

No. 672,898.

Patented Apr. 30, 1901.

F. E. GOLDSMITH.

TILE PRESS.

(Application filed Feb. 14, 1901.)

(No Model.)

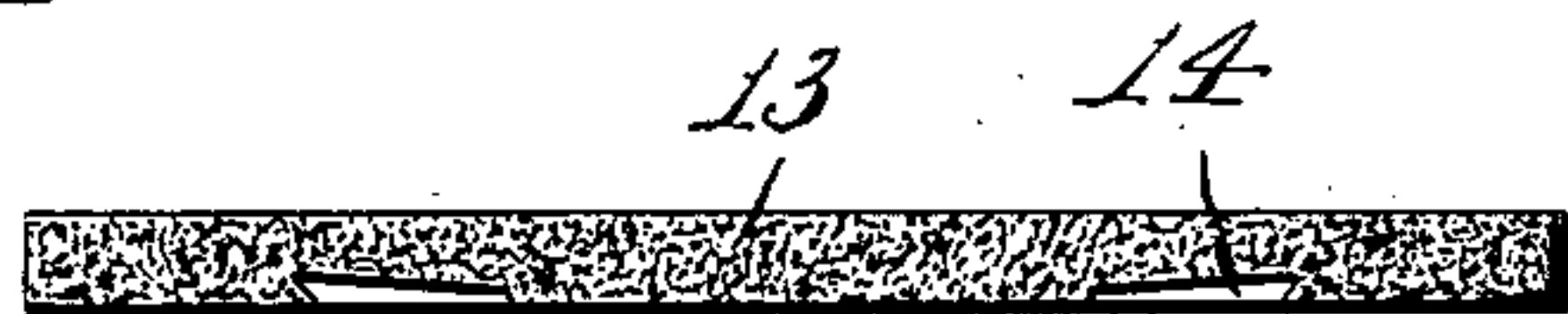
