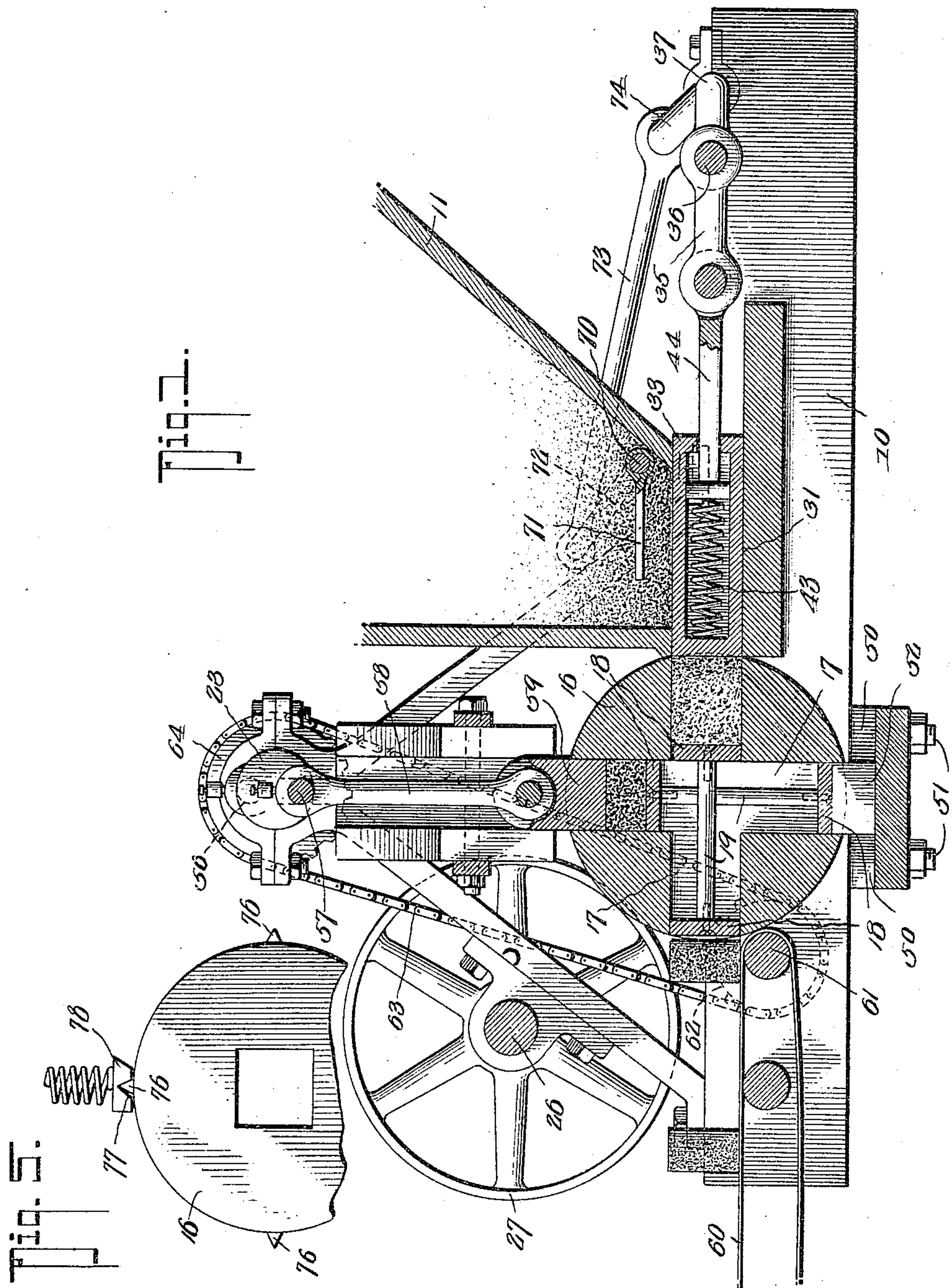


No. 816,374.

