No. 788,581. PATENTED MAY 2, 1905.

C. G. CONGER.

MOLD FOR MAKING CONCRETE BUILDING BLOCKS.

APPLICATION FILED SEPT. 15, 1904.

2 SHEETS—SHEET 1.

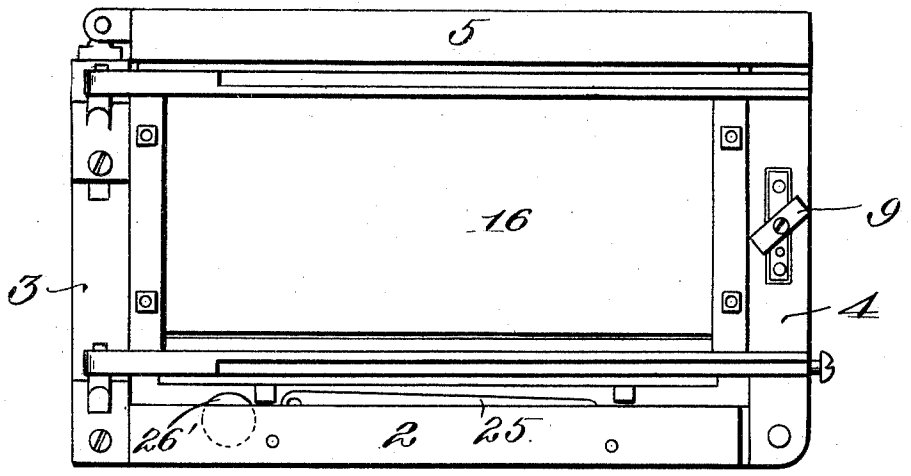


Fig. 1.

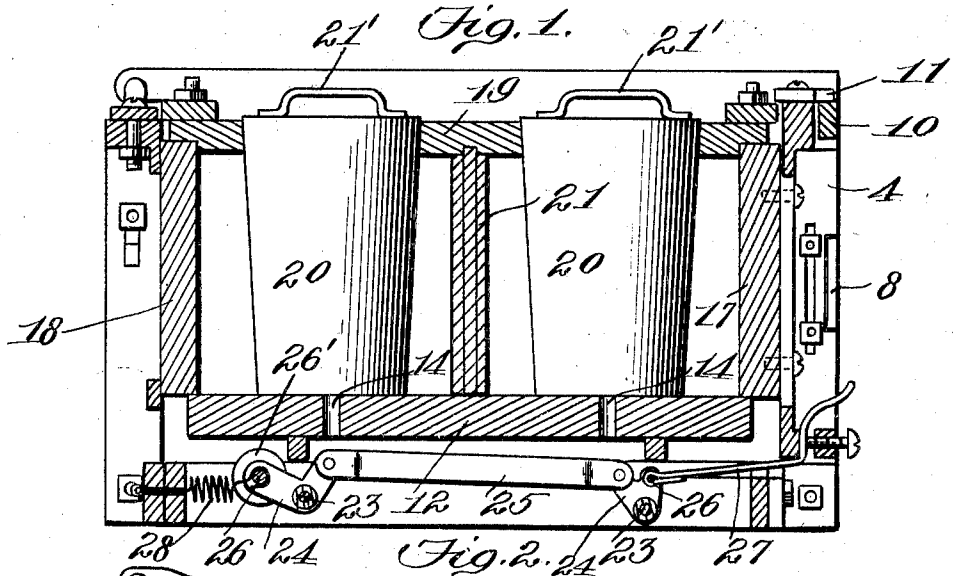


Fig. 2.