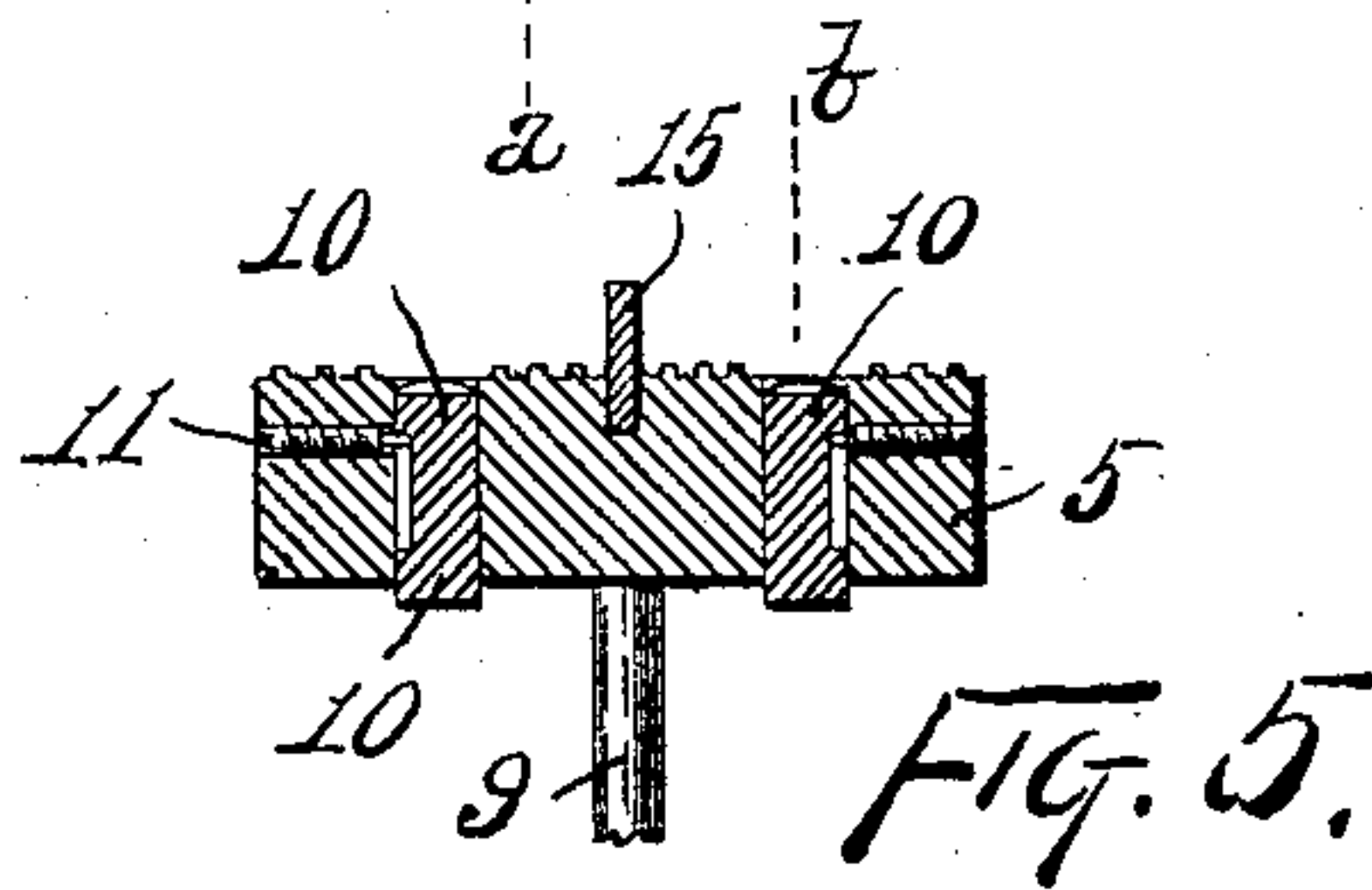
