July 22, 1930. C. M. BEALS 1,771,030

CONCRETE BRICK MOLDING DEVICE

Filed May 17, 1928 3 Sheets-Sheet 1

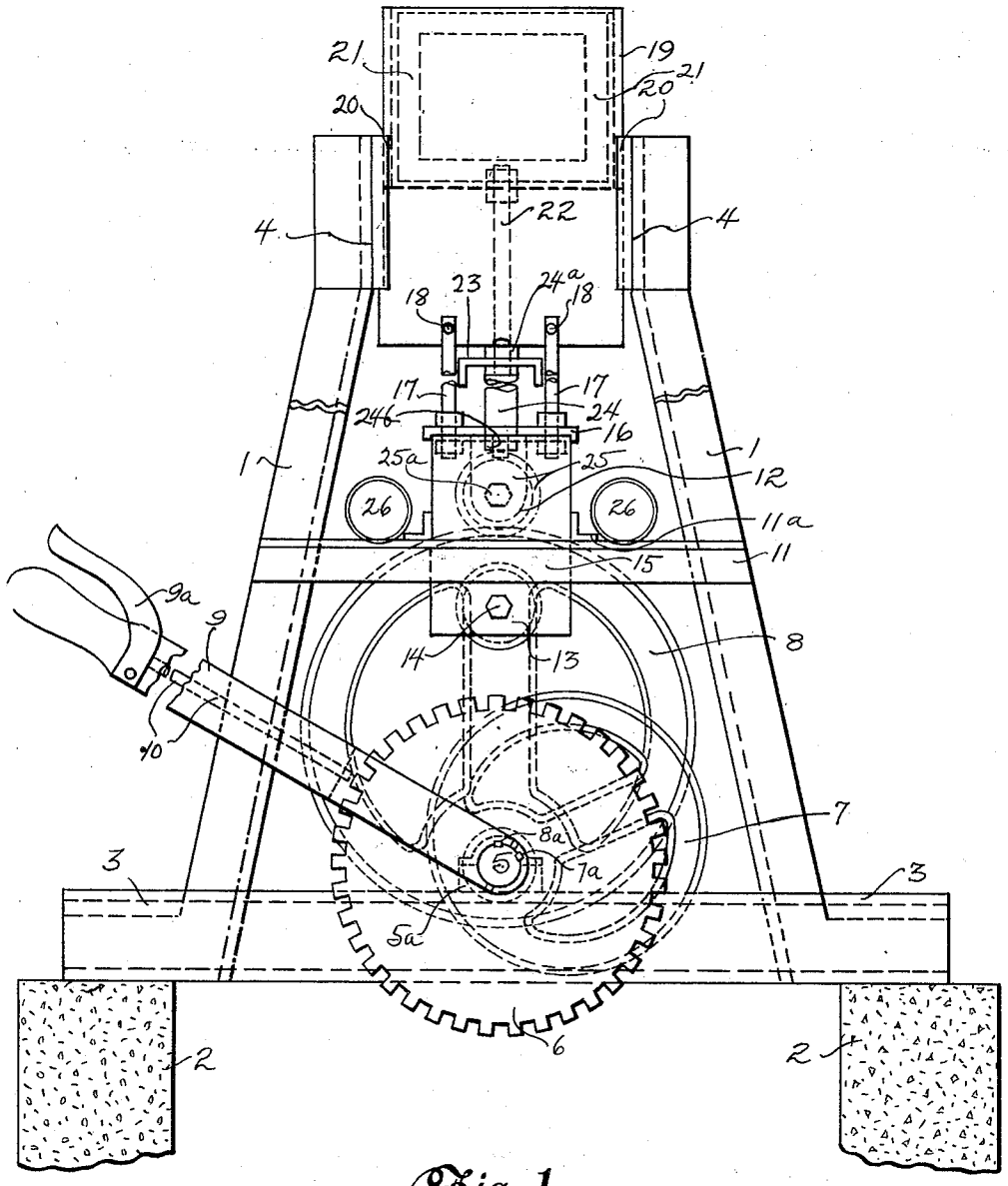


Fig. 1.

