

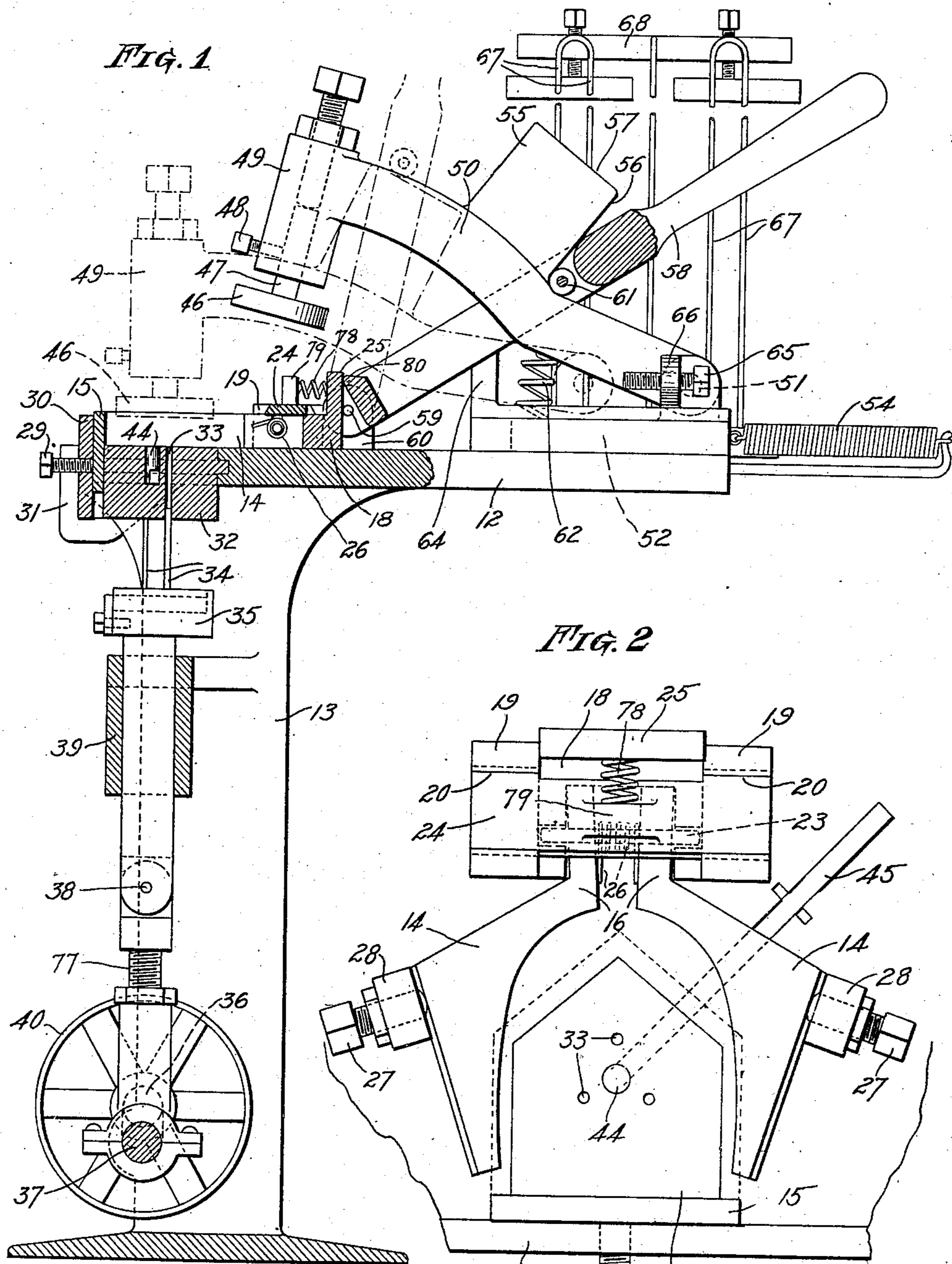
No. 891,503.

PATENTED JUNE 23, 1908.

C. O. RYBERG.
HEEL BUILDING MACHINE.

APPLICATION FILED MAY 6, 1907.

