

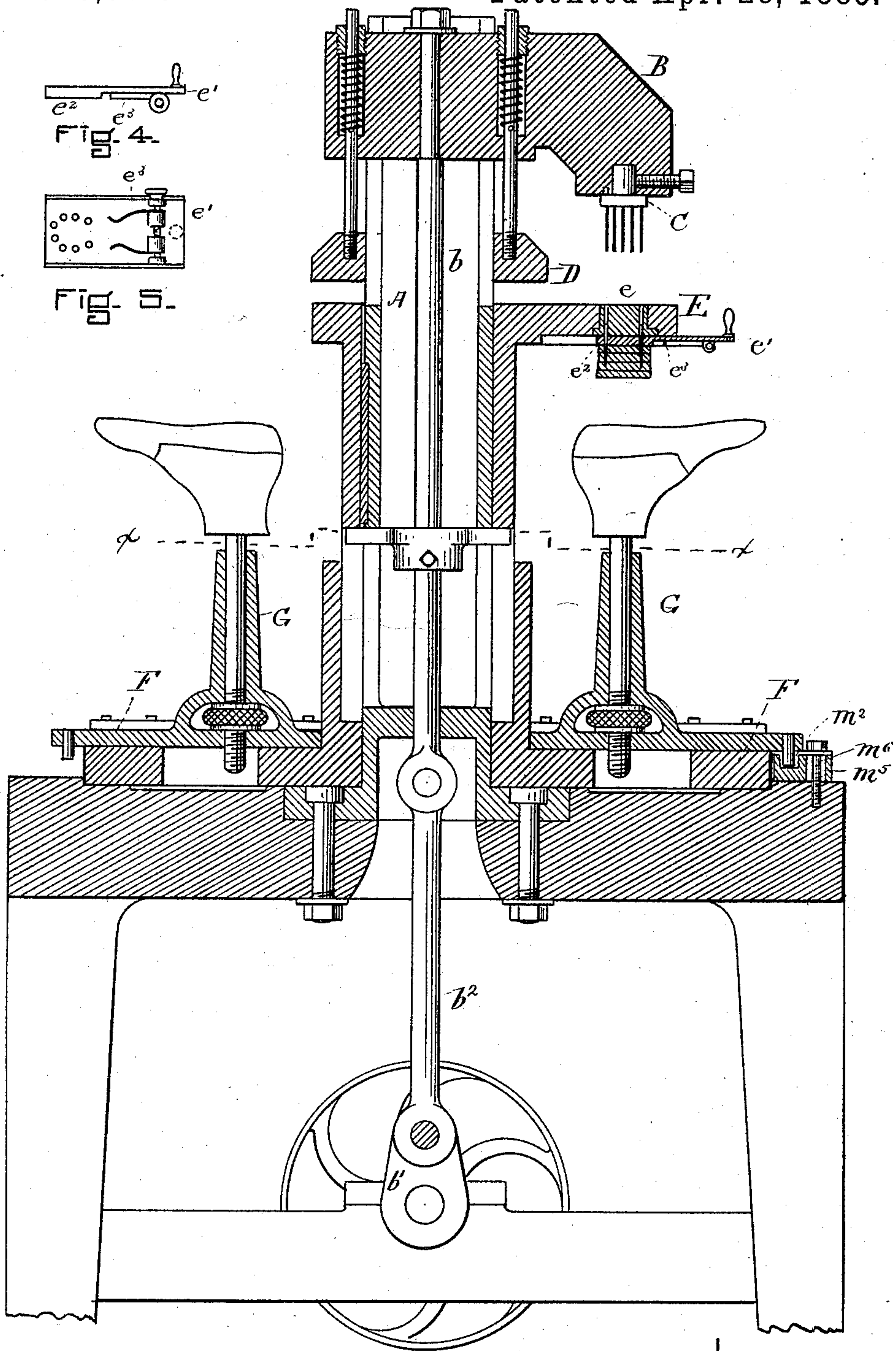
(No Model.)

