

(No Model.)

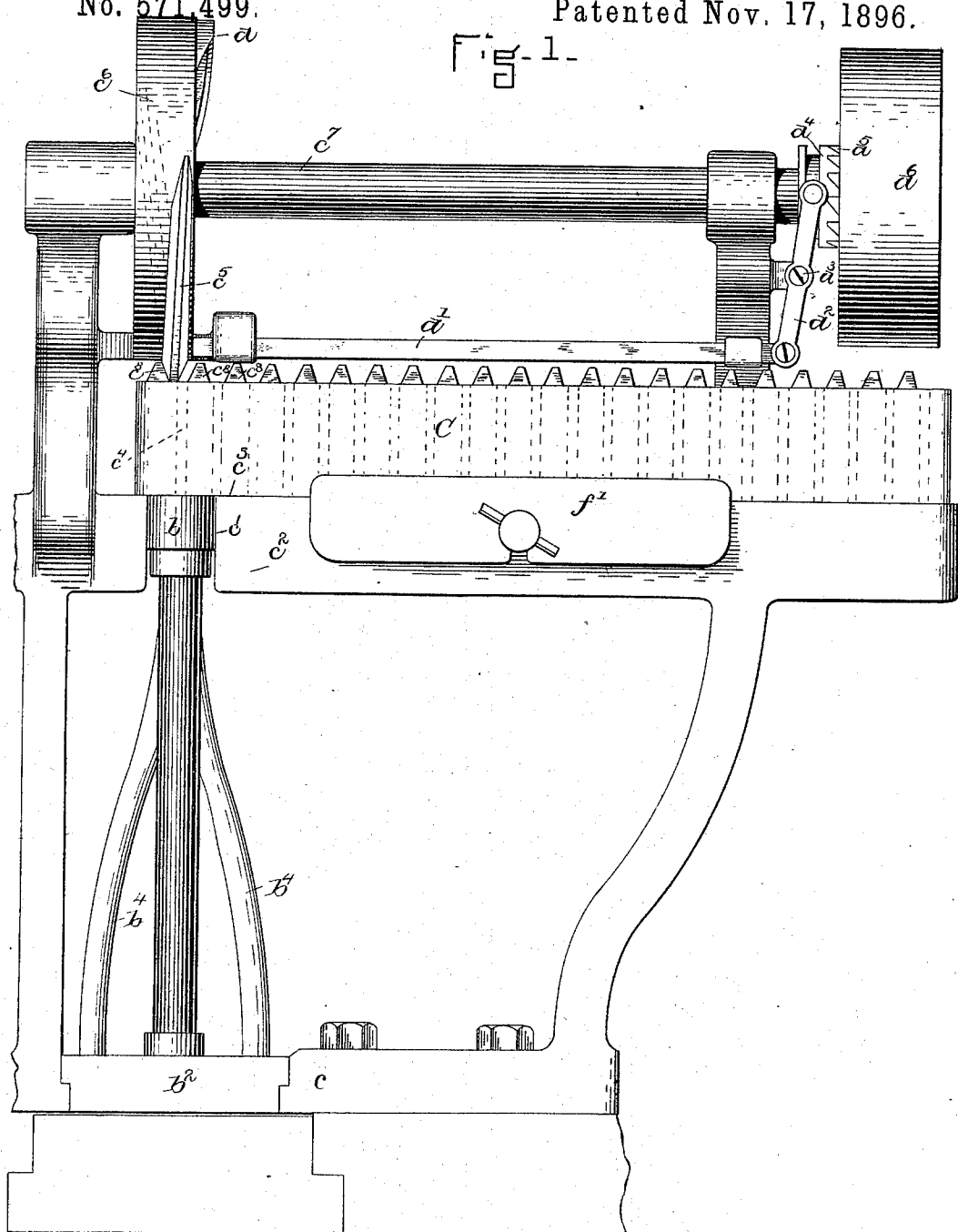
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F. F. RAYMOND, 2d.
NAIL DISTRIBUTING AND DRIVING MACHINE.

No. 571,499.

Patented Nov. 17, 1896.

Fig. 1.



WITNESSES.

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(No Model.)

