

W. C. STEWART.  
 WORK SUPPORT FOR BOOT AND SHOE MACHINES.  
 APPLICATION FILED MAR. 31, 1909. RENEWED FEB. 21, 1910.

958,042.

Patented May 17, 1910.

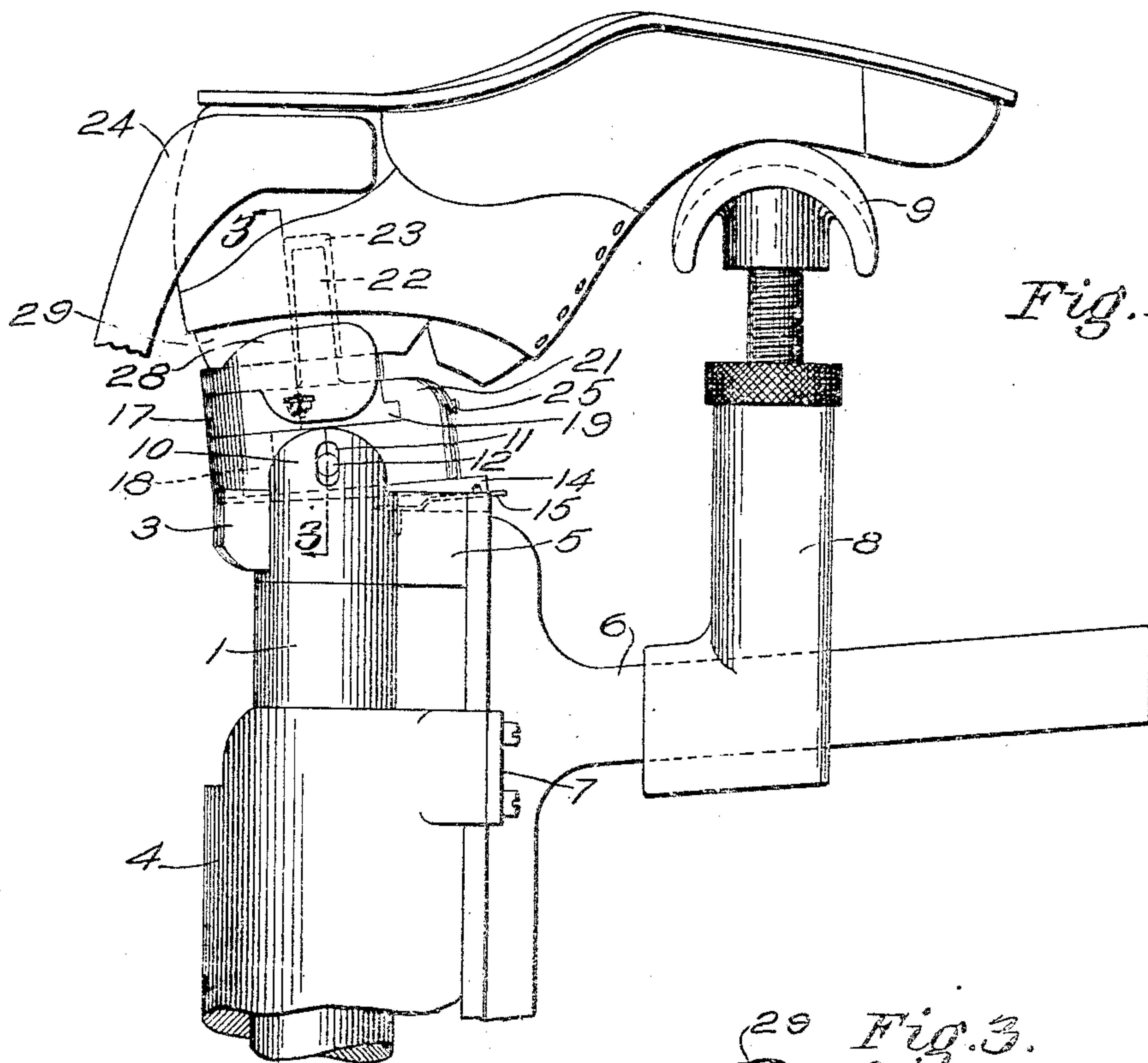


Fig. 1.