3 Sheets—Sheet 1.

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

No. 316,661.

Patented Apr. 28, 1885.



WITNESSES

J. M. Dolan  
Fred. B. Dolan.

Fig. 1.

INVENTOR

F. F. Raymond.

(No Model.)

3 Sheets—Sheet 2.

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

No. 316,661.

Patented Apr. 28, 1885.

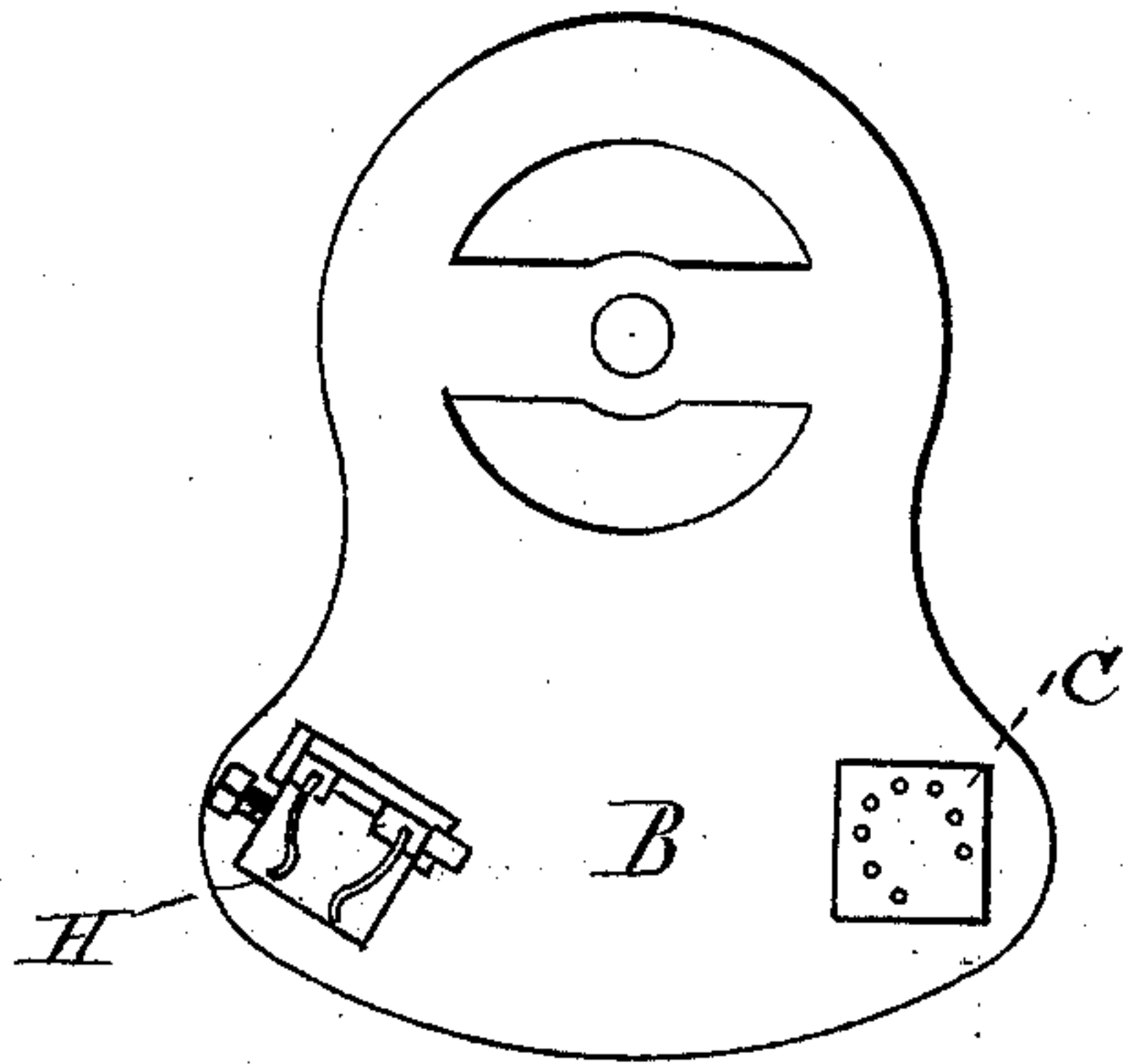


Fig. 2.