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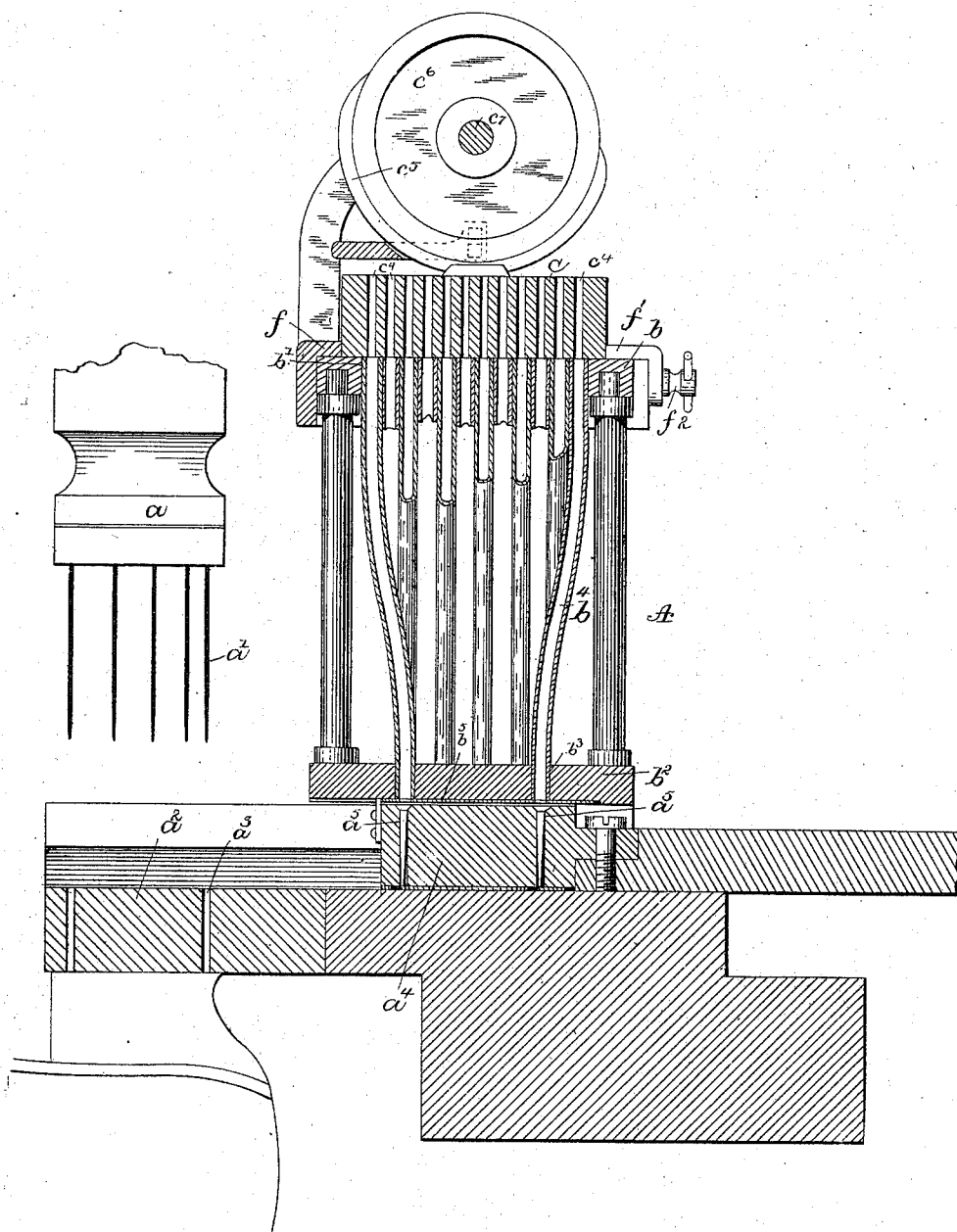


Fig. 2.

