

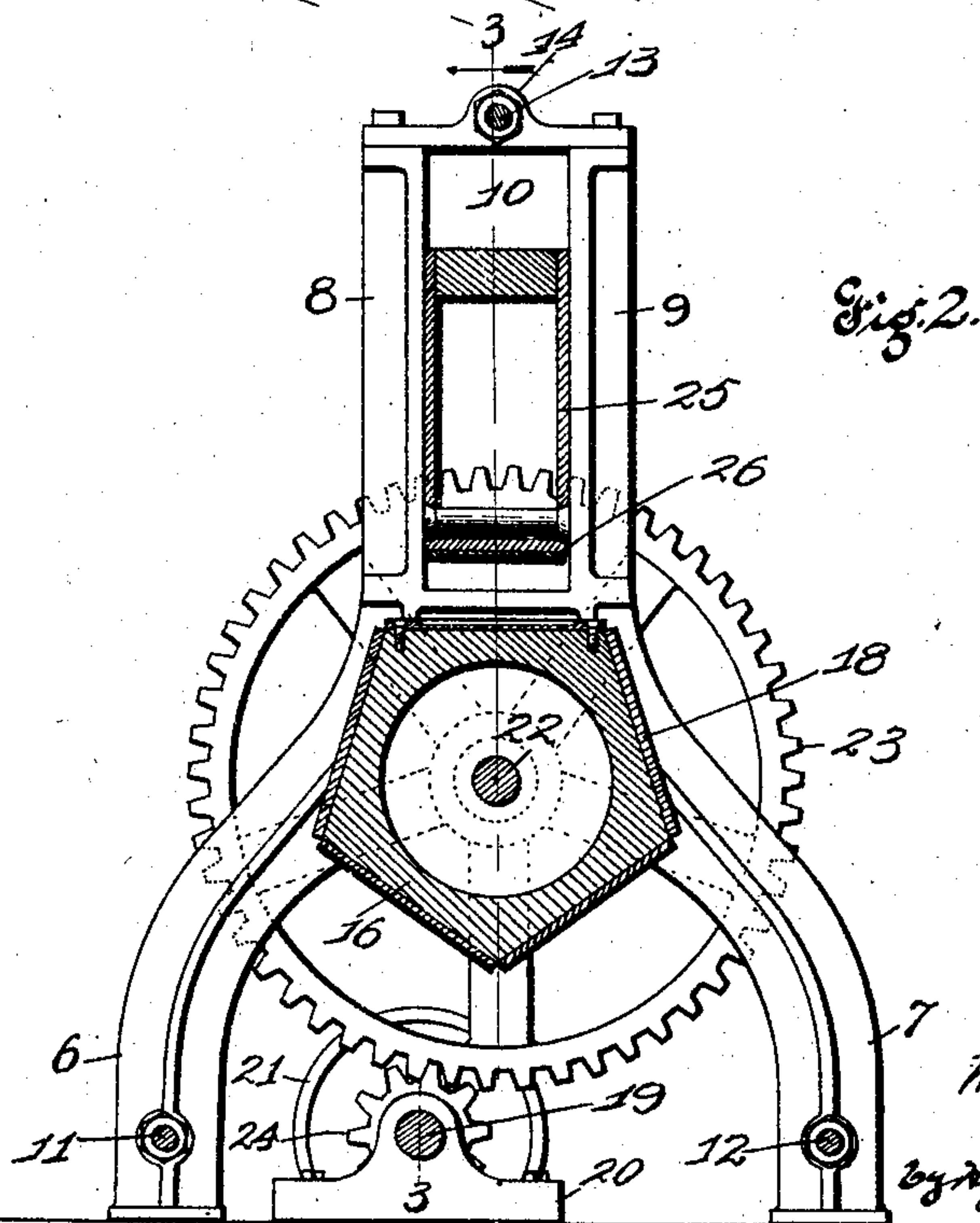