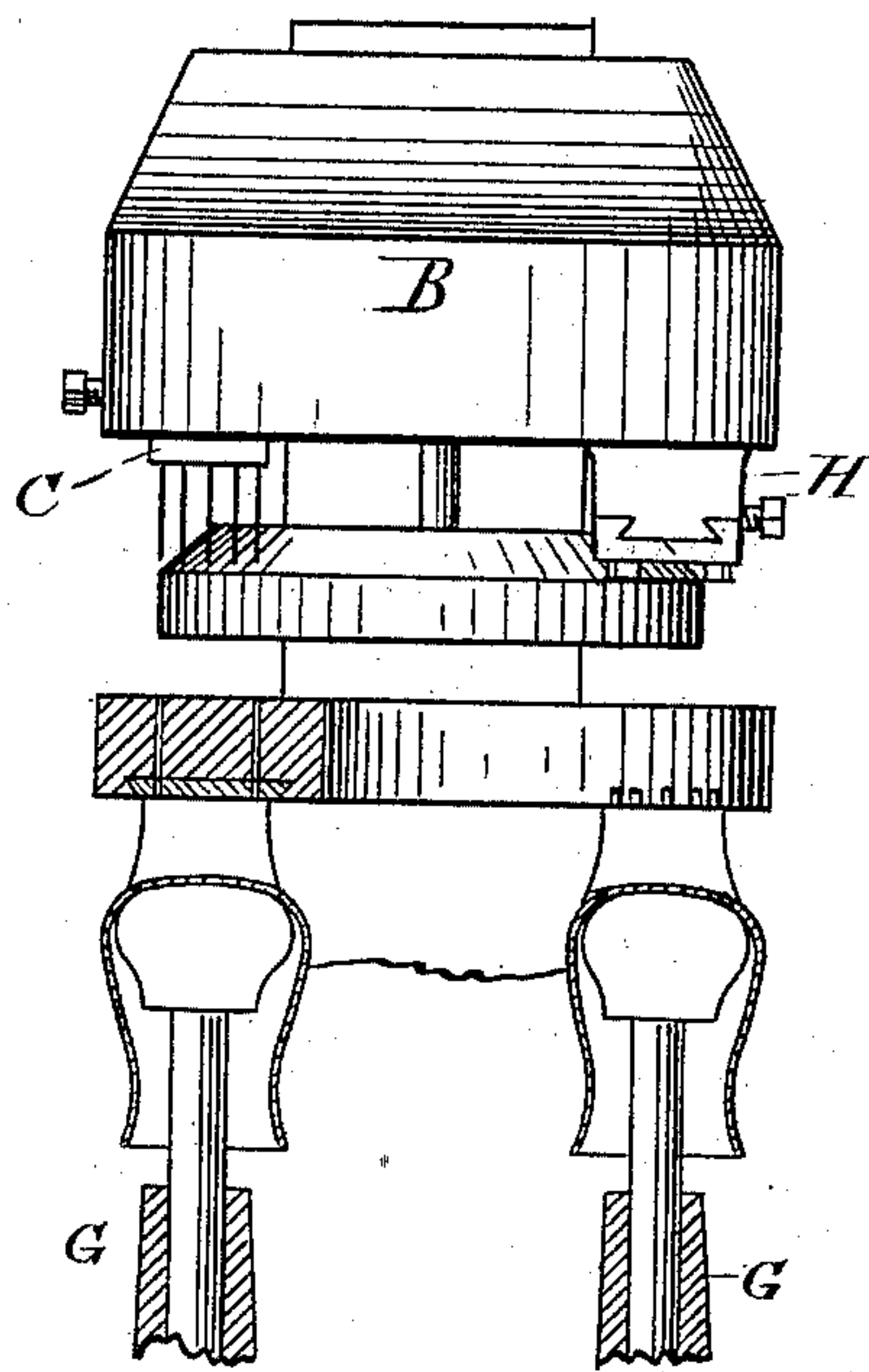


Fig. 3.

WITNESSES.

*J. M. Dolan*  
*Fred. B. Dolan*

INVENTOR.

*F. F. Raymond*

(No Model.)

3 Sheets—Sheet 3.

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

No. 316,661.

Patented Apr. 28, 1885.