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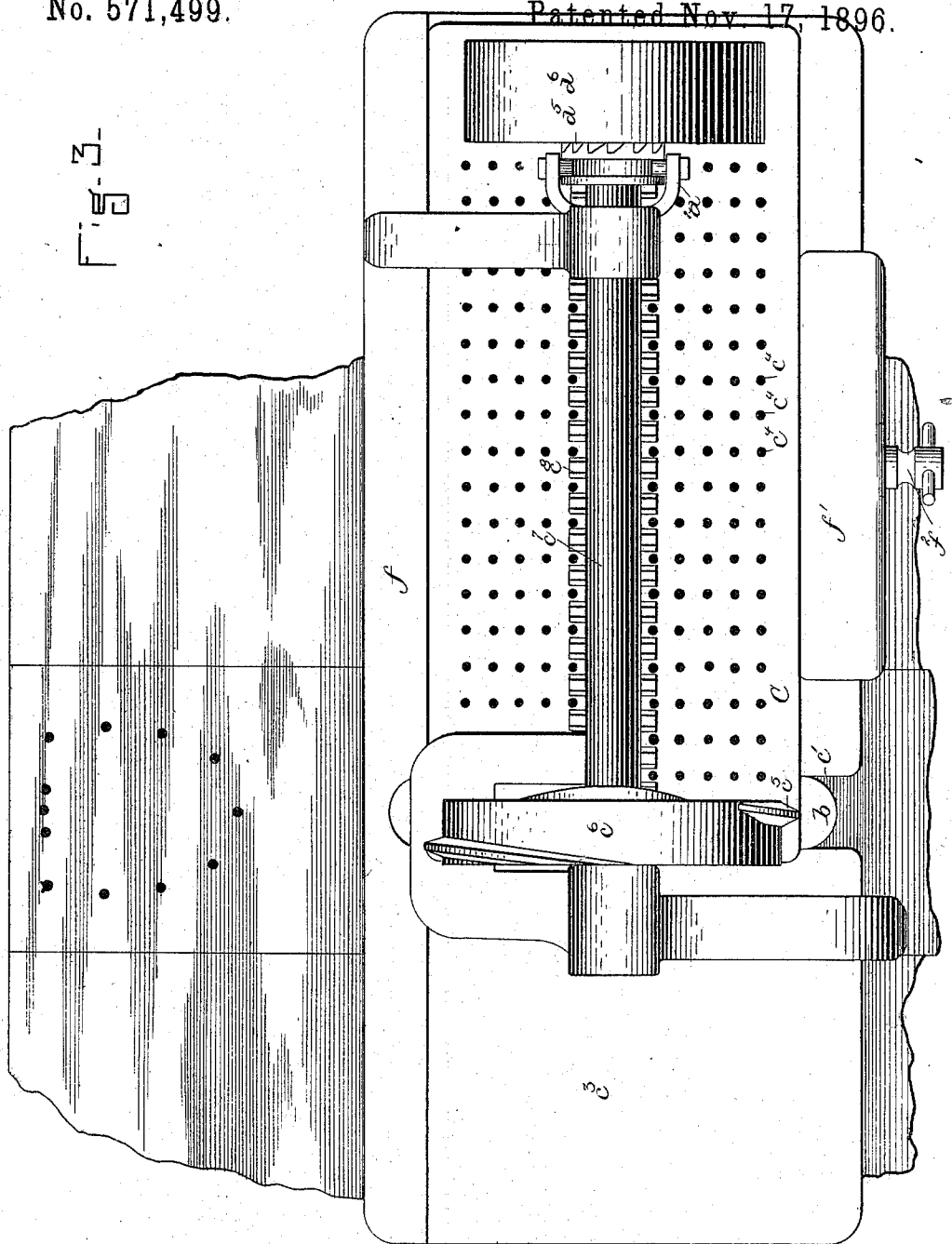
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Fig. 4.

