

E. BAYARD.
MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.
APPLICATION FILED MAY 31, 1907.

918,486.

Patented Apr. 13, 1909.

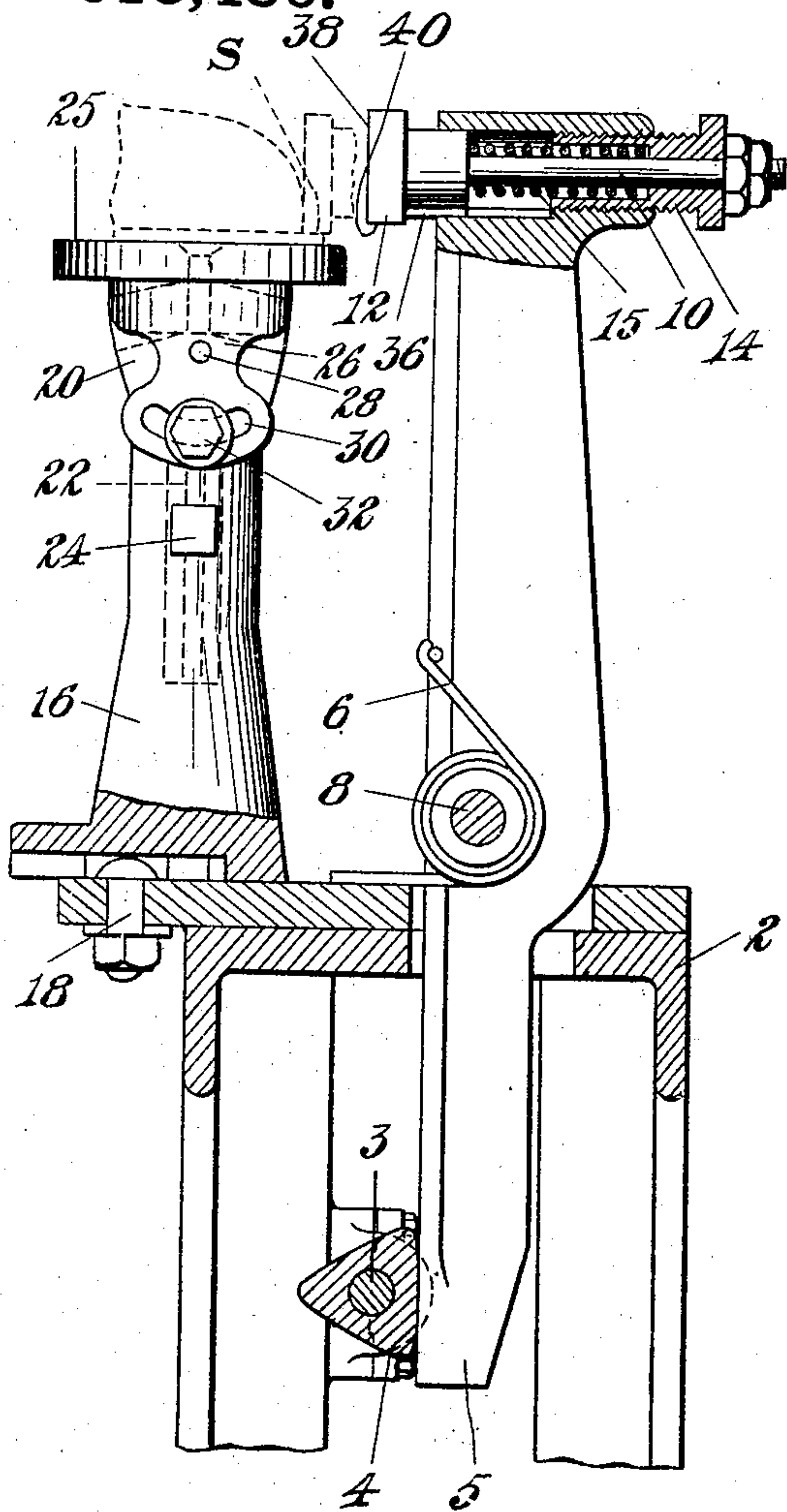


Fig. 1.