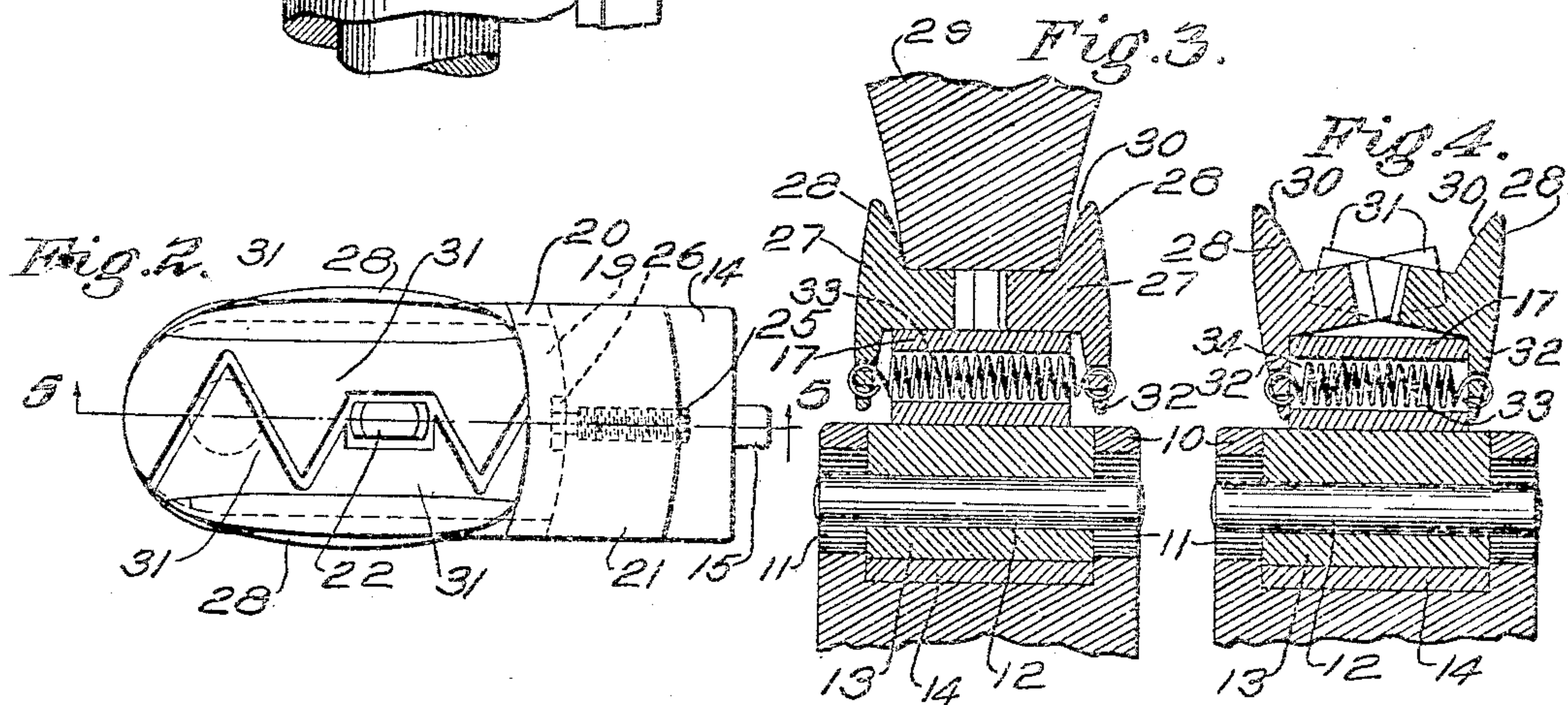


Fig. 2.

Fig. 3.

Fig. 4.

