

J. H. FERRABEE, JR.
MACHINE FOR COMPRESSING THE HEELS OF BOOTS AND SHOES.
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1,006,072.

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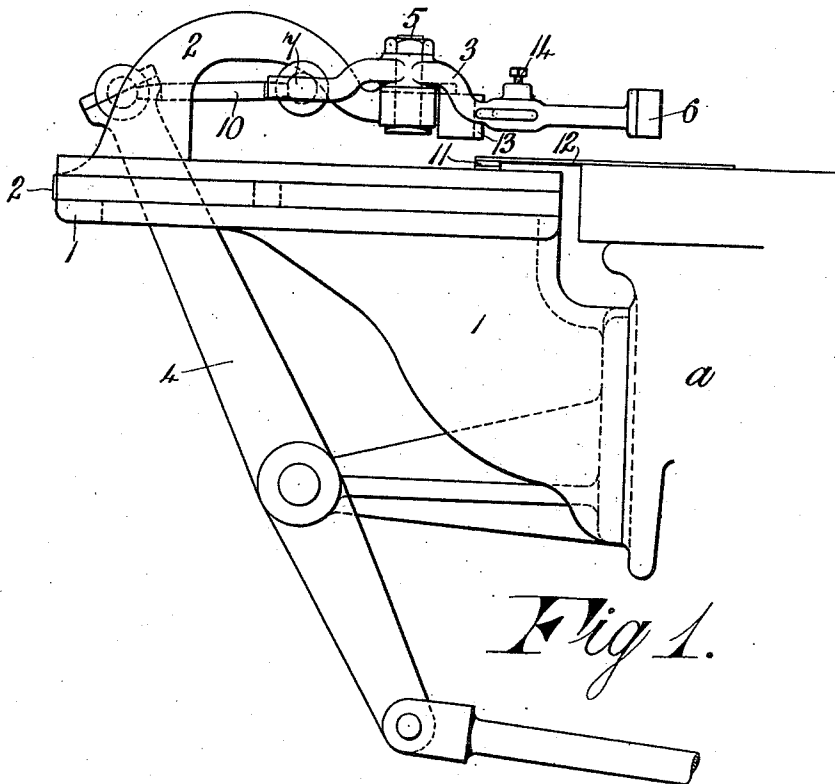


Fig 1.

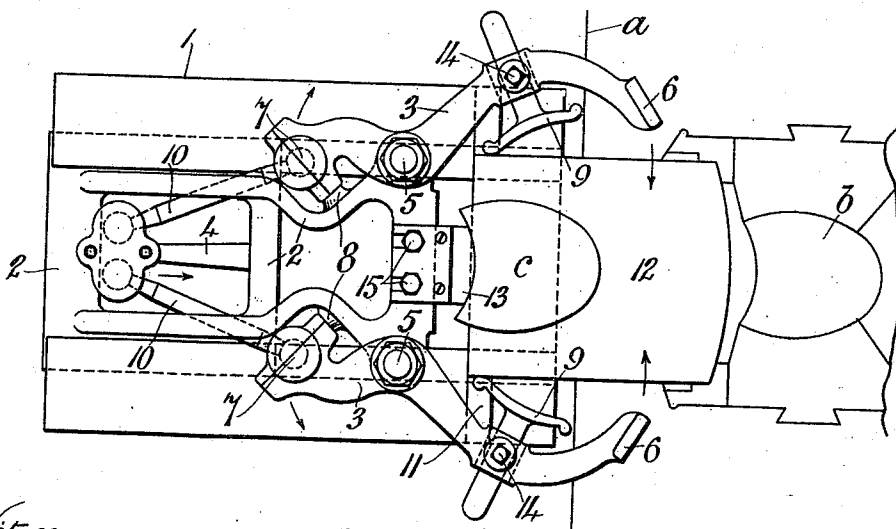


Fig 2.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR COMPRESSING THE HEELS OF BOOTS AND SHOES.

1,006,072.

Specification of Letters Patent.

