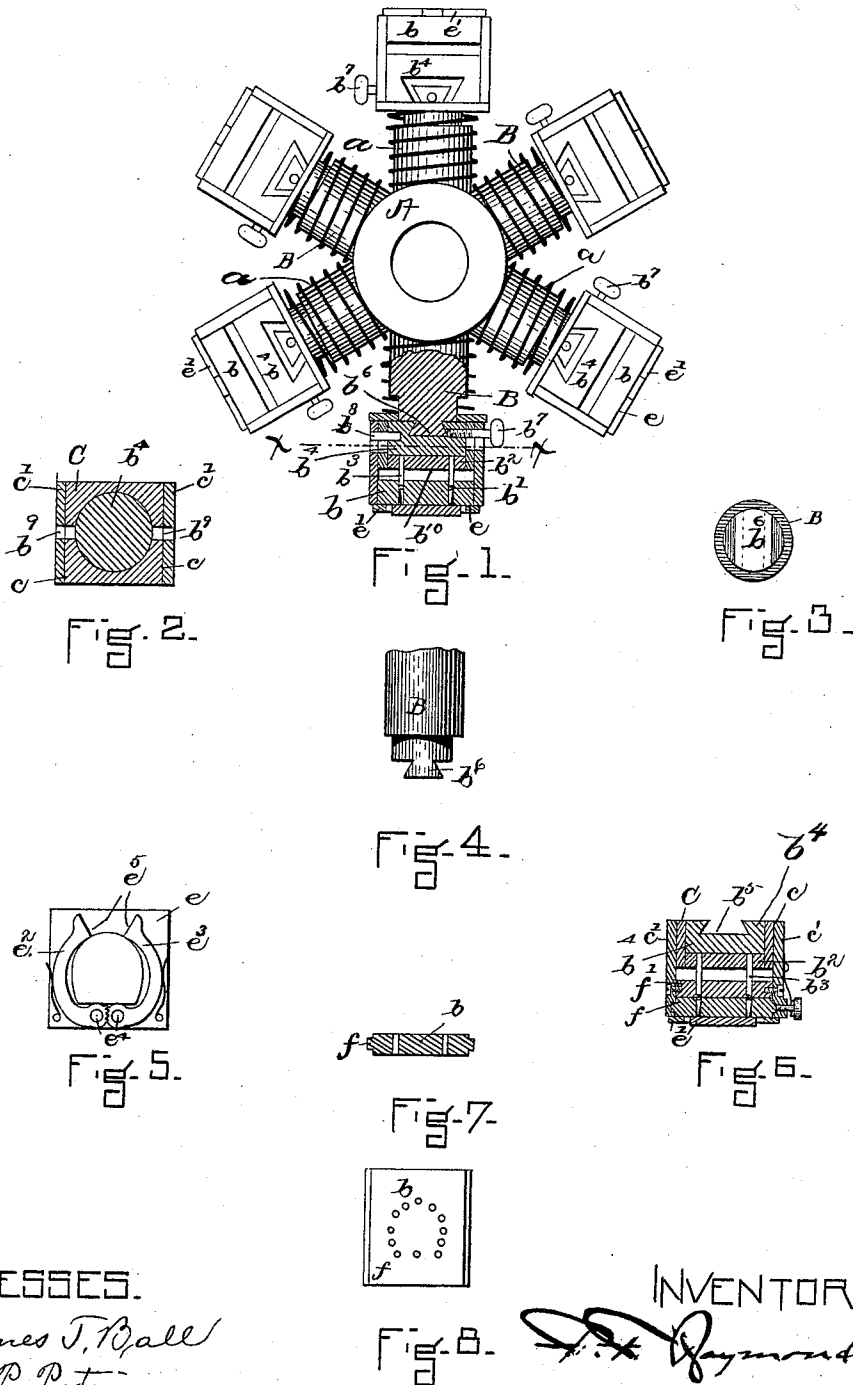


(No Model.)

F. F. RAYMOND, 2d.
HEEL NAILING MACHINE.

No. 581,408.

Patented Apr. 27, 1897.



WITNESSES.

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HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 581,408, dated April 27, 1897.

Application filed August 20, 1889. Serial No. 321,389. (No model.)

To all whom it may concern:

Be it known that I, FREEBORN F. RAYMOND, 2d, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Heel-Nailing 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 is an improvement upon that described in my application for Letters Patent of the United States filed August 17, 1889, Serial No. 321,158, and it relates especially to the top-lift spanker and devices for driving an additional gang or group of nails through the top lift. It is desirable that there be provision for the adjusting of the top lift horizontally or back and forth in relation to a given breast-line for the purpose of enabling the same top lift to be applied to a number of nails driven in different orders or by different prickings, and when additional nails are to be driven through the top lift it is desirable that the nail-holes bear the same relation continuously to the edge of the top lift. Therefore when the top-lift spanker is made with holes through which said nails are driven it is desirable that the driving devices and the top-lift spanker and holder be adjustable together. It is also desirable that the top-lift holder and spanker or a portion thereof be removable from the machine in order that it may be loaded with the additional gang of nails away from the machine and then be quickly placed in the machine and the nails driven therefrom. My invention relates to means whereby these things are accomplished.