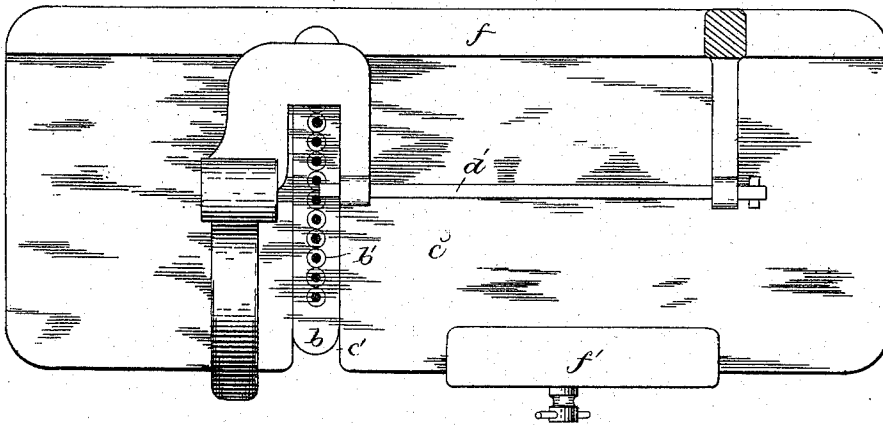
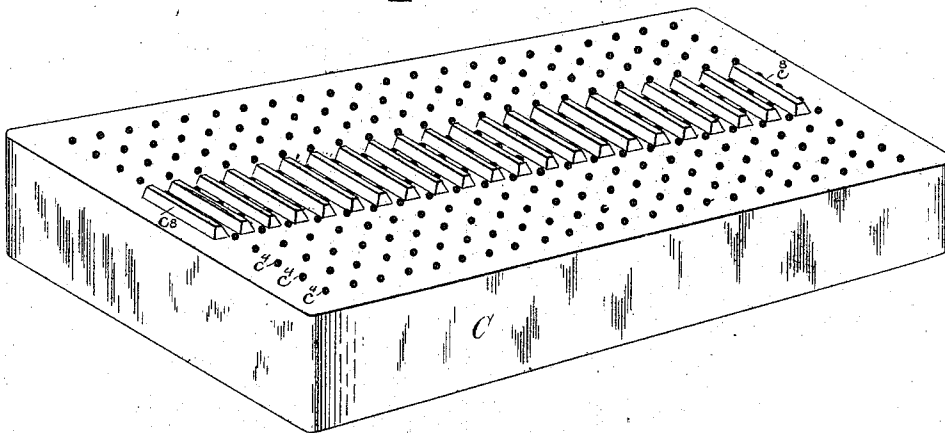


Fig. 5.



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UNITED STATES PATENT OFFICE.

FREEBORN F. RAYMOND, 2d, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO
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NAIL DISTRIBUTING AND DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 571,499, dated November 17, 1896.

Application filed February 20, 1892. Serial No. 422,319. (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 Nail Distributing and Driving 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 devices or mechanism for feeding nails in gangs or groups to a nail-distributor, means for distributing the nails, and for driving them. The nail-feeding device comprises a nail block or receptacle having nail-receiving holes arranged therein in parallel lines, and which holes are filled with nails. The block or receptacle thus loaded or filled with nails is placed in the machine and is automatically fed to the nail-distributor to bring each of its lines of holes in successive order over the entrances to the passages of the distributor.

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

Referring to the drawings, Figure 1 is a view in rear elevation of sufficient of the machine to illustrate the especial features of my invention. Fig. 2 is a view in vertical section thereof and of a portion of the nail-carrying and nail-driving devices. Fig. 3 is a view in plan thereof. Fig. 4 is a view in plan, the nail-holding block being removed. Fig. 5 is a view in perspective of the nail-holding block.

a represents an arm of a nailing-head carrying the gang of awls a' .

a^2 is a templet, through the holes a^3 of which the nails are driven by the drivers. (Not shown.)

a^4 is a nail-carrier having holes a^5 and movable from the distributor A to the templet a^2 by a cam, (not shown;) but this and the nailing devices are like those described in various of my pending applications.

The distributor A comprises the upper block b , which has holes b' arranged in a straight line uniformly separated from each other, the

lower plate b^2 having holes b^3 in the arrangement of the holes of the carrier a^4 , and the connecting tubes b^4 , which connect the holes of the upper block b with the holes of the lower block b^2 . The upper block b extends lengthwise the attaching machine instead of crosswise, as is usual. This is an important change, so far as the present invention is concerned, in that it permits the feeding of a much longer nail-supply block or receptacle.

The distributor rests upon the plate c , and its upper block b extends into a recess or space c' between or in the table c^2 . The surface c^3 of this table on the side of the holder or space c' is of the same height as the upper surface of the block b of the distributor when in position.