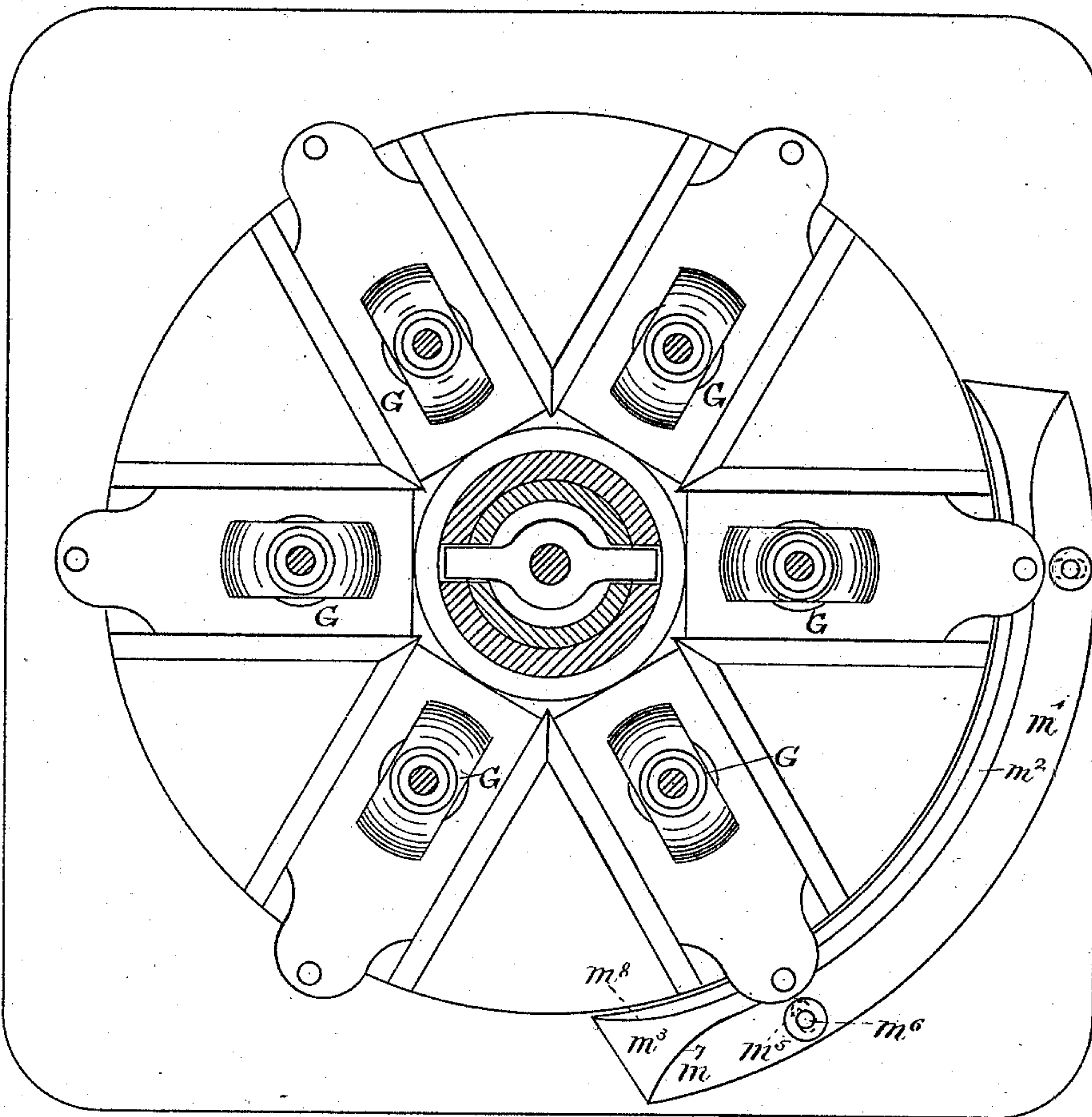


FIG. 6

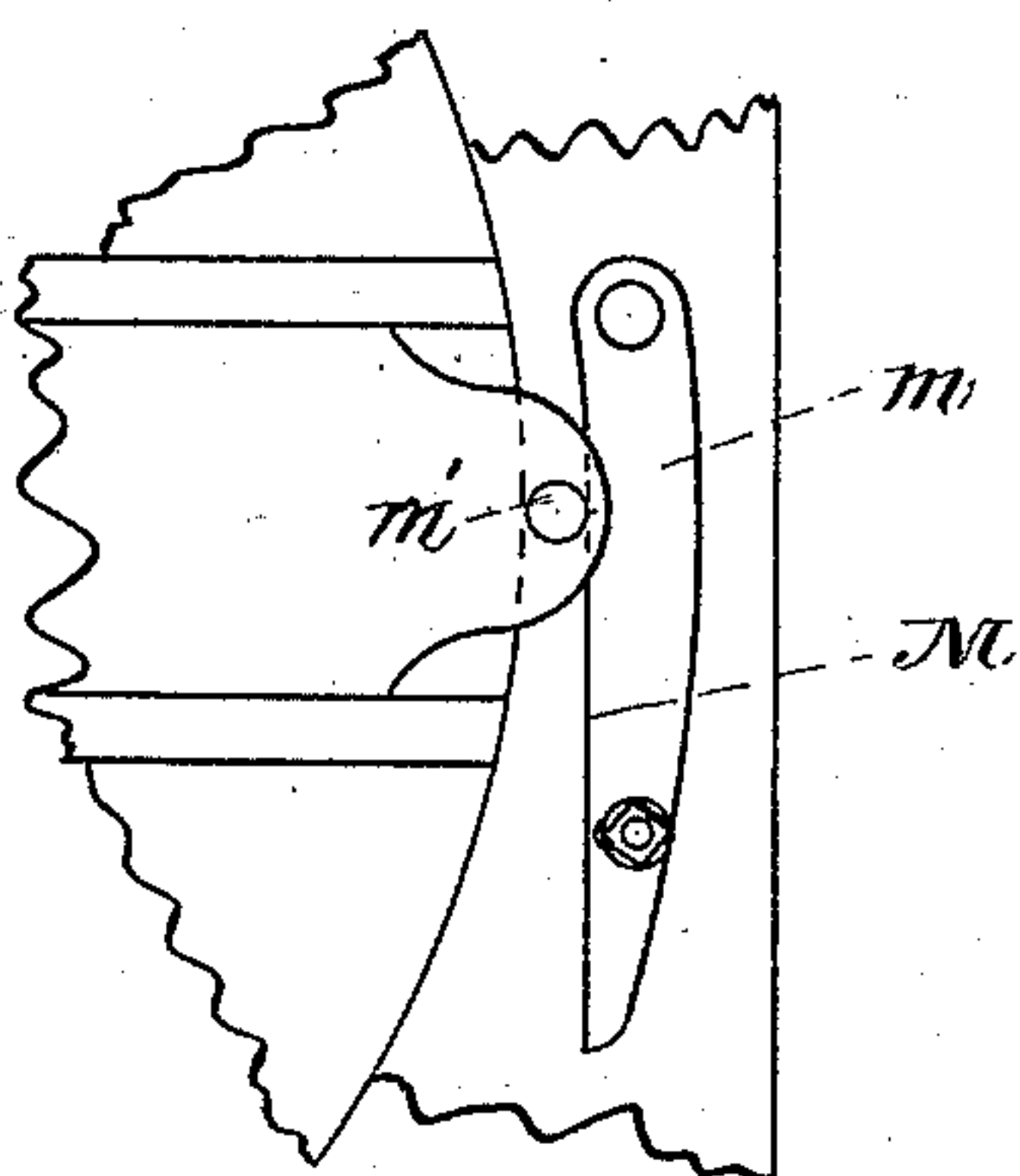


FIG. 7 -

WITNESSES

*J. W. Dolan*  
*Fred. B. Dolan.*

INVENTOR

*F. F. Raymond*



# UNITED STATES PATENT OFFICE.

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

## HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 316,661, dated April 28, 1885.

Application filed January 20, 1885. (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-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.

This invention is an improvement upon that described in my application for Letters Patent of the United States filed January 20, 1885, Serial No. 153,387; and it comprises a heel-attaching machine having two or more jacks supported upon a revolving bed and adapted to be moved successively into position beneath the nail-driving devices, and is especially adapted for attaching what is known as a "loaded" heel-blank.

In the drawings, Figure 1 is a vertical central section of the machine. Fig. 2 is a view of the reciprocating head inverted, and Fig. 3 is a side elevation of the head and a vertical section of the templet and upper parts of the jacks. Fig. 4 is a side elevation, and Fig. 5 a plan inverted, of the templet and spanker and top-lift-attaching plate. Fig. 6 is a horizontal section and plan upon the line  $xx$  of Fig. 1, and Fig. 7 is a view in plan of a modification.