2 SHEETS—SHEET 1.



WITNESSES,
T. H. Pezzetti
E. D. Batcher

INVENTOR,
C. O. Ryberg
BY Knight Brown & Lundy May
ATTORNEYS.

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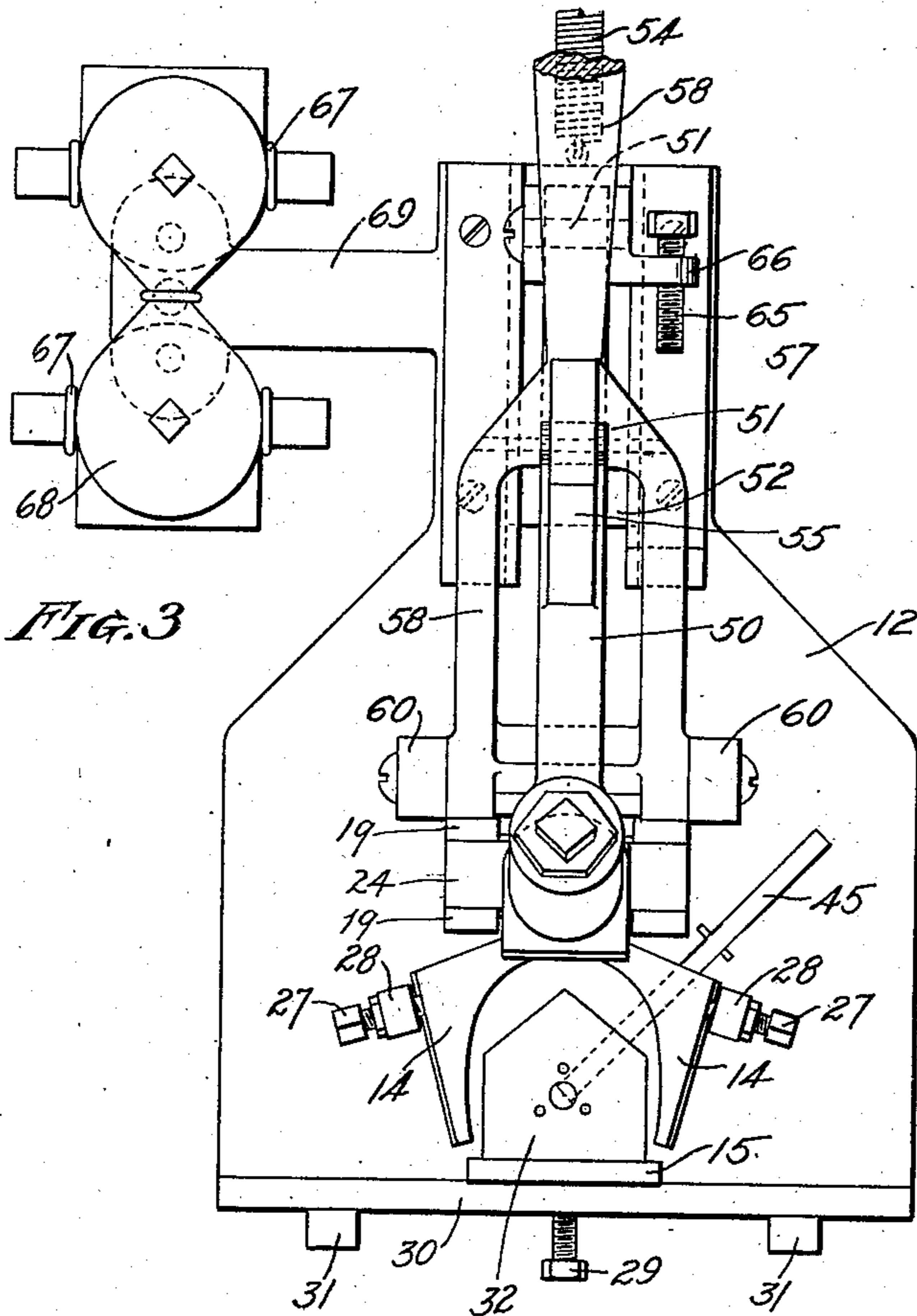


