

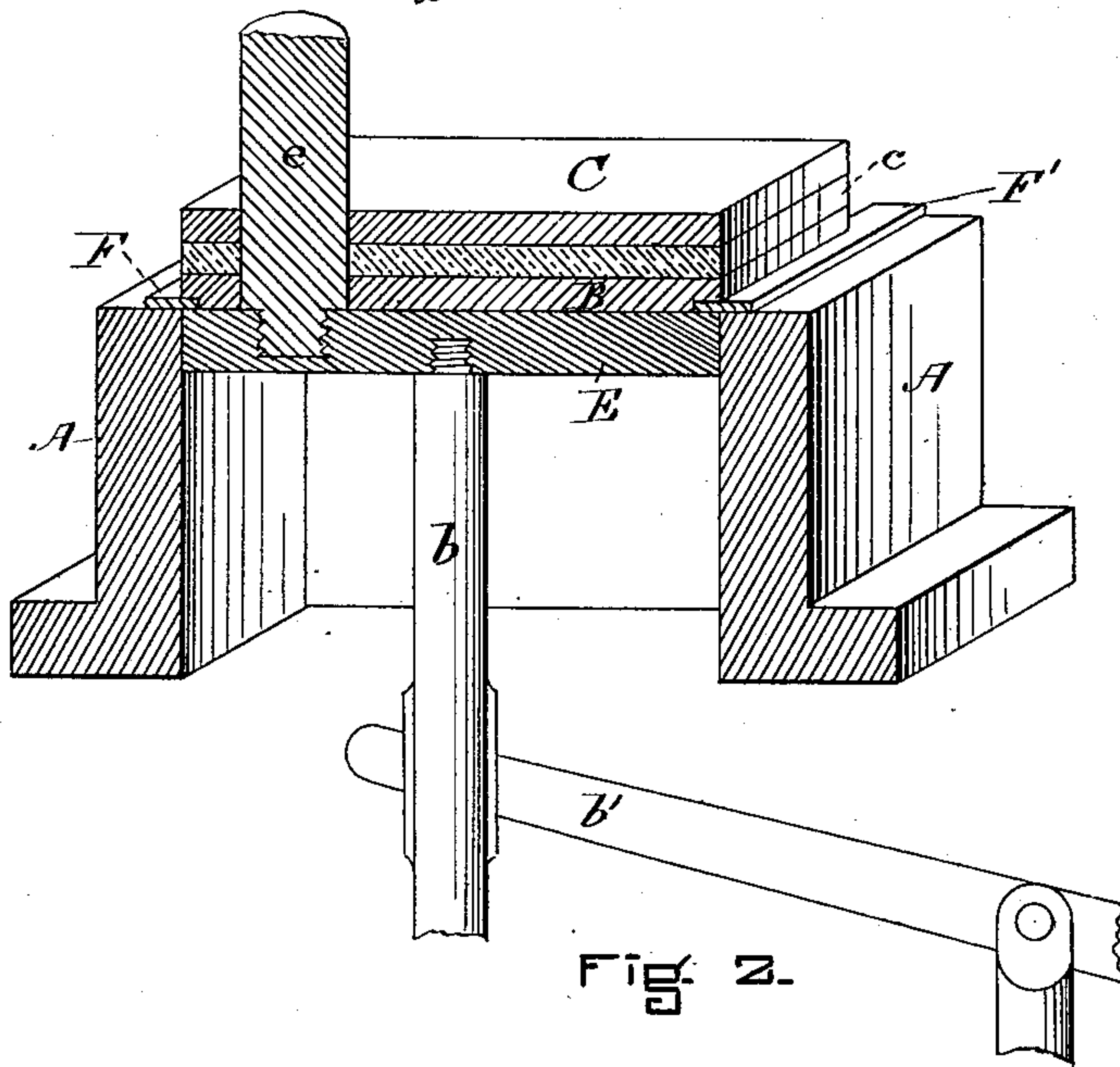