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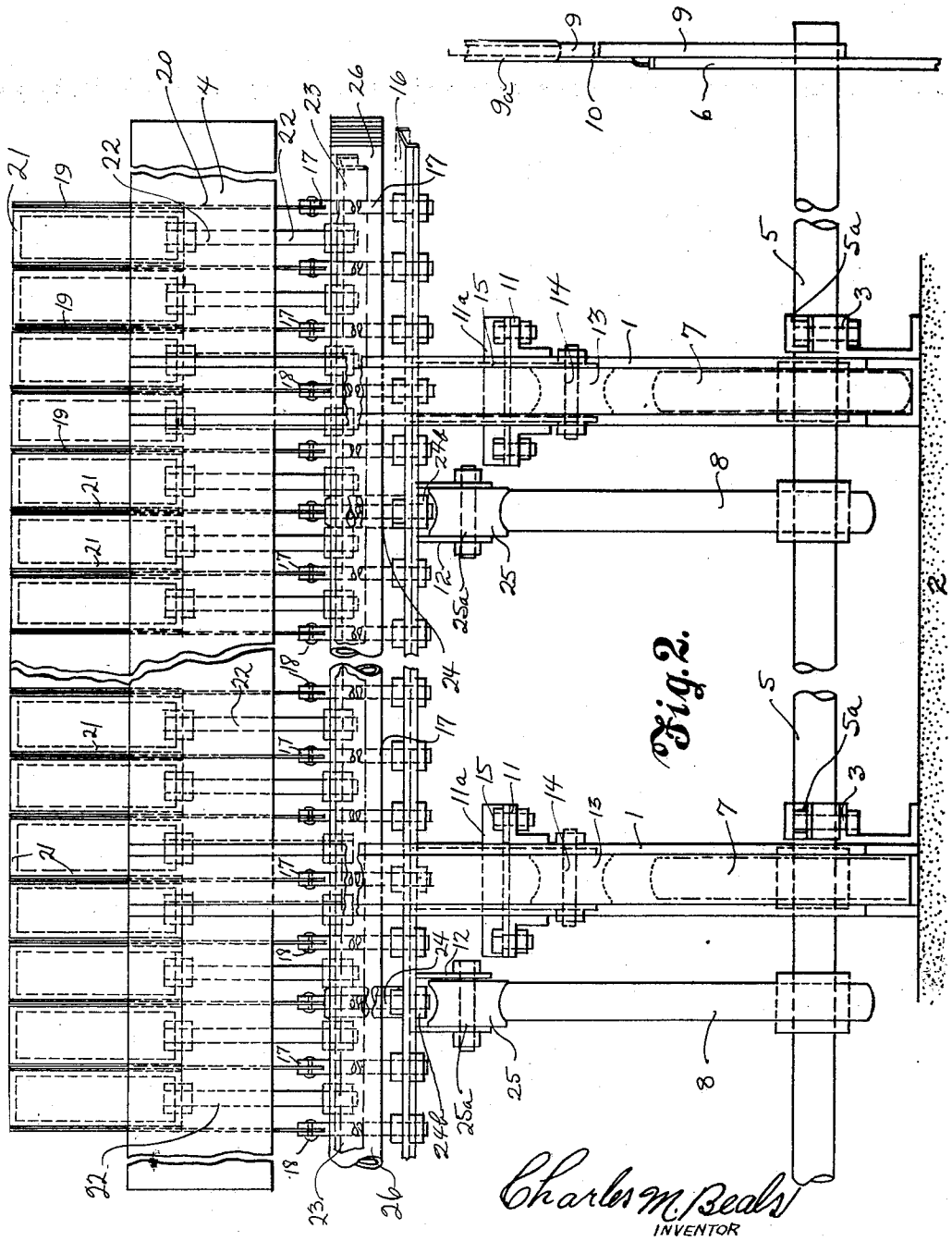


Fig. 2.

