

No. 745,971.

PATENTED DEC. 1, 1903.

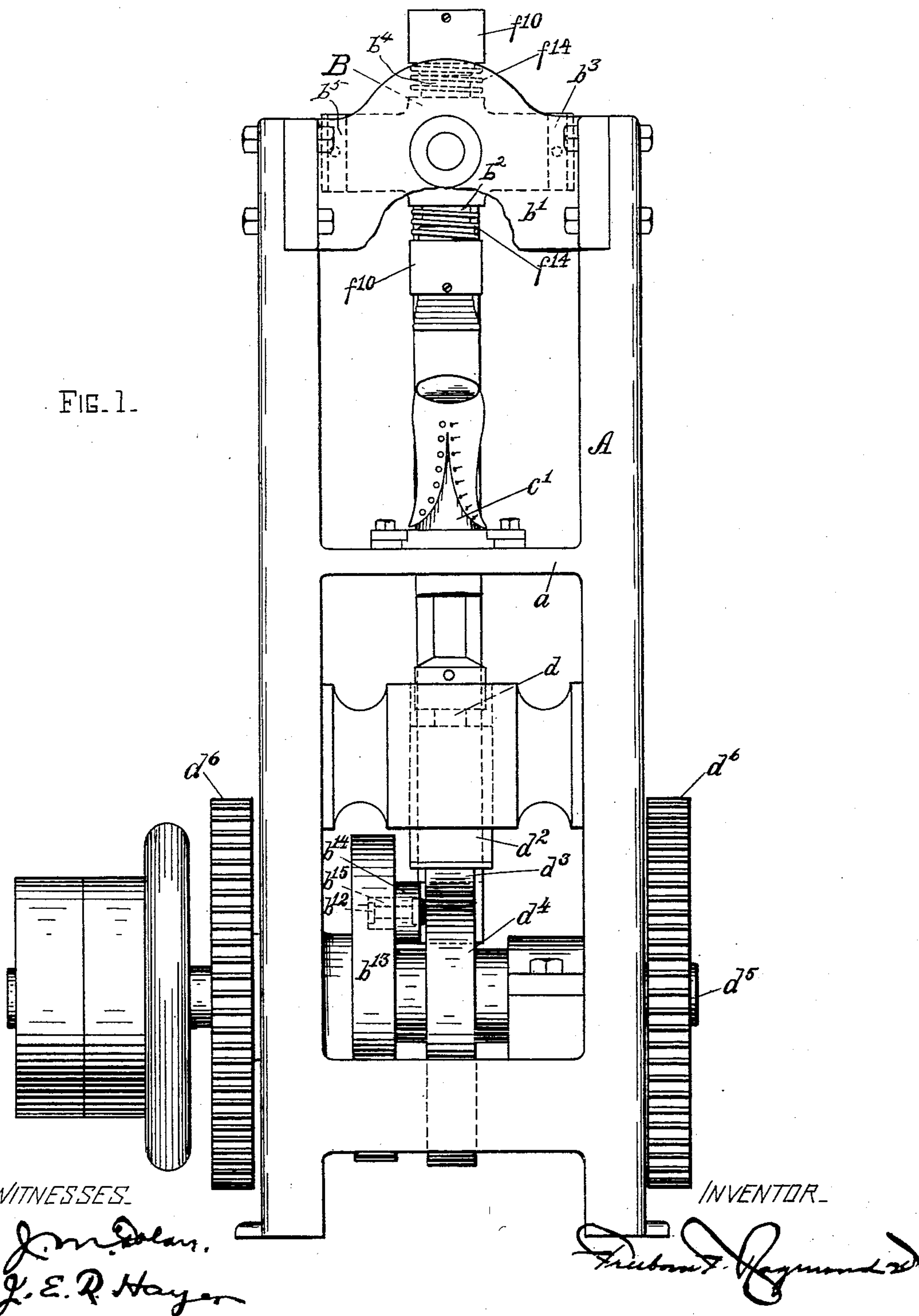
F. F. RAYMOND, 2D.
HEEL ATTACHING MACHINE.

APPLICATION FILED FEB. 20, 1892.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.



No. 745,971.