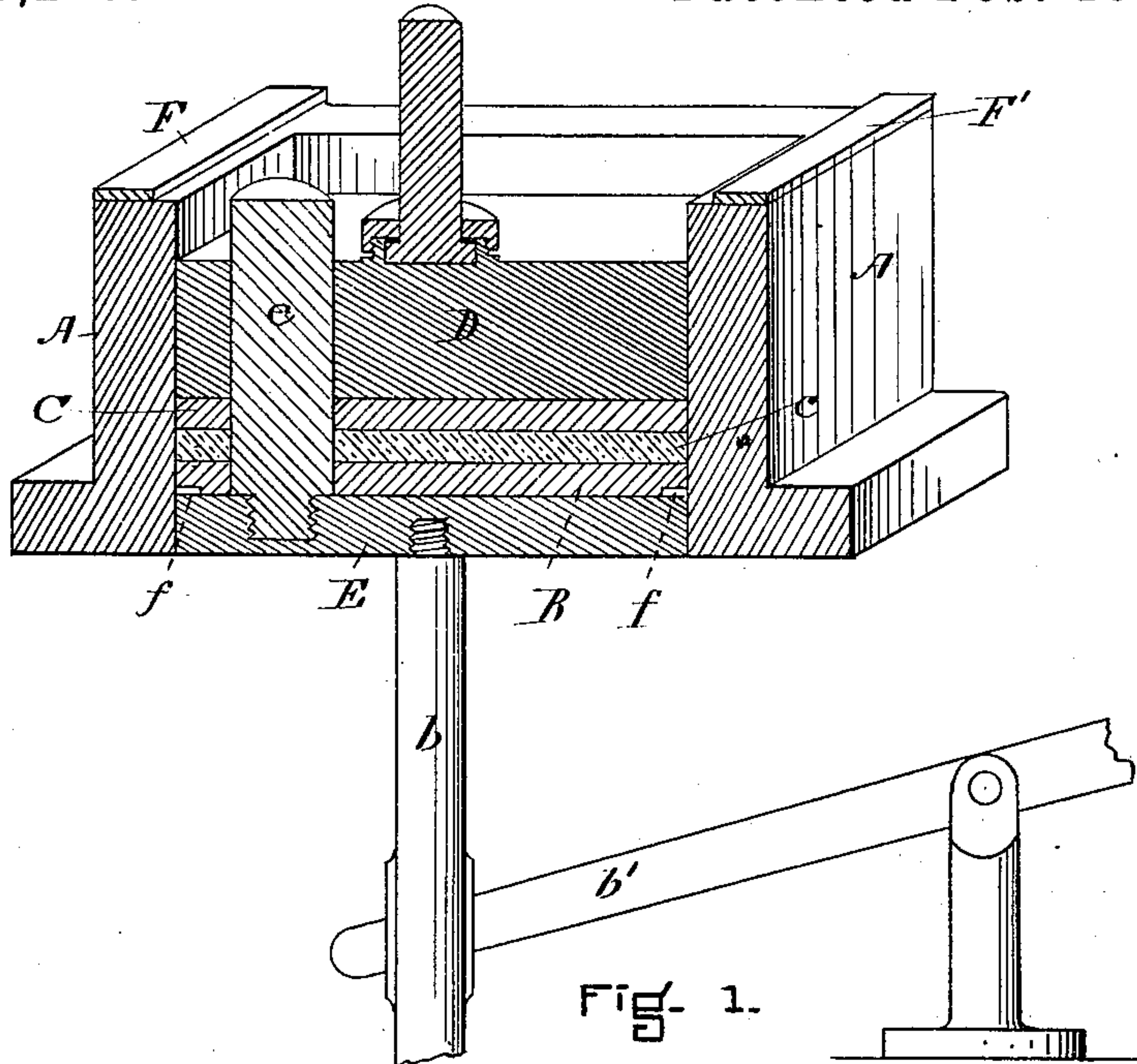
(No Model.)