Referring to the drawings, A is the column on which the head B is reciprocated by means of the connecting-rod  $b$ , crank  $b'$ , and link  $b^2$ , or any other equivalent mechanism. It supports a driver or driving device, C.

E is the templet-plate. It is not arranged to revolve upon the column, as is the templet-plate described in my said application, but has a vertical movement thereon, and is moved downward automatically by means of the presser ring or foot D, which is like that described in my said application, although of course any other equivalent means for moving it downward may be employed. The pressure or templet plate E has the movable templet-block  $e$  and the sliding top-lift plate  $e'$ , which is like that described in my said application, the only material difference being that the section  $e^2$ , which forms the portion of the templet  $e$ , is thicker than the portion  $e^3$ , supporting the top-lift-holding devices. An elevation of the plate is shown at Fig. 4. This shape of

plate is somewhat preferable to that described in my said application, in that the upper surface of the top-lift when suspended will be above the line of the lower ends of the drivers when they are in their lowest position, so that the top-lift will be attached without compressing to any material extent the remainder of the heel-blank. This result is due to the difference in level between the surface which forms the top-lift spanker and that which forms a part of the templet; but to further assist in the spanking of the top-lift it will be found desirable in blind-nailing to slightly lower the jack before the lift is spanked on.

F is the revolving bed, which is like that described in my said application. G are the jacks, which preferably are arranged upon the bed to be moved into and out of position radially. As many jacks may be used as desired.

Instead of applying the top-lift as above described, I may provide the head with the top-lift holder H so arranged upon the head that upon the revolution of the table F beyond the templet E the top-lift shall be spanked upon the heel-blank. The top-lift holder then will be like that described in the Henderson Patent No. 259,687; and it will be observed that when this construction is used two operations are being performed at the same time—first, the heel is being attached, and, second, the top-lift is being applied to a heel-blank previously attached, or it is being spanked simply.