PATENTED MAR. 27, 1906.

C. W. PRATT.  
BRICK MAKING MACHINE.  
APPLICATION FILED DEC. 13, 1904.

4 SHEETS—SHEET 1.



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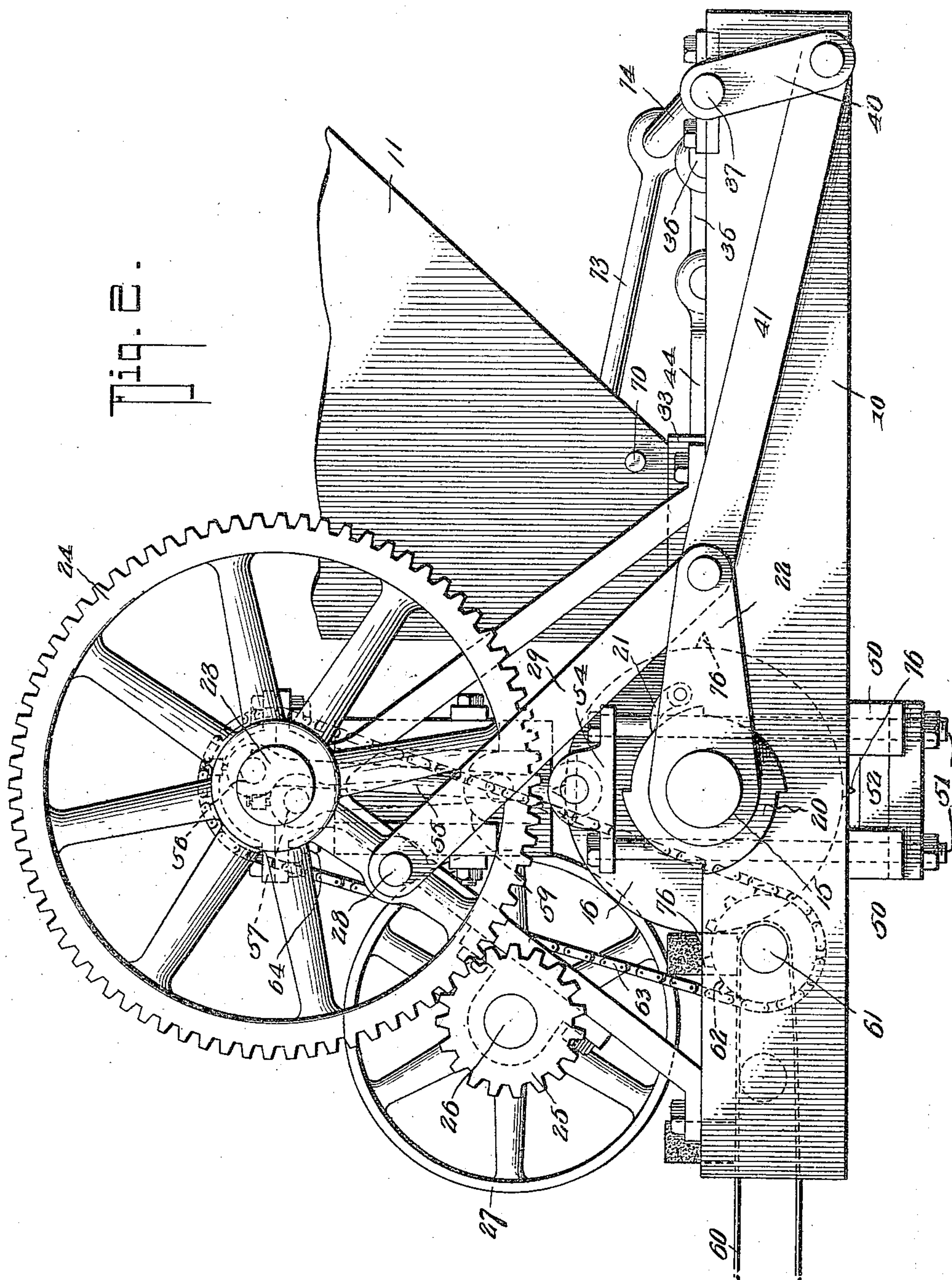


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4 SHEETS—SHEET 2.