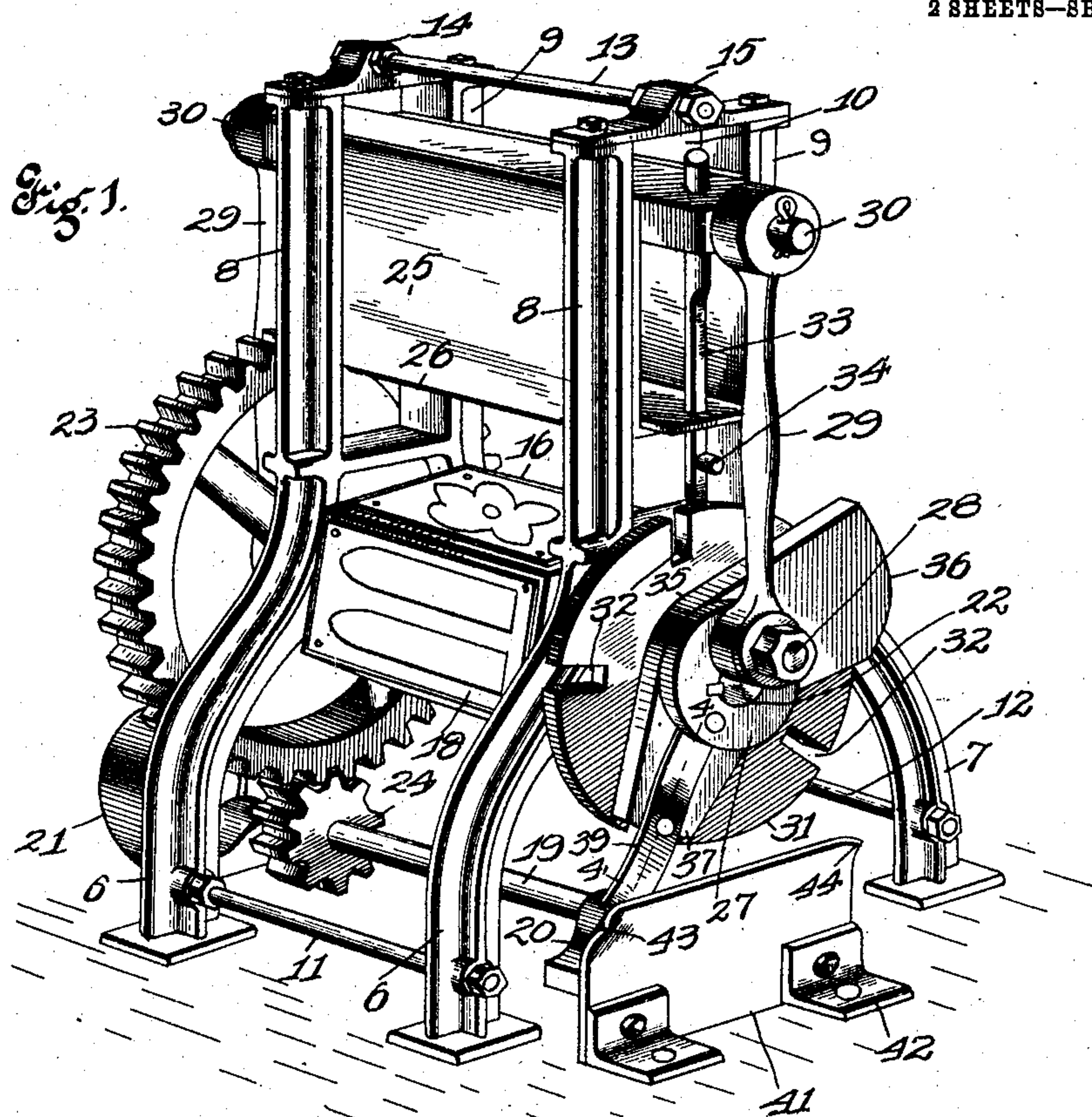
No. 780,435.

