

No. 699,113.

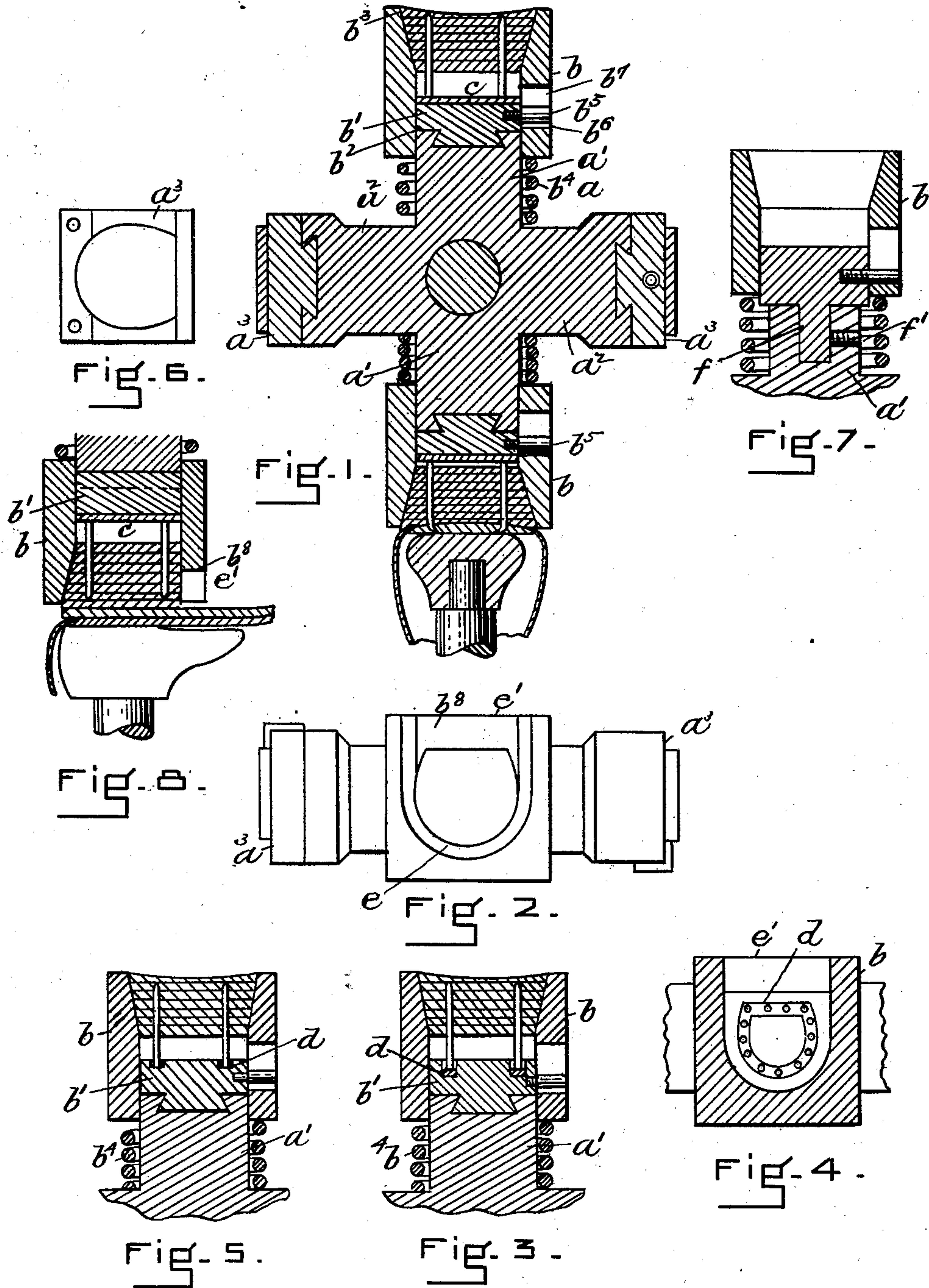
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F. F. RAYMOND, 2d.

HEEL HOLDER FOR HEEL ATTACHING MACHINES.