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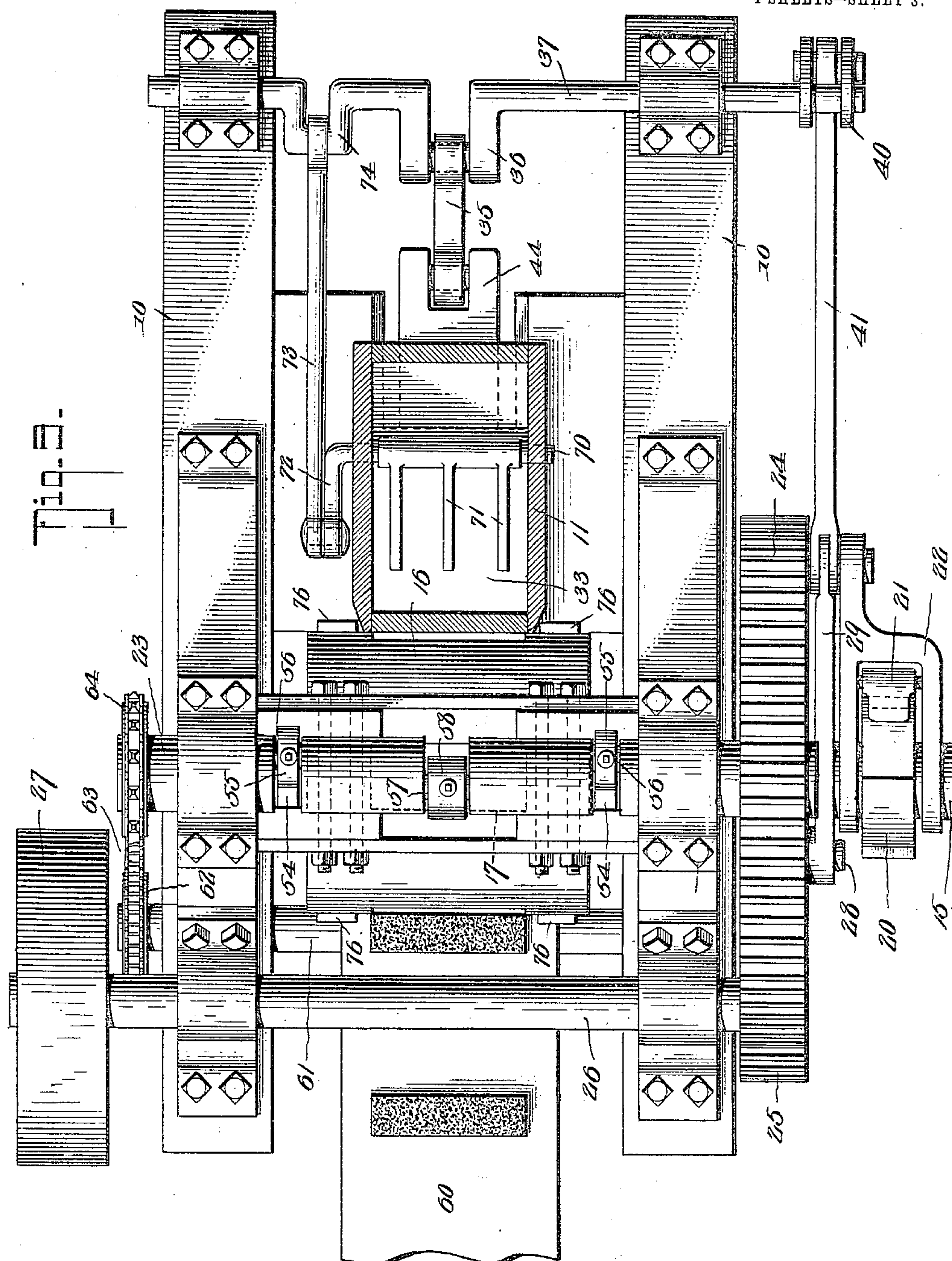