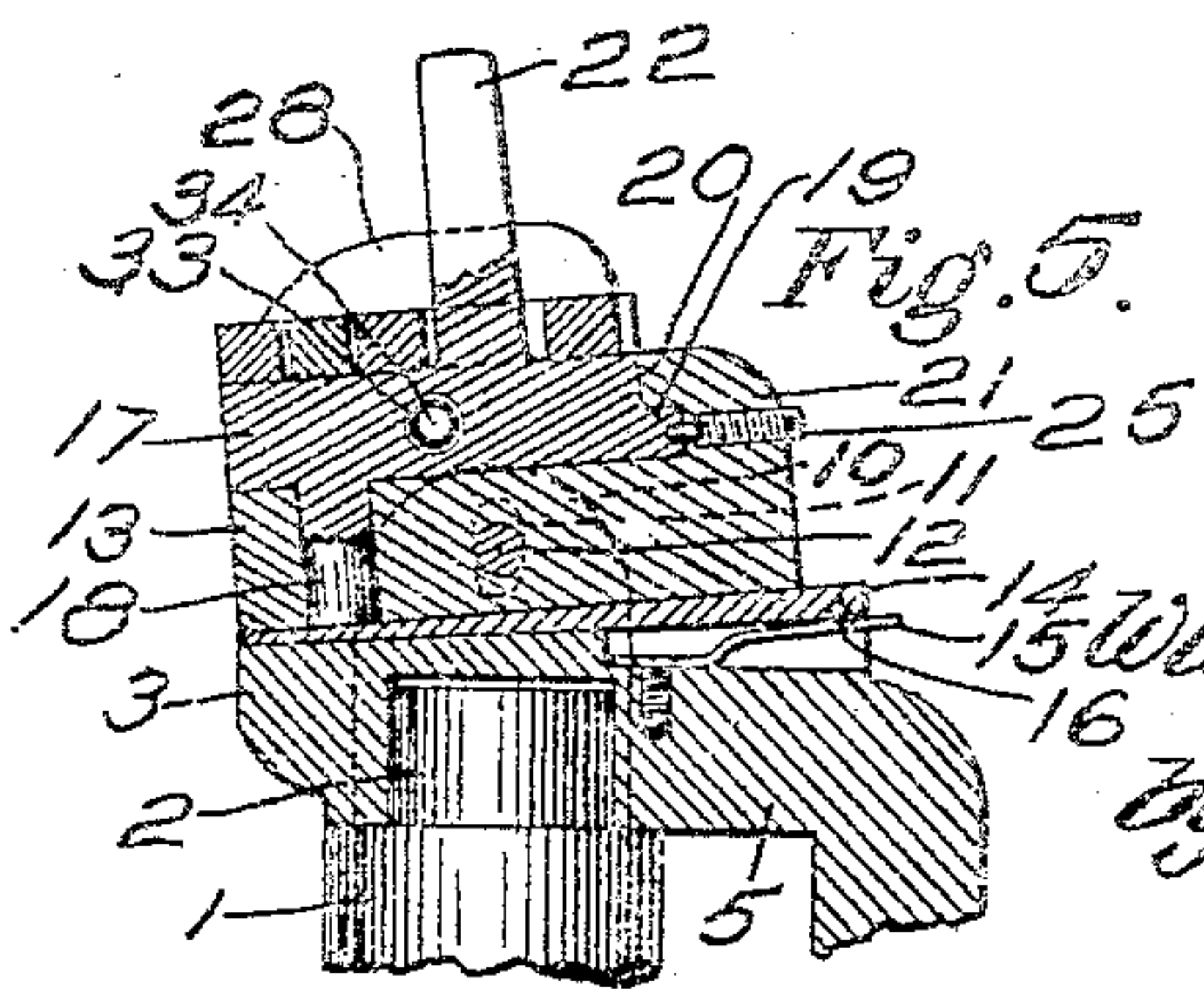


Fig. 5.

Witnesses:  
 Roswell F. Hatch  
 Redfield H. Allen

Inventor:  
 William C. Stewart  
 by Robt. D. Harris,  
 Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM C. STEWART, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THOMAS G. PLANT,  
OF BOSTON, MASSACHUSETTS.

WORK-SUPPORT FOR BOOT AND SHOE MACHINES.

958,042.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed March 31, 1909, Serial No. 487,007. Renewed February 21, 1910. Serial No. 545,238.

*To all whom it may concern:*

Be it known that I, WILLIAM C. STEWART, a subject of the King of Great Britain, residing at Lynn, in the county of Essex and State of Massachusetts, have invented an Improvement in Work-Supports for Boot and Shoe Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

The invention to be hereinafter described relates to boot and shoe supports or jacks employed in the manufacture of boots or shoes. In a prior application, Serial No. 385,848, filed July 28, 1907, there is shown, described and broadly claimed a jack for boot and shoe lasts having last supporting members adapted to slide toward and from each other and engage the last to prevent it from splitting during treatment of a shoe upon the last, and also there was shown, described and broadly claimed a character of jack or last support having swinging movement about an axis substantially coincident with the back seam at the back of the heel of the shoe.