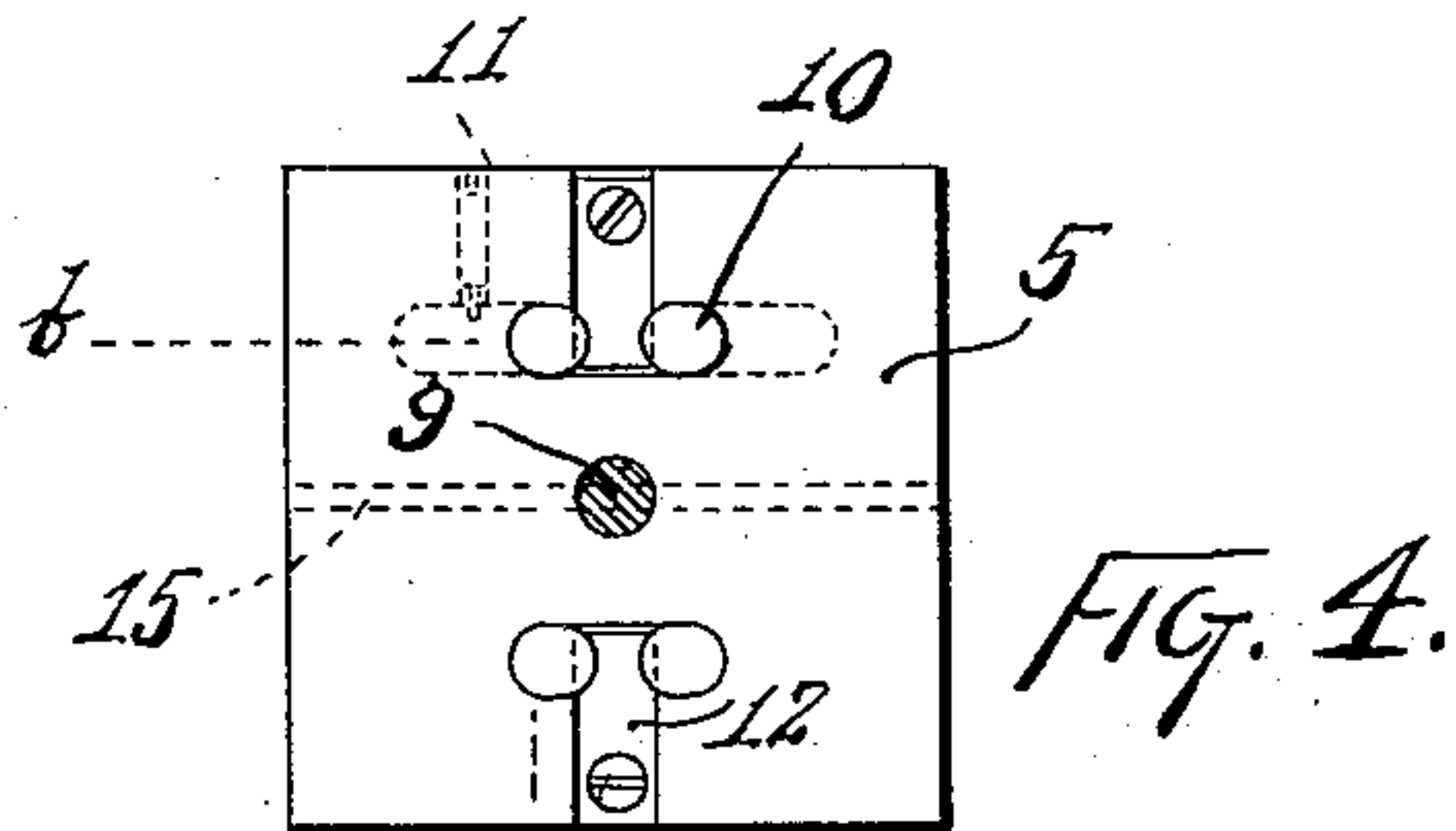
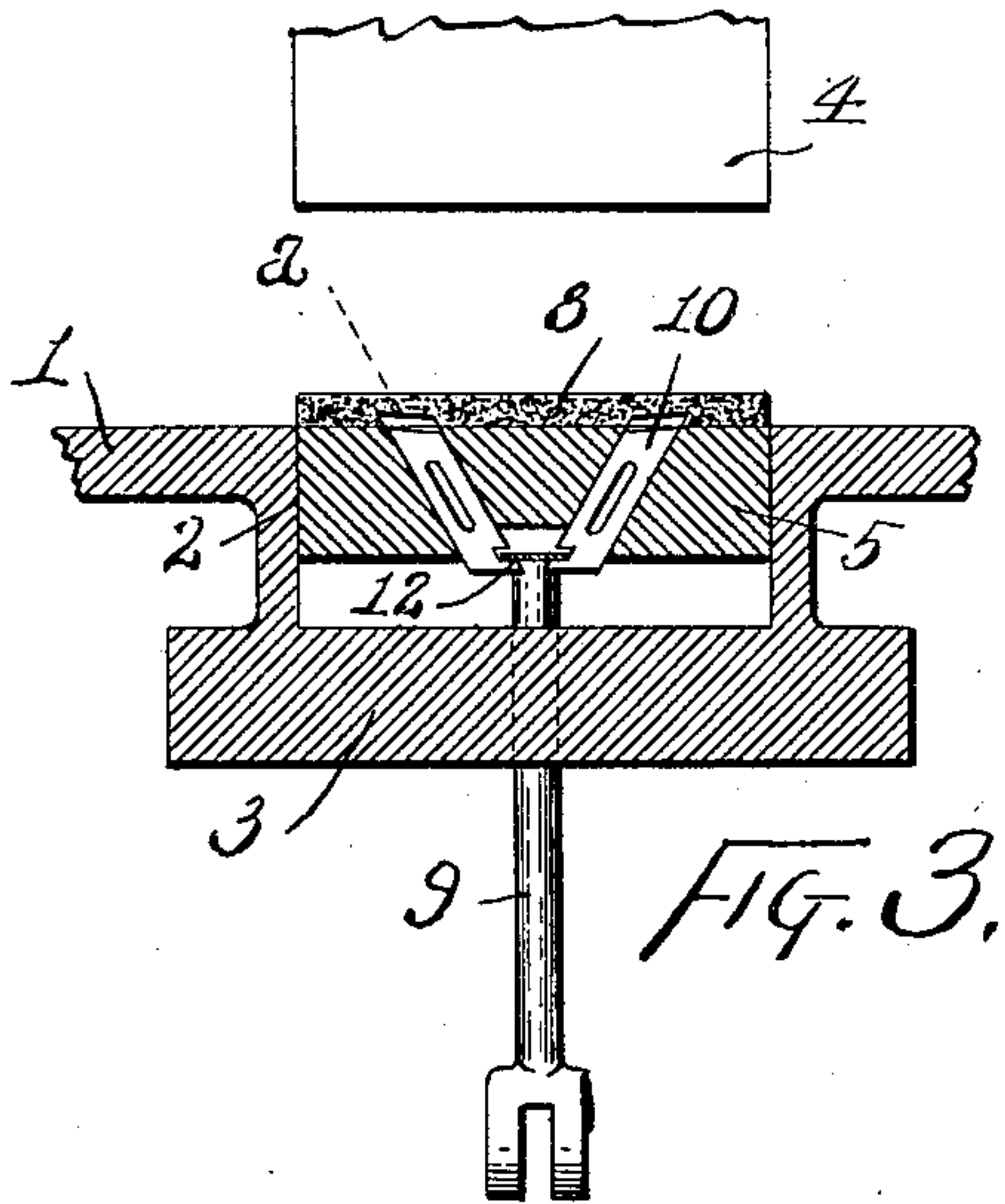