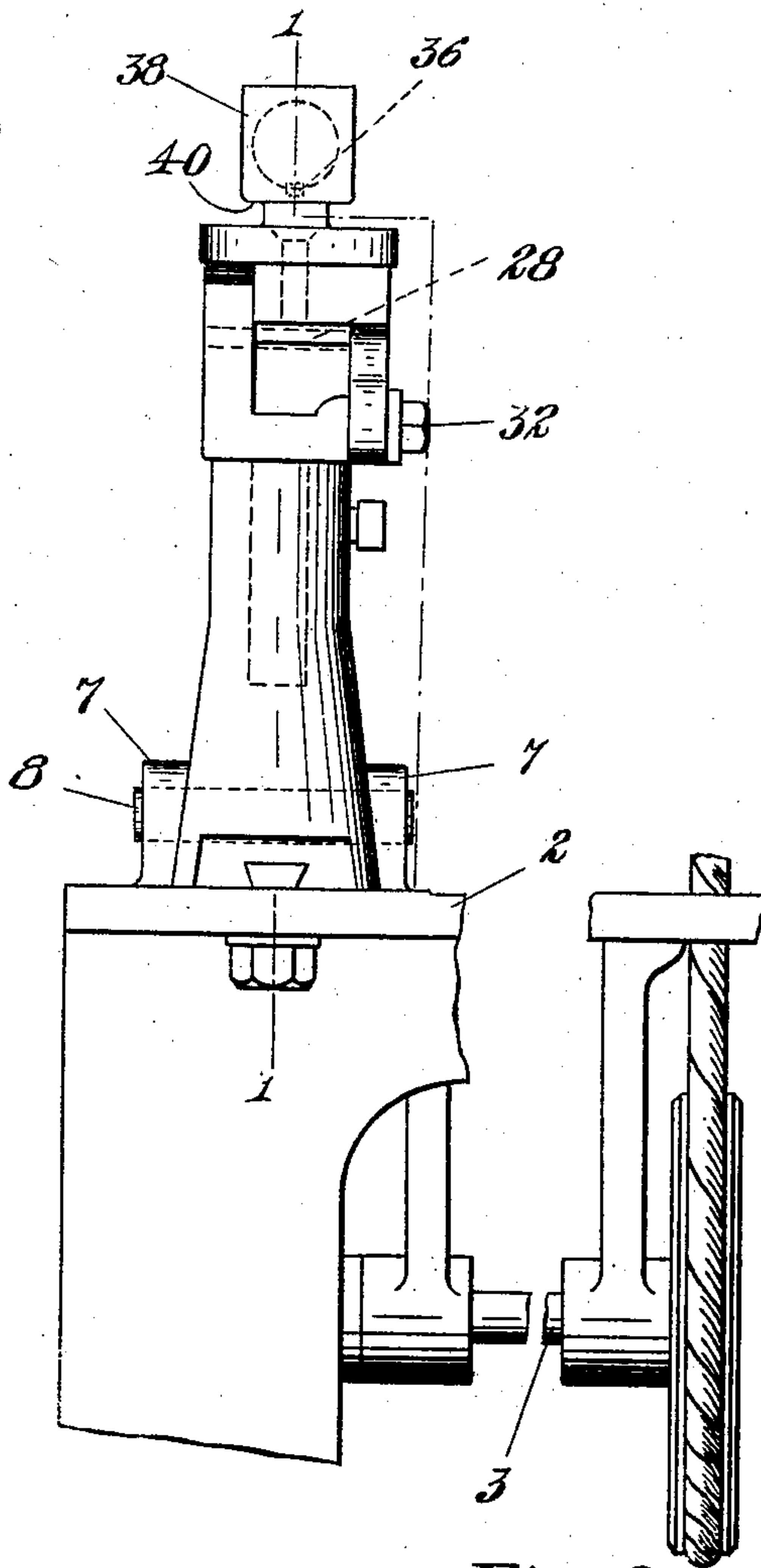


Fig. 2.