3 Sheets—Sheet 1.

J. G. LOW.
TILE MAKING MACHINE.

No. 336,240.

Patented Feb. 16, 1886.



WITNESSES.

J. M. Dolan
Fred. B. Dolan

INVENTOR.

J. G. Low
by his attys
Clark & Raymond

(No Model.)

3 Sheets—Sheet 2.

J. G. LOW.
TILE MAKING MACHINE.

No. 336,240.

Patented Feb. 16, 1886.

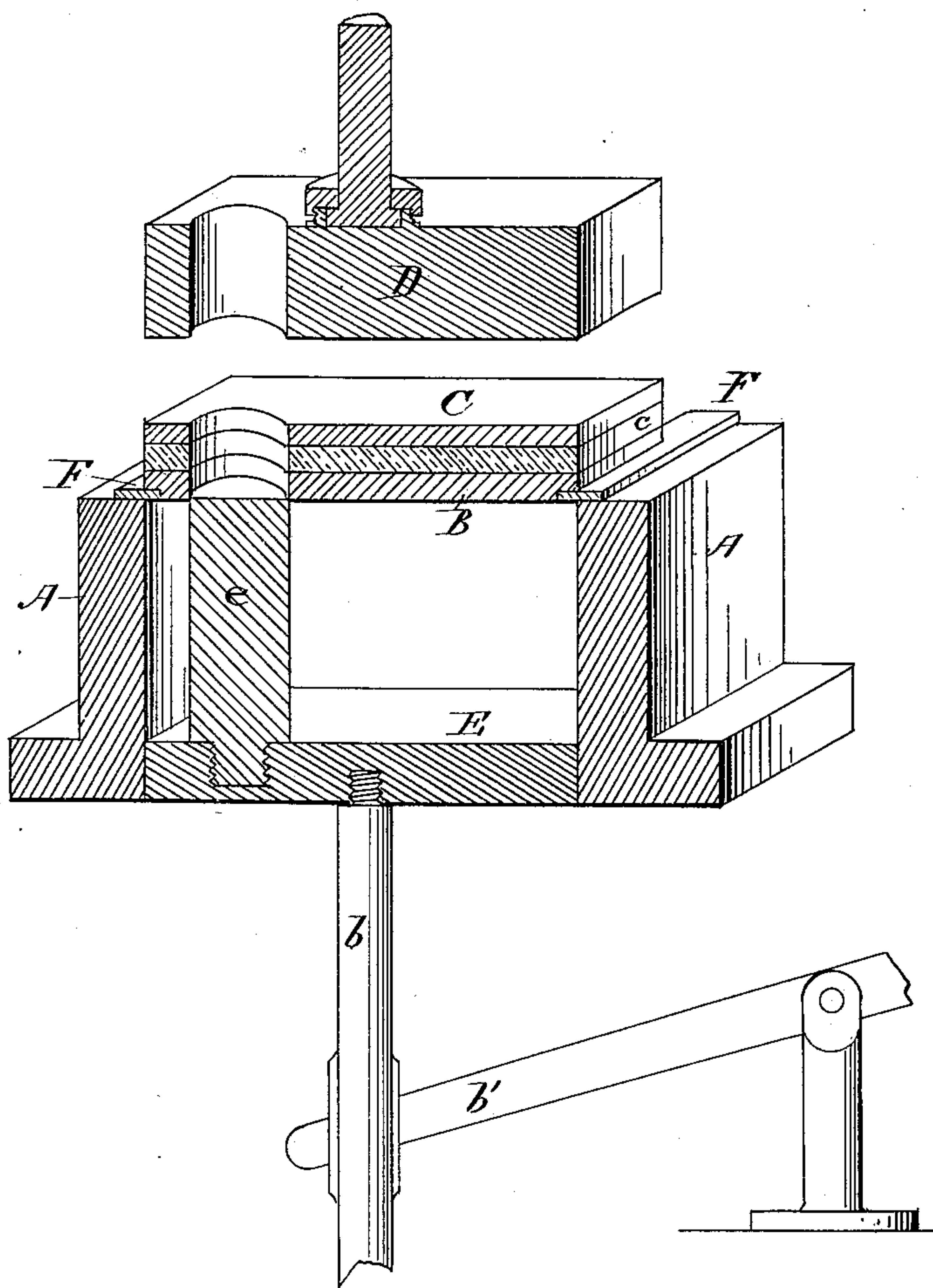


FIG. 3.

WITNESSES.

Fred. B. Dolan.

J. M. Dolan.

INVENTOR.

J. G. Low
by his attys
Charles H. Raymond.

(No Model.)

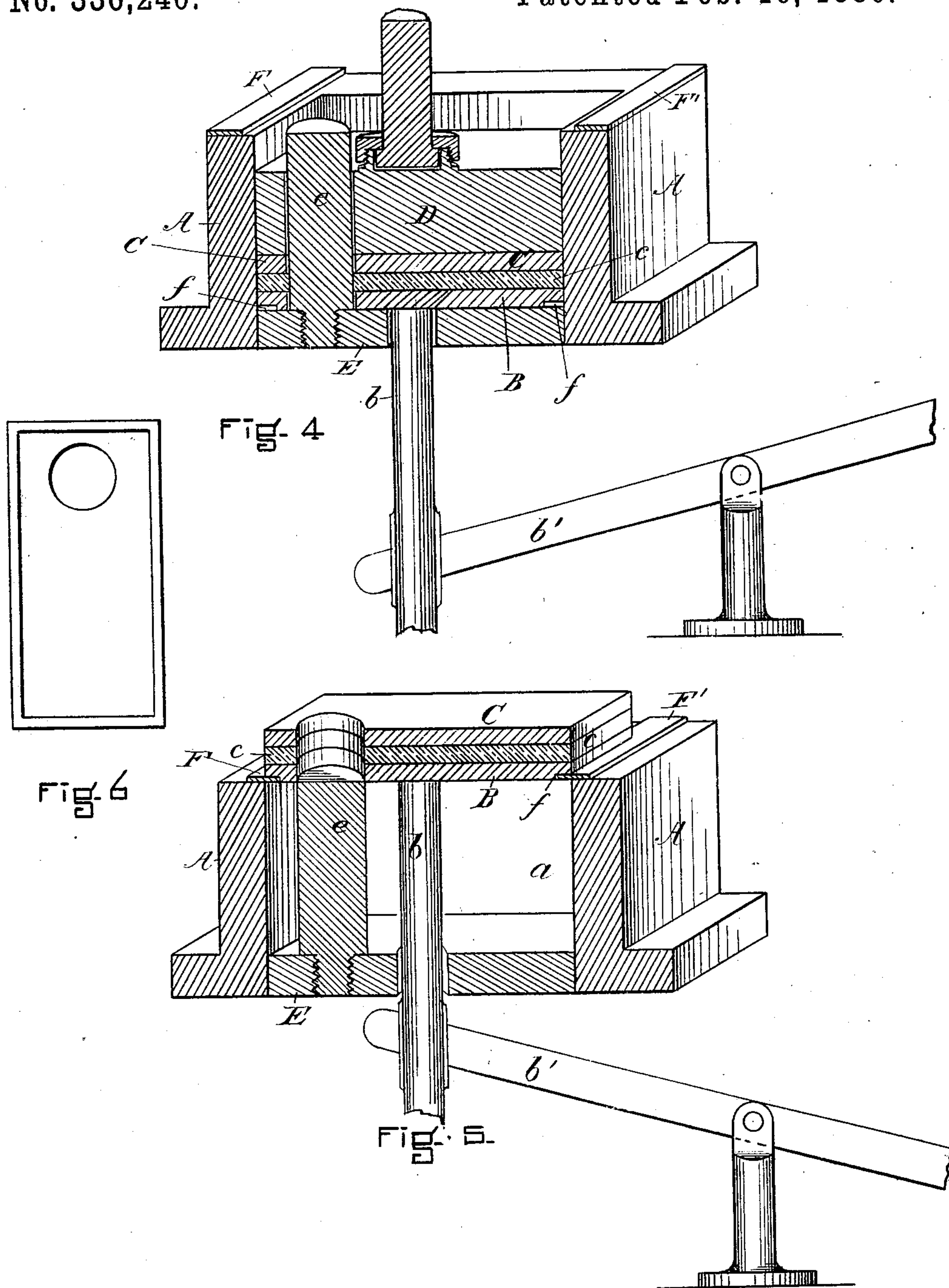
3 Sheets—Sheet 3.