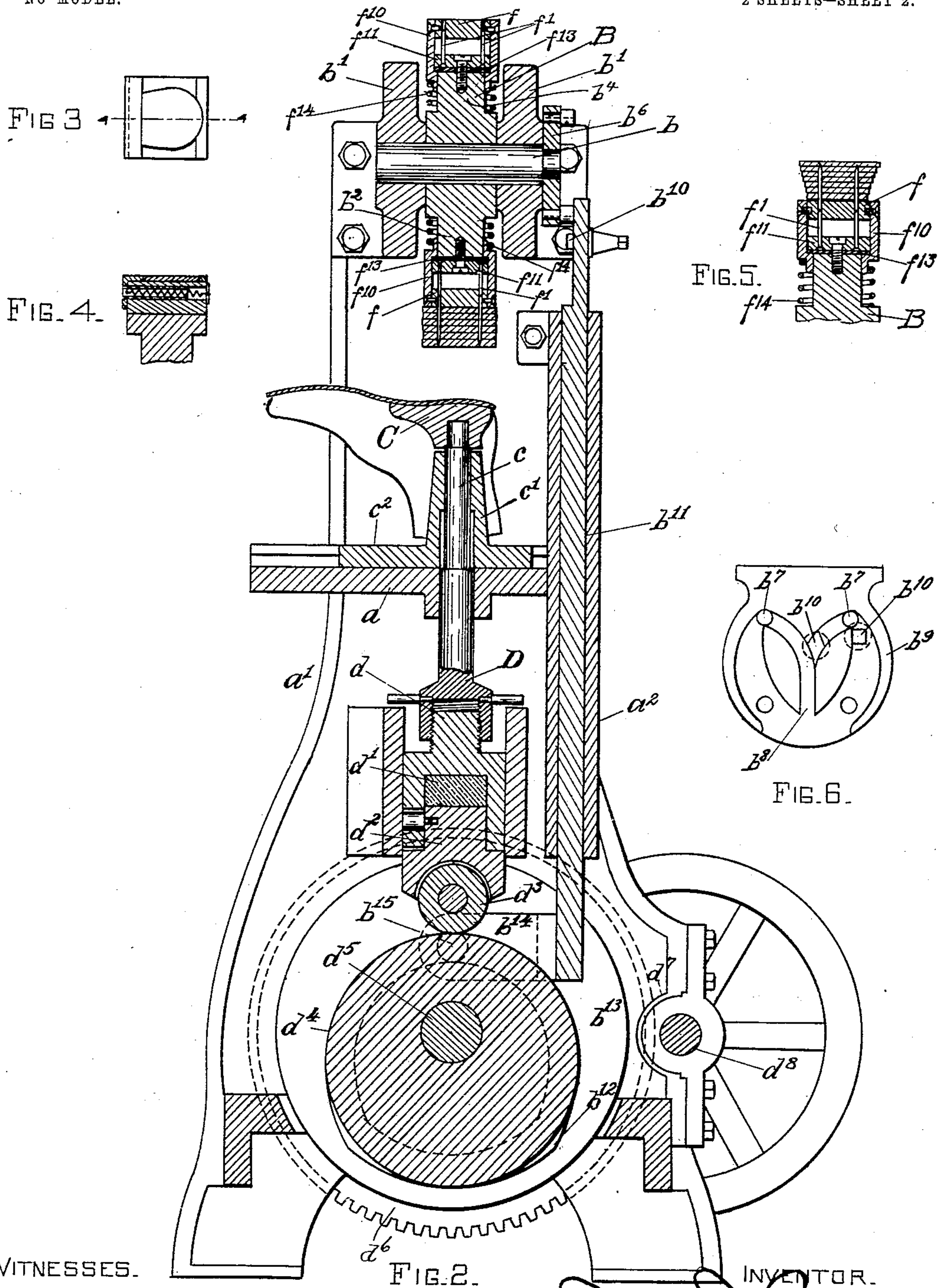
PATENTED DEC. 1, 1903.

F. F. RAYMOND, 2D.
HEEL ATTACHING MACHINE.

APPLICATION FILED FEB. 20, 1892.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES.

J. M. Dolan.
J. E. R. Hayes

INVENTOR.

Frederick F. Raymond, Jr.

UNITED STATES PATENT OFFICE.

FREEBORN F. RAYMOND, 2D, OF NEWTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNITED SHOE MACHINERY COMPANY, A CORPORATION OF NEW JERSEY.

HEEL-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 745,971, dated December 1, 1903.

Application filed February 20, 1892, Serial No. 422,321. (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-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 heel-attaching machine having a rotary nailing-head or carrier which turns, but is not reciprocated, and a last or work-support having a movement toward and from the nailing-head.

The invention otherwise relates to various details of construction and organization, all of which will hereinafter be described.

Figure 1 is a view in front elevation of a machine embodying my invention. Fig. 2 is a view in vertical central section of the machine shown in Fig. 1, this figure showing the parts in the positions they will occupy prior to the heel-attaching operation. Fig. 3 is a view in plan, and Fig. 4 in section, of the top-lift holder. Fig. 5 is a view in section of the heel-attaching mechanism, showing the yielding templet in inverted or heel-receiving position, with a loaded heel applied to it; and Fig. 6 is a view in elevation of the cam-plate.

A is the frame of the machine.

a is the bed.

a' is the front of the machine; a^2 , the back.

B is a nailing-head or carrier. It is mounted upon the shaft b , which has bearings in the supporting blocks or bars b' .

The nailing-head or carrier B is represented as having four arms b^2 b^3 b^4 b^5 , respectively. The arms b^2 b^4 have each a yielding templet and a gang of drivers, as shown in Figs. 2 and 5, and the arms b^3 b^5 each have a spanker-block and top-lift holder. Each arm of the head, however, may have nailing templets or plates, if desired.