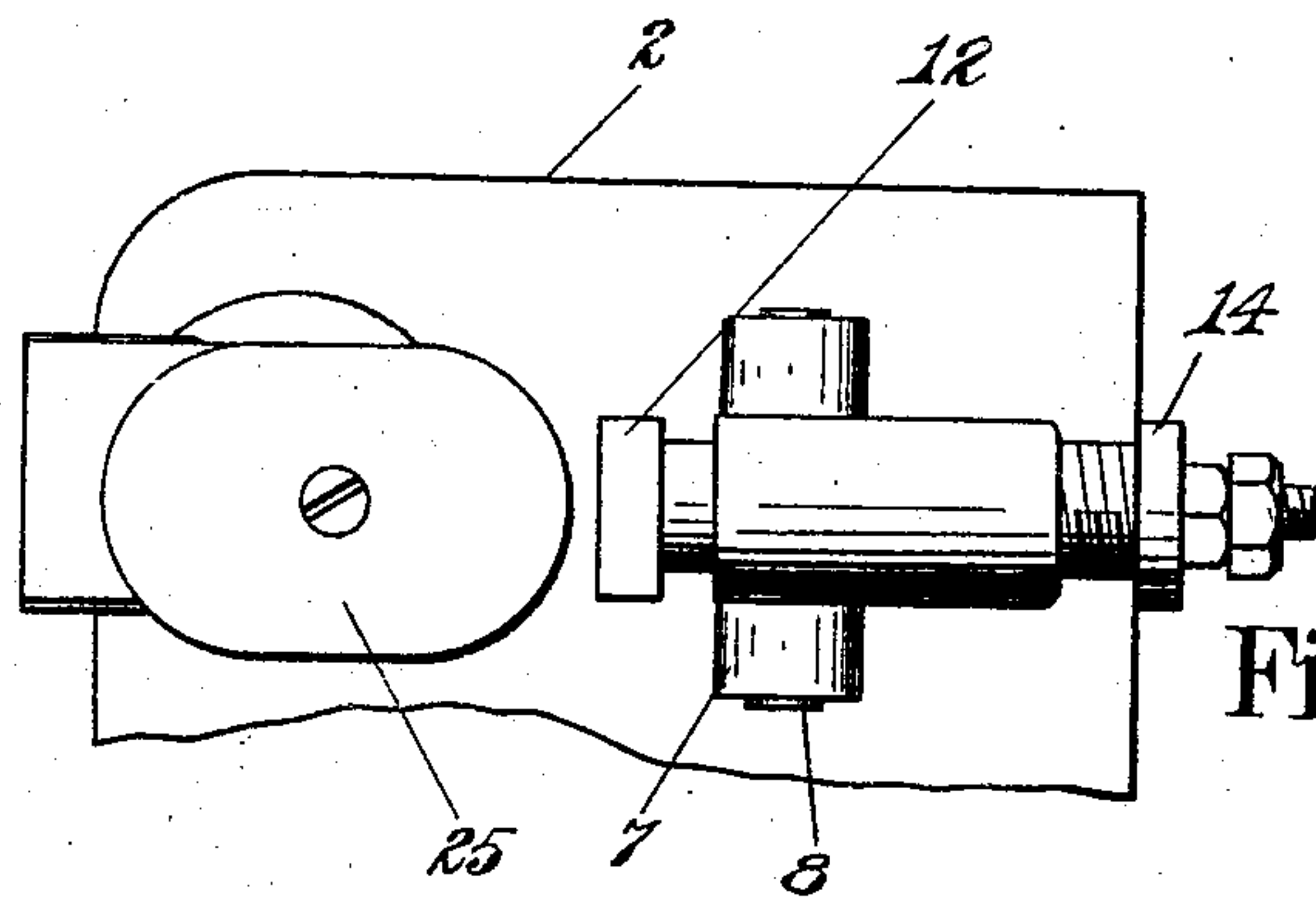
