July 15, 1924. 1,501,479

R. P. M. DAVIS

METHOD AND APPARATUS FOR MAKING BRICK

Filed Oct. 4, 1922 3 Sheets-Sheet 1

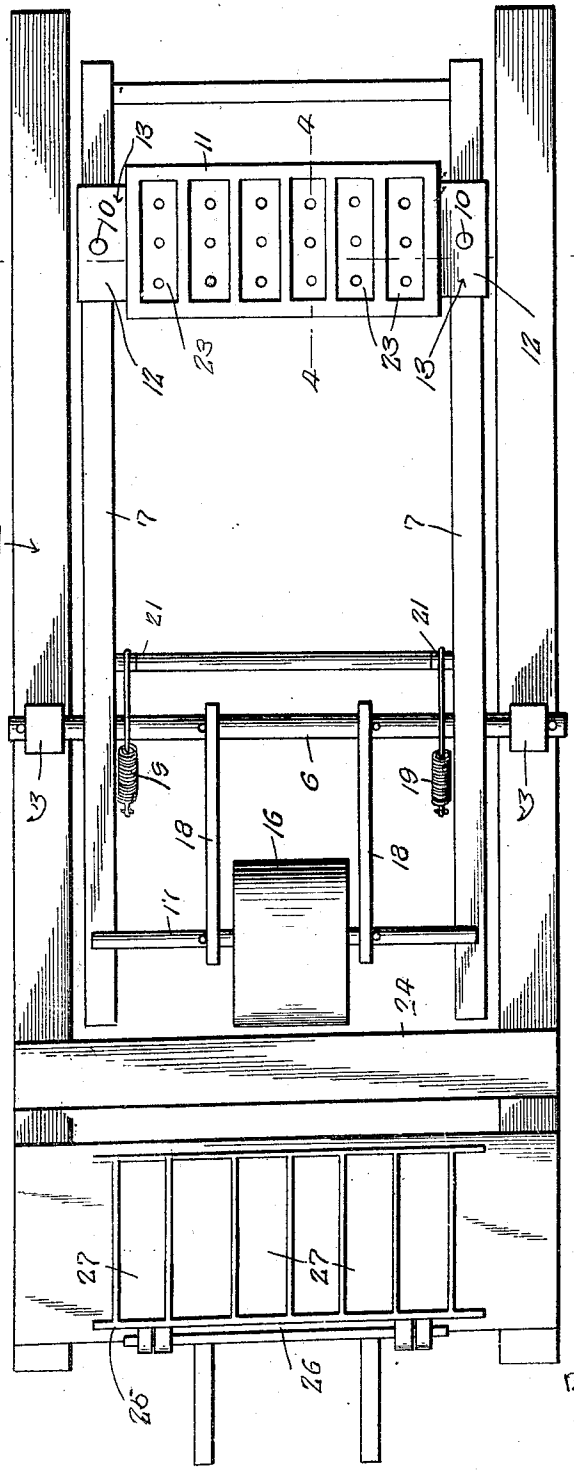


Fig. 1.

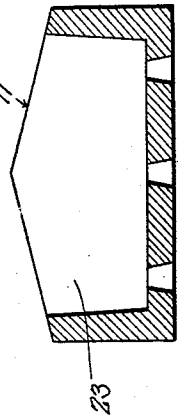


Fig. 2.

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Filed Oct. 4, 1922 3 Sheets-Sheet 2