Patented Oct. 17, 1911.

Application filed March 13, 1911. Serial No. 614,212.

To all whom it may concern:

Be it known that I, JAMES HENRY FERRABEE, JR., a subject of the King of Great Britain, residing at Leicester, in the county of Leicester, England, have invented new and useful Improvements in or Relating to Machines for Compressing the Heels of Boots and Shoes, of which the following is a specification.

10 This invention relates to machines employed in the manufacture of boots and shoes for compressing heels after the latter have been nailed and before they are attached to the boot or shoe.

15 The present invention comprises an improvement in or modification of the feed mechanism of the machine which forms the subject of my prior English patent application No. 18506 dated 11th August 1909.

20 The object of the present invention is to simplify the construction of the feed mechanism of the prior machine and this is effected in a manner which will now be described.

25 In the feed mechanism of the prior application before referred to, two pivoted and slidable fingers are employed to simultaneously carry the compressed heels from the mold and feed fresh heels to the mold. 30 These fingers grip the compressed heels between their forward ends and for the purpose of adapting said fingers for different sizes of heels the fulcrums of said fingers are adjustable toward and from each other 35 to vary the distance between the gripping ends of the fingers.

The present invention obviates the adjustment of the fulcrums of the fingers by arranging that the ends of the fingers, instead 40 of closing on opposite sides of the compressed heel to grip the latter, shall close or move together in front of the heel, and then, instead of carrying it away from the mold, said fingers shall push the heel away 45 as the fingers slide forward. In the present case where the fingers close together for all shapes and sizes of heels and do not grip the heels, no variation of the distance between the fingers is required, and therefore 50 their fulcrums are attached to the supporting slide in permanent positions relatively one to the other.

The adjustment of the side members of the guide which receives the heels to be fed 55 to the mold is effected by moving them in

the pivoted fingers the same as described in the prior English application. The feed mechanism of the prior English application was furnished with a slide having a reciprocating movement in a bracket actuated by a 60 lever and links from a cam. This slide carried the pivoted fingers hereinbefore referred to and said fingers received their closing and opening movement from cam slots along which trucks or rollers, mounted on 65 the fingers, traveled. This construction is much simplified according to the present invention which obviates the use of the cam slots and by a modified arrangement of the parts obtains both the reciprocation and 70 opening and closing movements of the fingers from one actuating lever.

In further describing the invention reference will be made to the accompanying drawing, wherein:— 75

Figure 1 is a side elevation of the improved feed mechanism constructed according to the present invention. Fig. 2 is a plan of the same.

Like parts are designated by the same reference characters in both figures of the drawing. 80

In like manner to the feed mechanism of the prior English patent application No. 18506 of 1909, the feed mechanism of the 85 present invention is carried by a bracket 1 attached to the front of the lower reciprocating beam *a* of the machine.

In the arrangement according to the present invention the slide 2 on which the fingers 90 3 are pivotally mounted is freely movable to and fro along its supporting bracket 1, that is to say, it is not directly coupled with the actuating lever 4 of the feed mechanism. As previously stated the fulcrums 5 of the 95 fingers are mounted in permanent positions on the slide 2, and the movement of said fingers 3 on their fulcrums is restricted, the arrangement being such that the fingers close toward each other until their forward 100 ends 6 meet in front of the compressed heel and then, after the closed fingers have moved forward to push the said heel from the mold *h*, they open apart until their rear ends 7 make contact with suitable stops 8 105 on the slide 2 whereupon the fingers move rearward to leave the fresh heel in the mold. This result is brought about by coupling the rearward ends 7 of the pivoted fingers 3 directly to the upper end of the actuating rock 110

lever 4 of the mechanism, said coupling being of such a nature that it will allow movement to take place both laterally and vertically as the parts move.