There may be employed for centering the shoe upon the last or jack, and for holding and centering the heel-blank, any of the devices described in the various patents granted to Henry A. Henderson and myself, and in our various applications; and there may also be used for moving the jack automatically into operative position a cam or guiding-surface, M, which is so arranged on the bar  $m$  (see Fig. 7) that a pin,  $m'$ , upon the sliding plate or support of each jack shall successively come in contact therewith as it is revolved, and by it be automatically moved into position beneath the templet.

In lieu of the guide-plate M, I may use a guiding-groove,  $m^2$ , as shown in Fig. 6. This groove has a flaring mouth,  $m^3$ , and is formed in the curved block  $m^4$ , which is horizontally



adjustable on the bed toward and from the table by means of the slots  $m^5$  and bolts  $m^6$ . It will be seen that by this construction the pin  $m'$  on the sliding jack-plate, as the table is revolved, comes in contact with one or the other of the guiding-surfaces  $m^7$   $m^8$ , which form the opening to the groove, and is caused to enter the groove, whereby it is not only guided but the jack is locked, in that after the pin has entered the groove it cannot be moved forward or back on the table. This groove may continue to the front of the spanker and top-lift-applying devices, so that the jack shall be held locked as it is moved on from the driving devices. By moving the block  $m^4$  in or out, of course the position of the jack may be varied. This automatic location of the jack and locking in a predetermined position I regard as of very considerable value. Of course the guiding-groove should be so located as to bring the jacks in proper position under the nail-attaching and top-lift and spanking devices. Of course the revolving bed F is locked, as described in my said application, or in any other suitable way.

In operation the boot or shoe is placed upon the jack or heel-support by a boy or attendant, who stands at one side of the machine, and the table F is moved, moving the jacks successively into position beneath the attaching devices. The operator stands in front of this portion of the machine, and adjusts the heel-blank in its place upon the boot or shoe, and operates the machine. The heel-blank being placed in position, the machine is set in motion and the attaching-nails driven, and if a top-lift spanker-plate is attached to the driver-plate it is then moved into position by the operator, and the machine again reciprocated. If, however, the top-lift spanker is arranged so as to operate simultaneously with the nail-driving device, then the movement of the next jack or support into position for the attachment of the heel also moves the jack having the boot or shoe and attached heel to a position under the heel-blank, so that upon the next reciprocation of the machine the sec-

ond heel is attached and a top-lift applied to the first attached heel, or, if flush-nailed, it is simply spanked. The continued revolution of the table brings the first boot or shoe applied finally to the boy or attendant, who substitutes another therefor, and so continues.

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

1. The combination of two or more sliding jacks or heel-supports, mounted on a movable table and adapted to be brought successively into operative position, with a guide, substantially as specified, for automatically moving them in succession beneath the heel-attaching devices, all substantially as described.

2. The combination, in a heel-attaching machine, of a pressure or templet plate, a reciprocating head carrying driving devices, and two or more automatically-operated radially-sliding jacks or work-supports adapted to be moved successively beneath the templet and driving devices, substantially as specified.

3. In a heel-nailing machine, a movable table carrying a series of jacks or work-supports adapted to be moved automatically into position, and mechanism, substantially as specified, for locking each of said jacks respectively in said position, substantially as described.

4. In a heel-attaching machine, the guide having a flaring end, in combination with a series of jacks or work-supports, each carrying a pin on its end and adapted to be successively moved to said guide, substantially as described.

5. The combination of the central vertical column, A, with the revolving table F, arranged in relation to the column, as shown, and supporting two or more jacks or work-supports, the templet or pressure plate, the reciprocating head B, and a single gang or group of drivers carried thereby, all substantially as described.

FREEBORN F. RAYMOND, 2D.

Witnesses:

E. A. PHALEN,  
FRED. B. DOLAN.