Referring to the drawings, Figure 1 is a view principally in elevation of sufficient of the machine to illustrate my invention. Fig. 2 is a horizontal section upon a dotted line xx of Fig. 1. Fig. 3 is a view in plan, and Fig. 4 in elevation, of an arm of the head. Fig. 5 represents a view in plan of the top-lift holder. Fig. 6 shows the device provided with a removable nail-loading section, to which reference is hereinafter made. Fig. 7 is a section of such removable section, and Fig. 8 a plan view thereof.

A represents the rotary head described in said application. The arms a carry the device for driving the heel-attaching nails. Each arm B carries the top-lift centering and spanning device and mechanism for driving the nails through the top lift. Each device comprises the plate or block b , having the holes b' , the circular driver-holding block b^2 , and the drivers b^3 , secured thereto and extending into the holes b' of the block b . The driver-block b^2 is secured to another block b^4 , in which there is a dovetail recess b^5 , or the blocks $b^4 b^2$ may be made integral. The block b^4 is also circular, and upon the blocks $b^2 b^4$ there is arranged a thick sleeve C. It has a cylindrical hole to fit the blocks $b^2 b^4$ and the straight edges c . It is united to the block b by side plates c' . Each arm B has the dovetail tongue b^6 , upon which the dovetail block b^4 fits, and the block b^4 and parts carried thereby are horizontally adjustable upon this dovetail. The block is fastened in any position thereon by means of the set-screw b^7 . The movement of the sleeve C upon the blocks $b^2 b^4$ is limited by one or more pins b^8 , which enter slots b^9 , formed in the sleeve. There is attached to the surface e of the block b the top-lift holder e' , which preferably has two arms $e^2 e^3$, pivoted at e^4 to the breast end of the block and preferably geared together, closed by springs, and having the flaring ends e^5 . It will be seen that by this construction the drivers, top-lift spanker, and top-lift-centering devices can be simultaneously adjusted or moved upon the arm B; also, that the same can be quickly removed therefrom and another substituted in the place thereof. This construction is essential when it is desired to load the block b away from the machine or when it is not attached to the head. This last-named result can also be obtained by making the block b in two parts $f f'$ and making the portion f removable from the side plates c' , preferably providing it with tongues to fit grooves in the slide-plates and fastening it in place by a spring-pin. Then in lieu of removing the drivers to load the device only the lower section f is taken from the machine. The top lift is first inserted in the top-lift holder and the nails inserted in the

holes of the block from above, and when loaded it is returned to its original position, which brings the holes in line with the holes *b'*.

Each arm *B* is surrounded by a spring which bears against a collar that slides thereon, the outward movement of the collar being limited by suitable stops, and in use, upon the reciprocation of the head, the arm or top lift comes in contact with the heel, stopping the plate *b*. The sleeve *C* then rides up on the blocks *b⁴ b²*, coming in contact with the collar and in opposition to the spring. The head still continuing its downward movement forces the nails through the top lift into the heel-block, and the surface *b¹⁰* of the block *b²* comes in contact with the upper surface of the block *b* and applies such pressure to the top lift as is necessary to properly spank it upon the heel.

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

1. The combination, in a heel-nailing machine, of the following instrumentalities, viz: a supporting arm or head, a top-lift spanker and nailing device consisting of a driver holding-block, a sleeve movable on said block, a perforated spanker-block, drivers carried by said driver holding-block and entering said perforations, a top-lift holder cooperating with the spanker during the driving operation, and arms or plates connecting said movable sleeve and the spanker-plate substantially as described.

2. The combination, with a perforated spanker-block, of a top-lift holder carried thereby and cooperating therewith, a driver-

block carried thereby and provided with a gang of drivers, means for securing the block to a holding arm or head so as that it shall be horizontally adjustable thereon, a sliding sleeve mounted on said block, and connections between said sleeve and spanker-block, substantially as described.

3. In a heel-attaching machine, a supporting arm or head, in combination with a combined removable top-lift spanker and nail-driver, consisting of a driver-block, a gang of drivers carried thereby, a perforated spanker-block movably secured to said driver-block and movable with relation to said drivers, and a top-lift holder carried by said spanker-block and cooperating therewith, substantially as described.

4. The combination of the arm having the spring and collar and dovetail tongue with the driver holder-block having a dovetail recess and a set-screw, drivers carried thereby, a spanker-block having holes *b'*, the top-lift holder carried by said spanker-block, and a sliding connection uniting the spanker-block and the driver holder-block, substantially as described.

5. The combination in a heel-nailing machine, of a combined removable spanker-block and nail-holder comprising the plate *f* having nail-receiving holes *b'* and a top-lift holding and centering device upon one surface thereof, as and for the purposes described.

FREEBORN F. RAYMOND, 2D.

In presence of—

JAMES TURNER BALL,
A. P. PORTER.