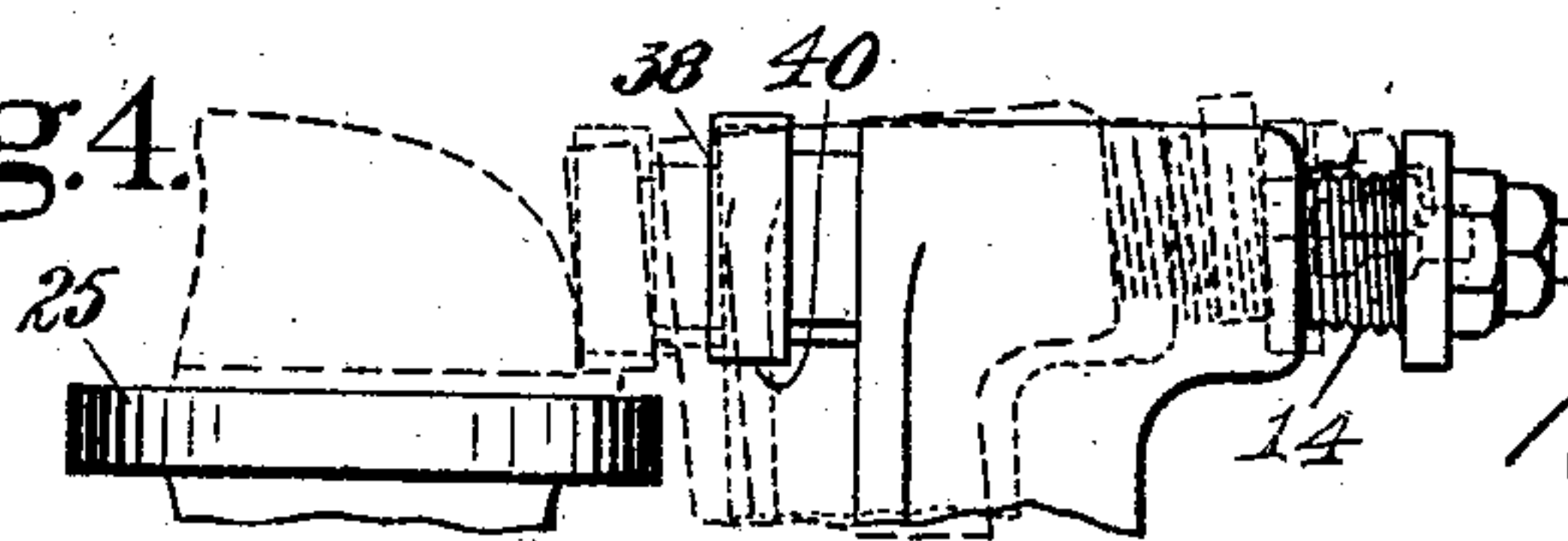