The nail-supplying block C is movable upon the bed c' , it being provided with an intermittent movement whereby its lines c^4 of holes are successively brought into line with the holes in the upper block b of the distributor. This movement is represented as imparted to the block C by the worm-thread c^5 on the wheel c^6 upon the shaft c^7 , the worm-thread engaging at each rotation in successive order the teeth or projections c^8 from the upper surface of the block C. Each rotation of the wheel and worm advances the block C the distance between the centers of two lines of holes. This causes the various lines to be brought in successive order into position over the holes of the block b of the distributor until all the various lines of the block C have been thus brought into discharging position. Upon each movement of the block C to bring one line of holes into position with those of the block b and another line out of position therewith the machine is stopped by means of a stop-cam d on the side of the wheel c^6 , an intermediate connecting slide-bar d' and lever d^2 , pivoted at d^3 and connected at its upper end with a movable section d^4 of a clutch, the section d^4 sliding upon a fast feather upon the shaft c^7 and engaging the driven member d^5 of the clutch fastened to the driving-pulley d^6 . (See Fig. 1.)

The block C preferably is removable from the bed of the machine in order that its holes may, after they have discharged their nails,

be filled with a separate mechanism and another filled block substituted therefor, and I have represented the block as held in place upon the bed between the stationary guide-plate *f* (see Fig. 2) at one side and the removable guide-plate *f'* upon the other side, the removable guide-plate *f'* being held in position by a set-screw *f*².

In use the block is placed upon the upper bed with its first tooth in operative relation with the worm-thread, and the cover of the block which holds the nails in the holes of the block during its loading and transportation having first been removed, the machine being started, the block is moved toward the holes of the block *b* of the distributor and the first line of holes in the block brought in line with the set holes *b'*, and the nails dropped or discharged therefrom into the holes of the distributor. The machine then comes to rest. A second rotation of the shaft causes the block to be again advanced and the second line of holes to be brought over the holes of the distributor and the nails therein discharged. The machine stops with each line of holes in position over the holes of the distributor, so that ample time is given for the dropping of nails from the block into the holes of the distributor.

It will be understood, of course, that instead of placing the feed-teeth *c*⁸ upon the block *C* they may be formed or placed upon an independent slide-carriage, to which the block *C* may be secured and with which it may be fed. It will also be understood that in lieu of using a worm-thread for engaging the teeth a feed-pawl or similar feeding device may be substituted without departing from the essential features of the invention.

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

1. In a nail-driving machine a nail-distributor having a line of distributing-holes the upper ends of which are upon a line at right angles or practically at right angles to the line of the reciprocation of the nailing head or device in combination with said head, as and for the purposes described.

2. The combination of a nail-distributor having a series of distributing-passages, the upper ends of which are upon a line at right angles or practically at right angles to the line of the reciprocation of the nailing head or device, a table the upper surface of which is

upon a line with or above the upper surface of the distributor, and a nail-supplying block movable upon said table and having lines of holes which have the arrangement of the holes in the upper part of the distributor, as and for the purpose described.

3. The combination of the distributor, the table, the nail-supplying block, the guide *f*, *f'* and the removable nail-supplying block.

4. The combination of a distributor, a nail-supplying block having the lines of the order or arrangement of the holes of the distributor at their upper ends, which are upon a line at right angles or practically at right angles to the line of the reciprocation of the nailing head or device; a table or guide for the same to direct the movement of the block relatively to the distributor, and mechanism for imparting an intermittent movement of the block to bring its line of holes in successive order over the holes of the distributor substantially as described.

5. The combination of a distributor and nail-supplying block having the lines of holes extending across the same previously filled with nails and of the arrangement of the holes of the distributor at the upper ends thereof, and feed mechanism for imparting an intermittent forward movement to the nail-supplying block, and a stopping device to stop the action of the feed after each feeding movement, as and for the purposes described.

6. The combination of the feed-block *C*, movable in guides upon a table and having the teeth *c*⁸, the distributor and an engaging device like a worm-tooth to engage said teeth successively and impart to the block an advancing movement, as and for the purposes described.

7. The combination of a distributor, the nail-supplying block *C* movable upon a bed relative to the distributor, as specified, and having the teeth *c*⁸, the shaft *c*⁷ and wheel upon said shaft, having the worm-thread *c*⁵ to engage the teeth *c*⁸, the driven member of a clutch, and a cam or stop for automatically disengaging the driven member from the driving member of the clutch at the end of the feed-movement of the block, substantially as described.

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Witnesses:

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