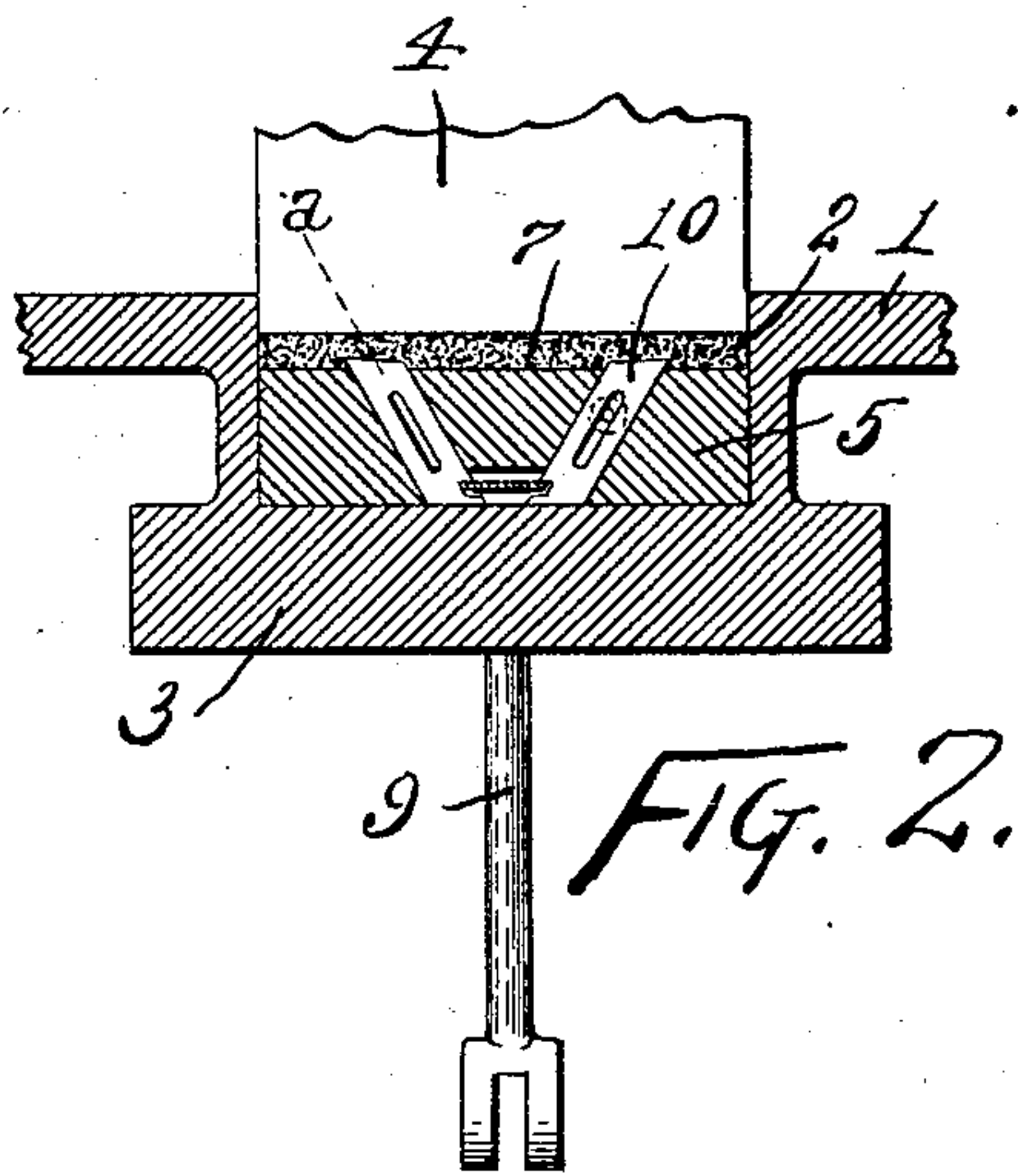
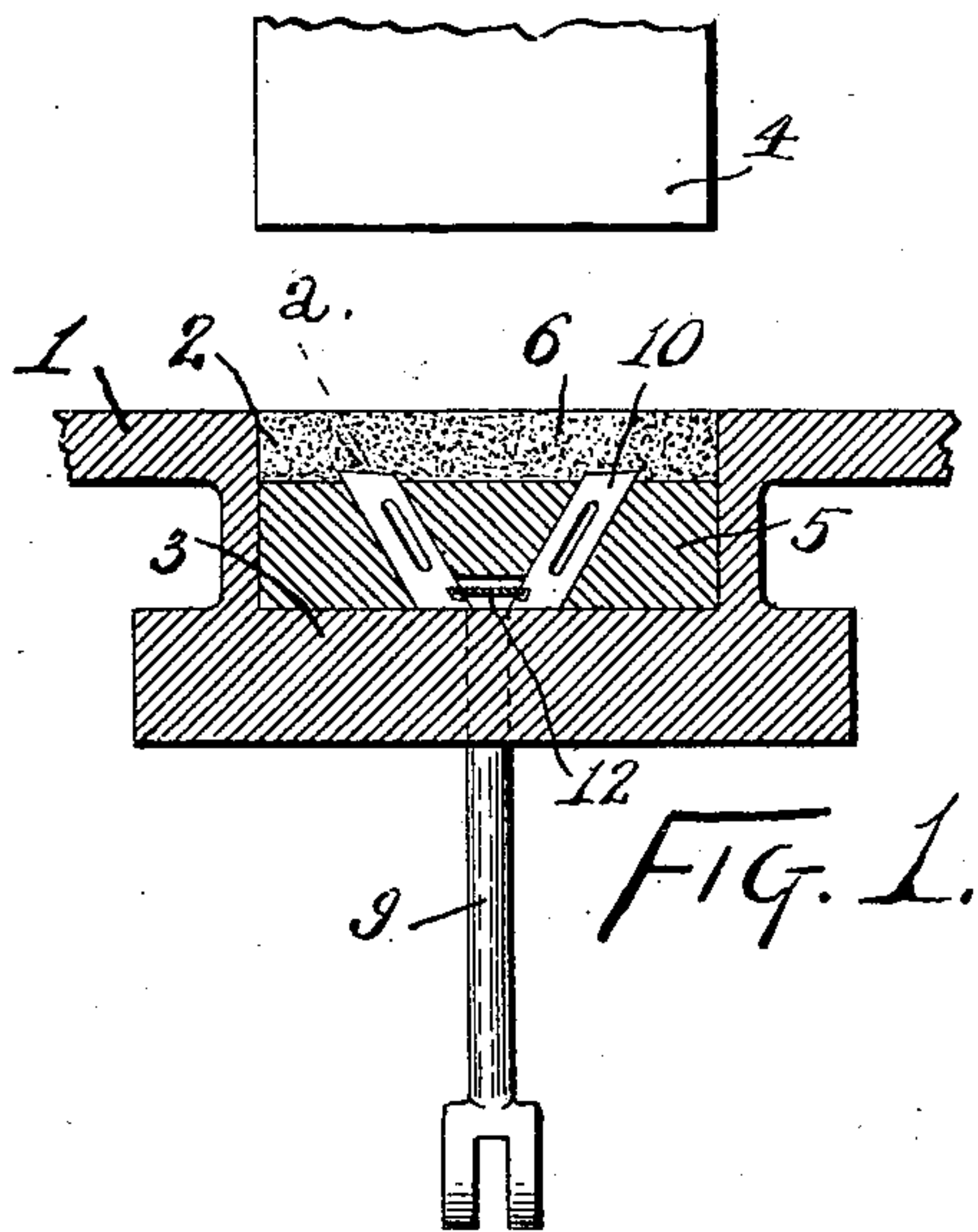


