

No. 803,744.

PATENTED NOV. 7, 1905.

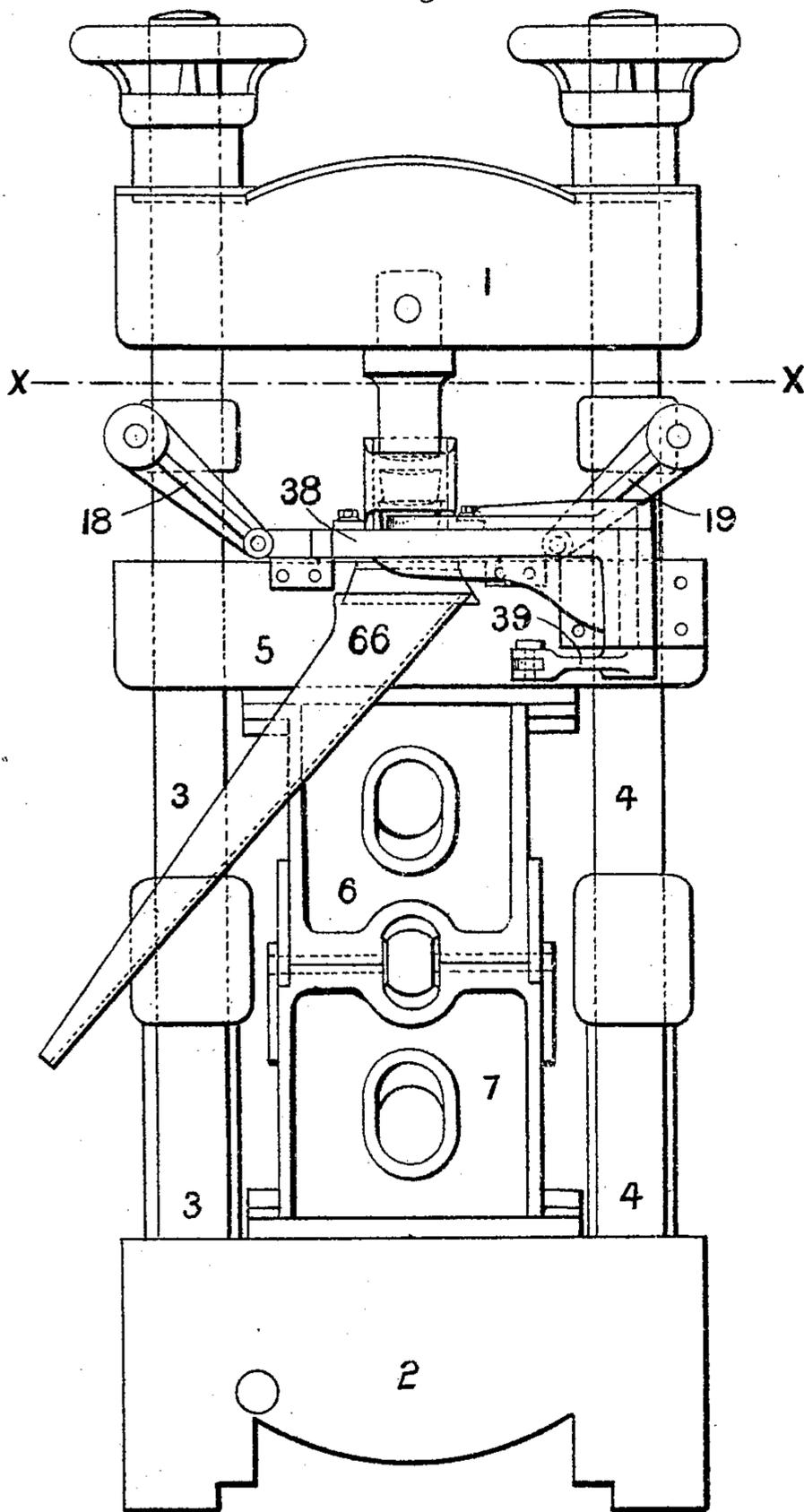
J. V. COLLIER.

MACHINE FOR COMPRESSING HEELS FOR BOOTS AND SHOES.

APPLICATION FILED DEC. 29, 1904.

6 SHEETS—SHEET 1.

Fig. 1.