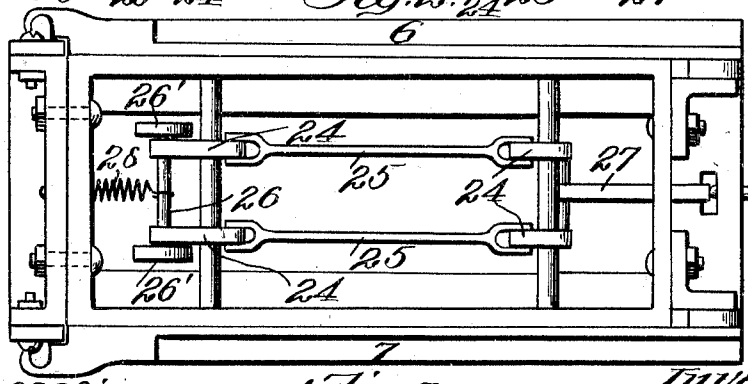


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

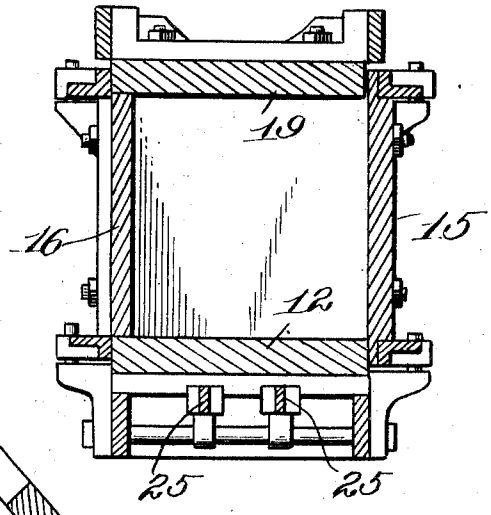


Fig. 5.

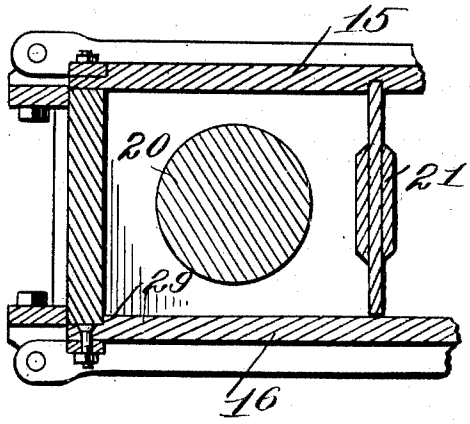
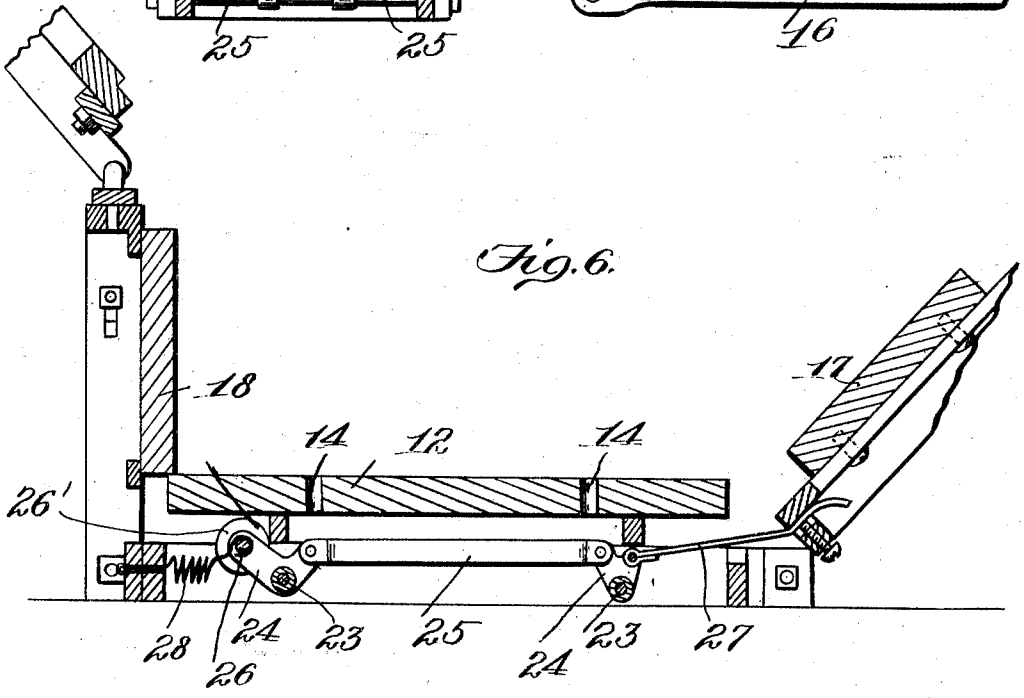


Fig. 6.



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No. 788,581. Patented May 2, 1905.

UNITED STATES PATENT OFFICE.

CLARENCE G. CONGER, OF SPRINGVILLE, NEW YORK.

MOLD FOR MAKING CONCRETE BUILDING-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 788,581, dated May 2, 1905.

Application filed September 15, 1904. Serial No. 224,609.