PATENTED JAN. 17, 1905.

M. MUELLER.
TILE PRESS.

APPLICATION FILED AUG. 22, 1904.

2 SHEETS—SHEET 1.



Witnesses
Alfred W. Calkins
H. M. Brazier

Inventor
Max Mueller
By Nelson & Rogers & Hopkins Attys

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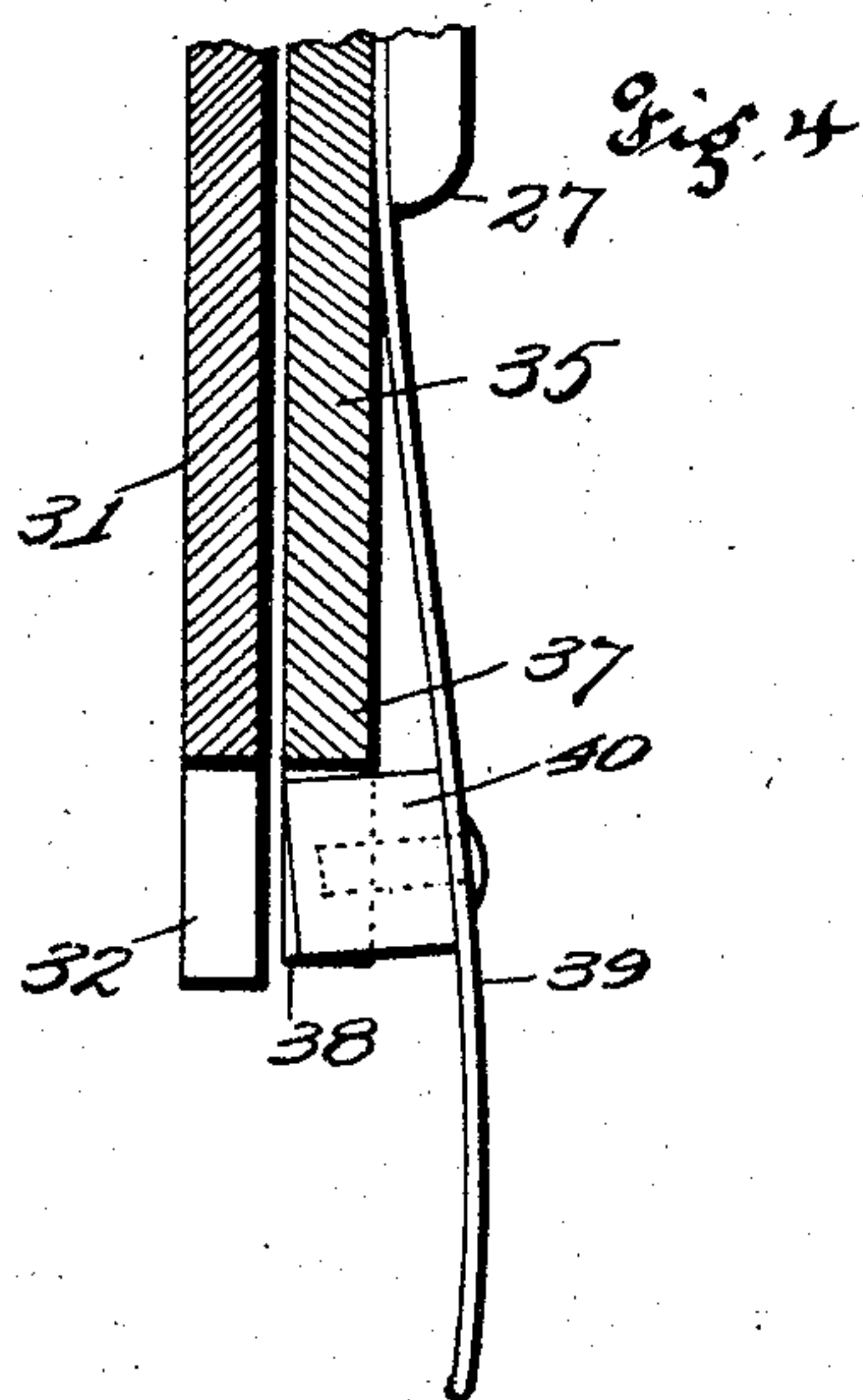
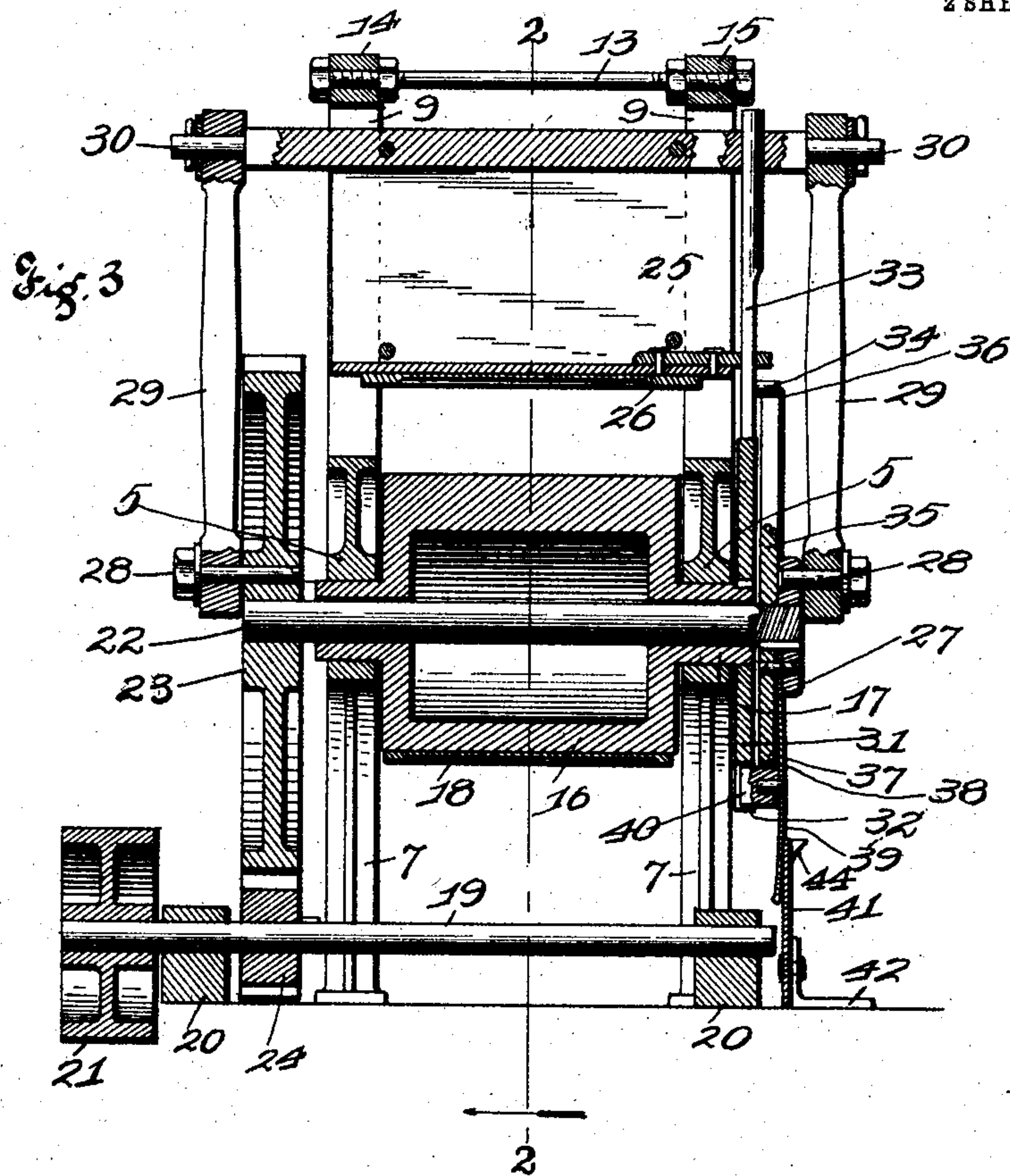
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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