Witnesses.
H. M. Kuehne
J. P. Swoman

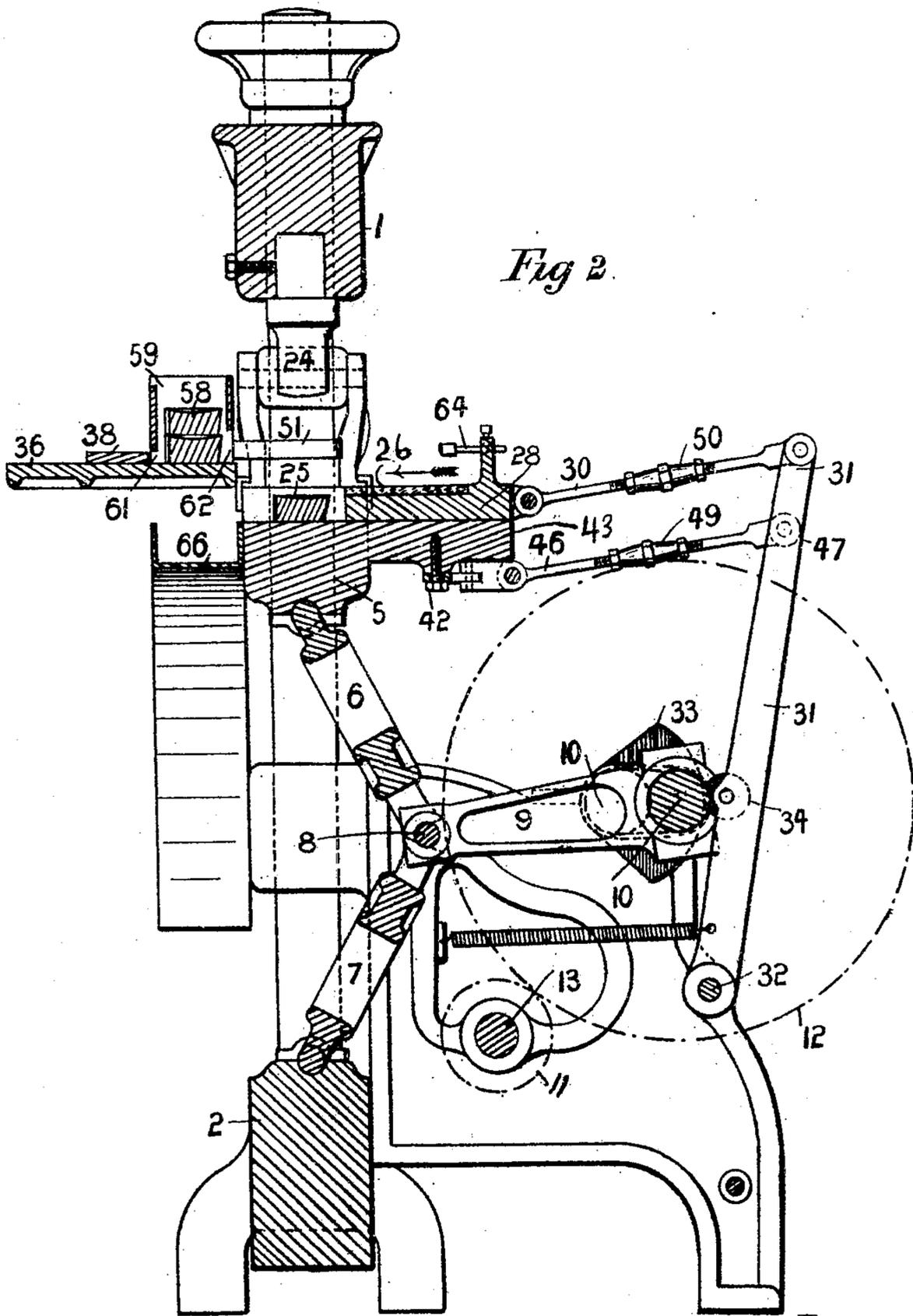
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6 SHEETS—SHEET 2.