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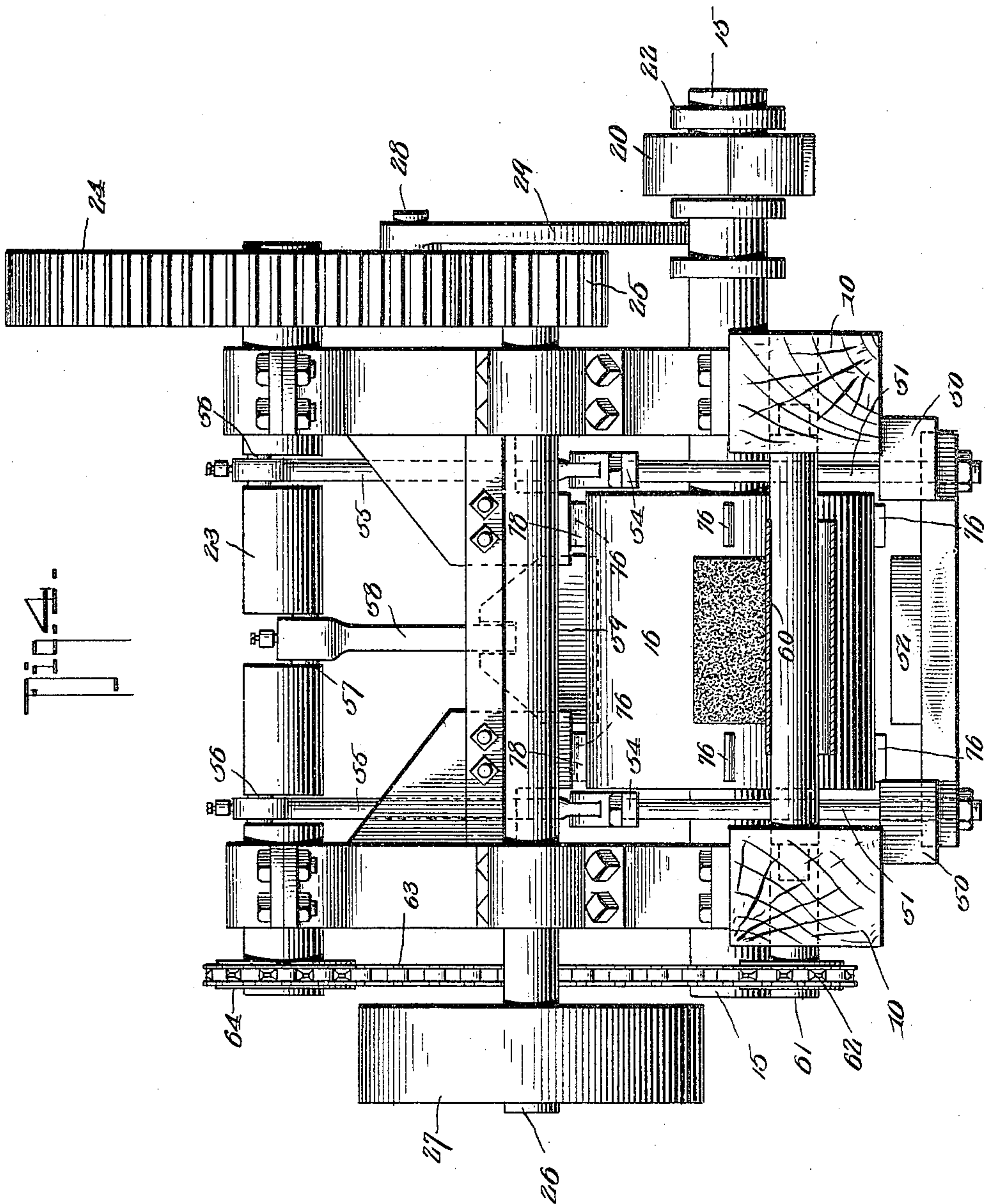