J. G. LOW.

TILE MAKING MACHINE.

No. 336,240.

Patented Feb. 16, 1886.



WITNESSES.

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

INVENTOR.

J. G. Low
by his attys
Charles & Raymond.

UNITED STATES PATENT OFFICE,

JOHN G. LOW, OF CHELSEA, MASSACHUSETTS.

TILE-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 336,240, dated February 16, 1886

Application filed October 20, 1885. Serial No. 180,417. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. LOW, of Chelsea, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Tile-Making 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 object of the invention is to provide means for making perforated tiles—that is, tiles which have one or more holes or perforations extending completely through them.

In the drawings, Figure 1 is a vertical central section of the machine, representing the position of the parts while the tile is being made. Fig. 2 is also a vertical section of the machine, representing the position of the parts before the withdrawal of the hole-forming block or device and the stripping of the tile from the dies. Fig. 3 is a vertical central section of the machine, representing the hole-forming device as removed from the dies and the plunger as lifted from the upper die. Figs. 4 and 5 represent a slight modification in construction, to which reference is hereinafter made. Fig. 6 is a plan view of a complete tile.

I use in practicing my invention a die-box, A, which is mounted upon a table or suitable support, and it has a cavity or space, *a*, for the reception of the dies. The vertical edge of this cavity may have any desirable configuration. Below this box there is arranged the lower plate or diaphragm, B, which is supported by the platen or bed E, adapted to be moved vertically in the die-box by the rod or post *b* and the lever *b'*, or any other suitable mechanism. This plate, diaphragm, or die B may have an impression, either in intaglio or in relief, formed upon its surface.

C is the upper die plate or diaphragm, which is movable vertically in the die-box, and which has its under surface, *c*, finished, either with a design or not, to impart a finish or ornamental figure to the surface of the die. The die-box is supported upon a suitable bed, and above it there is a press, (not shown in the drawings,) which has a block or head, D, adapted to be moved by means of a screw, or in any other suitable manner, into the die-box

and upon the plate or die C. There is attached to the base-plate E of the die-box one or more blocks, *e*, according to the number of holes or perforations which it is desired to form in the tiles, which is or are readily secured to this platen or base, and which extends upward through the hole or holes formed in the bottom die plate or diaphragm, B, the upper die plate or diaphragm, C, and the head or block D of the press during the operation of molding or pressing the tile. The use of but one post or frame is represented in the drawings. The holes in the die-plates must be of a size to fit the block or blocks closely.