5 The actuating rock lever 4 of the present mechanism, as in the prior English application, is oscillated by connection with a cam or equivalent (not shown) and its upper end moves toward and from the mold in a
10 corresponding direction to that of the slide 2 and feed fingers 3. The functional result of coupling this rock lever 4 to the rearward ends 7 of the two pivoted fingers 3 respectively instead of, as hitherto, to the
15 slide, is as follows. When the slide 2 is in its normal *i. e.* rearward position farthest from the mold as shown in the drawing, the commencement of the forward movement of the rock lever 4 (indicated by an arrow in
20 Fig. 2) will open the rearward ends 7 of the fingers 3 thus closing the forward ends 6 and also closing the sides 9 of the feed guide upon the heel *c* to be fed. This movement, indicated by arrows in Fig. 2, will continue
25 until the front ends 6 of the fingers meet in the front of the compressed heel and at this point the guide sides 9 will also have closed upon the fresh heel *c*. During the closing movement of the fingers 3, the slide 2 which
30 carries them remains stationary, but as soon as the fingers meet at their front ends 6 the closing movement of said fingers is stopped and the continued forward movement of the rock lever 4 moves the slide 2, and fingers 3
35 forward to push away the compressed heel from the mold *b* and carry forward the fresh heel *c* to the mold.

Upon the commencement of the return movement of the rock lever, 4, the slide 2
40 again remains stationary but the rearward ends 7 of the fingers 3 are drawn, by the couplings 10, toward each other thus opening the forward ends 6 of said fingers and also the guide sides 9 which release the fresh
45 heel *c*. This opening movement of the fingers 3 continues until it is arrested by the contact of the fingers with the stops 8 on the slide whereupon the rock lever 4 moves the slide 2 and fingers 3 rearward to the normal position again preparatory to the operation being repeated.
50

The preferred form of coupling between the ends 7 of the fingers 3 and the actuating rock lever 4 consists of a rod 10 connected at
55 its ends to the said rock lever and finger by a ball and socket joint of any suitable construction. Instead of the form of coupling members just described, it is obvious that members consisting of pivoted links con-

nected to the ends of the fingers and the ac- 60
tuating rock lever by double or other uni-
versally movable joints may be used. To
prevent the slide 2 overrunning in a for-
ward direction, a bar 11 is located across the 65
bracket 1, and any suitable form of stop (not
shown) may, if desirable, be provided to
prevent overrunning of the slide in a rear-
ward direction. Attached to the bar 11 is
a plate or platform 12 which extends in a
forward direction to the mold *b*. This plat- 70
form forms a support for the heels during
the feeding thereof, that is to say, the fresh
heels *c* are placed by hand on the platforms
12 and in front of a breast block 13, then
when the sides 9 have closed in upon the 75
heel the latter is moved forward over said
platform 12 and left in the desired position
on the mold bottom. The guide sides 9 are
held in their adjusted positions in the fin-
gers 3 by means of set screws 14 and the 80
breast block 13 is held by screws 15 and may
be interchanged with others having differ-
ently shaped fronts.

What I claim is:—

1. In a heel compressing machine, feed 85
mechanism comprising a slide, a supporting
bracket along which said slide is freely mov-
able, pivoted fingers carried by said slide, an
actuating rock lever, and pivoted coupling
members between the rock lever and pivoted 90
fingers said coupling members and rock lever
imparting respectively a closing and open-
ing movement to the fingers before the com-
mencement of the forward and return move-
ments of the slide the latter being effected 95
through the medium of the couplings and
fingers, substantially as described.

2. In a heel compressing machine, feed
mechanism comprising a fixed supporting
bracket, a slide freely movable along said 100
bracket, pivoted fingers mounted on said
slide, guides adjustably mounted in said
fingers adapted to grip the heel to be fed
on opposite sides thereof, a rock lever, rods
to couple the pivoted fingers to the actuating 105
rock lever, ball and socket connections be-
tween the said coupling rods and the fingers
and rock lever, and stops to restrict the open-
ing movement of the fingers, all substantially
as herein set forth. 110

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

JAMES HENRY FERRABEE, JR.

Witnesses:

B. V. C. TAYLOR,
GEORGE LESTER.