(No Model.)

2 Sheets—Sheet 1.

F. F. RAYMOND, 2d.

HEEL ATTACHING MACHINE.

No. 377,958. Patented Feb. 14, 1888.

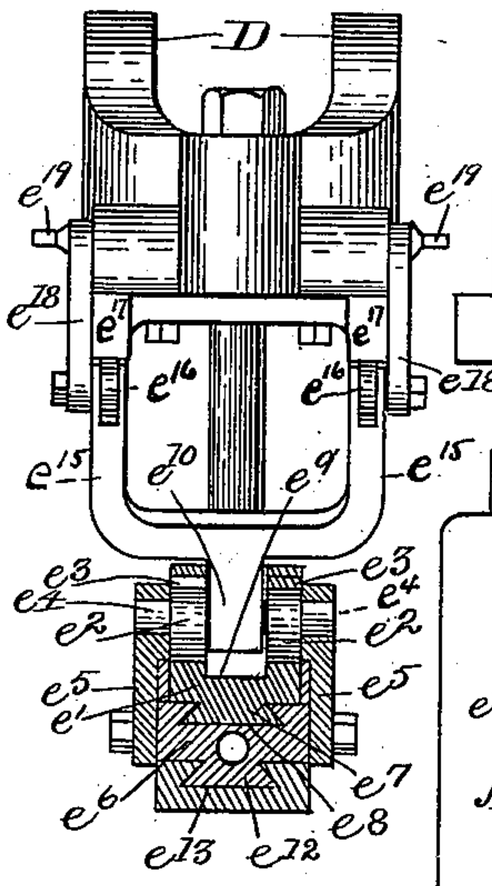

Fig. 3.