Witnesses.
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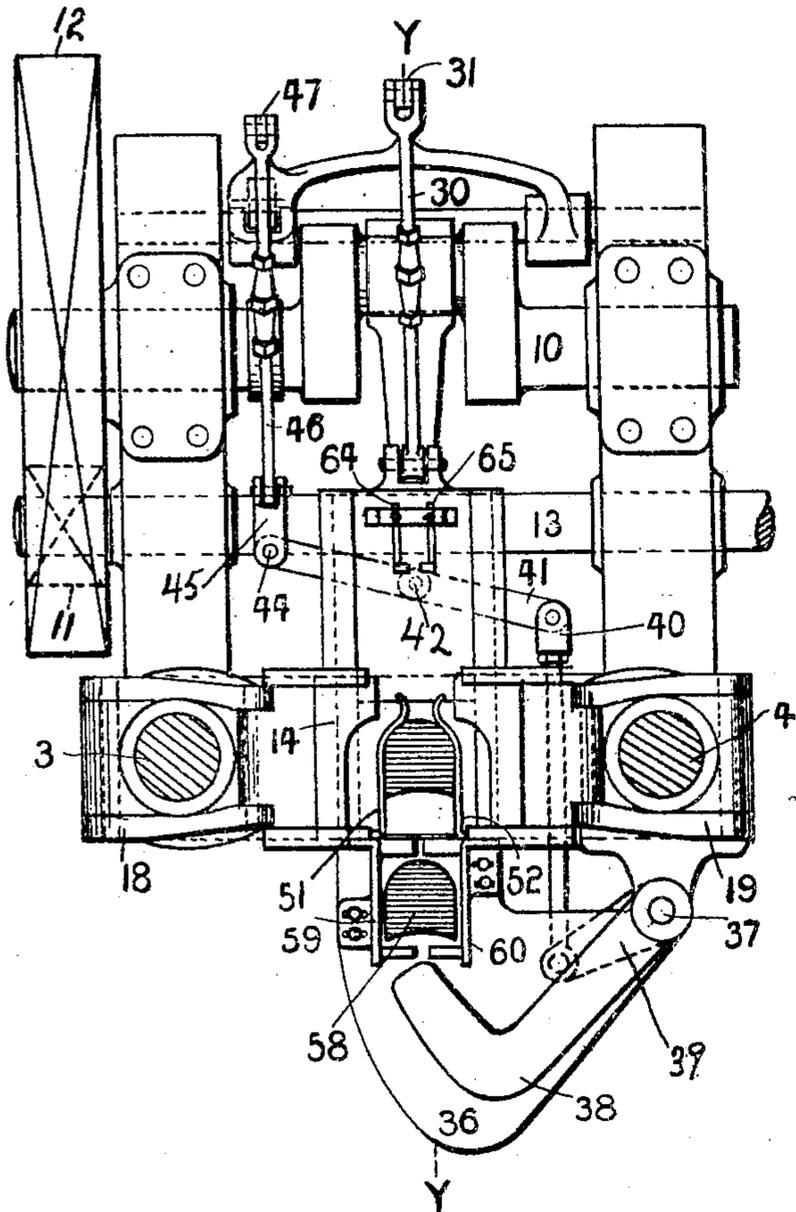
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6 SHEETS—SHEET 3.

Fig. 3.



Witnesses.