FIG. 3

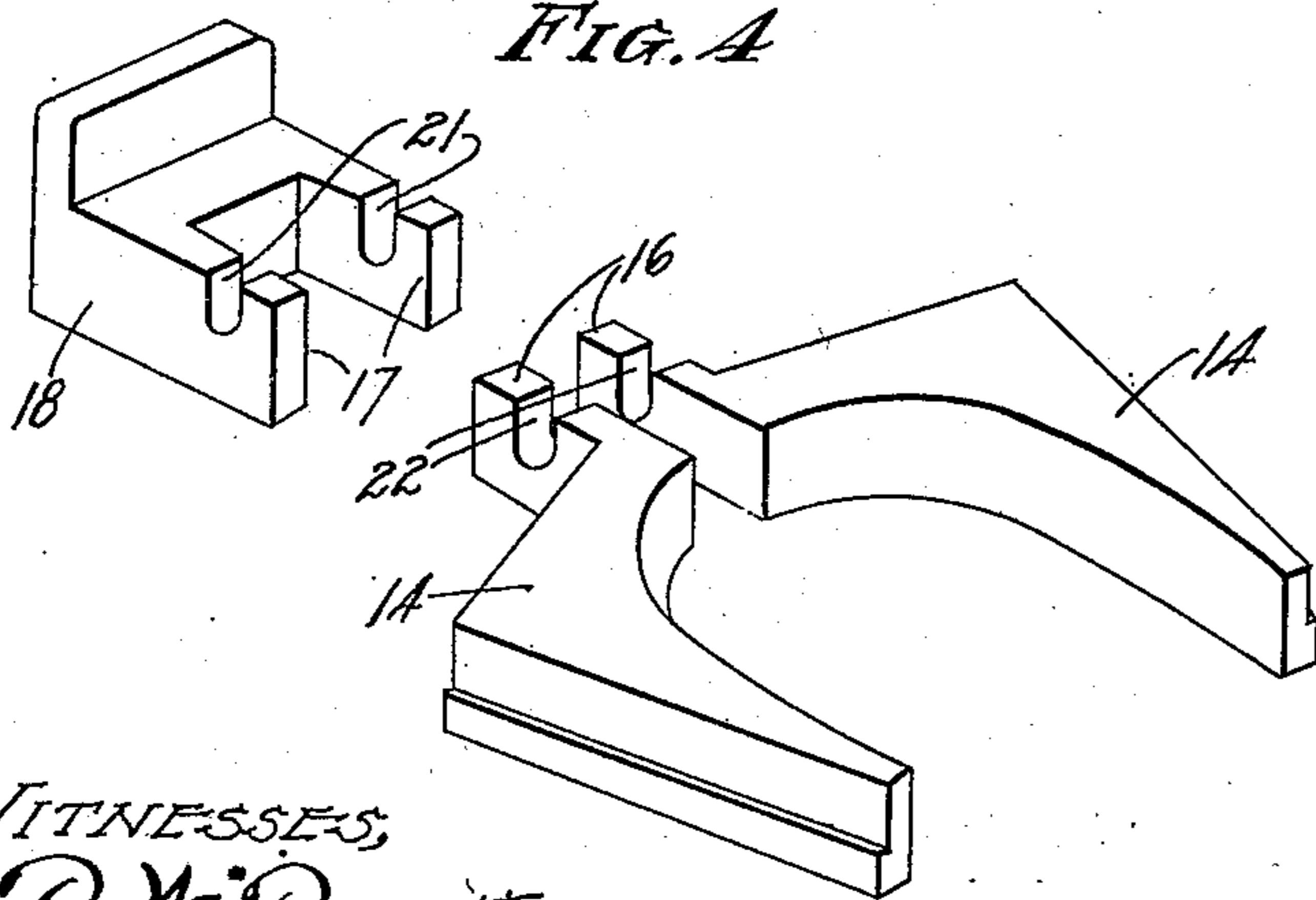


FIG. 4

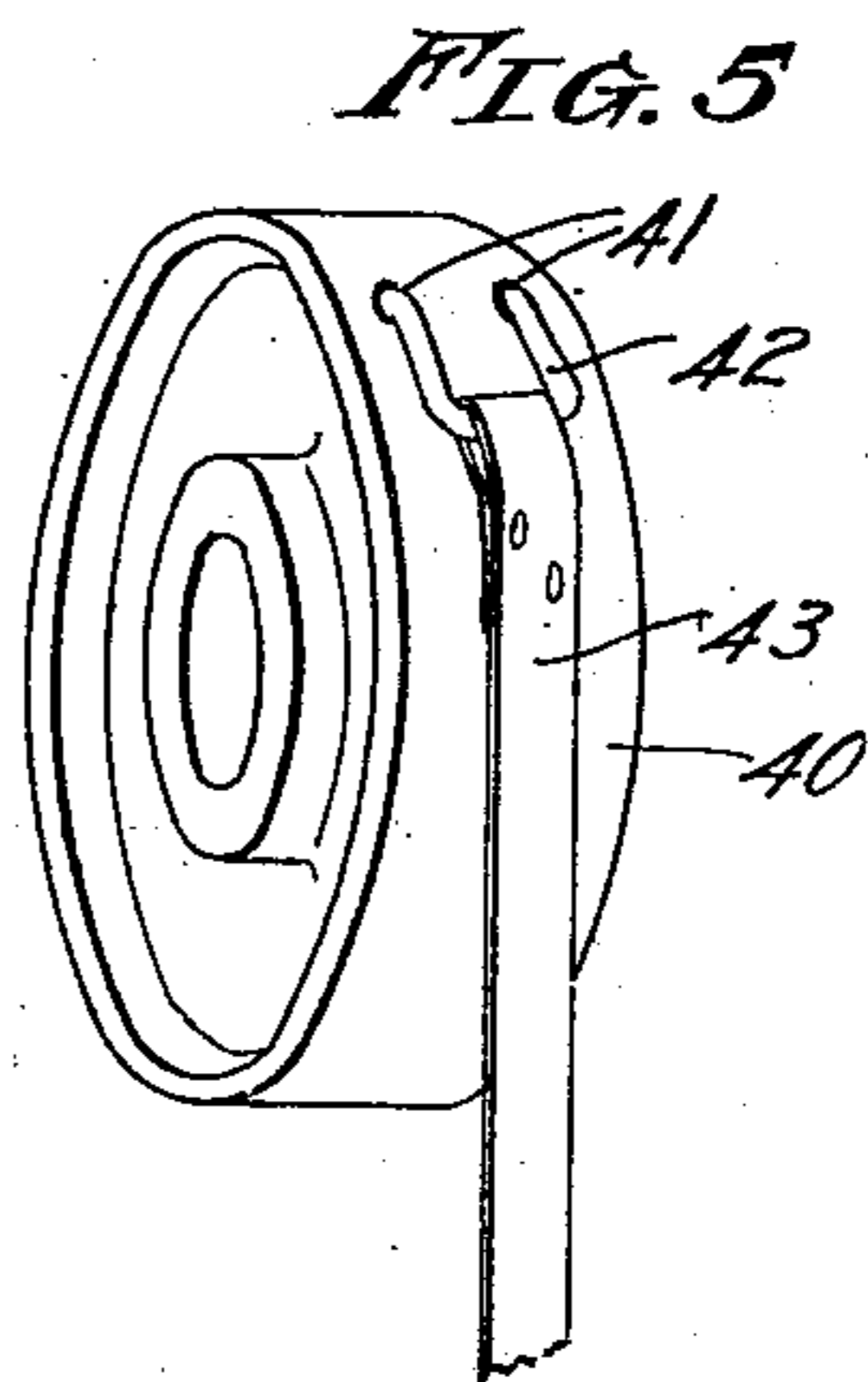


FIG. 5

WITNESSES,
P. H. Pezzetta
E. Batcheller

INVENTOR,
C. O. Ryberg

By Knight Brown Quincy & May
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES O. RYBERG, OF BROCKTON, MASSACHUSETTS.