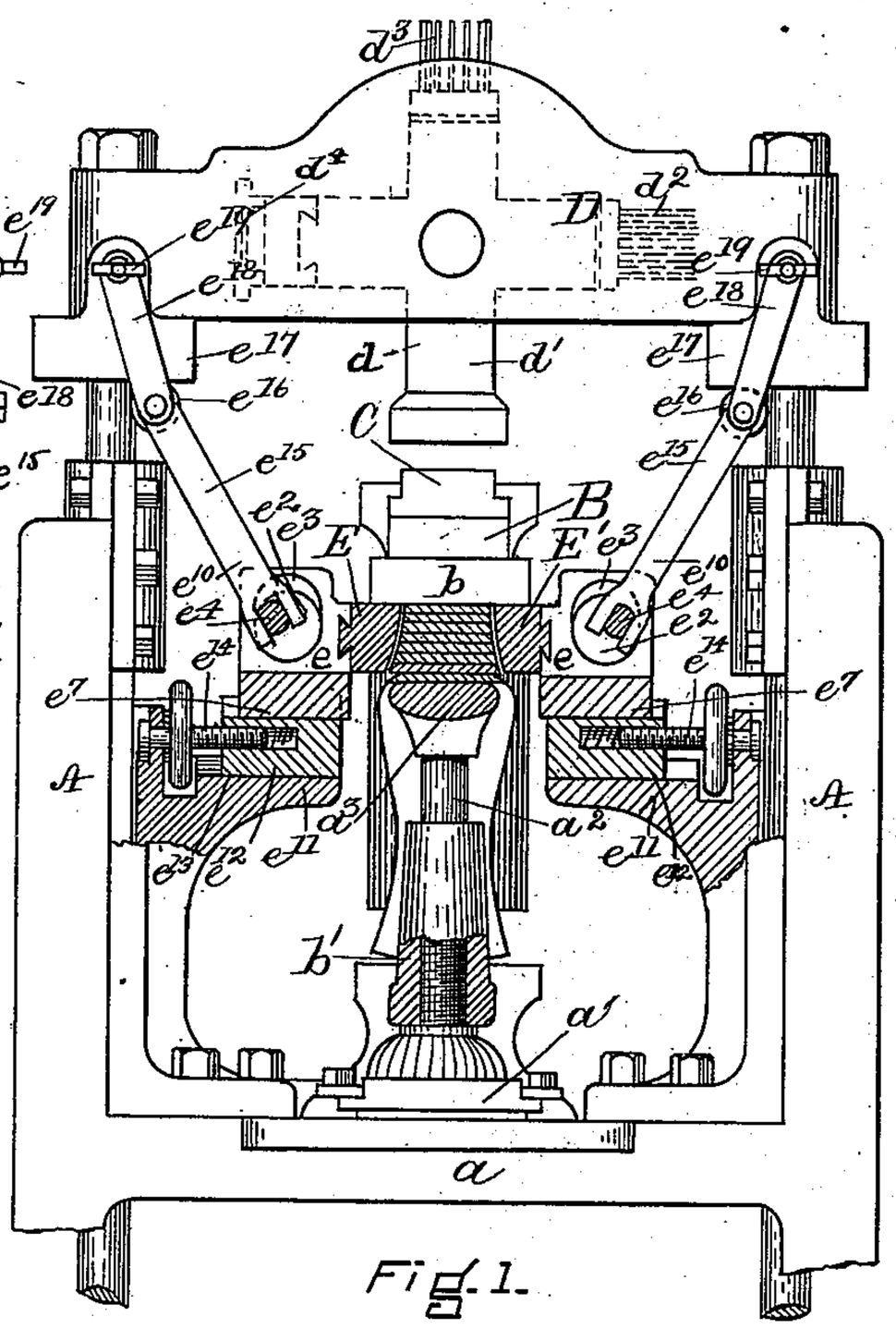

Fig. 1.

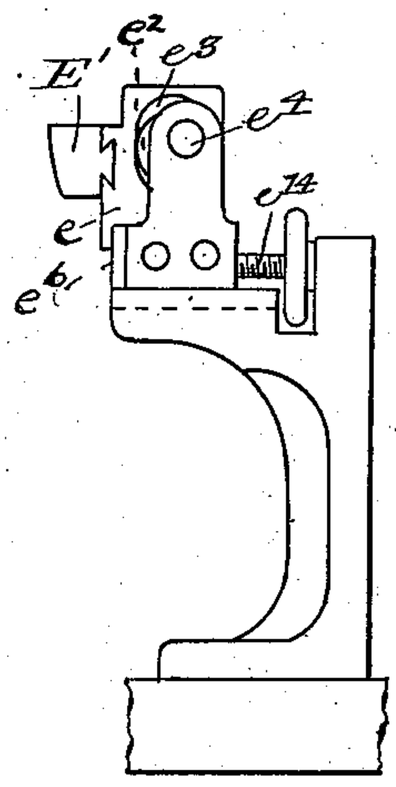

Fig. 4.