Fig. 3.

WITNESSES.

Fig. 4.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.

No. 918,486.

Specification of Letters Patent.

Patented April 13, 1909.

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To all whom it may concern:

Be it known that I, EMERY BAYARD, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Machines for Use in the Manufacture of Boots and Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for use in shaping shoes and particularly to a machine designed for performing the operation known as "blocking" a shoe.

The object of this operation is to shape the upper on the side of the shoe at and adjacent to the edge of the shoe bottom into conformity with the contour of the side face of the last and to remove wrinkles or inequalities in this portion of the upper. It is desirable that in this blocking operation the shoe be so treated as to avoid drawing the upper back from the edge of the last over which it was stretched in lasting, and preferably the blocking operation will be so performed as to tend to work the upper on the side of the last toward the edge of the shoe. By so doing the upper is drawn more snugly to the last and the edge of the shoe may be shaped. For the purpose of steadying the shoe and supporting it in proper relation to the blocking tool a table or support is employed against which the shoe bottom is rested.

A feature of this present invention consists in providing, in a machine for the purpose stated, a vibrating tool and a rest for supporting the shoe relatively arranged to cause the blows of the tool on the side of the shoe to be received from a direction at a slight inclination to the plane of the shoe bottom. Preferably provision is made for varying this inclination by mounting the table so that it may have an angular adjustment. The table is preferably formed and arranged to give support to the shoe bottom at and inwardly from its edge so that it

forms a rest or anvil between which and the blocking tool the edge of the shoe is shaped on its side and bottom faces.

In the preferred embodiment of the invention provision is made in a machine having a support for the shoe bottom at its edge for actuating the blocking tool downwardly toward the bottom of the shoe while it is in contact with the upper on the side of the shoe and after its movement toward the shoe has been arrested by such contact. The provision for this downward movement constitutes a very important feature of the invention. As shown, the blocking tool is yieldingly mounted in an actuator which moves in a path inclined toward the shoe bottom. When the advance of the tool is arrested by its engagement with the shoe the actuator continues its movement and by reason of the inclination of its path forces the tool to move downwardly along the side of the shoe. This works the upper on the side of the shoe toward the edge. One advantage of this operation is that it tends to form the upper in the rand crease, made by the upper and sole or welt, and overcome the gaping of the crease sometimes seen in shoes. If the shoe being operated upon has an attached sole or welt the edge of which projects outwardly beyond the side of the last, the table will preferably be so positioned vertically that the welt or sole may extend between the table and the lower edge of the blocking tool. This arrangement has the advantage of enabling the side of the shoe to be treated without danger of the edge of the sole or welt being struck by the tool and mutilated. Another important advantage of the described construction is that the blocking tool which may be a hammer head having an outer end face for engaging the upper may have also a lower working face for beating the upper face of the sole or welt at the same time that the upper is being blocked. This may be desirable in any kind of shoe, but is especially advantageous in treating turn shoes, and also welt shoes before the soles are applied, for the action of the hammer beats out the welt or the projecting edge

of the turn sole giving to it the shape and relative position with reference to the shoe that is required.

A further feature of the invention may, therefore, be stated to consist in providing a hammer shaped to engage the upper face of a welt or sole edge by one face and the adjacent upper on the side of the shoe by the other face, and actuating mechanism for vibrating the hammer to beat both said portions of the shoe with its appropriate faces.

These and other features of the invention will be explained more fully in connection with the following description of the machine and will be pointed out in the claims.

The drawings illustrate a preferred embodiment of the machine.

Figure 1 is a side view, partly in section, on the line 1—1 of Fig. 2. Fig. 2 is an end view; Fig. 3 is a plan view; and Fig. 4 is a detail view illustrating by full and dotted lines different positions which the hammer may assume during its operation.

A stand 2 has bearing for a shaft 3, on which is mounted a cam 4, shown as a three-sided cam arranged to engage the lower arm of a lever 5. The lever is mounted on a fulcrum 8 in suitable bearings 7 and is held by a spring 6 with its lower end yieldingly pressed against the cam. The upper end of the lever is recessed to receive the stem 10 and the shank of the blocking hammer 12. The recess is formed to permit these parts to slide lengthwise but to prevent any lateral movement of the blocking hammer. The backward sliding movement of the hammer takes place against a spring 15 abutting at its rear end against an adjustable sleeve nut 14. The table or work rest upon which the shoe is supported comprises a standard 16 secured in adjusted position upon the stand 2 by a locking device 18. Upon the standard is mounted a head 20 having a stem 22 extending downwardly into the standard and secured in vertical position by the binding nut 24. The table 25 has a depending arm 26 which is connected to the head 20 by the pin 28. The arm 26 has also a segmental slot 30 through which extends a binding screw 32. By this arrangement the table 25 may not only be adjusted vertically, but may also be adjusted angularly about the pivot 28 and secured in angular position by the screw 32. The hammer is prevented from turning in the lever by means of a pin 36 which is guided in a groove in the lever. The hammer has on its front end a striking face 38 designed to engage the upper on the side of the shoe and on its lower edge is formed with a striking face 40 adapted to engage the upper face of the portions of the sole or welt which projects beyond the upper of the shoe.