HEEL-BUILDING MACHINE.

No. 891,503.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed May 6, 1907. Serial No. 371,989.

To all whom it may concern:

Be it known that I, CHARLES O. RYBERG, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Heel-Building Machines, of which the following is a specification.

This invention relates to machines for temporarily pressing together and holding in their properly assembled relation, the lifts of a boot or shoe heel while said lifts are being secured together by nails or by an adhesive applied to the lifts.

The invention has for its object to provide a machine for this purpose adapted to be conveniently and effectively operated, and it is embodied in a machine comprising a suitable bed, a heel mold mounted on the bed, a heel-pressing platen which is movable laterally from a position at one side of the mold which it occupies when the mold is being charged with lifts, to a position over the mold, preparatory to engaging and pressing the lifts, the platen being movable from the last-mentioned position into contact with the lifts for the purpose of confining and compressing the same while they are being attached to each other.

The invention consists in the several improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a side elevation, partly in vertical section, showing the essential parts of my improved machine. Fig. 2 represents a top plan view of a portion of the bed of the machine, and a sectional heel mold mounted thereon. Fig. 3 represents a top plan view of the entire machine. Fig. 4 represents a perspective view of the sections of the mold. Fig. 5 represents a perspective view of the driving pulley, showing means for connecting a treadle strap thereto.

The same letters of reference indicate the same parts in all the figures.

In the drawings 12 represents the bed of my improved machine, which is preferably horizontal, and mounted on suitable supports 13. On the forward portion of the bed is mounted a heel mold, which is preferably of adjustable construction, and detachably connected with the bed, the preferred construction of the mold being as follows: 14 14 represent two mold sections having curved inner faces which collectively form the sides

of the mold, and cooperate with a front piece 15, which forms the breast portion of the mold. Each section 14 is provided at its rear end with an ear 16, the said ears being inserted side by side in a cavity 17 formed in a block 18, which is fitted to slide between two fixed guides 19 19, said guides having dove-tailed recesses 20 in their upper sides. The block 18 is provided in its side portions with slots 21 21, and the ears 16 are provided with coinciding slots 22, said slots 21 22 receiving a pin 23 which couples the ears 16 and the block 18 together sufficiently to prevent horizontal displacement of the mold sections relatively to the block.

24 represents a dove-tailed keeper, which is inserted in the dove-tailed recesses 20 in the fixed guides 19, and extends across the upper surface of the block 18 and the upper edges of the ears 16, the said keeper preventing vertical displacement of the mold sections. The block 18 is provided with an upwardly-projecting ear 25 at its rear portion, which is located at the rear of the keeper 24. A spring 78 interposed between the ear 25 and an ear 79 on the keeper, normally forces the block 18 and the jaws connected therewith, backwardly, the mold sections 14 being thus also moved backward. When the keeper 24 is removed from the fixed guides 19, the coupling pin 23 may be removed, and the mold sections withdrawn. Provision is thus made for interchangeably using mold sections of different shapes and sizes. A spring 26 interposed between the ears 16, presses the oblique outer edges of the mold sections outwardly against adjustable stop screws 27 engaged with fixed ears 28 on the bed of the machine. The breast portion or section 15 of the mold is vertically adjustable and is pressed against the front edge of the bed by means of a set screw 29 engaged with a plate 30, which is held by lugs 31 formed on the bed of the machine. By loosening the set screw 29, the breast portion 15 may be adjusted vertically to accommodate the height of the heel. The bed of the machine is provided with a recess in which is removably inserted a nail block 32, the upper surface of which is flush with the upper surface of the bed, and forms the major portion of the bottom of the mold, said block being provided with nail cavities 33 adapted to receive nails to be used for attaching together the lifts assembled in the mold.