(Application filed July 18, 1898.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## HEEL-HOLDER FOR HEEL-ATTACHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 699,113, dated April 29, 1902.

Application filed July 18, 1898. Serial No. 686,241. (No model.)

*To all whom it may concern:*

Be it known that I, FREEBORN F. RAYMOND, 2d, a citizen of the United States, and a resident of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Heel-Holders for Heel-Attaching Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a device for holding the heels centrally during the nail-driving operation, also to a particular form of nail-driving device, and also to the combination of the heel-holder with nail-driving devices.

Referring to the drawings, Figure 1 represents in vertical section a rotary nailing-head having two heel holding and nailing devices thereon, one of which is shown in operative conjunction with a portion of a jack to represent the relation which the heel-holder bears to the heel of the boot or shoe at the instant of attachment. Fig. 2 is a plan view of the rotary head and heel-holder. Fig. 3 is a view representing in section a heel-holder and a nail-driving plate in connection therewith for use when the heel is to be blind-nailed instead of flush-nailed. Fig. 4 is a view, partly in plan and partly in section, of the holder and nail-driver of Fig. 3. Fig. 5 is a view in section, representing the construction shown in Figs. 3 or 4, which will hereinafter be specified. Fig. 6 is a view in plan of the top-lift holder used in connection with the rotary head of Fig. 1 upon two of its arms. Fig. 7 represents the same construction of holder as that shown in Fig. 1, the nailing-plate being attached to the arm of the rotary head in a different manner. Fig. 8 is a view in vertical section, representing a modified form of holder, to which reference is hereinafter made.

$a$  is the rotary head.

$a'$  represents the arms carrying the nailing-plates and heel-holders;  $a^2$ , the arms carrying the top-lift holders and spankers  $a^3$ .

The heel-holder  $b$  preferably is given the vertical or sliding movement in relation to the nailing-plate  $b'$  and arm  $a'$  and when so

constructed is shaped to fit the outer edge  $b^2$  of the nailing-plate to slide thereon and be guided thereby. It is moved outward to maintain its opening  $b^3$  in position to receive and locate the heel-blank preferably by spring  $b^4$ , and the extent of its outward movement is limited by a stud  $b^5$  to the end  $b^6$  of a slot  $b^7$  in the holder through which the stud extends. The holder preferably has the mouth or opening  $e$  of a shape to bear against the sides or portions of the sides and the back of the heel and is varied as to shape, as the heels vary in this particular. The front  $e'$  of the holder preferably is open. The rear portion of the holder, or that section which slides upon the plate  $b'$ , preferably has the cross-bar  $b^8$ , and this preferably is integral with the rest of the holder. The holder has sufficient movement in relation to the surface of the nailing-plate to permit a loaded heel-blank to be placed therein and held by its sides without the ends or heads of the attaching-nails coming into contact with the attaching-plate, the heel being held in the heel-holder by the contact of its side and back surface or sections thereof with the bearing-sections of the holder. By providing the holder with the front opening  $e'$  the heel-blank may be more quickly and readily placed in position.

The nailing-plate  $b'$  may have a flat nailing-surface  $c$ , as represented in Fig. 1, or it may have a groove or recess  $d$ , as represented in Figs. 3, 4, and 5. The flat surface is adapted for flush-nailing and the grooved surface for blind-nailing. The groove is made of the shape in which the nails are arranged or located in the heel, preferably continuously in the plate, and of a depth to receive the sections of the heads or ends of the nails, so that they may not be driven flush with the surface of the heel-blank, but may, after the attachment of the heel-blank, project from the heel-blank sufficiently to receive and hold the top lift. To insure wear, I prefer to cover the plate  $b'$  with a thin steel plate and in the plate represented in Figs. 3 and 4 to make the groove deep enough to receive and hold a removable steel wearing-piece of a width to fit the recess  $d$ .

In order that the nailing-plate and holder



may be readily removable from its holding-arm  $a'$  and also in order that the arm  $a'$  may receive a nailing-plate and holder for any size heel, I make the arm  $a'$  of a size sufficient to  
 5 receive the smallest nailing-plate, and instead of attaching the nailing-plate to the arm  $a'$  by a dovetail, as represented in Fig. 1, I provide it with a spindle  $f$ , which enters a hole in the arm  $a'$  of a size to receive it, and the  
 10 spindle is locked to the arm  $a'$  by a set or locking screw  $f'$ . This enables the nailing-plate and holder of one form to be quickly removed and one of another form substituted.