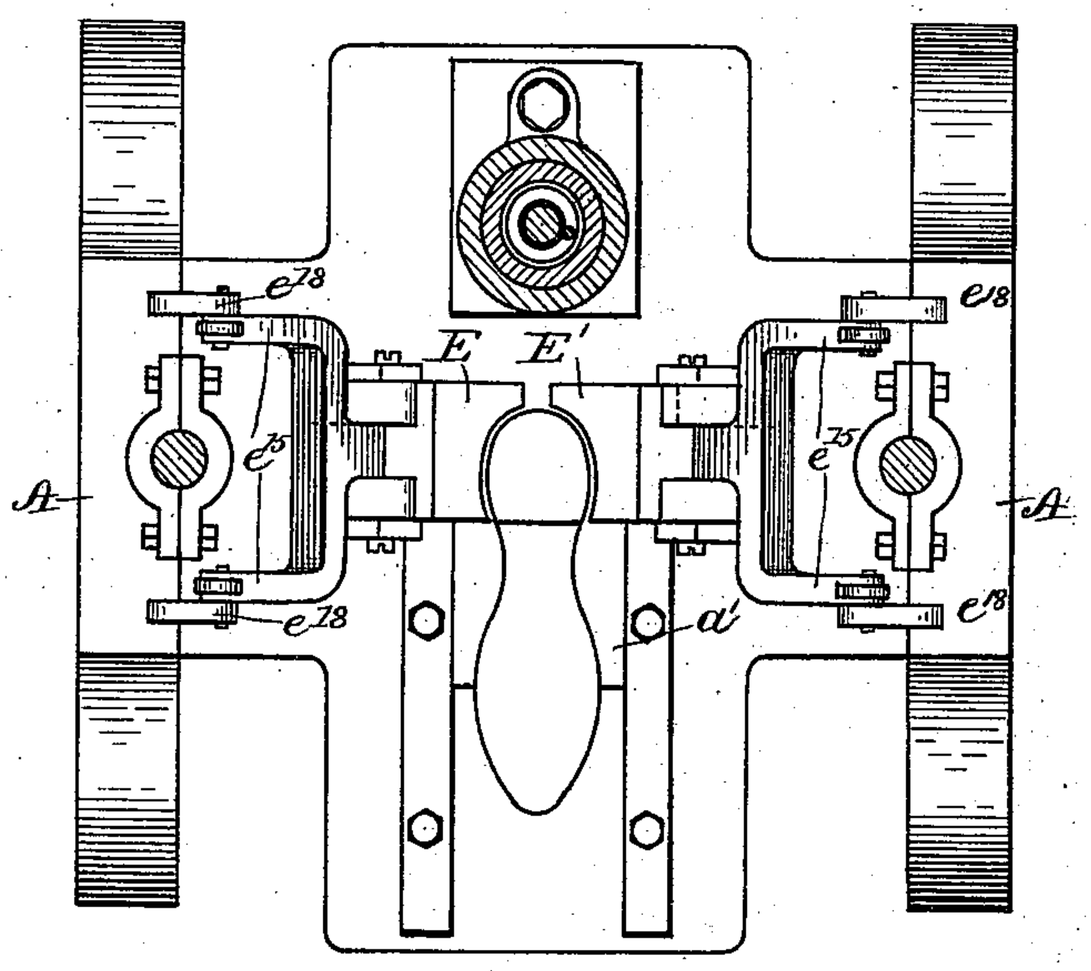

Fig. 2.

WITNESSES.

E. F. Small.

A. D. Grover.

INVENTOR.

F. F. Raymond

(No Model.) 2 Sheets—Sheet 2.

F. F. RAYMOND, 2d.

HEEL ATTACHING MACHINE.

No. 377,958. Patented Feb. 14, 1888.