To all whom it may concern:

Be it known that I, CLARENCE G. CONGER, a citizen of the United States, residing at Springville, in the county of Erie and State of New York, have invented new and useful Improvements in Molds for Making Concrete Building-Blocks, of which the following is a specification.

This invention relates to a mold for making concrete building-blocks, the object of the invention being to provide a simple yet thoroughly stable structure of this kind which is effective in operation and which is of such construction that a block can be readily removed while in a semiplastic condition without possible injury to the same.

In that embodiment of the invention selected for convenience of indicating the nature of the invention in the accompanying drawings, forming a part of this specification, the block molded is hollow, although this is not essential, for it may be solid. In like manner the block may be of any shape.

Referring to the drawings, Figure 1 is a rear side elevation of a mold including my invention. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is a bottom plan view of said mold. Fig. 4 is a transverse sectional elevation. Fig. 5 is a horizontal top plan view of one end of the mold; and Fig. 6 is a detail of certain parts of the mold, showing the manner of removing a block.

Like characters refer to like parts in the different views.

The mold includes in its construction a base-frame, as 2, and an end frame, as 3, which, with the other parts of the frame, the latter presenting a skeleton structure, are ordinarily, though not necessarily, made of angle-iron in order to secure strength and rigidity. The end frame 3 is shown as permanently connected with one end of the base-frame 2 at the right viewing the mold from the front. An opposite end frame is shown at 4, the same being hingedly connected to the base-frame 2, so as to be dropped down to facilitate the removal of a molded block.

The top frame is denoted by 5, while the front and rear frames are designated by 6 and 7. The top frame is flexibly connected in some convenient way—as, for example, by one or more hinges—to the upper cross-bar of the end frame 3, while the front and rear frames 6 and 7, respectively, are removably hingedly connected with the corresponding vertical bars of the end frame 3. It will therefore be apparent that the front and rear frames can be dismounted. To hold them in working relation with the end frame 3, pin-and-socket hinges of a familiar shape and which need no further description are illustrated.

On the left ends of the front and rear frames 6 and 7 are projections, as 8, arranged to fit correspondingly-shaped recesses or seats in the corresponding vertical bars of the left end frame 4 when the frames are in working relation, such relation being maintained by latches or buttons, as 9, of any suitable kind, pivoted on blocks carried by said bars and fitted within vertically-disposed slots formed in the left end bars of the front and rear frames 6 and 7. The latches 9 when in their operative positions are arranged to extend across the outer faces of said front and rear frames. The forward latch 9 is normally held, by means of a spring of some suitable kind, in its ineffective position, so as to provide for the ready closing of the front frame 6. To the under side of the left cross-bar of the top frame 5 is a projection 10, similar to the projections 8 and arranged to enter a cut-away portion or seat formed in the upper cross-bar of the end frame 4 when the mold is assembled for the setting of a stone, the relation mentioned being maintained by a latch 11, similar in construction and mode of operation to the latches 9.

The bottom board or pallet 12 is sustained by the base or bottom frame 2, said bottom board or pallet being represented as having on its under side two or more cleats separated at suitable intervals and adapted to rest upon said base-frame in order to hold the body of the bottom board or pallet separated a short distance from said base-frame, so that a user can get his hands underneath the pallet to facilitate carrying off the molded block. These cleats also serve to stiffen the bottom board or pallet and prevent its distortion or getting out of shape. The pallet or bottom board 12

has one or more holes or perforations, as 14, to provide for the entrance of air into the mold, whereby such air can circulate around the blocks when being cured. These perforations or holes also permit the drainage of the interior of the mold when the blocks are sprinkled with water during the curing period, so that the water will not collect in the block.

The face-plate of the mold is designated by 15, and its inner surface may be of any desired shape or configuration, the same being dependent upon the external form of the block to be made. I have shown the said face-plate as flat on its inner surface; but this, as will be understood, is not essential. The face or front plate 15 is removably connected with the front frame 6 by means of bolts, screws, or the like, so that it can be readily detached and one of a different kind inserted in its place.

The back or rear plate is designated by 16, and it is removably associated with the back or rear frame and may be held in such relation by means of bolts, screws, or the like, these being matters of individual preference. By reason of the fact that the back or rear plate 16 is removable it can be separated from its carrying-frame to substitute one of a radically-different character from that shown.

The left end plate is designated by 17, and it is detachably connected in any desirable way with the corresponding end frame 4.