MAX MUELLER, OF ST. LOUIS, MISSOURI.

TILE-PRESS.

SPECIFICATION forming part of Letters Patent No. 780,435, dated January 17, 1905.

Application filed August 22, 1904. Serial No. 221,734.

To all whom it may concern:

Be it known that I, MAX MUELLER, a subject of the Emperor of Germany, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Tile-Presses, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in tile-presses; and it consists of the novel features herein shown, described, and claimed.

In the drawings, Figure 1 is a perspective of a tile-press embodying the principles of my invention. Fig. 2 is a vertical cross-section taken substantially on the line 2 2 of Fig. 3 and looking in the direction indicated by the arrow. Fig. 3 is a vertical central longitudinal section on the line 3 3 of Fig. 2 and looking in the direction indicated by the arrow. Fig. 4 is a sectional detail upon an enlarged scale and taken substantially on the line 4 4 of Fig. 1.

Referring to the drawings in detail, the frame comprises two bearing-blocks 5, legs 6 and 7 extending downwardly from each bearing-block, arms 8 and 9 extending upwardly from each bearing-block and forming the slideway 10, spaced rods 11 and 12 connecting the lower ends of the legs, and a similar spaced rod 13 connecting the cap-plates 14 and 15, said cap-plates connecting the upper ends of the arms 8 and 9. The polygonal rotary die-holder 16 is mounted between the bearing-blocks 5 and has hollow spindles 17 extending into the bearing-blocks. The dies 18 are removably secured to the faces of the die-holder 16. The driving-shaft 19 is mounted in bearing-blocks 20, secured to the floor between the legs 6 and 7, and a belt-pulley 21 upon the shaft is driven from the engine or motor.

A counter-shaft 22 is mounted through the spindles 17, and a spur-gear 23, fixed upon one end of the shaft, meshes with the pinion 24, fixed upon the driving-shaft 19. The reciprocating die-holder 25 is slidingly mounted between the arms 8 and 9, and the reciprocating die 26, removably attached to the lower face of the die-holder works in opposition to

the dies 18 upon the rotary die-holder. A hub 27 is fixed upon the shaft 22 at the end opposite to the gear 23. Crank-pins 28 are fixed in the hub of the gear 23 and in the hub 27, and connecting-rods 29 connect these crank-pins with the pins 30, extending outwardly from the die-holder 25, so that as the shaft 22 rotates the die-holder 25 reciprocates in the slideway 10. A wheel 31 is fixed upon one of the spindles 17, and notches 32 are formed from the periphery of the wheel, there being one notch for each side of the die-holder 16. A sliding plunger 33 is mounted vertically in the reciprocating die-holder 25 in position to engage in the notches 32, and a pin 34 projects outwardly from the plunger.

A cam-hub 35 is fixed upon the shaft 22, inside of the hub 27, and the cam-face 36 is carried by the cam-hub in position to engage the pin 34 and raise the plunger 33 out of the notch 32 at each revolution of the hub. An arm 37 projects from the hub 35, nearly in line with the end of the cam-face 36, there being a notch 38 in the outer end of said arm. A leaf-spring 39 is attached to the hub 27, and extends outwardly past the notch 38. A tooth 40 is secured to the central part of the spring 39 in position to operate through the notch 38 into one of the notches 32.