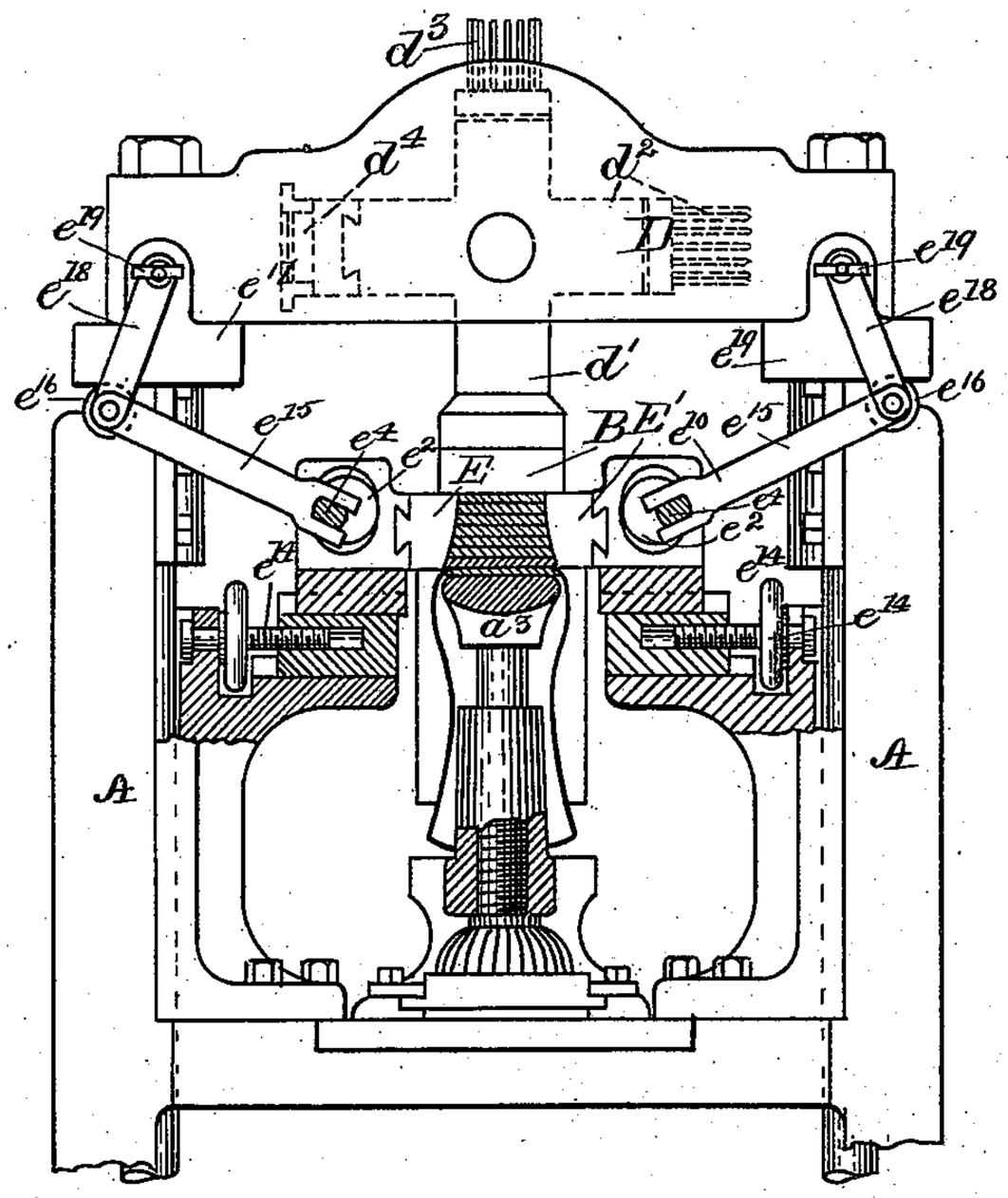

Fig. 5.

WITNESSES.
E. P. Small.
A. D. Grant.

INVENTOR.
F. F. Raymond 2d

UNITED STATES PATENT OFFICE.

FREEBORN F. RAYMOND, 2D, OF NEWTON, MASSACHUSETTS.

HEEL-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 377,958, dated February 14, 1888.

Application filed November 12, 1887. Serial No. 254,946. (No model.)

To all whom it may concern:

Be it known that I, FREEBORN F. RAYMOND, 2d, of Newton, in the county of Middlesex and State of Massachusetts, a citizen of the United States, 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 especially to the mechanism or devices for operating side-heel-compressing dies in a heel-attaching machine.

In the drawings, Figure 1 is a view, part in vertical section and part in front elevation, of a heel-attaching machine having the features of my invention. Fig. 2 is a view in plan of the dies and their operative devices, and in horizontal section of the frame of the machine and of the back post upon a level with the upper surface of the dies. Fig. 3 is a view in end elevation of the cross-head and of a lever for moving or turning one of the eccentrics, and in vertical section of the eccentric, the die-supporting block which it moves, and the carriage and support below the same. Fig. 4 is a view in front elevation of one section of the heel-compressing mechanism. Fig. 5 is a view of the same parts represented in Fig. 1, showing the position of the parts at the completion of the compression of a heel-blank upon the soles of a boot or shoe.

In the drawings, A represents the frame of the machine.

a is a cross-bed, upon which is mounted the sliding jack a', which has the jack-post a^2 and supports the last or work-support a^3.