A second end plate, and a loose one, is shown at 18, said end plate 18 being adapted when in its operative position to rest against the end frame 3 and to be directly supported by the bottom board or pallet 12.

When the several plates are assembled to secure the molding of an article, the two end plates 17 and 18 will rest upon the bottom board or pallet 12, while the inner faces of the face and rear plates 15 and 16 will fit against the outer edges of the end plates 17 and 18. The several plates and bottom board may be of any desirable material. They may be constructed of wood or metal, as may be found most convenient.

Connected separably in any convenient way with the top frame 5—for example, in the manner hereinbefore described in connection with the several plates—is a stripping or top board 19. The stripping-board represented has two perforations at opposite sides of its transverse center line to receive core-blocks, as 20. The perforations in the stripping-board may be of any desirable shape, dependent, of course, upon that of the cores. They are represented as of circular form, while the core-blocks are shown as being of cylindrical shape, the core-blocks being insertible through the said holes or perforations. In the case of a block that was not hollow or had no cores the stripping-board 19 would be solid or imperforate. The stripping-board may be of any desirable shape, and the effective portion thereof when the mold is assembled fits within the upper side of the body formed by the plates and pallet hereinbefore described. The shape of the inner face of the stripping-board may be of any kind. Ordinarily the stripping-board 19 is made of wood, so that it can be readily shaped.

In the drawings there is represented within the mold a dividing-board, as 21, the front or face plate 15 and the stripping or top board 19 being grooved to receive the adjacent edges of said dividing-board 21 to hold the latter in place. The mold, it will therefore be apparent, is arranged for molding half-blocks, each with a core. In the case of a full or complete block the dividing-board or partition 21 would not be employed, and when the same is not used the face-plate and the stripping or top board will not be grooved or channeled.

I provide means for positively lifting one end of the bottom or base board 12 to prevent injury to the molded article. I will now set forth the means illustrated for accomplishing such result; but I do not limit myself to the same. Two rock-shafts are shown at 23 as supported by the side bars of the base-frame 2. Each rock-shaft is illustrated as rigidly carrying two angle-levers, each denoted by 24, the levers of the respective shafts being connected by links, as 25. The outer portions of the angle-levers are connected by rods, as 26, the rod 26 on the left being connected by a band, as 27, rigidly in some suitable way with the drop-down end frame 4. The rod 26 on the right is connected by a spring, as 28, with the right transverse bar of the base-frame 2, said spring serving to return the parts to their normal positions after they have been shifted by the dropping down of the left end frame 4. When the several parts of the mold are in assembled relation, the inner portions of the angle-levers 24 on the right will stand higher than the corresponding portions of the angle-levers on the left, by reason of which when the end frame 4 is swung down to effect the release of a molded article the right ends of the two links 25 will be elevated to cause the rolls 26′ to impinge against the pallet or bottom board 12 at the right end thereof, so as to slightly raise said end with respect to the opposite end and also to move the pallet or bottom board toward the left in order to prevent the semiplastic block from rubbing against the right end plate 18. As the left end plate 17 is out of contact with the newly-made article, the front and rear plates having been previously moved out of the way, the pallet can be lifted without causing any injury to the block thereon, and this lifting can be accomplished without the use of means other than the hands. The rear or back plate 16 has an inward extension, as 29, represented as of rectangular form and the purpose of which is to compact or solidify the plastic mass upon the

closing of the rear or back frame 7, to which said plate is connected. The core-blocks 20 have handles 21', by which the same can be easily removed.

In operation the several frames, except the rear or back frame 7, will be closed together, after which the mold will be placed with the front frame 6 down on a suitable support, which support, for example, may be a bench located a short distance above the floor. A thin layer of facing material, such as fine sand and cement in the proper proportions, is sprinkled onto the face or front plate 15. Coarse material composed, say, of sand or gravel and cement in the necessary proportions is then introduced into the mold up to the core-holes in the stripping-board 19. The core-blocks 20 are then introduced into said holes until they strike the bottom board 12. The mold will then be filled with coarse material and tamped until it is full. What is now the upper side of the mass will be leveled off by a suitable implement, the superfluous material falling onto the floor, where it can be used in the formation of a second block. The back frame which carries the back plate 16 is then closed down against the plastic mass with considerable pressure, the extension 29 on the back plate compacting the material and insuring the formation of a block presenting a smooth rear face. The back frame is then fastened in working position, following which the mold is given a quarter of a turn until it rests on its permanent base-frame 2. The core-blocks 20 are now removed.