A cam-plate 41 is secured to the floor by brackets 42, the upper corners 43 and 44 of the plate being bent outwardly, so that as the hub 27 rotates the outer end of the spring 39 will be brought into contact with the inclined corner 44, forcing the spring inwardly and causing the tooth 40 to pass into a notch 32, so as to connect the arm 37 to the wheel 31, thereby causing the wheel 31 to rotate as the hub 27 rotates, so as to rotate the rotary die-holder 16 one step. Then as the spring 39 passes out of engagement with the plate 41, the tooth 40 passes out of the notch 32, and the plunger 33 falls into the notch 32, so as to hold the upper die 18 in a horizontal position. Then as the shaft 22 continues to rotate the reciprocating die-holder 25 passes downwardly in opposition to the die 18. Then as the shaft 22 continues to rotate the cam 36 will be brought into engagement with the pin 34, thereby elevating the plunger 33 out

of the notch 32. The spring 39 will again engage the cam-plate 41 and rotate the rotary die-holder another step.

The plastic material to be used in making 5 tiles is placed upon one of the dies 18 by the operator in front of the machine. Then as the machine operates this die is brought to a horizontal position, the reciprocating die presses against the material and forms the 10 tile, the rotary die-holder again moves, and the operator behind the machine removes the finished tile from the rear die.

I claim—

1. In a tile-press: a rotary die-holder; a 15 shaft extending through the die-holder; crank-pins carried by the shaft; a reciprocating die-holder; connecting-rods connecting the reciprocating die-holder to the crank-pins; a notched wheel rigidly connected to the rotary 20 die-holder; a sliding plunger carried by the reciprocating die-holder in position to engage in the notches of the wheel; a pin projecting from the sliding plunger; a cam-hub fixed upon the shaft adjacent to the notched wheel 25 and having a cam-face to engage the pin and operate the plunger; a notched arm extending from the cam-hub; a leaf-spring attached to the hub; a tooth carried by the leaf-spring in position to engage in the notch of the arm 30 and in the notches of the notched wheel; and a cam-plate rigidly mounted in position to engage and operate the leaf-spring; substantially as specified.

2. In a tile-press: a rotary die-holder; a re- 35 ciprocating die-holder; means for operating the reciprocating die-holder to and from the rotary die-holder; a notched wheel rigidly mounted upon the rotary die-holder; a plunger in position to engage the notches of the 40 wheel; a cam for moving the plunger out of the notches of the wheel; and cam mechanism

for connecting the notched wheel to driving means; substantially as specified.

3. In a tile-press: a rotary die-holder; a shaft extending through the die-holder; crank- 45 pins carried by the shaft; a reciprocating die-holder; connecting-rods connecting the reciprocating die-holder to the crank-pins; a notched wheel rigidly connected to the rotary die-holder in position to engage in the notches 50 of the wheel; means of operating the sliding plunger out of the notches of the wheel; a cam-hub fixed upon the shaft; an arm extending from the cam-hub; a leaf-spring attached to the cam-hub; a tooth carried by the leaf- 55 spring in position to engage the arm and in the notches of the notched wheel; and a cam-plate rigidly mounted in position to engage and operate the leaf-spring; substantially as specified. 60

4. In a tile-press: a rotary die-holder; a shaft extending through the die-holder; a notched wheel rigidly connected to the die-holder; a sliding plunger in position to en- 65 gage the notched wheel; means of moving the plunger out of the notches of the wheel; a cam-hub fixed upon the shaft adjacent to the notched wheel; an arm extending from the cam-hub; a leaf-spring attached to the hub; a tooth carried by the leaf-spring in position 70 to engage the arm and in the notches of the notched wheel; and a cam-plate rigidly mounted in position to engage and operate the leaf-spring; substantially as specified.

In testimony whereof I have signed my name 75 to this specification in presence of two subscribing witnesses.

MAX MUELLER.

Witnesses:

ALFRED A. EICKS,
M. M. BRAZILL.