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# UNITED STATES PATENT OFFICE.

CHARLES WALTER PRATT, OF MARTIN, TENNESSEE, ASSIGNOR OF ONE-HALF TO THOMAS J. TAYLOR, OF MARTIN, TENNESSEE.

## BRICK-MAKING MACHINE.

No. 816,374.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed December 13, 1904. Serial No. 236,704.

*To all whom it may concern:*

Be it known that I, CHARLES WALTER PRATT, a citizen of the United States, residing at Martin, in the county of Weakley and State of Tennessee, have invented a new and useful Brick-Making Machine, of which the following is a specification.

This invention relates to machines for the formation of bricks or blocks for building purposes, and has for its principal object to provide a machine of simple construction by which bricks may be manufactured at minimum expense and in which the article produced will be equal to the ordinary re-pressed brick of commerce.

A further object of the invention is to provide a machine in which the operation of applying a fresh quantity of material to one mold will result in the discharge of a finished brick from another die or mold.

A still further object of the invention is to provide for the production of bricks of uniform size and density by the application of pressure to exactly the same extent from opposite sides of the brick being formed.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts herein-after fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of a brick-pressing machine constructed in accordance with the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view of the machine. Fig. 4 is an end elevation of the machine looking from the left of Fig. 1. Fig. 5 is a detail view illustrating one of the devices employed for locking the cylinder in adjusted position.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The various working parts of the apparatus are supported on a suitable frame 10, which also carries a hopper 11, to which the

material for the formation of the bricks is supplied.

The frame is supplied with bearings for the opposite end gudgeons 15 of a revoluble mold-cylinder 16, the latter being provided with a number of molds 17, of which four are shown in the present instance, these being arranged at angles of ninety degrees from each other. In each of the mold-boxes is a bottom plate 18, the diametrical-opposed plates being connected in pairs by rods 19, so that movement imparted to one will be transmitted to the other. One of the end gudgeons is extended to a point some distance beyond the side of the frame and carries a ratchet-wheel 20, with which engages a pawl 21, carried by an arm 22, that is pivotally mounted on the gudgeon, and said pawl imparts to the ratchet-wheel a movement through an arc of ninety degrees at each operation.

Immediately above and in vertical alignment with the axes of the gudgeons the frame is provided with bearings for the support of a shaft 23, carrying at one end a gear-wheel 24, which intermeshes with a pinion 25, carried by a main driving-shaft 26, the latter being provided at one end with a pulley 27 for the reception of a driving-belt. To the gear-wheel 24 is secured a crank-pin 28, that is connected by a rod 29 to the outer end of the arm 22 and serves to impart movement to the latter for the operation of the ratchet-wheel and mold-cylinder.

At the lower end of the hopper is a chamber 31, into which the clay or other material falls by gravity or is pressed thereinto by a screw or other conveyer member of a type ordinarily employed in this art. Arranged in the chamber 31 is an initial die-block 33, which is moved outward or in a direction away from the mold-cylinder to permit the entrance of the material to the chamber, and then is forced in the opposite direction to convey such material into one of the mold-boxes of the cylinder, this operation occurring four times during each complete rotation of the mold-carrying cylinder.

The opposite edges of the initial die 33 are adapted to suitable guideways formed in the frame, and the rear end of such die is connected by a link 35 to a crank 36, formed on a rock-shaft 37, that is adapted to suitable bear-



ings on the frame. The outer end of the rock-shaft carries a rocker-arm 40, that is connected by a link 41 to the connecting-rod 29 and arm 22, so that each time the large gear 24 rotates the rock-shaft will be operated and the initial die will be moved forward and press the material from chamber 31 into one of the mold-boxes.