In the use of the machine the table 25 will

preferably be adjusted vertically and angularly with relation to the hammer substantially as shown in Fig. 1. In this position the projecting edge of the sole or welt may extend between the table and the lower face 40 of the hammer, thus allowing the hammer to beat the side of the shoe for blocking the shoe without danger of striking the edge face of the sole. The spring 15 permits the hammer lever to continue its movement after the hammer head contacts with the side of the shoe in the forward movement of the hammer. It will be understood, however, and this is brought out more especially in Fig. 4, that the movement of the upper end of the hammer lever has a downward component. The hammer head cannot yield vertically in the lever and, therefore, it receives a positive downward movement along the upper on the side of the shoe during the last portion of each stroke. This causes the hammer to force the upper toward the edge of the shoe bottom and the table coöperates with the hammer in shaping the edge of the shoe as will be obvious if the shoe being operated upon has no sole or welt. If the shoe is provided with a sole or welt the hammer tends to work the upper toward and into the rand crease and prevent the crease from gaping. If the table is adjusted to the proper height with relation to the hammer the lower side of the hammer head, which is of a breadth to form a striking face as is shown in Figs. 1 and 4, strikes the upper face of the sole or welt as said head is actuated downwardly during the last portion of the stroke of its lever. The hammer may thus be employed to beat out a welt or the projecting edge of a sole—as, for example, the sole of a turn shoe which has been more or less distorted in the turning operation. It will be observed that the hammer when used as described has two movements, one of which is in a path inclined slightly to the horizontal and by which it beats the upper on the side of the shoe, and the other of which is in an approximately vertical plane. In this last movement the hammer beats the upper face of the sole or welt and also rubs the upper toward the edge of the shoe.

Having explained the nature of my invention and described a preferred embodiment thereof, I claim as new and desire to secure by Letters Patent of the United States:—

1. In a machine for shaping shoes, the combination with a work support comprising a rest for the tread face of a shoe sole and a blocking hammer relatively arranged to support a shoe with the sole below the path of movement of the hammer and to beat the side of the shoe adjacent to the sole, of means to actuate the hammer for blocking the shoe.

2. In a machine for shaping shoes, the

combination with a work support and a blocking hammer relatively arranged to permit the projecting edge of the sole of a shoe to extend between the support and the path of movement of the hammer, of means permitting adjustment of the support, and means for actuating the hammer toward the side of the shoe to block the shoe.

3. In a machine for shaping shoes, the combination with a work support and a blocking hammer relatively arranged to support a shoe with the sole below the path of movement of the hammer and to beat the side of the shoe adjacent to the sole, of a carrier in which the hammer is yieldingly mounted, means for actuating the carrier, and means for maintaining a predetermined angular relation between the hammer and the work support.

4. In a machine for shaping shoes, the combination with a support and a blocking hammer relatively arranged to permit the projecting edge of the sole of a shoe to extend between the support and the path of movement of the hammer, of means permitting adjustment of the support, and means for actuating the hammer outwardly toward the side of the shoe and downwardly toward the sole to block the shoe.

