

A. BARONE.
MOLD FOR CONCRETE WALLS.
APPLICATION FILED JUNE 7, 1911.

1,021,443.

Patented Mar. 26, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

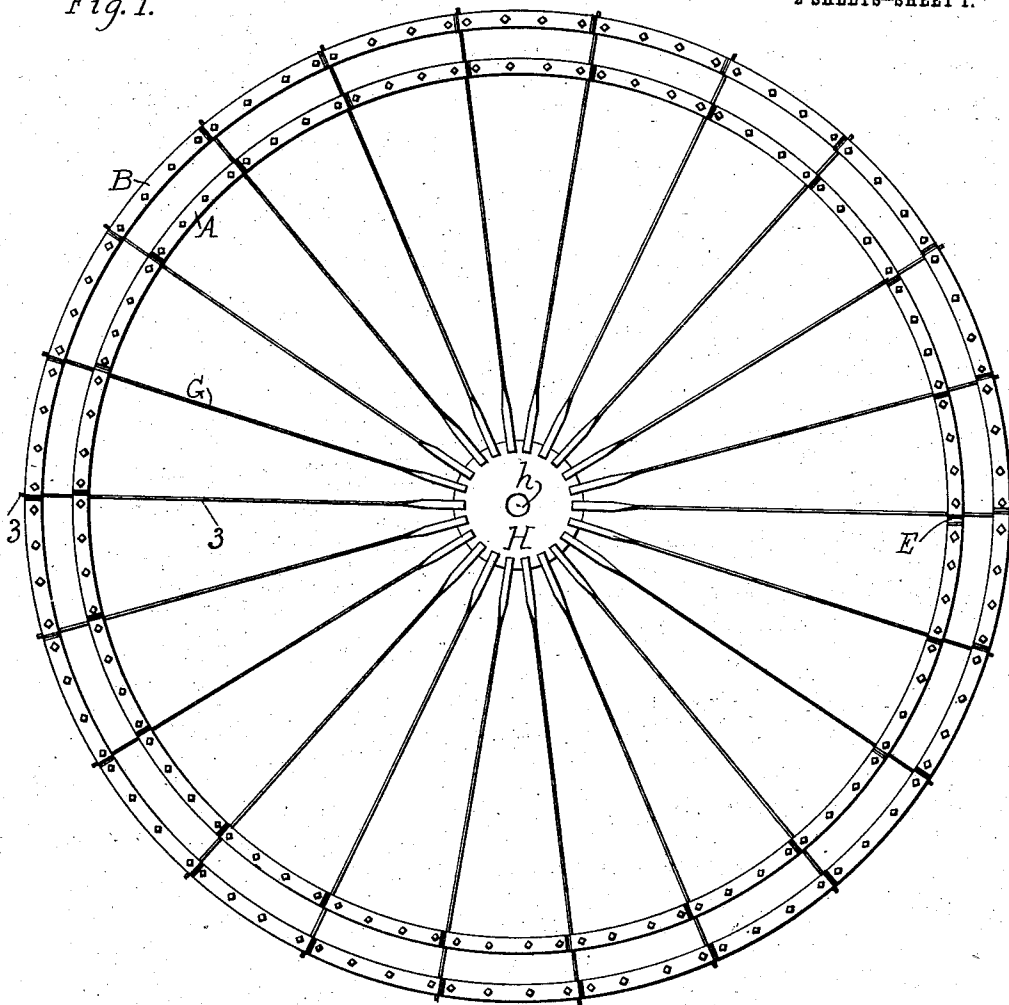
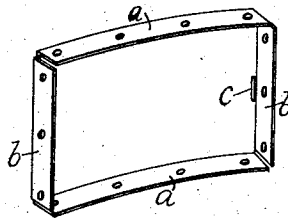


Fig. 2.



Witnesses.