In order to prevent breakage of the parts should there be any obstruction in the lower portion of the hopper or in the chamber 31, the die-block 33 is chambered and receives a compression-spring 43, against which plays the headed end of a stem 44, that is connected directly to the link 35, so that a yieldable connection is formed between the rock-shaft and the initial die, and should there be any obstruction to the movement of said die the spring will yield and breakage of the parts will be prevented.

At the lower portion of the frame are arranged beams 50, having guiding-openings for the reception of two pairs of rods 51, there being one pair adjacent to each side of the machine. The lower ends of these rods are all connected to a transversely-disposed presser-block 52, the upper face of which is of a contour corresponding to that of one of the mold-boxes and is arranged to enter the lowermost mold-box immediately after each one-fourth revolution of the mold-carrying cylinder. The upper ends of the pairs of rods 51 are connected by blocks 54, and these in turn are connected by rods 55 to cranks 56, disposed near the opposite ends of the upper shaft 33. This shaft further carries a central crank 57, that is connected by a rod 58 to a re-pressing die 59, adapted to suitable guides formed in the adjacent faces of the side members of the frame. The cranks are arranged at points diametrically opposite each other—that is to say, the two cranks 56 on one side of the axis of rotation of the shaft and the crank 57 on the opposite side of such axis of rotation—so that each time the shaft turns the presser-block 52 and re-pressing die 59 will be moved first toward each other and then away from each other.

The completed blocks or bricks are removed on a conveyer-belt 60, mounted on suitable supporting-rollers at the discharge side of the machine. The initial roller is carried by a shaft 61, on which is arranged a sprocket-wheel 62, that is connected by a link belt 63 to a sprocket-wheel 64 on the shaft 23, and at each revolution of the latter the conveyer-belt will be moved a predetermined distance, so that the bricks received thereby will be maintained in spaced relation for conveyance to the drying-floor.

In the operation of the device clay or other material is supplied to the hopper, and as the shaft 23 revolves the initial die 33 will be moved outward, allowing a portion of the material to pass to the chamber 31. The initial

die is then moved forward and presses the material from the chamber 31 into one of the mold-boxes. The ratchet-wheel 20 is then rotated to the extent of one-fourth of a revolution, and the filled mold-box is turned around to a position in the vertical plane of the axis of the mold-carrying cylinder. At the next revolution of the crank-shaft 23 the pressing-block 52 will be moved upward into the lowest empty mold-box and into contact with the bottom plate 18 therein, while the upper re-pressing die 59 is simultaneously moved downward into contact with the material to be molded. The movement of the presser-block 52 will be transmitted through the lower bottom plate to the bottom plate of the upper mold-box, so that the material in the mold will be subjected to equal pressure from its upper and lower slides. The extent of movement of the presser-block and re-pressing die is in all cases precisely the same, and the material will thus be compressed into blocks of uniform size and density. After the presser-block and re-pressing die move outward from the mold-box the cylinder is again rotated to the extent of one-fourth of a revolution until the brick is in the horizontal plane of the axis of rotation of the cylinder, and when the initial die 33 again acts to force material into the mold-box adjacent to the hopper the movement will be transmitted through said material to the bottom plate of one mold-box and thence is transmitted to the mating plate in order to discharge the pressed brick onto the conveyer-belt.

In order to feed the material from the hopper to a point in advance of the initial die, the hopper has bearings for a transverse shaft 70, from which project a number of fingers or blades 71. One end of the shaft carries a crank 72, that is connected by a link 73 to a crank 74 on the shaft 37. At each operation the fingers will be vibrated, being moved downward when the initial die is at the limit of its rearward movement, and in this manner the chamber in advance of the die will be filled with the clay or other material.

In order to correct the movement of the mold-carrying cylinder and to lock the same in adjusted position, the cylinder is provided with two sets of lugs 76, which are adapted to enter notches 77, formed in spring-pressed blocks 78, carried by the frame. As the lugs pass under these notches the cylinder will become locked and positively centered by the operation of the dies.