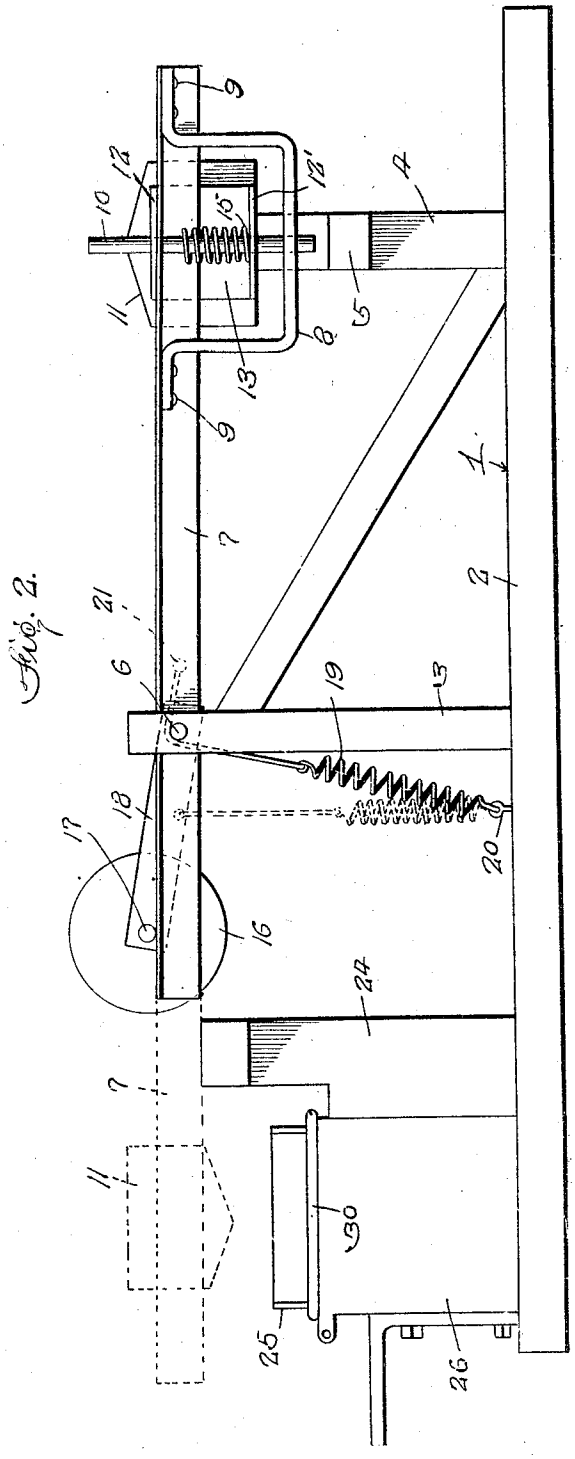


Fig. 2.

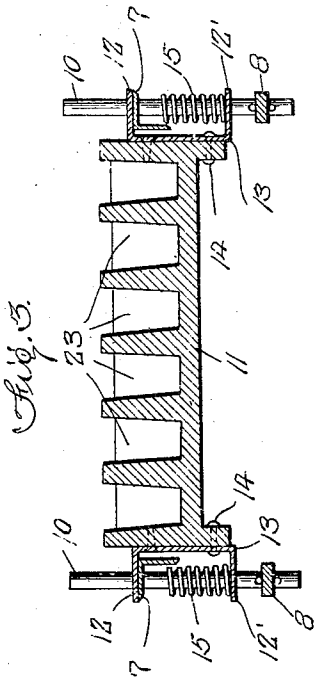


Fig. 3.

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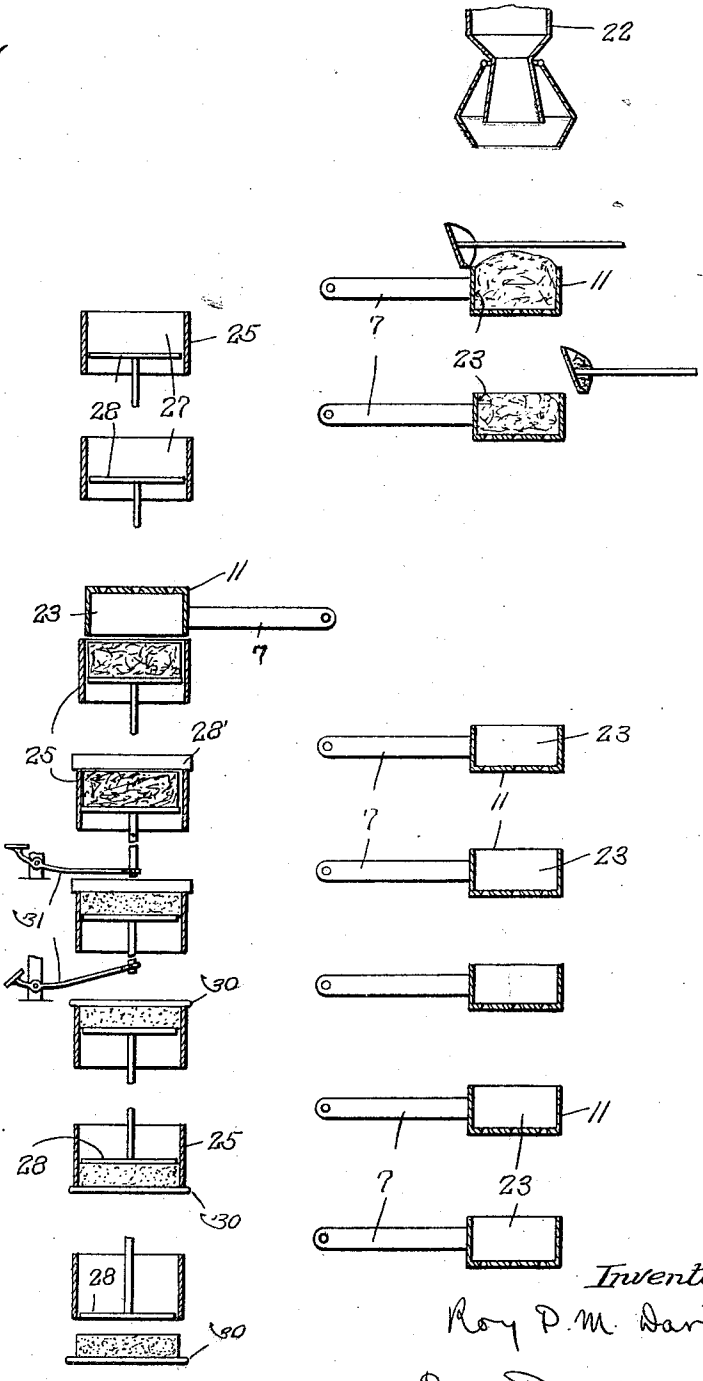