C. C. Eustachius.

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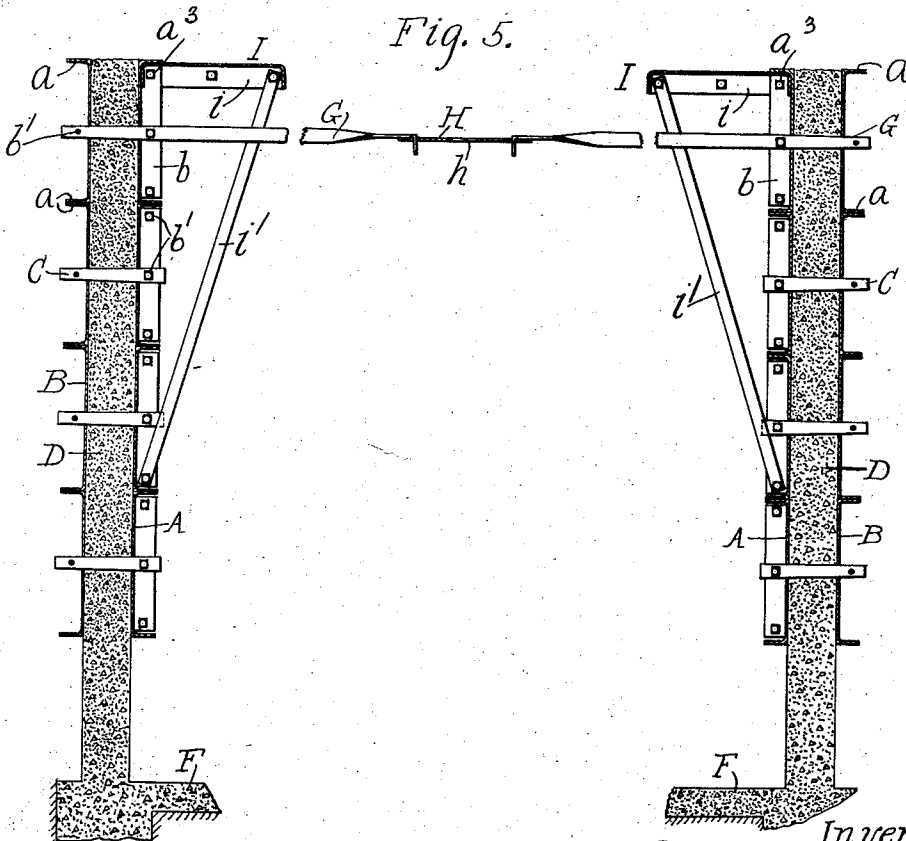
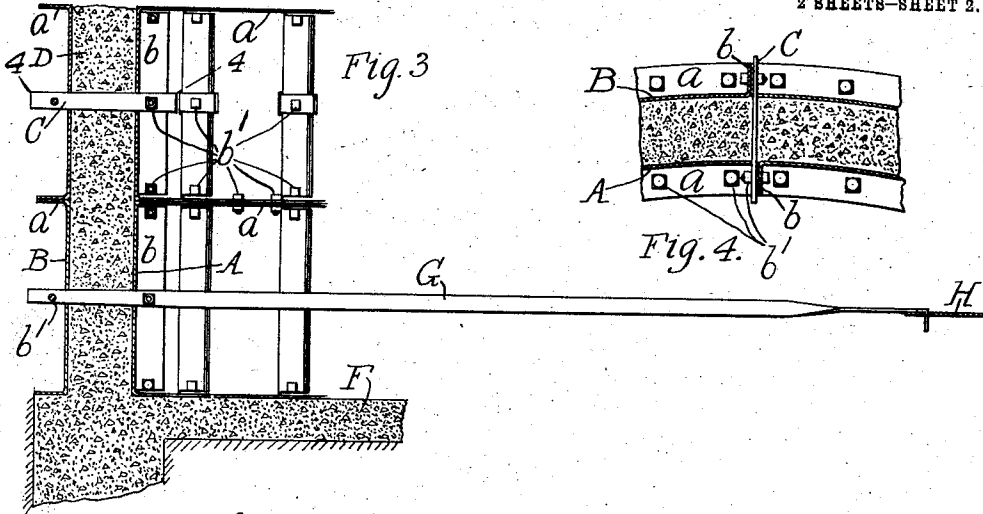
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2 SHEETS—SHEET 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

ANTHONY BARONE, OF MOUNT MORRIS, NEW YORK.