FIG. 6.

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UNITED STATES PATENT OFFICE.

FREDERICK E. GOLDSMITH, OF HAMILTON, OHIO, ASSIGNOR TO ERNST G. RUDER, OF SAME PLACE.

TILE-PRESS.

SPECIFICATION forming part of Letters Patent No. 672,898, dated April 30, 1901.

Application filed February 14, 1901. Serial No. 47,202. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. GOLDSMITH, a citizen of the United States, residing in Hamilton, Butler county, Ohio, (post-office address No. 119 Heaton street, Hamilton, Ohio,) have invented certain new and useful Improvements in Tile-Presses, of which the following is a specification.

This invention pertains to improvements in that class of tile-presses designed for the production of tiles for walls, &c., and involving in the die mechanism spurs for the formation of undercut tooth-recesses in the back of the tile.

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical section in the plane of line *b* of Fig. 4 of a tile-die and its immediate accessories, illustrating my improvement, this view showing the die as charged with clay ready for the pressure; Fig. 2, a similar view showing the plunger as having descended and the clay as being under compression; Fig. 3, a similar view, but showing the plunger as having risen and the bed-die as having risen and pushed the compressed tile up out of the mold; Fig. 4, a bottom view of the bed-die; Fig. 5, a vertical section of the bed-die in the plane of line *a* of other figures; and Fig. 6, a vertical longitudinal section through a finished tile, showing the undercut recesses therein.

In the drawings, 1 indicates the usual table-surface of an ordinary tile-press; 2, the mold-cavity therein, in which the clay is to be compressed to form the tile, this mold-cavity having, as usual, such dimension and form as is consistent with the tiles to be produced; 3, the rigid floor of the mold-cavity; 4, the plunger, adapted, as usual, for being pressed forcibly down into the mold-cavity to compress the clay therein; 5, the bed-die disposed within and closely fitting the mold-cavity and forming the floor proper thereof and adapted for vertical movement therein, so as to take an upward position with its upper surface flush with the table or a lower position with its upper surface far enough down from the top of the mold to permit the mold to receive

the proper amount of clay to form the tile, the bed-die in the latter position being firmly supported by mold-floor 3; 6 in Fig. 1, the loose clay charged into the mold-cavity over the depressed die-bed; 7 in Fig. 2, the same clay after it has been compressed by the descent of the plunger, thus resulting in the compacted tile; 8, Fig. 3, the compacted tile after the plunger has risen and after the bed-die has risen to its upper position and pushed the tile up out of the mold-cavity; 9, the usual rod or stem, by means of which the bed-die is raised and lowered in the mold-cavity, the same projecting down through the floor 3 for connection with the usual mechanism for operating the bed-die; 10, a pair of spurs disposed angularly through the bed-die and arranged for vertical movement through openings in the bed-die, these spurs closely fitting the bed-die openings in which they slide, two pairs of these spurs appearing in Fig. 4 incident to the fact that the die parts illustrated are designed for the production of two tiles at one pressing; 11, retaining-pins screwed inward from the edges of the die and having their inner ends engaging slots in the faces of the spurs 10 to serve in preventing the entire separation of the spurs from the bed-die or the rotation of the spurs; 12, springs of blade form secured in the lower surface of the bed-die and having their free portions engaging notches in the contiguous faces of spurs 10, the office of these springs being to urge the spurs downwardly in the bed-die; 13, Fig. 6, the body of the tile; 14, the undercut recesses formed in the back of the tile by the action of spurs 10, and 15 the usual rib provided upon the upper surface of the bed-die when the bed-die is employed in forming two tiles at one pressing, this rib separating the edges of the two tiles as usual.