5. In a machine for shaping shoes, the combination with a blocking hammer and means for actuating it from and toward the side of a shoe, of a shoe support having a rest for the tread face of the shoe sole and arranged with relation to the hammer to permit the projecting edge of the sole to extend below the hammer, said head rest being mounted for tipping movement to allow the shoe to be presented at different inclinations to the face of the hammer.

6. In a machine for shaping shoes, the combination with a table, a support upon which the table is adjustably mounted, and a blocking hammer for beating the upper of a shoe adjacent to the sole, said hammer being arranged with relation to the table to permit the projecting edge of the sole of the shoe to extend between the hammer and table of a carrier in which the hammer is mounted, and means for actuating the carrier.

7. In a machine for shaping shoes, the combination with a shoe support, a blocking hammer, and a carrier therefor arranged for movement to actuate the hammer in a path inclined downwardly toward the support, of a connection between the hammer and the carrier arranged to permit the hammer to yield backwardly but not upwardly whereby the hammer is yieldingly actuated against the side of the shoe and unyieldingly actuated downwardly over the side of the shoe.

8. In a machine for shaping shoes, the

combination with a table adapted to rest the bottom of a shoe, a blocking hammer, and a carrier therefor arranged for movement in a path inclined downwardly toward the table, of a connection between the hammer and the carrier arranged to permit the hammer to yield backwardly but not upwardly whereby the hammer is yieldingly actuated against the side of the shoe and unyieldingly actuated downwardly over the side of the shoe.

9. In a machine for shaping shoes, the combination with a blocking hammer and mechanism constructed and arranged to actuate the hammer yieldingly against the side of a shoe and then unyieldingly over the side of the shoe toward the edge of the shoe.

10. In a machine for shaping shoes, the combination with a table for supporting a shoe, a blocking hammer and mechanism constructed and arranged to actuate the hammer against the side of a shoe on the table and then downwardly along the side of the shoe.

11. In a machine for shaping shoes, the combination with a hammer and a table relatively arranged to permit the projecting edge of the sole of a shoe to extend between the table and the path of movement of the hammer, of mechanism constructed and arranged to actuate the hammer to beat the side of the shoe and the upper face of the projecting edge of the sole.

12. In a machine for shaping shoes, the combination with a hammer and a table relatively arranged to permit the projecting edge of the sole of a shoe to extend between the table and the path of movement of the hammer, of mechanism constructed and arranged to actuate the hammer against the side of the shoe and then at an angle to the path of its first movement to rub the side of the shoe and beat the top face of the projecting edge of the sole.

13. In a machine for shaping shoes, the combination with a hammer and a table relatively arranged to permit the projecting edge of the sole of a shoe to extend between the table and the path of movement of the hammer, of actuating mechanism for the hammer comprising a lever having a guideway in which the hammer is fitted to slide lengthwise but is held against lateral movement, a spring to hold the hammer in its outermost position in the guideway, and means for actuating the lever to cause the hammer to strike the side of the shoe and then move along the side of the shoe to beat the projecting edge of the sole.

14. In a machine for blocking shoes, the combination with a blocking tool and a carrier in which the tool is held against vertical movement and is permitted longitudinal yielding movement, of means for actuating

the carrier against the side of a shoe in a path inclined downwardly whereby the hammer is drawn downwardly over the side of the shoe as it yields in the carrier after contact with
5 the shoe.

15. A machine for shaping shoes having, in combination, a substantially horizontal table forming a rest for the shoe bottom, a substantially vertical hammer lever, a hammer projecting laterally from the lever to be
10 actuated forwardly toward the side of the shoe and downwardly toward the table when the lever is rocked, means for actuating the hammer lever, and a connection between the

hammer and lever arranged to permit the hammer to yield backwardly but not upwardly in the lever when the hammer strikes the shoe whereby the continued movement of the lever actuates the hammer downwardly after its outward movement is arrested.
15 20

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

EMERY BAYARD.

Witnesses:

FRANCIS JOSEPH NUGENT,
WALTER IRVING GILLETTE.