34 34 represent a gang of drivers mounted

on a head 35, which is adapted to be reciprocated toward and from the block 32 by suitable power, the drivers entering the nail holes 33, and being adapted to force the nails into the lifts assembled in the mold. The drivers may be reciprocated by power applied through a crank shaft 36 journaled in bearings on the frame of the machine, and having a crank 37 connected with the head 35 by means of a link or pitman 77 pivoted at 38 to the head 35, the latter being movable in a fixed guide 39. The shaft 36 is provided with a driving pulley 40, which may be operated by power through a belt or otherwise, or may be operated by foot power, the periphery of the pulley being provided with orifices 41 (Fig. 5) adapted to receive a bail or loop 42, to which is connected a strap 43 connected with a foot treadle, not shown.

44 represents an ejector, which is movable in the nail block 32 to raise nailed lifts from the mold after the nailing operation, the ejector being connected with a lever 45, which is pivoted to the bed of the machine, and is adapted, when depressed at its outer end, to raise the ejector.

The above-described mold being adjusted for the size of heel desired, the lifts are assembled in the mold, and are then subjected to pressure by a platen 46, which is normally elevated above the mold, and moved back from the space directly over the mold, as shown by full lines in Fig. 1, means being provided, as next described, for moving the platen forward to a position over the mold, and then downwardly to bring it into compressing contact with the lifts in the mold, as shown by dotted lines in Fig. 1. The platen has a shank 47, which is attached by a set screw 48 to a head 49, formed on an arm 50, which is pivoted at 51 to a slide 52. The said slide is movable in suitable guides toward and from the mold, and is normally retracted from the mold, as shown by full lines in Fig. 1, by a spring 54. The arm is provided with a wing or projection 55, having a rear face 56 and an upper face 57.

58 represents an operating lever, which is forked at one end, the arms or branches of the lever being pivoted at 59 to ears 60 formed on the bed 12. The forked portion of the lever bestrides the arm 50, and the lever is provided between its arms with a trundle roll 61, adapted to engage the arm 50. The said arm is normally held in the raised position shown in full lines, by a spring 62. The rear face 56 of the projection on the arm 50 forms, with the upper portion of said arm, a recess which is occupied by the roll 61 when the operating lever 58 is thrown back and the arm 50 and the platen are raised, as shown by full lines in Fig. 1, the arrangement being such that when the lever 58 is thrown forward by the operator, or toward the left, as viewed in Fig. 1, the roll 61 will

exert pressure on the rear face 56, and thus force the arm 50 and the slide 52 forward toward the mold, the roll 61 at the same time swinging upwardly and moving toward the upper end of the rear face 56. When this movement of the slide and arm has been continued until the platen is directly above the mold, the roll 61 moves on to the upper face 57, as indicated by dotted lines in Fig. 1, and forces the arm 50 and the platen downwardly, the platen being thus caused to exert pressure on the lifts in the mold. The arrangement is such that the lever 58 may be left in the dotted line position, holding the platen against the contents of the mold, while the connecting nails are being driven by the drivers. When this operation has been performed, the operator moves the lever 58 back to the position shown in full lines in Fig. 1, the roll 61 moving from the top face 57, and allowing the spring 62 to raise the arm 50 and the platen 46 to the starting position, the spring 54 at the same time retracting the slide 52, and with it the arm 50 and the platen, so that the platen is drawn back from the space over the mold, leaving the latter unobstructed for the removal of the attached assemblage of heel lifts, and the insertion of another set of lifts. The extent of the forward movement of the slide 52 is governed by a fixed stop member 64 on the bed of the machine, and an adjustable stop member 65, which may be a screw adjustably mounted in an ear or lug 66 on the slide 52. As here shown, the fixed stop member 64 serves to limit the backward throw of the lever 58.

The lever 58 is provided with a toe piece or projection 80, which bears against the ear 25 on the block 18 when the lever is thrown back, as shown in full lines. The projection 80 permits the block 18 and the mold sections 14 connected therewith, to also move backwardly. When the lever is thrown forward, the projection 80 forces the block 18 and the mold sections 14 forward, thus causing the mold sections to be moved inwardly by the sliding of their inclined outer edges and contact with the stop screws 27. The mold is thus contracted by the operation of moving the platen to its pressing position.