In the absence of the rib 15 the apparatus may be employed in forming a tile the full size of the mold-cavity and bed-die. When rib 15 is employed, it fits the apparatus for the formation of two tiles whose conjoint width, plus the thickness of the rib, equals the width of the mold-cavity and bed-die. In the illustration two pairs of the spurs 10 are shown, designed for the production of two undercut tooth-recesses 14 in each of the nar-

row tiles produced when the rib 15 is employed. With the rib 15 absent, thus providing for a single tile the full size of the bed-die, the two pairs of spurs may be retained
 5 for the purpose of producing four tooth-recesses in the tile, or a greater or less number of pairs of spurs may be provided, according to the number and disposition required for the pairs of tooth-recesses desired in the finished tile. The cross-section of the spurs 10
 10 is unimportant, though my preference is to make these spurs cylindrical, thus producing recesses in the tile of circular form somewhat modified into ellipses by reason of the angular presentation of the spurs. The two spurs
 15 of a pair are arranged divergently or non-parallel, so as to produce undercut recesses 14 in the back of the tile with their undercut portions facing in opposite directions. The spurs
 20 are of such length that when the bed-die is in its lower position, as in Figs. 1 and 2, the upper ends of the spurs will project above the upper surface of the bed-die a distance corresponding with the desired depth of the re-
 25 cesses in the tile, the upper surface of the spurs being substantially parallel with the upper surface of the bed-die, the lower ends of the spurs then resting solidly upon floor 3 of the mold-cavity.
 30 Fig. 1 illustrates the parts in condition ready for the pressing of the loose clay 6. The bed-die 5 is firmly supported by the floor 3, and the spurs 10 are also firmly supported by the floor 3, the upper ends of the spurs pro-
 35 jecting up into the loose clay. The descent of the plunger produces the conditions illustrated in Fig. 2, the only effect being to compress the clay and produce the compacted tile 7, giving it the form defined by the walls of
 40 the mold-cavity and by the surfaces of the bed-die and plunger, the upward projection of the spurs 10 producing the undercut tooth-recesses. Fig. 3 shows the plunger 4 as hav-

ing risen and the bed-die as having been elevated by proper operation of its stem 9. 45
 The compacted tile has been pushed up out of the mold-cavity and is ready for removal. As the bed-die rose from the supporting-floor 3 the spring 12 retracted the spurs 10 sufficiently to draw their upper ends diagonally 50
 out of the recesses formed by them, the upper ends of the spurs sinking even with or below the upper surface of the bed-die, so as not to interfere with the sliding of the tile from the bed-die. When the tile has been re- 55
 moved and the bed-die again depressed ready for a new charge of clay, the effect of the final descending motion of the bed-die is to cause the lower ends of the spurs to make contact with the floor 3, thus preventing the 60
 farther descent of the spurs, the continued descent of the bed-die causing the projection of the spurs above the upper surface of the bed-die.

I claim as my invention— 65

In a tile-press, the combination, substantially as set forth, of a mold-table, a mold-cavity therein, a plunger adapted for forcible descent into the mold-cavity, a bed-die fitting the mold-cavity and adapted for vertical mo- 70
 tion therein and provided through it with a pair of openings, spurs fitting said openings and adapted for sliding motion therein, a spring carried by said bed-die and engaging the lower portions of said spurs and urging 75
 them downwardly, and a rigid floor or support below said bed-die and adapted to support the bed-die and the spurs in depressed position with the upper ends of the spurs pro- 80
 jecting above the upper surface of the bed-die.

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