The head or carrier B may be turned by hand by means of a dial having a handle and may be locked in position by a spring-latch to engage registering recesses in the dial, or it may be turned automatically by means of a disk b^6 upon the shaft b , having cam-pins

b^7 , which are engaged by the grooves b^8 of a sliding cam-plate b^9 , the sliding cam-plate having also switches b^{10} and operating to rotate and hold the head in the same manner as described in the patent of C. C. Small, dated January 19, 1892, No. 467,242, with the exception that in that case the cam-plate is stationary and the disk carrying the cam-pin is moved vertically, while in this case the cam-plate is moved vertically, while the cam-disk simply rotates.

I have represented the cam-plate b^9 as provided with a sliding movement by means of the slide-rod b^{11} and the cam-groove b^{12} in the cam-disk b^{13} upon the cam-shaft of the machine, the slide b^{11} having an arm b^{14} , carrying a cam-pin b^{15} , which enters the cam-groove b^{12} , and movement is imparted to the sliding cam-plate b^9 at the proper interval to turn the rotary head. This is when the work is in its lowest position. At all other times the cam-plate holds the rotary head stationary.

C is the last or work-support. It is mounted upon a spindle c , having a vertical movement in the sleeve c' , the sleeve rising from a plate c^2 , which is carried by the bed a and is adjustable thereon. The jack-spindle c rests upon a vertically-movable head D. This head is vertically adjustable upon a slide-block d , which rests on a cushion or block of rubber d' , and this slide-block is in turn held by another block d^2 , which has a cam-roll d^3 resting upon a pressure-cam d^4 upon a shaft d^5 . This shaft d^5 is connected, by means of gears d^6 and pinions d^7 , with a power or pulley shaft d^8 .

The heel-attaching device comprises a yielding templet f , secured to the sleeve f^{10} , arranged to slide on the end of an arm of the head or carrier B. On the end of the arm is secured a block f^{11} , carrying a gang of drivers f' , and between the block f^{11} and the arm is a driving-plate f^{13} , against which the ends of the drivers rest. The templet f is held away from the block f^{11} by the spring f^{14} . Thus each of the drivers occupies only a portion of its hole in the templet f , so that the projecting head ends of a loaded heel can be inserted in the holes.

The start-and-stop-motion mechanism is not

shown; but it is sufficient to say that the last may have one or more vertical movements for each operation of the machine, as may be required. If a heel is flush-nailed only, then one reciprocation may suffice, although two are preferable, because it is desirable in flush nailing not only that the nails be driven, but that the heel be leveled by the subsequent operation of a spanker.

10 In operation the operator places the boot or shoe upon the last or work-support and the loaded-heel blank in one of the templets and, if it is to be blind-nailed, a top lift in the next top-lift holder in order. Upon starting the machine the rotary head B is turned sufficiently to bring a heel in line with the last or work-support. The last or work-support immediately moves upward forcibly against the heel sufficiently to cause the templet to be moved on its arm and the drivers to act to drive the nails into the soles of the boot or shoe, attaching the heel thereto. The last then drops or moves away from the arm, the head turns, and the top lift is brought into position over the last or work-support, which then moves upward to bring the top of the heel forcibly against the same and causes it to be attached thereto by blind-nailing. In case the heel is flush-nailed instead of blind-nailed it may have one or two movements in relation to the rotary head, as above indicated.

It will be noted that as the cross-head does not reciprocate the attendant may occupy the time during which the last or work-support is reciprocating in placing upon the upwardly-projecting arm the top lift or heel to be attached upon a subsequent reciprocation of the jack.

40 A non-reciprocating rotary head having arms for the attachment of the heel-blank and the top lift not only permits of an improvement in the structure of the machine whereby the parts and finish necessary for reciprocating the cross-head above the jack are dispensed with, but a means is provided whereby the capacity of the machine may be increased in that the heel-blank and top lift may be placed by the attendant or boy

upon the arms of the head while the machine is in operation, it being understood that at such time the head is stationary, with one at least of its arms held in a receiving position.

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

1. In a heel-nailing machine the combination, with a last or work-support, of a rotary head bearing heel-attaching and top-lift-applying devices mounted upon a stationary support to be turned upon a vertical arc from an inverted heel-blank and top-lift-receiving position to a suspended attaching position over the last or work-support, and means for reciprocating said last or work-support as and for the purposes set forth.

2. In a heel-nailing machine, the combination, with a stationary support, of a carrier mounted on said support and provided with a heel-attaching device comprising a plurality of drivers and a yielding templet having a plurality of nail-holes, and also provided with a top-lift-spanking plate, said carrier being movable to present in operative position either the heel-attaching device or the top-lift-spanking plate, a work-support, and means for reciprocating the work-support toward and from said carrier.

3. In a heel-nailing machine, the combination, with a stationary support, of a carrier mounted on said support, a heel-attaching device on said carrier provided with drivers and a yielding templet and arranged to receive a loaded heel when in inoperative position, and an unyielding top-lift-spanking plate on said carrier arranged to receive a top lift when in inoperative position, said carrier being movable to present in operative position successively the heel-attaching device carrying a loaded heel and the top-lift-spanking plate carrying a top lift, a work-support, and means for reciprocating the work-support toward and from said carrier.

FREEBORN F. RAYMOND, 2D.

In presence of—

J. M. DOLAN,
M. McFAGUE.