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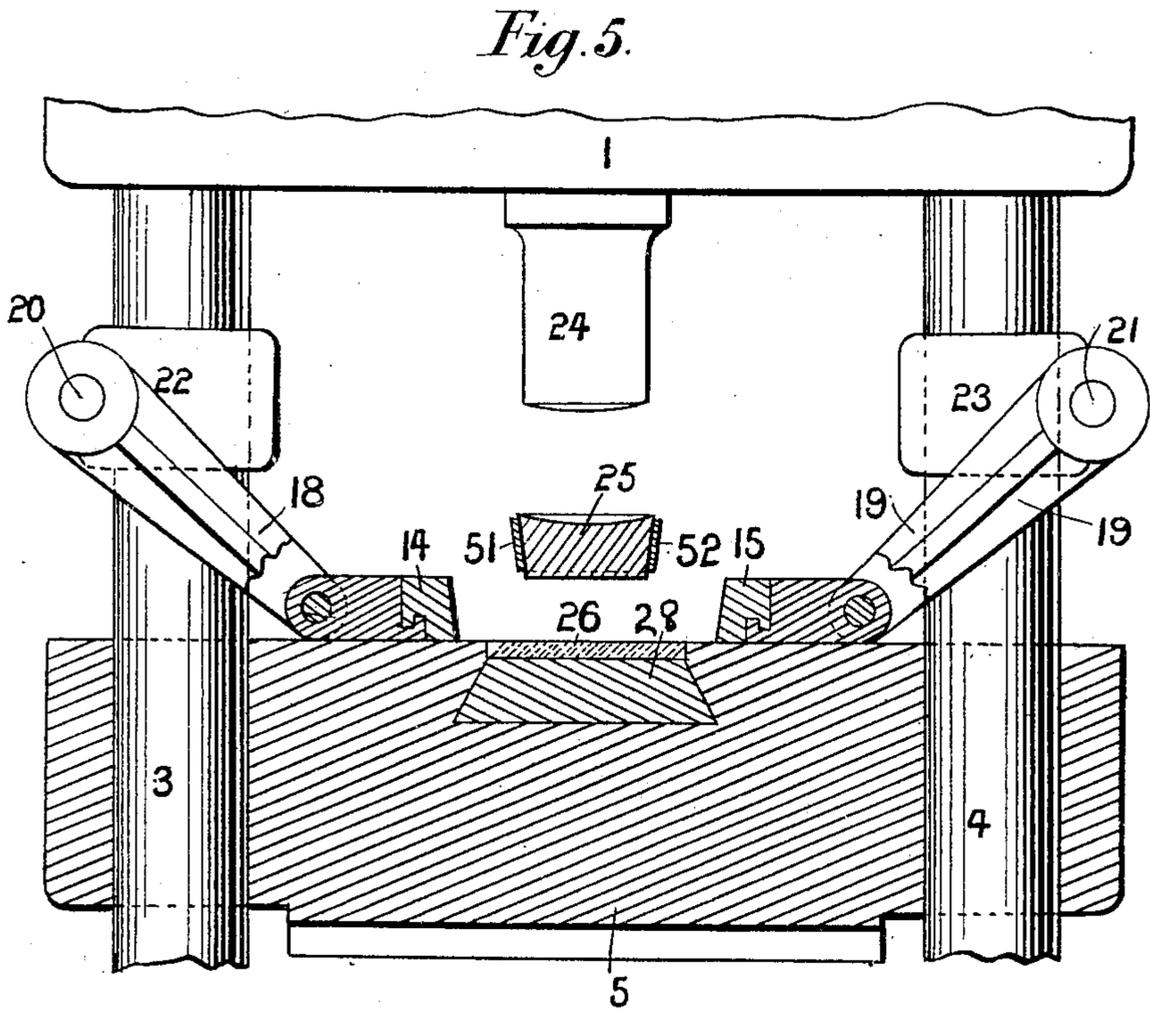
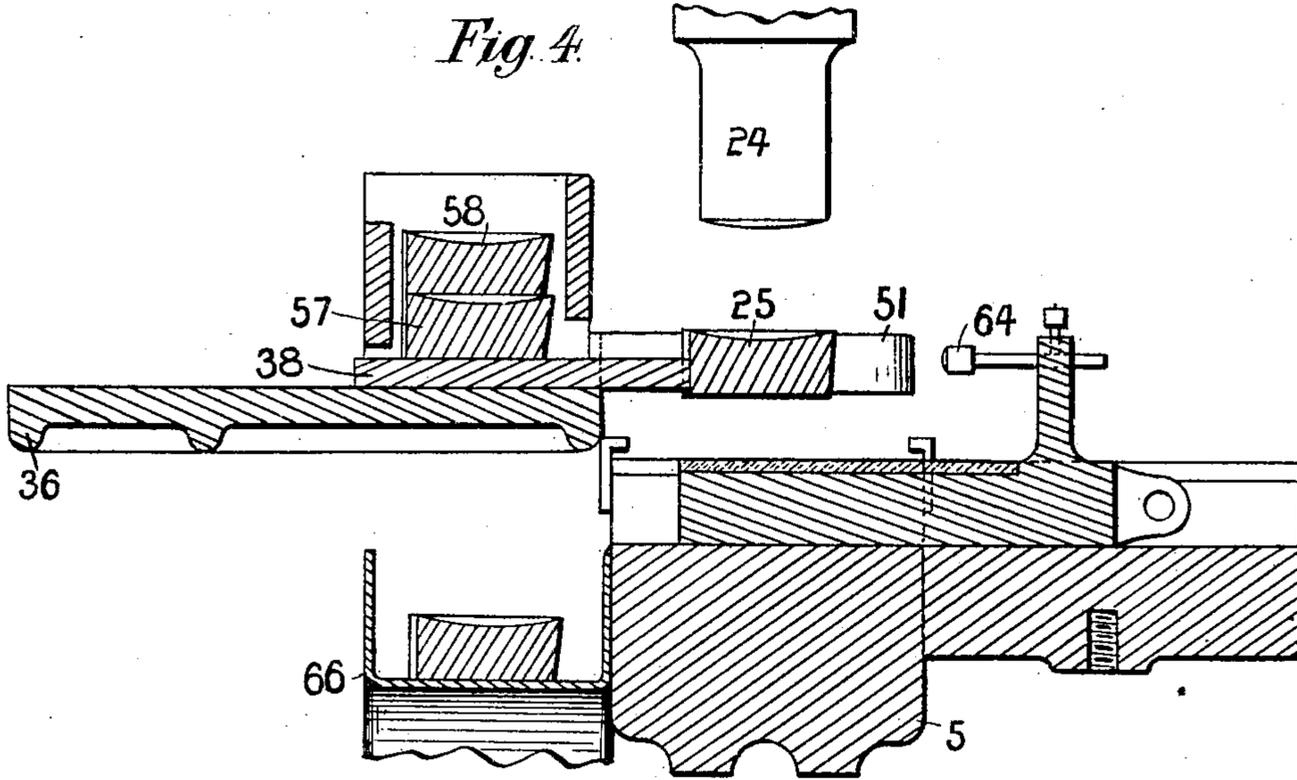
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6 SHEETS—SHEET 4.



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6 SHEETS—SHEET 5.

Fig. 6.