15 It will be seen that this device affords a quick, ready, and accurate means of placing a heel-blank in position for attachment and also serves to accurately center the heel-blank during the attachment, also holds the heel-  
 20 blank in place during the movement or rotation of the arms  $a'$  from one position to another, also does away with the necessity of placing the ends of the nails in the holes of a templet, as when drivers are employed in-  
 25 stead of a nailing-plate.

The rotary head is preferably mounted upon a horizontal axis and may be moved vertically by a reciprocating cross-head or may be stationarily held. In the first event the  
 30 jack will be stationary and the rotary head movable toward it to attach a heel-blank and top lift. In the second event the jack will be movable toward the rotary head during the attachment of the heel and the top lift.  
 35 By mounting the head upon a horizontal axis the heel-holders and top-lift holders are adapted to be supplied with heels and top lifts when in their uppermost position and to attach them when in their inverted or lower-  
 40 most position. This enables the heel-blanks and top lifts to be quickly placed, and with their holders in sight of the boy or operator who feeds the heel-blanks and top lifts. The rotary head may have but one heel-blank  
 45 holding and nailing device and one top-lift-applying device, in which event I prefer that they be arranged diametrically opposite each other.

Having thus fully described my invention,  
 50 I claim and desire to secure by Letters Patent of the United States—

1. In a heel-attaching machine the combination of nail-driving devices movable from an overhead receiving to an underneath at-  
 55 taching position, with a heel-holder provided with fixed sides forming a socket to hold the heel and movable with said nail-driving devices from receiving to attaching position and also movable toward and from the nail-driv-  
 60 ing devices.

2. In a heel-attaching machine, the combination of the nail-driving device with a heel-holder attached thereto and movable lengthwise thereon, said heel-holder being hollow

and having a section at its outer end, of a 65 shape corresponding with the shape of the sides of a heel-blank and forming a socket to receive and hold the heel-blank in a position removed from the nail-driving devices, and a  
 70 section forming a sleeve having parallel sides, said sleeve being the shape and area in cross-section of said nail-driving device and adapted to slide thereupon, said sections forming a continuation of each other, as and for the  
 75 purposes set forth.

3. In a heel-attaching machine, a heel-attaching arm or support and a heel-holder adapted to slide telescopically upon it, said holder being hollow and having a section  
 80 shaped to receive and support a heel-blank by its edge and a section having sides parallel with those of said arm or support whereby said holder is adapted to hold a heel-blank in a position somewhat removed from the end  
 85 of said arm or support and to permit the movement of the arm or support relatively to the holder and the heel-blank in the act of attaching it.

4. In a heel-attaching machine, a heel-attaching arm having a hollow heel-holder slid- 90 ably attached to its outer end, said heel-holder having a section forming a sleeve with parallel sides adapted to slide on said arm, and an outer enlarging section shaped to receive the sloping sides of a heel, and limit the  
 95 entrance of the heel-blank therein, whereby each blank will be held in a predetermined position with relation to the shoe during the heel-attaching operation, as set forth.

5. In a heel-attaching machine a plate hav- 100 ing a continuous recess  $d$  adapted to receive the heads of nails projecting from a heel and serve as a driver therefor, in combination with means for holding the heel during the driving operation. 105

6. In a heel-attaching machine the plate hav- ing a continuous recess  $d$  adapted to receive the heads of nails projecting from a heel to be attached, in combination with a removable  
 110 metal strip held in said recess, and means for holding the heel during the attaching operation, as and for the purposes set forth.

7. In a heel-attaching machine, a rotary head having one or more arms projecting therefrom each carrying at its outer end a  
 115 nail-driving surface and a heel-holder projecting beyond said nail-driving surface and movable in relation thereto in the manner described, in combination with one or more arms also mounted upon said rotary head and  
 120 each carrying at its extremity a top-lift-applying device, as and for the purposes set forth.

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Witnesses:

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