In operation the under die-plate or diaphragm, B, is placed in the die-box upon the bed or platen E, which is in its lowest position, and the block projects upward through the hole in the said die or plate, as represented in Fig. 1. The tile-dust or other tile-making material is then placed within the box upon the upper surface of this bottom plate or die upon the post or plug. The top die or plate is then placed in the box to rest upon the tile-dust or tile-making material, so that the block or post shall extend through the hole formed therein. The pressure block or head D is then brought or moved down upon the upper surface of the top die, and the block or post extends into or through a hole formed therein. The tile dust or material is then compressed between the two dies or plates, with the post or block extending across the die cavity or space, and the position of the parts at that time is well represented in Fig. 1. After the tile has been formed the pressure-block D is moved upward out of the box, and the bed or platen E, with the dies or plates B C and the formed tile and post or block, are then moved upward to the position shown in Fig. 2, or until the formed tile has been lifted above the end of the post or block *e*. The dies or plates C B, with the tile between them, are then held above the upper surface of the die-box by means of the holding-plates F F', which are adapted to be placed upon the upper surface or edge of the die-box, and to extend into recesses *f*, formed in the edges of the bottom die or plate, as shown in Figs. 2 and 3; and when the die-plates C B have been thus secured the platen or bed E and the post *c* are moved downward by the lever *b'*, so that the

post or former shall be moved from the dies to the position shown in Fig. 3. This allows the top die or plate to be easily removed and the tile stripped from the under plate.

5 While I consider this mode of operating the machine preferable, yet the device can be organized as represented in Figs. 4 and 5, in which case the bed or platen E and the post e are stationary in the die-box, while the post
10 or rod b is arranged to extend through a hole formed in the die or platen E, and to move the dies and tile, after the tile has been formed, upward in the die-box to the position shown in Fig. 5, while the bed or platen and the post
15 are stationary. This organization, however, requires a machine of greater power than that shown in Figs. 1, 2, and 3, and when it is employed it will be desirable, under certain circumstances, to move the two plates C B up-
20 ward under some pressure against the pressure block or head D while it is being moved upward, so that the two die-plates can be held somewhat forcibly together while the dies and tile are being stripped from the post or block.
25 It will be seen that the complete device for making perforated tiles comprises two of the dies or plates, one or both of which may bear a design to be impressed on the surface or surfaces of the tile, and one or more posts or
30 blocks arranged to extend through holes formed in the dies across the die rest or space, and means for moving the plates in relation to the post or posts, or the post or posts in relation to the plates. It will also be seen that
35 by holding the tile between the two die-plates while they are being moved in relation to the post or posts, or the post is being moved in relation to them, the tile is held so that the movement of the post or of the dies shall not
40 crack or injure it, and that after the post has been removed the upper plate or die can be easily removed, and the tile stripped from the lower die in the ordinary way; also, that by arranging the dies to be supported above
45 the die-box access to the tile for purposes of removal is readily obtained.

Of course I do not confine myself to the es-

pecial form of press used, nor to the particular means herein described for moving the dies or posts therein or within the die-box, as any 50 equivalent means for providing movements herein specified can be used.

I would also state that as many holes or perforations may be made in the tile as may be desired, and that they may be of any edge 55 configuration or shape, according to the form of the posts or frames.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States— 60

1. In a tile-making machine, the combination of a die-box, the tile-forming dies or plates or diaphragms B C, and one or more posts, plugs, or forms extending across the die-space, and adapted to be withdrawn from the die- 65 cavity after the forming of the tile, either by the movement of the dies or plates in relation to it, or its movement in relation to them, all substantially as described.

2. The combination, in a tile-making machine, of a die-box, the die plates or diaphragms B C, having the perforation or perforations for the reception of one or more plugs or post, for forming holes or perforations in the tile, and means for compressing the two 75 dies, plates, or diaphragms together, and for moving them vertically in relation to the post or posts, all substantially as and for the purposes described.

3. The combination, in a tile-making machine, of the die-box A, the dies, plates, or diaphragms B C, having one or more perforations or holes for the reception of one or more posts, plugs, or formers, as described, means for moving the two plates, dies, or diaphragms 85 within the die-box, and devices for supporting the dies above the post or posts and while the tile is being removed, all substantially as and for the purposes described.

JOHN G. LOW.

Witnesses:

F. F. RAYMOND, 2d,
FRED. B. DOLAN.