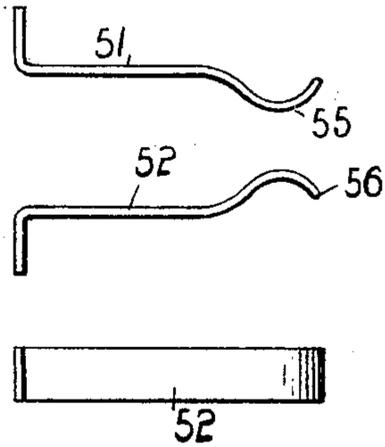
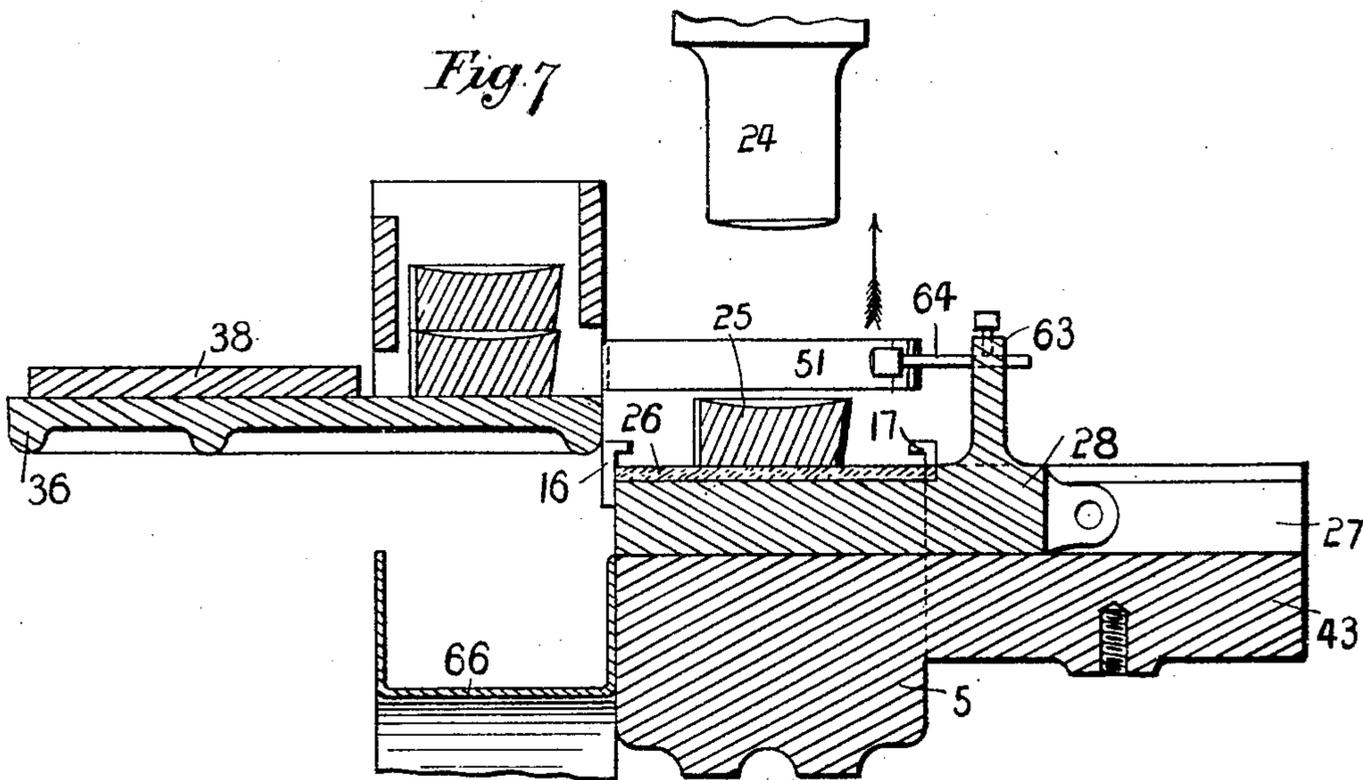


Fig. 7.



Witnesses.
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6 SHEETS—SHEET 6.

Fig. 8.