B is the templet, and C the nail-carrier. They are supported upon the vertically-movable table *b*, which has a vertical movement upon the post b'.

D is a reciprocating head. It carries a rotary head, *d*, which has an arm forming the pressure-block d', an arm supporting a gang or group of awls, d^2, an arm supporting a gang or group of drivers, d^3, and an arm supporting a top-lift holder and spanker, d^4. These parts are like those described in Patent No. 316,894, and need not further be described here.

E is one side-compressing die, and E′ the other. Each die is mounted upon its respective slide-block *e* by means of a horizontal dovetail, which fits the horizontal dovetail recess in the block. The block is made movable in a carriage, e^6, by means of an eccentric, e^2, which passes through the enlarged hole e^3 in the block and has bearings e^4 in the arms e^5 of the slide-block e^6. The slide-block *e* has a dovetail, e^7, that enters a dovetail recess, e^8, in the upper surface of the slide-block e^6. It also has the recess e^9, across which the eccentric extends, and which receives the lower end, e^{10}, of a lever for turning the eccentric. The slide-block e^6 is horizontally movable upon the stationary bed e^{11}, which is bolted to the bed *a* of the machine (the slide-block e^6 having a dovetail projection, e^{12}, which enters a dovetail recess, e^{13}, in the stationary bed e^{11}) by means of the screw e^{14}. This slide-block e^6 is adjustable upon its bed e^{11} by means of the screw e^{14}. (See Figs. 1, 4, and 5.) The lever e^{10} has two arms, e^{15}, and each arm carries a roll, e^{16}, at its upper end, (see Fig. 3,) and they are in line with the bearing-blocks e^{17}, attached to the cross-head D, so that upon the descent of the cross-head these blocks bearing against the rolls cause the upper end of the lever e^{10} to be moved downward, turning the eccentric e^2 and throwing the holding-block and die E inward.

The lever C is connected with the head D by means of a link, e^{18}, which is secured thereto by thumb-screws e^{19} in a manner to permit them to be easily detached from the head. These links serve to keep the rolls in contact with the under surfaces of the blocks e^7, and also serve to draw the upper end of the lever upward upon the upward movement of the cross-head D, thereby serving to rotate the eccentric e^2 in a reverse direction and moving backward the die-supporting block and die. This construction provides a very powerful compressing mechanism.

To obtain adjustments of the relation of the dies E E′ to each other it is simply necessary to adjust upon the beds e^{11} the slide-block e^6 by means of their adjusting-screws e^{14}.

In operation the shoe is placed upon the jack with its outsole uppermost, the heel-blank is placed in the die-recess, and the templet moved into position over the heel-blank and moved downward sufficiently to bring its upper sur-

face into contact with the heel. The pressure-block *d'* is then moved into operative position. The machine is then caused to make one reciprocation, the dies E E' are caused to be moved inward against the side edge of the heel, and the templet is at the same time moved downward forcibly. The heel is then held confined upon the surface of the outsole, and while thus confined it is pricked, the nails fed, and attached. The templet is then removed and the top lift spanked.

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

1. The combination of the dies E E', the slide-blocks and eccentrics, and levers connected with the eccentrics for rotating them, substantially as described.

2. The combination, with the heel-attaching devices, of dies E E', the die-holding blocks *e*, the eccentrics e' e^2, the blocks e^6, the levers e^{10}, and the reciprocating cross-head D, substantially as described.

3. The combination, with the heel-attaching devices, of the dies E E', the die-holding blocks e e', the blocks e^6, eccentrics e^2, the levers e^{10}, having rolls e^{16}, and the links e^{18}, and reciprocating cross-head D, having the bearing-blocks e^{17}, substantially as described.

4. The combination of the heel-attaching devices, the heel-side-compressing dies E E', their slide-blocks *e*, the blocks e^6, and means for adjusting them horizontally, the eccentrics e^2, levers e^{10}, and reciprocating cross-head, substantially as described.

FREEBORN F. RAYMOND, 2D.

Witnesses:
F. D. GROVER,
E. P. SMALL.