The present invention is a development of the above and is characterized by features of structure the object of which will best be understood from the following description and accompanying drawings of one form of means for carrying the invention into practical effect.

In the drawings: Figure 1 is a side elevation showing a last supported on a jack or support embodying the features of the present invention; Fig. 2 is a plan view of the parts shown in Fig. 1, with the last removed; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a similar section with the last removed; and Fig. 5 is a section on the line 5—5, Fig. 2.

In the particular embodiment of the invention illustrated, the jack post 1 has an upper portion 2, Fig. 5, adapted to engage a complementary portion or seat in the post head 3, and is, as usual, adjustable vertically in a jack guiding sleeve 4, Fig. 1. Projecting from the post head 3 is an arm 5 carrying a toe supporting finger or arm 6 which is suitably guided by devices 7 connected to the sleeve 4, and has mounted thereon the toe rest standard 8 carrying any desired form of toe rest 9, as indicated in Fig. 1.

The post head 3 has upwardly projecting side members 10, shown by full lines in Fig. 1 and by dotted lines in Fig. 5, and said side members have appropriate slots or elongated apertures 11 adapted to receive a pin 12 extending transversely of the part 13 which, for identification, may hereinafter be identified as the last head.

As well known by those skilled in the art, it is frequently desirable to tilt the shoe in a longitudinal direction upon its support by reason of variation in the plane of the tread surface of the heel or other part of the shoe to be treated. In ordinary practice, it is found that there are approximately three different inclinations or variations for which provision should be made, and the present invention contemplates the provision of a series of wedges which may be interposed between the post head and last head to provide for such variations in the plane of the tread surface to be treated. Obviously, the number of wedges and, consequently, the number of different variations that may be given the last head may be varied, but ordinarily three of such wedges will be sufficient.

Disposed between the post head and last head is a wedge 14, the angular relation of its wedging surfaces being made to suit the particular inclination to be given to the last head. This wedge 14 is removable from between the last head and post head and is normally held in position between said heads by means of a catch 15, Figs. 1 and 5, said catch comprising a spring having a pin 16 to engage in a suitable recess in the under surface of the wedge 14.

From the construction thus far described it will be apparent that any desired inclination may be given the last head by simply depressing the catch 15, withdrawing the wedge 14, and substituting therefor another. It will be noted also that the last head 13 will be turned or tilted on a varying fulcrum to the rear of a last pin or to the rear of the transverse pin 12, the pin and slot connection 11 and 12 between the last head and side members 10 of the post head permitting the use of different characters of wedges and, consequently, variation in the fulcrum about which the last head tilts, as will be readily understood by those skilled in the art.

Pivotally connected to the rear portion of the last head 13 is the swinging head 17, its



pivotal connection with the last head being formed by a pin 18 projecting from the swinging head and engaging a suitable socket in the last head, said pin and socket being disposed to the rear of the last pin, as will presently appear. The swinging head 17 has a forwardly projecting flange part 19, Fig. 5, which engages beneath a shoulder 20 formed in the upturned portion 21 of the last head, whereby, while said swinging head 17 may turn laterally with respect to the last head upon an axis furnished by the pin 18, it will be held in position on the last head by means of the coacting parts 19 and 20.

Projecting upward from the swinging head 17 is the last pin 22 adapted to engage a suitable socket 23 in the last, as indicated by dotted lines in Fig. 1. As indicated in Fig. 1, the last pin 22 is of smaller external dimensions than the socket 23 in the last which it engages, wherefore the last may have a certain amount of freedom of movement on the last pin due to the loose fit between the last pin and its engaged socket in the last.