Having thus described the invention, what is claimed is—

1. In a brick-machine, a movable mold, an initial pressing-die for filling the mold, a pair of re-pressing devices, and means for traversing the mold between the initial die and the re-pressing devices.

2. The combination with a movable mold,



of an initial mold filling and pressing die, a pair of re-pressing devices serving to impart equal pressure on opposite sides of the material in the mold, a discharging means, and  
5 mechanism for imparting a step-by-step movement to the mold.

3. The combination with a mold, of a means for imparting a step-by-step movement thereto, a mold filling and pressing die, a re-pressing die, means coacting therewith  
10 for imparting equal pressure to the opposite sides of the material in the mold, and mechanism for discharging the re-pressed brick from the mold.

4. The combination with a movable mold-carrier, of bottom plates carried thereby and connected in pairs, a presser-block arranged to enter an empty mold and engage the bottom plate thereof, a re-pressing die arranged  
20 to enter a second mold opposite to the first, and means for simultaneously moving the presser-block and re-pressing dies in opposite directions, respectively.

5. The combination with a revoluble mold, having a bottom plate, of means for moving the bottom plate in one direction against the material, a re-pressing die for engaging the opposite surface of the material, and means for operating said bottom plate and re-pressing die.  
30 ing die.

6. The combination with a movable mold, of a bottom plate serving also as an ejecting or mold-clearing means, a re-pressing die, and means for simultaneously moving the bottom plate and re-pressing die in opposite directions respectively.  
35 respectively.

7. The combination with a mold having a movable bottom plate a re-pressing die, a shaft having diametrically-opposed cranks, and means connecting the cranks, respectively, to the bottom plate and the die, thereby to impart movement to the same in opposite directions, respectively.  
40 respectively.

8. The combination with a revoluble cylinder having diametrically-opposed molds, of bottom plates arranged in said molds, a ratchet, connecting means between the bottom plates, a re-pressing die for engaging the material in one mold and forcing the same  
45 against the bottom plate, and a presser-block engaging the opposite bottom plate and tending to resist said movement.

50 against the bottom plate, and a presser-block engaging the opposite bottom plate and tending to resist said movement.

9. The combination with a frame, of a revoluble member having a crank-pin, a cylindrical mold-carrier having a plurality of molds, a ratchet-wheel secured to the mold-carrier, a pawl engaging said ratchet-wheel, a pivotally-mounted lever carrying the pawl, a rod connecting the lever to the crank-pin, a hopper, a preliminary filling and pressing die  
55 arranged under said hopper, a rock-shaft connected to said die, a rocker-arm on said shaft, and a rod connecting said rocker-arm to the juncture of the connecting-rod and pawl-carrying lever, thereby to form a toggle-lever for the operation of the die.  
60 lever for the operation of the die.

10. The combination with a frame, of a cylindrical mold-carrier having a plurality of molds, a ratchet-wheel secured thereto, a pawl for engaging the ratchet-wheel, a lever carrying said pawl, a hopper, an initial pressing-die for filling the successive molds, means connecting the die to the pawl-carrying lever, a crank-shaft, a gear on said crank-shaft, a crank-pin carried by the gear, a rod connecting the crank-pin to the pawl-carrying lever, a pair of opposing pressing members, means for connecting the same to the crank-shaft, a conveyer-belt, and means for imparting continuous lengthwise movement to said conveyer-belt.  
70 conveyer-belt.

11. The combination with a movable mold, of a hopper, an inner mold filling and pressing die movable through the hopper to fill the mold, a crank-shaft arranged near the lower portion of the hopper, a plurality of feeding-fingers carried by the shaft and serving to force the material down in advance of the die, and an operating-crank connected to the shaft.  
85 shaft.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.  
90

CHARLES WALTER PRATT.

Witnesses:

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H. J. RAINER.