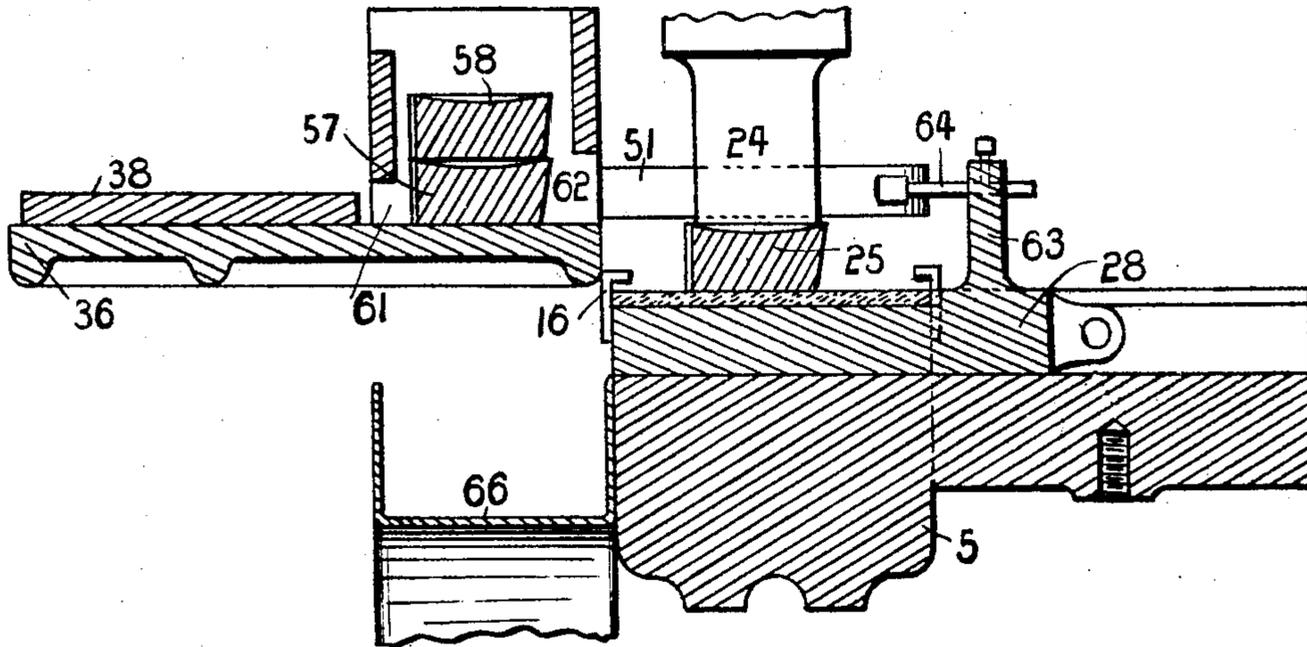
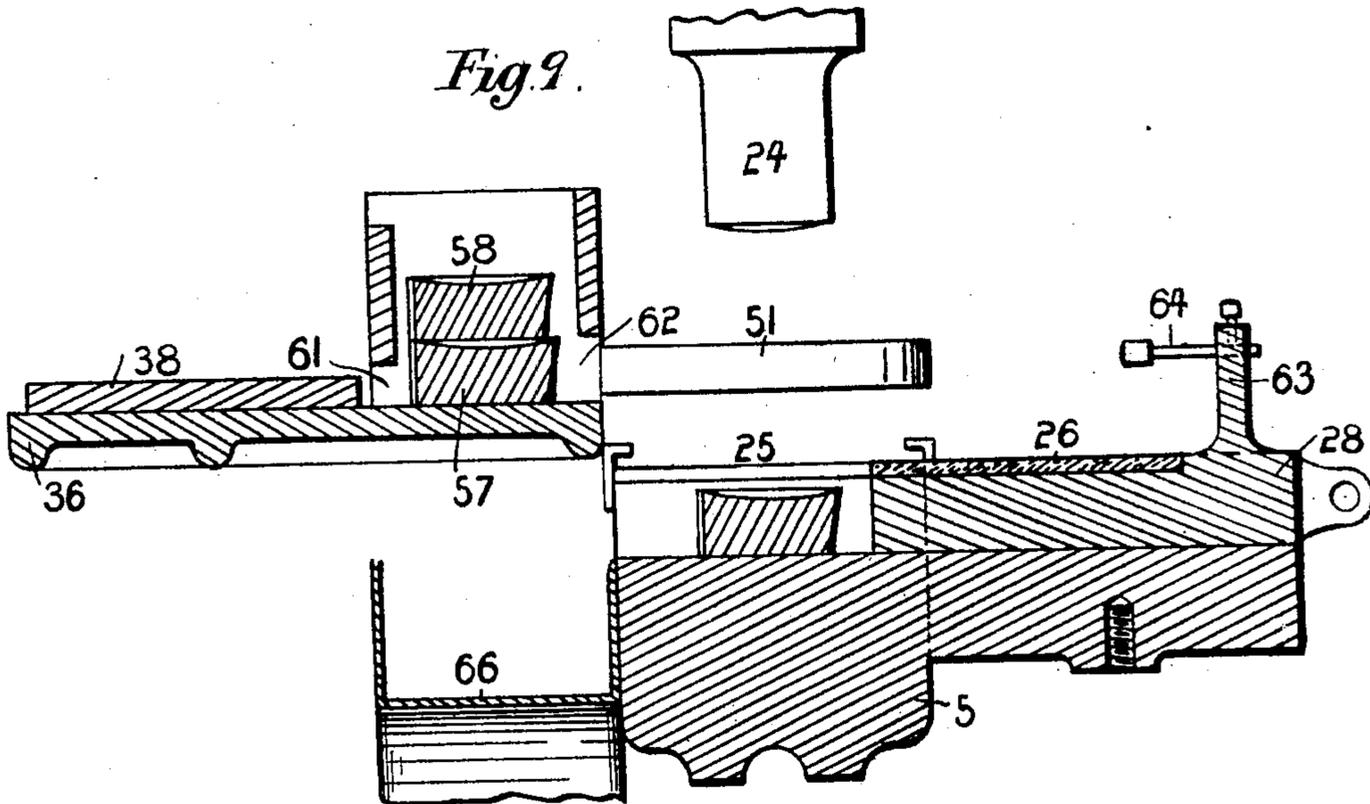


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN VEASY COLLIER, OF NORTHAMPTON, ENGLAND.