Fig. 5.

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UNITED STATES PATENT OFFICE.

ROY P. M. DAVIS, OF MOUNT UNION, PENNSYLVANIA.

METHOD AND APPARATUS FOR MAKING BRICK.

Application filed October 4, 1922. Serial No. 592,226.

To all whom it may concern:

Be it known that ROY P. M. DAVIS, a citizen of the United States of America, residing at Mount Union, in the county of Huntingdon and State of Pennsylvania, has invented certain new and useful Improvements in Methods and Apparatus for Making Brick, of which the following is a specification.

My invention relates to method and apparatus for making brick.

The object of my invention is to produce a more perfect brick than has heretofore been possible by prior methods and apparatus for making brick.

Other and more specific objects and advantages of my invention will be in part described and in part obvious as the specification is proceeded with.

In the accompanying drawings forming part of this specification:

Figure 1 is a plan view of my invention;

Figure 2 is a side view;

Figure 3 is a section through the mold on the line 3—3 of Figure 1;

Figure 4 is a section on the line 4—4 of Figure 1; and

Figure 5 shows the various steps employed in carrying out the invention.

Referring more particularly to the drawings 1, denotes a supporting frame comprising a base 2, uprights 3 and side and end beams 4 and 5, respectively. Rotatably mounted in the upright beams 3 is a shaft 6, to which is fixed intermediate their ends a pair of rock arms 7, preferably of angle iron construction.

A pair of U-shaped brackets 8, secured to the underside of the rock arms 7, at the outer ends thereof as by bolts 9, carry upwardly projecting guide posts 10, for supporting the charging or preforming mold 11. These posts 10 pass loosely through the upper and lower inwardly turned apertured ends 12 and 12′ of brackets 13, which brackets are bolted to the ends of the charging mold as at 14. The upper apertured ends of the brackets 13 rest upon the upper face of the angle iron arms 7, and coil springs 15 on the posts 10, engage with their lower ends the inwardly turned lower apertured ends 12′ of the brackets 13, and with their upper ends 12 engage the under face of the angle iron arms 7.

The inner ends of the angle iron arms 7, are counter weighted by means of a counter weight 16, mounted on a shaft 17, the ends of which rest upon the inner ends of said arms 7. Connecting rods 18, fixed at opposite ends to the shafts 17, and 6, connect these shafts for simultaneous movement. Coil springs 19, connected to the base 2, of the frame 1, as at 20, pass upwardly over the shaft 6, and are connected to the rock arm 7, at 21. When the charger mold is swung over to inverted position, manually or by any suitable automatic means (not shown) these springs serve to accelerate the final movement of the charger mold, and also serve to check or cushion the return movement.

Plastic brick making material is fed by gravity from a hopper 22, into the charging or preforming mold 11, a slightly greater charge being precipitated from the hopper than is necessary to fill the compartments 23. The excess of material is then scraped or smoothed off from the top of the mold 11, by means of a combined scraper and scoop, either manually or by reciprocating the scraper by any suitable mechanical means (not shown). The rock arms 7, are then swung about the axis of the shaft 6, until the top face of the arms come to rest upon the anvil 24, at which time the charger or preforming mold will have been swung to inverted position, directly above a reforming mold 25, carried by a mold support 26. The reforming mold and mold supports are identical with the mold and mold supports shown in my copending application Serial No. 592,736 filed October 6, 1922, further description being therefore unnecessary.

When the arms 7, strike the anvil, the former will come to a dead stop but the charger or preforming mold will continue its movement by virtue of the centrifugal force developed. However, further movement of the mold 11, after the rock arms come to rest is a vertical one, along the guide rods 10, such movement being cushioned by the springs 15, and finally completely checked when the lower bent ends 12′ of the brackets 13 come into engagement with the rock arms 7. The preformed blocks in the compartments 23 will then be precipitated into corresponding compartments 27 in the reforming mold 25. The compartments 23 are slightly narrower and shorter than the compartments 27, but are of greater depth so that the capacity of the one equals that of

the other. It will of course be understood that the compartments 23 will register with the compartments 27, and that the blocks of mud from the latter will be precipitated into the former without coming in contact with the end, or side walls thereof, consequently no mud is chipped off and lost, and the preformed bricks will be of uniform size and quality. The blocks of mud are precipitated with such force that they will spread out and completely fill the mold compartments 27, and be suitably compressed. A pallet 28′ is then applied to the top of the reforming mold, and the brick ejected by means of the mold plungers 28, in a manner well known in the art.