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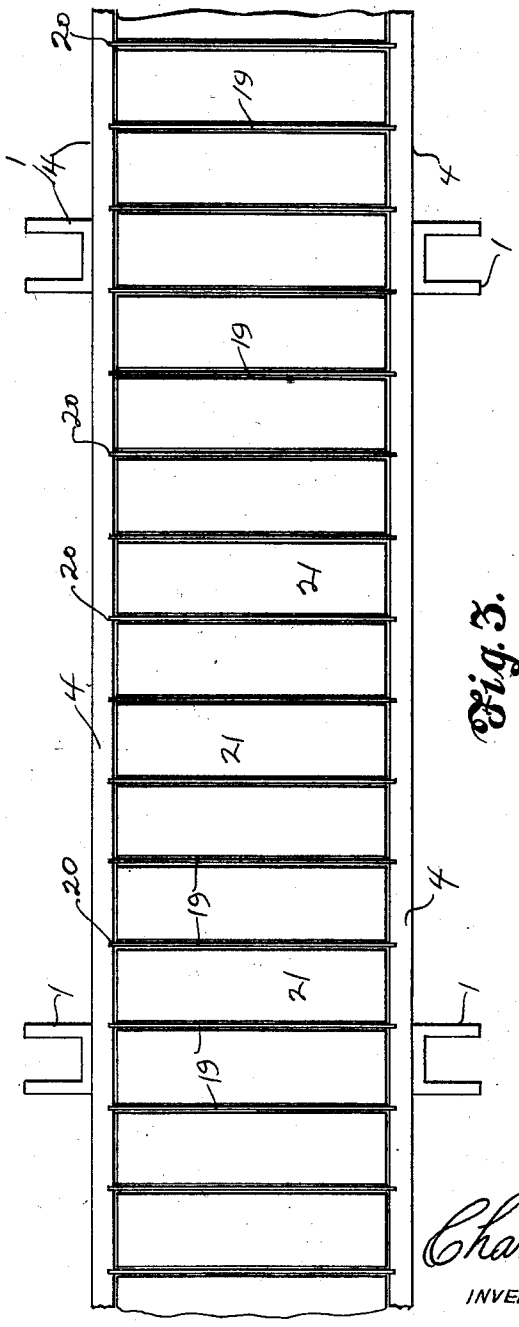


Fig. 3.

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UNITED STATES PATENT OFFICE

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CONCRETE-BRICK-MOLDING DEVICE

Application filed May 17, 1928. Serial No. 278,469.

This invention relates to concrete brick molding machines, and refers more particularly to such a machine adapted to allow the facing of a number of brick, and then the lifting of the brick from the molding or separation plates by the actuation of a ratchet lever controlling a pair of eccentrics journaled on a common shaft, each eccentric affecting different parts of the machine to accomplish the results above mentioned in the order named.

The object of this invention is the provision of a device which will perform the above in a fraction of the time now taken by the employment of devices now in common use, and further, the elimination of excessive manual handling of each brick.

By the use of this machine, the molds, being fixed in alignment, mechanical attachments for filling the molds and removing the brick, may be attached or used in co-operation with the device, and the manual handling of the brick entirely eliminated.

Therefore, it will be readily seen and understood that time, labor, and money may be saved and a more perfect brick be produced in greater quantities than has been done in common practice heretofore.

Now, I wish to make clear that this machine is adapted to be employed in the manufacture of poured concrete brick (not dry tamped) and for no other type of brick, but of course may be made in sizes to accommodate concrete blocks or other concrete products of greater size than brick.

The device may be better understood in the course of the following detailed description, of which the annexed drawings form a part, and in which—

Figure 1 is an end elevation of the machine embodying my invention

Figure 2 is a side elevation, and Figure 3 is a top or plan view.