MACHINE FOR COMPRESSING HEELS FOR BOOTS AND SHOES.

No. 803,744.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed December 29, 1904. Serial No. 238,808.

To all whom it may concern:

Be it known that I, JOHN VEASY COLLIER, boot and shoe machinery manufacturer, a subject of His Majesty the King of Great Britain and Ireland, residing at Northampton, in the county of Northampton, England, have invented new and useful Improvements in Machines for Compressing Heels for Boots and Shoes, of which the following is a specification.

This invention consists of the herein-described improvements in machines for compressing heels preparatory to their attachment to boots and shoes; and my invention is especially directed to the simplification of the mechanism for placing the heels between the parts of the heel-mold and for removing of the compressed heels therefrom.

My invention is carried out as I will describe by referring to the accompanying drawings, on which—

Figure 1 is a front elevation of so much of a heel-compressing machine as is necessary to illustrate my invention. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a sectional plan of the same on line X X of Fig. 1, but not showing the top heel mold or form which is carried by the top beam of the machine. Fig. 4 is a cross-sectional elevation of parts of the machine on line Y Y of Fig. 3. Fig. 5 is a front sectional elevation of some of the parts shown by Fig. 4. Fig. 6 shows in plan and side elevation the heel-clips of the machine separately; and Figs. 7, 8, and 9 each show the same parts as Fig. 1, but in different positions, to illustrate the operation of my feed mechanism, as hereinafter described.

The same reference-numerals indicate the same parts in all the figures.

I will first describe some of the well-known parts of the machine to which my invention is applied.

In the machine-frame there is a top beam 1 and a bottom beam 2, fixed together by two upright side rods 3 4, and between this top beam 1 and the bottom beam 2 there is a middle beam 5, which can slide up and down the side rods 3 4. The middle beam 5 and the bottom beam 2 of the machine are connected together by a toggle-joint formed of the two toggle-links 6 7, which are jointed together at 8 and to the connecting-rod 9, which connects them to the revolving crank-shaft 10, which is driven by gear-wheels 11 12 from the driving-shaft 13. Resting on the

top of the middle beam 5 are the two halves 14 15 of the heel-mold, and these can advance toward each other or retire along the parallel guides 16 17, which are fixed on the top of the middle beam 5. These two halves of the heel-mold are connected to the side rods 3 4 by the arms 18 19, which at 20 21 are jointed to collars 22 23, the position of which can be adjusted on the side rods 3 4. As the toggle-links 6 7 of the toggle-joint are straightened out by the connecting-rod 9 in the working of the machine the middle beam 5, with the half-molds 14 15 and side arms 18 19, is thereby caused to rise, which brings the half heel-molds 14 15 nearer together.

Attached to the under side of the top beam 1 there is a suitably-shaped top heel mold or form 24, against which the heel 25 is compressed by the toggle raising the middle beam 5, as above described, when the latter, with the half or side molds 14 15, are brought together by the completion of the movement of the toggle-links 6 7, thus compressing the heel 25 between the bottom plate 26 (hereinafter described) and the half or side molds 14 15 and the top heel-mold 24, which latter is carried by the top beam 1.

The aforesaid parts are old, and I will now describe how my invention is carried out for placing the heels between the parts 14 15 of the heel-mold and for removing the compressed heels therefrom.

The middle beam 5 has in the top a cross horizontal groove 27 at right angles to a line joining the side rods 3 4, and adapted to move to and fro in this groove there is a suitable bottom plate or slide 28, which carries a removable steel wearing-plate 26, on which the heel 25 is compressed. This bottom plate 28 is by the connecting-rod 30 connected to the upper end of the arm or lever 31, which is jointed to the machine-frame at 32 (see Fig. 2) and is rocked to and fro by the cam 33, which is fixed on the crank-shaft 10, the lever-arm 31 carrying a roller 34, which acts against the contour of the cam 33. Thus as the crank-shaft 10 revolves the arm 31, with the slide 28, is at the proper times moved outwardly by the cam 33 and is moved inwardly again by the spring 35, which keeps the roller 34 of the lever 31 pressed against the cam 33.