In some instances it may be desirable to subject the brick to pressure in the reforming mold, in which case, after the preforming mold has precipitated the blocks of mud into the reforming mold, a pallet 30 is clamped to the preforming mold, by any suitable means (not shown) and the plungers are then elevated to compress the brick, by any suitable means such as the cam lever 31.

The final vertical movement of the mold 11, during the discharging step, is essential, in that it overcomes the tendency of the blocks of mud under the initial centrifugal force to leave the mold 11 at a tangent.

Having thus described my invention, what I claim is:

1. The herein described method of making brick consisting in precipitating plastic material into a mold, scraping the excess material from the top of the mold to shape the brick, and then precipitating the preformed brick into a mold of slightly greater transverse and longitudinal dimensions than the first mentioned mold.

2. The herein described method of making brick consisting in filling a mold to overflowing with plastic material to preform a brick, removing the excess material from the top of the mold to shape the brick, and then forcibly discharging the shaped brick into a mold of greater transverse and longitudinal dimensions than the preformed brick.

3. The herein described method of making brick consisting in filling a mold to overflowing with plastic material to preform a brick, then removing the excess material, then discharging the preformed brick with considerable speed from said mold into a second mold of greater transverse and longitudinal dimensions than the preformed brick.

4. The herein described method of making brick consisting in filling a mold to overflowing with plastic material, then smoothing off the excess material from the top of the mold, inverting said mold over a second mold of greater transverse and longitudinal dimensions than said first mold, and precipitating the preformed brick into said second mold.

5. The herein described method of making brick consisting in filling a mold to overflowing with plastic material, smoothing off the excess material from the top of the mold to preform the brick, precipitating the brick into a mold of greater transverse and longitudinal dimensions than the brick, and then subjecting said brick to pressure in said second mold.

6. The herein described method of making brick consisting in forming a block of mud containing the exact amount of material to form a brick, and then precipitating said block of mud into a mold having greater transverse and longitudinal dimensions but of a cubic capacity identical with the cubic volume of said block.

7. A machine for making brick comprising a preforming charger mold and a reforming mold of greater transverse and longitudinal dimensions than the preforming mold, means for feeding a charge of mud to the charger mold, means for swinging said charger mold about a horizontal axis to a position above said preforming mold, to cause said charger mold to precipitate the preformed brick therein into said reforming mold.

8. A machine for making brick comprising a frame, a pair of rock arms supported on said frame, a pair of brackets on said arms, guide posts in said brackets, a charger mold, means for feeding material thereto, brackets on the ends of said mold slidably mounted on said posts, a preforming mold, means for rocking said arms to swing said charger mold to inverted position over said preforming mold, and means for checking said rocking movement when said preforming mold reaches said inverted position.

9. A machine for making brick comprising a reforming mold and a preforming mold, means for precipitating brick making material to said preforming mold, said preforming mold being mounted to swing about a horizontal axis to inverted position above said reforming mold, means for checking said swinging movement, and means for imparting a downward vertical movement to said preforming mold after said swinging movement has been checked.

10. A machine for making brick comprising a reforming mold and a preforming mold, means for precipitating brick making material into said preforming mold, said preforming mold being mounted to swing about a horizontal axis to inverted position above said reforming mold, means for checking said swinging movement, means for imparting a downward vertical movement to said preforming mold after said swinging movement has been checked, and

means for cushioning and checking said vertical movement.

11. A machine for making brick comprising a reforming mold and a preforming mold, the reforming mold being of greater width and length but less depth than the preforming mold, means for precipitating a charge of brick making mud into said preforming mold to form blocks of mud thereon, and mechanical means for precipitating the said blocks into said reforming mold.

12. A machine for making brick comprising a reforming mold and a preforming mold, the reforming mold being of greater width and length but less depth than the preforming mold, means for precipitating a charge of brick making mud into said preforming mold to form blocks of mud thereon, mechanical means for precipitating the said blocks into said reforming mold and means for subjecting said blocks to pressure in said reforming mold.

13. A machine for making brick comprising a reforming mold and a preforming mold, means for precipitating a charge of brick making mud into said preforming mold to form blocks of mud thereon, and mechanical means for precipitating the said blocks into said reforming mold.

In testimony whereof I affix my signature in presence of two witnesses.

ROY P. M. DAVIS.

Witnesses:
P. L. WALLITT,
T. L. ARCHEY.