The machine may be provided with a holder or magazine for the heel lifts, said holder being composed of vertical wire rods 67, the ends portions of which are attached to suitable end pieces or heads 68, one of which forms the bottom of the holder, and is mounted on an arm 69 attached to the frame of the machine.

It will be observed that the connection between the side sections 14 and the block 18, effected by the slots 21 22, and pin 23, is such that the side sections are adapted to slide rectilinearly toward each other when they are pressed forward to press the oblique

outer edges of the side sections against the stops 27, and also to be freely released and removed to permit other side sections of different size and shape to be substituted, the side sections being released by the simple operation of lifting the pin 23 from the slots 21 22. The rectilinear movement of the side sections causes them to exert a more effective pressure at all parts of their inner edges against the heel than would be the case if they were pivoted and adjusted by a swinging movement. The freedom of release and engagement of the side sections, permits the interchange of different sections without such loss of time as would be involved by the employment of screws.

I claim:

1. A heel building machine comprising a mold, a heel pressing platen movable horizontally into and out of the space above the mold and movable vertically toward and from the mold when in said space, a slide to which the platen is pivotally connected, said slide being movable toward and from the mold, means for yieldingly holding the slide retracted from the mold, means for yieldingly holding the platen in a raised position relatively to the slide, and platen-operating mechanism having means for moving the slide to carry the platen to a position above the mold, and for forcing the platen into the mold.

2. A heel building machine comprising a mold, a heel pressing platen, a slide movable toward and from the mold, connections between the slide and platen whereby movements of the slide are imparted to the platen, means for normally holding the platen raised above the mold, means for normally holding the slide and platen retracted from the mold, and means for successively projecting the slide and platen to locate the platen over the mold and force the platen into the mold.

3. A heel building machine comprising a mold, a heel pressing platen, a slide movable toward and from the mold, an arm pivoted to the slide and supporting the platen, means for yieldingly holding the arm in a raised position, means for yieldingly holding the slide retracted from the mold, and a pivoted operating lever, said lever and arm having cooperating members which act when the lever is forced forward to first move the slide forward toward the mold, and then to force the platen against the contents of the mold.

4. A heel building machine comprising a mold, a heel pressing platen, a slide movable toward and from the mold, a platen-supporting arm pivoted to the slide and provided with a projection having rear and upper faces, means for yieldingly holding the arms

in a raised position, means for yieldingly holding the slide retracted from the mold, and a pivoted operating lever provided with a roller adapted to cooperate with the faces of said projection in moving the slide and depressing the platen.

5. A heel building machine comprising a mold, a heel-pressing platen, a slide movable toward and from the mold, an arm pivoted to the slide, and supporting the platen, means for yieldingly raising the arm and platen, means for yieldingly retracting the slide, a pivoted operating lever, said arm and lever having cooperating parts which act, when the lever is thrown forward, to move the slide toward the mold and to depress the platen, and relatively adjustable stop members which limit the forward movement of the slide.

6. A heel building machine comprising a bed, a mold mounted thereon, and composed of side sections having rearwardly projecting ears, and a breast section, a holding block having a recess in which said ears are laterally movable, the ears and block having coinciding slots, a coupling pin engaging said slots, and loosely connecting the block and the side sections, fixed guides at opposite sides of the block, a keeper detachably engaged with said guides and confining the ears in the recess of the block, the latter having a projection engaging the keeper, the side sections being adapted to move independently toward and from each other, and stops to limit the outward movement of the side sections.

7. A heel building machine comprising a bed, a mold mounted thereon, and composed of side sections bearing loosely on the bed, a holding block slidable on the bed, connections between the block and side sections having provisions for permitting the latter to slide toward and from each other, and to be freely interchanged with other side sections, means for detachably connecting the holding block with the bed, an operating lever pivoted to the bed, and having a projection adapted to engage the holding block and force the same forward, the side sections having oblique outer edges, and stops bearing against said edges, and adapted to force the mold sections inwardly when they are moved forward by the projection on the lever, the connection between the block and the side sections permitting a rectilinear inward movement of said sections.

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

CHARLES O. RYBERG.

Witnesses:

N. C. KING,

GUSTAF A. CARLTON.