Attached to and carried by the middle beam 5 and to the front of the same there is a table 36, which projects at the front of the machine, and jointed to this table at 37 there is an arm

38, which is adapted to move to and fro on the table about its fulcrum 37. This arm 38 is connected by suitable mechanism to the rocking arm 31. This mechanism is by preference arranged as shown on my drawings, consisting of a short lever 39, which is fixed on the lower end of the fulcrum-pin 37, to the upper end 31 of which the arm is fixed. Jointed to the outer end of this lever 39 there is a connecting-rod 40, which is jointed to one end of the two-armed lever 41, which turns about a fulcrum-pin 42, fixed to the under side of the backwardly-projecting part 43 of the middle beam 5. The other end of this two-armed lever 41 is at 44 connected by the connecting-piece 45 to the connecting-rod 46, the other end of which is at 47 connected to an upwardly-projecting arm 48 of the lever 31. The connecting-rod 46 is by preference made in two parts, as shown, connected together by a right and left hand screwed connector 49, so that the length of the connecting-rod can readily be adjusted to adjust the movement of the feed-arm 38. The connecting-rod 30 is also by preference similarly made in two parts, connected together by a right and left hand screwed connector 50, so that the length of this connecting-rod can be adjusted to adjust the movements of the slide 28.

By the arrangement of mechanism above described it will be seen that as the bottom plate 28 is pushed into position under the heel 25 the feed-arm 38 (which, as hereinafter described, moves the heels forward) brings the heel to be compressed immediately over the center of the bottom plate or slide 28 and between the two halves 14 15 of the heel-mold.

Fixed to the back of the table are two carriers or clips 51 52. (Shown separately by Fig. 6.) These clips are by preference made of spring-steel and adjusted to just the proper distance apart to grip and hold the heel in place between them, and they are curved at 53 54 to clip the rounded part of the heel, the outer ends 55 56 of these carriers or clips being curved outwardly for the purpose hereinafter explained.

The heels to be compressed are carried in a pile on the table 36, as shown in Fig. 2, where two of these heels are shown marked 57 58, and in order to keep them in position and permit of their being fed forward one at a time there is on the table an ordinary magazine made with vertical sides 59 60, which can be adjusted at the proper distance apart to suit the size of the heels. At the bottom of the front of the magazine there is an opening 61 of the proper size to admit the feed-arm 38, and in the back of the magazine there is an outlet 62 of the proper size to allow of the bottom heel 57 in the pile to pass through into the clips or carriers 51 52, which are fixed immediately in front of this outlet 62. This magazine is of the well-known kind used in

other machines and I make no separate claim to the use of it. The stroke of the arm 38 is such that when its forward movement has terminated it has moved the heel to the extreme position shown in Fig. 3 between the carrier 51 52, so as to be held thereby immediately in position over the bottom plate 28 and between the two half-molds 14 15, as shown by Figs. 3, 4, and 5. Attached to a projection 63 on the top of the sliding bottom plate 24 there are two adjustable fingers 64 65, which are immediately opposite the ends of the clips 51 52 and are adjusted at the proper distance apart to enter between their curved ends 55 56, so that when the heel is in position held by the clips 51 52 between but immediately above the half-molds 14 15, as in Figs. 4 and 5, these fingers 64 65 as the bottom plate 28 advances enter between the outer curved ends 55 56 of the clips 51 52, and thus force open these clips which hold the heel 25, so that the heel 25 now falls from the clips 51 52 onto the bottom plate 28, as shown by Fig. 8, into position between the half-molds 14 15, and as the upward movement of the middle beam 5 continues the half-molds 14 15 advance upon the heel 25, so that it is ultimately compressed between the half-molds 14 15 and the top mold or form 24 and the bottom plate 26, (see Fig. 7,) as above described. When by the movement of the connecting-rod 9 the toggles 6 7 are turned again into their angular position, (see Fig. 2,) so that the middle beam 5 with the compressed heel 25 and the parts carried by the middle beam thereby descend, the half-molds 14 15 will then retire and the bottom plate 28 is by its mechanism above described withdrawn to the position shown in Figs. 2 and 8, so that the compressed heel 25 now falls into the vacant space on the top of the beam 5, caused by the withdrawal of the bottom plate 28. Upon the next forward movement of the bottom plate 28 the heel will be pushed forward into the funnel or chute 66, down which it slides away, and the operations above described repeated on the next heel, which will have simultaneously been fed in by the arm 38 between the clips 51 52.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a heel-compressing machine of the kind herein referred to and in combination with the rising and falling middle beam thereof, the half-molds for compressing the heel carried by said beam, a table carried by said beam, a magazine on said table adapted to carry the heels in a pile one above another, an arm adapted to move to and fro on the table and to push the bottom heel of the pile forward, carriers or clips arranged above the half-molds and adapted to receive and hold the heel when it is pushed forward from the magazine, a slide carried and guided by said middle beam, and on which the heel is compressed, means for moving said slide to and fro as the beam rises

and falls, fingers carried by said slide and adapted to open the carriers or clips when the slide is moved under the heel which is carried by said clips, said parts being constructed and arranged for joint operation in the manner and substantially as set forth.

In testimony whereof I have signed my name

to this specification in the presence of two subscribing witnesses.

JOHN VEASY COLLIER.

Witnesses:

HENRY RUSSELL SMITH,
RALPH WALDEN GARDNER.