Continuing the description, the machine is provided with legs 1—1 of channel iron, set on a concrete base 2, and with bracing cross members 3—3, above the base. Joining the leg members at the top of the machine are members 4—4, which serve as a part of the brick forms and are provided with grooves 20 adapted to receive the separation plates 19 therein and serve as guides for them during the operation of the machine. A shaft 5 is journaled in bearings 5^a which are secured on members 3—3. Upon this shaft are supported eccentrics 7—7 and 8—8, which are arranged in the frame of the machine below the molds. These eccentrics are secured to the shaft by means of pins 7^a and 8^a. At or adjacent one end of the shaft is rigidly secured a ratchet wheel 6, and adjacent the wheel is pivotally secured a ratchet lever 9 having a spring controlled ratchet 10 operated into or out of engagement with the ratchet wheel by means of handle 9^a. Alined above each eccentric are rollers 13—13 and 25—25, which each are secured to different elements of the mold now described. Rollers 13—13 are pivotally journalled at 14 in the bottom of members 15. The latter are guided in vertical freedom of movement by guide members 11—11 and 11^a—11^a. These members 15 are secured to and support channel iron member 16. This member has bolted or otherwise suitably secured thereto a plurality of vertically extending rod members 17, which support the separation plates 19 at the bottoms thereof, being riveted thereto at 18, and below the member 4.

Rollers 25—25 are supported on pins 25^a—25^a journaled on brackets 12—12, which are secured to member 23 by means of bolt 24 and lock nuts 24^a and 24^b. Stud bolts 22—22 are secured in member 23 and support on the top of each, rectangular members 21, upon which as bases, the bricks are adapted to be formed.

Steam pipes to generate heat (26) are supported on cross members 11, which aid in equalization of temperature within the machine.

In operation, the ratchet is actuated to allow the rollers to be in the lowest possible position on the eccentrics just opposite the position shown in the drawings. This lowers the brick supporting elements so that the tops thereof are alined slightly above the bottoms of members 4—4. This forms a space the required depth of the brick to be poured. The tops of the separation plates are in a position alined slightly below the tops of the members 4—4. After the bricks are

poured and the tops faced and attain a natural set, the ratchet is operated to elevate the roller riding on the eccentric 7, to move all the moving parts of the molds upward for a space of about four and one half inches to allow the brick to be faced on the ends. After this is accomplished, by continuing the rotation of the shaft 5 separation plates are caught by a shoulder formed upon them coming against the lower edge of members 4—4 and their motion is stopped. Then eccentric 8 comes in contact with roller 25 and raises the bottom of the form and brick to an elevation above the plates, allowing them to be mechanically removed by a suitable attachment not forming part of this invention.

What I claim is:

1. In a device of the character described, a frame, a shaft carried by the frame, a ratchet adapted to rotate the shaft, a plurality of eccentrics journaled on said shaft and adapted to be rotated with the shaft, rollers adapted to ride on the outer periphery of said eccentrics, part of said rollers journaled in members in rigid attachment to a series of brick supporting members, and the balance of said rollers journaled in members in rigid attachment to brick separation members, adapted to operate vertically between the brick supporting members, and rigid members secured to the top of the frame adapted to guide the plates and with adjacent plates to form the four sides of each brick form.

2. A brick molding device comprising a frame, a ratchet rotated shaft journaled therein, and having secured thereon a plurality of eccentrics, rollers adapted to ride said eccentrics, part of said rollers adapted to have supported therefrom brick separation plates, the balance of said rollers being adapted to support brick supporting members, guides to direct the movement of the brick supporting members vertically, grooved members of the frame to guide the movement of the plate members, and form part of the wall structure wherein the bricks are molded, and means on the plates adapted to engage the grooved members to limit the movement of the plate members.

3. A brick molding machine comprising a frame, a shaft journaled therein, a ratchet mechanism adapted to rotate said shaft, a plurality of eccentrics in attachment to the shaft, rollers adapted to ride eccentrics, part of said rollers being journaled in members supporting brick separation plates, the balance of said rollers being journaled in members supporting a plurality of brick supporting members, guides adapted to limit the movement of said supporting members to a vertical plane, and members at the top of the frame to guide the plate members and with such adjacent members to form the walls wherein each brick is molded.

4. The herein described method of making concrete brick, wherein a plurality of bricks are molded, then elevated en masse on their form bases beyond their end forms for facing said ends, and then elevated away from separation plates between them in position for removal en masse.

In testimony whereof I have signed my name to this specification.

CHARLES M. BEALS.