As well understood by those skilled in the art, in some form of machines wherein a last supporting jack is employed, the shoe and its contained last may be positioned by means of counterclamps 24, Fig. 1, said counterclamps being disposed to engage opposite side portions near the heel of the shoe, as pointed out in application Serial No. 414,707, filed February 6, 1908, so that when the jack with the lasted shoe thereon is moved between the counterclamps, the free support of the last by the pin 22 will permit the shoe to conform, in part at least, to the demands of the counterclamps. It is usual, of course, to treat shoes, both rights and lefts, upon the same jack, and in order to permit swinging movement suitable for this purpose the swinging head 17 is given its characteristic capacity to swing transversely of a last head. Means are preferably provided to limit or define the swinging capacity of the swinging head 17, said means being in the form of a catch or like device, and in the present form of the invention being indicated as a screw 25, the end of which projects through the upwardly extending portion 21 of the last head and engages a socket 26 in the front edge portion of the flange 19 projecting forwardly on the swinging head 17.

It will be obvious from the construction indicated that as the shoe is moved between the counterclamps in the usual manner, as well understood by those familiar with this class of devices, the lasted shoe may accommodate itself to the demands of the counterclamps and that the swinging head 17 may move laterally to the right or left according as a right or left shoe is being treated, the

catch or screw 25 defining the limit of such lateral swing.

Loosely mounted upon the swinging head 17 are the sliding and swinging last supporting members 27, preferably one at each side. Each of these last supporting members 27 has an upwardly projecting flange portion 28, which, when the last 29 is in place upon its supporting members, as indicated in Fig. 3, engages the side portions of the last and prevents splitting thereof as the last is forced downward or upon its supporting members, as will be obvious. The inner surfaces 30 of the flange portions 28 are preferably flared outwardly from their base portions, as indicated in Figs. 3 and 4, for a purpose that will presently appear.

Each of the last supporting members 27 has a last supporting portion 31 extending transversely of the swinging head and interlocked with each other by complementary projections and recesses, as indicated in Fig. 2, the construction being such that each of the supporting members 31 projects transversely of the swinging head to the opposite side of the median line thereof, so that when the last is seated upon its supporting members, as indicated in Fig. 3, and pressure is brought thereon, any splitting tendency of the last due to such force will be, in part at least, overcome by the fact that the supporting surfaces or members 31, which must move outwardly to permit such splitting, engage the top or crown of the last and counteract the splitting tendency, as will be obvious.

Each of the last supporting members 28 is provided with a downwardly projecting portion or lug 32 furnishing means for connection with said last supporting members of the transversely disposed spring 33 which passes through a transverse perforation 34 in the swinging head and has its ends connected respectively to the projections or portions 32 of the last supporting members. It will be noted that the downwardly projecting portions 32 have their inner surfaces flaring outwardly somewhat, the effect being that under the tension of the spring 33 connecting these portions, the sliding last supporting members are tilted into the position indicated in Fig. 4, wherein their supporting surfaces 31 project diagonally upward.

It is to be noted that the sliding and last supporting members are not hinged to or jointly connected with the swinging head but merely rest thereon and under the tension of the spring 33 are tilted with their flange portions 28 disposed outwardly and their supporting surfaces 31 projecting upwardly as in Fig. 4. In other words, the last supporting members 27 are free to slide transversely of the swinging head against the tension of the spring 33, and, likewise, against the tension of the spring 33 the same



members may turn upon the swinging head when the last is forced downward upon its supporting surfaces.

From the construction described with respect to the last supporting members, it will be apparent that when a last 29 is engaged with a last pin 22 and moved downward, it will contact with the inclined or flaring surface 30 on the inside of the flange portions 28 and cause the last supporting members to slide outwardly one with relation to the other according to the size of the top or crown of the last then being used, and as the said last supporting members thus slide outwardly and accommodate themselves to the size of the last, and the latter moves downwardly, it comes in contact with the supporting surfaces 31 of the last supporting members and tilts them downwardly, thereby bringing the flange portions 28 firmly against the outside surfaces of the last, as indicated in Fig. 3.

Obviously, many changes and variations may be made in the features of the above described construction without departing from the spirit of the present invention and it is to be understood that the invention is not circumscribed by the particulars of detail, and that applicant regards himself as the first to provide last supporting members which have both a sliding and a tilting movement upon their support to embrace the crown or top of the last and accommodate themselves automatically thereto as the last is moved to last supporting position.

What is claimed is:

1. A jack comprising a head, last supporting members mounted to slide transversely and tilt upon said head, and yielding means for restraining the sliding separation of said members.