Following the procedure just outlined, the front and rear frames are swung out of contact with the molded article and the top frame is lifted up, so that the only parts of the mold that are in contact with the article are the two end plates 17 and 18 and the bottom board 12. The end frame 4 is now swung down, so as to impart, through the system of levers and links hereinbefore described acting through the intervention of the band 27, a slight upward movement to the right end of the bottom board or pallet and also a movement of the same toward the left, so that the molded article is carried free of the plate 18. When the two plates 17 and 18 are out of engagement with the article, the pallet can be lifted, so as to carry the same to its curing place.

I have not deemed it necessary to show other plates and coöperating parts whereby a block of a different form than the rectangular one made by the mold hereinbefore described can be produced; nor have I shown a core or cores for the formation of a different shaped cavity in the block. These parts, as will be apparent, may be of any suitable shape.

The mold can be used for making building-blocks, window-caps, window-sills, wall-coping, curbing, and many other articles, and such articles may be either hollow or solid. As described, the article made is hollow; but, as I state, the core-blocks need not be employed, and in such case the top or stripping board of the mold would be imperforate.

Having thus described the invention, what I claim is—

1. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, and a second end frame hingedly connected with said base-frame.

2. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, and a second end frame hingedly connected with said base-frame, combined with a bottom board adapted to rest on said base-frame, end plates to rest on the bottom board, one end plate being connected to the hinged end frame, and the other end plate being free of the other end frame, front and rear plates detachably connected with the corresponding frames, and a top board detachably connected with said top frame.

3. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, and a second end frame hingedly connected with said base-frame, combined with a bottom board adapted to rest on said base-frame, end plates to rest on the bottom board, one end plate being connected to the hinged end frame, and the other end plate being free of the other end frame, front and rear plates detachably connected with the corresponding frames, a top board having a hole to receive a core-block, a core-block arranged to be removably fitted into said hole and to engage the bottom board.

4. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame rigidly connected with the end frame, and a second end frame hingedly connected with said base-frame, combined with a perforated bottom board supported by said base-frame, end plates to engage the end frames and to rest on said bottom board, front and rear plates connected removably to the corresponding frames, and a top board removably connected with said top frame.

5. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, and a second end frame hingedly connected with said base-frame, combined with a bottom board having cleats on its under side to rest upon the base-frame, said bottom board being perforated, end

plates to rest upon the bottom board and to fit against the end frames, front and rear plates connected to the corresponding frames, and a top board connected to the top frame.

6. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames detachably hingedly connected with the end frame, a top frame hingedly connected with the end frame, and a second end frame hingedly connected with the base-frame.

7. A mold including a base-frame, an end frame hingedly connected with said base-frame, and the upright bars of which are notched, front and rear frames hingedly connected with said rigid end frame, the free bars thereof being slotted and having projections to fit the notches on said other bars, blocks to fit said slots and provided with latches to extend across said front and rear frames, a top frame hingedly connected to said rigid end frame, the free cross-bar thereof having a slot and a projection, the upper cross-bar of said hinged end frame having a notch to receive said last-mentioned projection, and a block carried by the upper cross-bar of the hinged end frame, adapted to fit the slot in the free cross-bar of the top frame and provided with a latch to extend across said last-mentioned cross-bar.

8. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, a second end frame hingedly connected with the base-frame, and means for positively lifting one end of a base-board or pallet supported upon the base-frame and for also imparting an endwise movement thereto.

9. A mold including a base-frame, an end frame rigidly connected therewith, front and end frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, a second end frame hingedly connected with said base-frame, means supported by the base-frame for operating a pallet or base-board supported by the base-frame, and means actuated by the hinged end frame for actuating said operating means.

10. A mold including a base-frame, an end frame rigidly connected with said base-frame, front and rear frames hingedly connected with the end frame, a top frame hingedly connected with the end frame, a second end frame hingedly connected with the base-frame, rock-shafts supported by the longitudinal bars of the base-frame, angle-levers supported by the shafts, links connecting the angle-levers, a band connecting the angle-levers on one of the shafts and the hinged end frame, and an antifriction-roll connected with the angle-levers at one end, arranged to lift and impart an endwise movement to a pallet supported by said base-frame.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLARENCE G. CONGER.

Witnesses:
C. J. BRASSMAN,
BERNIS L. BENSLEY.