown as extending over the bottom of the sole, it will be understood that such location is by no means essential and that any supporting means for the sole and upper centering and holding means falls within the spirit and scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An apparatus for the purpose described, comprising a pair of connected upper-holding devices, and a pair of sole-centering devices connected to said upper-holding devices, for adjusting the sole to and holding it in a desired position on the bottom of the upper portion of the shoe, substantially as described.

2. An apparatus for the purpose described comprising a sole-support, and an upper-centering device and a sole-centering device connected to each end of said support for holding the upper and sole in a desired relation thereon, substantially as described.

3. An apparatus for the purpose described, comprising an extensible support, an upper-centering device connected to each end of said support for holding the upper portion of the shoe in a desired position with relation thereto, and a sole-centering device also connected to each end of said support for holding the sole in a desired position upon said upper portion of the shoe, substantially as described.

4. An apparatus for the purpose described comprising an extensible support and means for locking the same in various positions of adjustment, an upper-centering device connected to each end of said support for holding the upper portion of the shoe in a desired position with relation thereto, and a sole-centering device also connected to each end of said support for holding the sole in a desired position upon said upper portion of the shoe, substantially as described.

5. An apparatus for the purpose described comprising an extensible support, an upper-centering device connected to each end of said support for holding the upper portion of the shoe in a desired position with relation thereto, and a sole-centering device also connected to each end of said support for holding the sole in a desired position upon said upper portion of the shoe, and locking means for said support normally permitting movement of its end portions toward each other, and preventing movement in the opposite direction, substantially as described.

6. An apparatus for the purpose described comprising a support, an upper-clamping device and a sole-clamping device connected to and oppositely disposed at each end of said support and each having diverging engaging faces, substantially as described.

7. An apparatus for the purpose described comprising a sole-support, sole centering and clamping devices connected to one side thereof at each end, and centering and clamping devices for the upper portion of the shoe connected to each end of said support and disposed at the opposite side of said sole clamping devices from said support, substantially as described.

8. An apparatus for the purpose described, comprising a sole-support, sole centering and clamping devices connected to one side thereof at each end, and centering and clamping devices for the upper portions of the shoe connected to each end of said support and disposed at the opposite side of said sole-clamping devices from said support, and means permitting movement of one of said devices transversely of the frame, substantially as described.

9. An apparatus for the purpose described comprising a support, an upper-clamping device connected thereto at each end, a sole-clamping device, likewise connected to said support at each end, for holding the sole in the desired position upon the upper portions of the shoe, and means permitting relative movement of adjacent sole and upper clamping devices transversely of the shoe, substantially as described.

10. An apparatus for the purpose described comprising a sole-support, sole-clamping devices having diverging engaging faces oppositely disposed at each end of said support, correspondingly shaped and dis-

posed upper-clamping devices connected to said support at the opposite side of said sole-clamping devices from said support, and means permitting variation in the obliquity of the lines which bisect the angles between each pair of said faces at opposite ends of said support, substantially as described.

11. An apparatus for the purpose described comprising a support jointed at an intermediate point therein, and a pair of sole and upper clamping and centering arms at each end thereof having diverging faces and disposed in planes approximately perpendicular to the pivot of said joint, substantially as described.

12. An apparatus for the purpose described comprising a support, a sole-clamping device and an upper-holding clip connected to each end of said support, said sole-clamping devices being arranged between said clips and said support, and a spring for moving one of said clips toward the other, substantially as described.

13. An apparatus for the purpose described comprising a frame, a pair of oppositely-disposed sole-clamping devices and a pair of oppositely-disposed upper-holding clips, one of each pair being connected to each end of said frame, and said sole-clamping devices being arranged between said clips and the frame, and means permitting movement of the heel-engaging clip toward the toe-clip and toward the frame, substantially as described.

14. A device for the purpose described comprising a frame, a pair of oppositely-disposed sole-clamping devices and a pair of oppositely-disposed upper-holding clips, one of each pair being connected to each end of said frame, and said sole-clamping devices being arranged between said clips and the frame, and spring-actuated means, for moving the heel-clip toward the toe-clip and the frame simultaneously, substantially as described.

15. An apparatus for the purpose described comprising a pair of connected sole-centering devices having diverging faces adapted to engage the edges of the sole at each end thereof, means connected thereto for engaging the bottom side of the sole, a pair of upper centering and holding devices connected to said sole-centering devices at the opposite side thereof from said bottom-engaging means and means engaging said upper-holding and sole-centering devices, for pressing the sole and bottom of the upper portion of the shoe together, substantially as described.

16. An apparatus for the purpose described comprising a support, a sole-centering and holding device oppositely disposed and connected to each end of said support, and spring-actuated, upper-holding means for simultaneously engaging each end of the

upper portion of the shoe and pressing it against the sole, substantially as described.

17. An apparatus for the purpose described comprising a support, a pair of oppositely-disposed sole-clamping devices connected to each end thereof, upper-clamping clips at the opposite side of said sole-clamping devices from said support and connected thereto, and a toe-engaging spring extending
15 between said clips for pressing the toe portion of the upper against the sole, substantially as described.

18. An apparatus for the purpose described comprising a longitudinally-extensi-

ble sole-support, a pair of sole-centering arms
15 connected thereto at each end, an upper-centering clip connected to each of said pair of arms, and means permitting adjustment of one of said clips longitudinally and transversely of said support, substantially as de-
20 scribed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM A. KNIPE.

Witnesses:

LOUIS H. HARRIMAN,
MAUD M. PIPER.