2. A jack provided with last supporting means, said means comprising automatically adjusting members mounted to slide transversely and tilt and having portions to engage the sides of the last.

3. A jack comprising a head, and last supporting members mounted on said head to slide and tilt toward and from each other in conforming themselves to the last, said members being provided with flange portions to engage the outer surface of the last supported on said jack.

4. A jack having a head, and last supporting members supported by said head to slide and tilt transversely thereof.

5. A jack having a head, last supporting members supported by said head to slide and tilt transversely thereof, and means acting normally to prevent sliding separation of said members.

6. A jack having a head, last supporting members supported by said head to slide and tilt transversely thereof, and yielding means acting normally to prevent sliding

separation of said members and maintain them in tilted position on said head.

7. A jack having a head, last supporting members loosely mounted to slide thereon, and a spring acting normally to tilt said members transversely on said head and separate their last engaging portions.

8. A jack having a head, last supporting members loosely mounted to slide thereon and having portions to engage the sides of a last, and means acting normally to tilt said members and separate the last engaging portions.

9. A jack having a head, last supporting members having last supporting surfaces and portions to engage the sides of the last, said members being mounted to slide and tilt transversely of said head, and means to tilt the said members to separate the side engaging portions and raise the last supporting surfaces.

10. A jack having a head, last supporting members having overlapping last supporting surfaces and portions to engage the sides of the last, said members being mounted to slide and tilt transversely of said head, and means to tilt the said members to separate the side engaging portions and raise the last supporting surfaces.

11. A jack having a head, last supporting members mounted to slide and tilt transversely thereon and having upwardly projecting flange portions provided with inclined surfaces to engage the sides of the last, and a spring acting normally to tilt the said members and separate the flange portions and permit sliding separation of said members as the last is placed upon the jack.

12. A jack having a head, last supporting members having overlapping last supporting surfaces extending transversely of the head, and means to tilt said last supporting members on the head and maintain the last supporting surfaces in raised position to be engaged by the crown or top of the last as it is forced to place and cause the last supporting members to tilt in opposition to said means.

13. A jack having a last supporting head, and a last pin, and means for tilting said head about a varying fulcrum in rear of the last pin.

14. A jack having a last supporting head and a last pin, and a wedge means for tilting said head about a varying fulcrum in rear of the last pin.

15. A jack having a last supporting head, a swinging head carrying a last pin and mounted on said last supporting head, a post head, and a removable wedge interposed between the post head and last supporting head.

16. A jack having a last supporting head, a swinging head carrying a last pin and mounted on said last supporting head, a post



head, a removable wedge interposed between the post head and last supporting head, and a catch for holding the removable wedge in position between said heads.

5 17. A jack having a last supporting head, a swinging head mounted on the last supporting head and having a last pin, said swinging head being free for movement transversely to one or the other side of the  
10 last supporting head about a center at the rear of said head, and means to limit the extent of such free swinging movement.

18. A jack having a last supporting head, a swinging head mounted on the last supporting head and having a last pin, said  
15 swinging head being free for movement transversely of the last supporting head, means to limit the extent of such free swinging movement, and a wedge for tilting the  
20 last supporting head.

19. A jack having a post head, a last supporting head, a slot and pin connection between said heads, a last pin sustained by the last supporting head, and a wedge inter-  
25 posed between the post head and last supporting head to determine the backward tilt of the last pin.

20. A jack having a last supporting head, a swinging head mounted on the last sup-

porting head and having a last pin, said 30 swinging head being free for movement transversely to one side or the other of the last supporting head about a center at the rear of said head, and a catch mounted on the last supporting head and engaging a 35 portion of the swinging head to limit the amplitude of free swinging movement permitted to the swinging head.

21. A jack having a last supporting head, a swinging head pivotally connected at its 40 rear portion to the last supporting head, means connecting the swinging head and last supporting head at the free end of the swinging head permitting free swinging 45 movement of the swinging head transversely to one side or the other of the last supporting head about its pivotal connection at the rear of the swinging head, and slot and pin connections between the swinging head and last supporting head to limit the free swinging movement of the swinging head.

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

WILLIAM C. STEWART.

Witnesses:

ROSWELL F. HATCH,  
REDFIELD H. ALLEN.