MOLD FOR CONCRETE WALLS.

1,021,443.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANTHONY BARONE, a citizen of the United States, residing at Mount Morris, in the county of Livingston and State of New York, have invented a new and useful Improvement in Molds for Concrete Walls, of which the following is a specification.

This invention relates to molds or forms of the kind used in the construction of walls made of concrete or analogous plastic material, and more particularly to molds or forms for the construction of circular walls, such as are used in silos, grain bins and similar structures.

The objects of this invention are to produce a form or mold for this purpose which is of simple, practical and inexpensive construction and is adapted to be supported by the wall itself as the construction proceeds without the necessity for a supporting scaffolding or structure; also to produce a mold comprising two walls between which the concrete is adapted to be poured, which are built up of sections in such a manner that, as the construction proceeds the sections at the lower portions of the walls can be removed and secured on other sections higher up to form the mold for the next portion of the concrete wall, so that the same sections can be repeatedly used during the construction of the wall.

In the accompanying drawings, consisting of two sheets: Figure 1 is a plan view of a circular form or mold embodying the invention. Fig. 2 is a perspective view on an enlarged scale of one of the sections or plates of the form. Fig. 3 is a fragmentary sectional elevation of the form on an enlarged scale on line 3—3, Fig. 1, showing the form in position on a wall. Fig. 4 is a fragmentary sectional plan thereof on line 4—4, Fig. 3. Fig. 5 is a fragmentary sectional elevation thereof, similar to Fig. 3, showing a different position of the device on the wall.

Like reference characters refer to like parts in the several figures.

The form as shown in the drawings and described in the specification is adapted for the construction of cylindrical walls, but it will be understood that the invention can also be applied to walls of other shape and is not limited to use in the construction of cylindrical walls only.

The form can be used for building walls of concrete, cement, or any other analogous

material, which for convenience will be hereinafter referred to as "concrete."

The form comprises a plurality of inner and outer sections, or flanged metal plates A and B, which are secured together to form the inner and outer walls of the form, which are spaced any desired distance apart and connected by suitable connecting or spacing members, or bars C. The space between the two forming walls is filled with liquid or green concrete, which, on hardening, forms the walls D of the building. The plates or sections A and B composing the inner and outer walls of the form are arranged and secured together in horizontal and vertical rows. The plates or sections may be of any suitable construction adapting them to be secured together, edge to edge, but are preferably provided with horizontal flanges *a* at their upper and lower edges, and vertical flanges *b* at their ends which project from the inner or concave faces of the inner plates A and from the outer or concave faces of the outer plates B. The plates or sections are preferably pressed into shape from sheet metal by suitable dies, which insures uniformity in the shape and dimensions of the sections, so that when properly secured together they will form walls of true circular form. The flanges stiffen the sections and prevent them from being bent out of their original form in the use thereof. These flanges are provided with holes through which suitable bolts *b'* are adapted to pass, for securing together the flanges of adjacent plates or sections.

The connecting members or spacing bars C may be of any desired shape, but are preferably flat bars, having converging or tapering edges. The plates A and B are provided, near their vertical flanges with suitable slots *c* through which the spacing bars are adapted to pass and the bars are provided near their ends with holes to receive the flange securing bolts *b'* located near the slots, whereby the bars are secured to the sections of the inner and outer walls.

E represents a usual wedge or block which is secured between the vertical flanges of two adjacent inner plates. By first removing this wedge E after the concrete wall D has hardened between the forming walls, the inner plates A can be readily removed from the wall D.

In the use of this form to construct a wall after a suitable foundation F for the

structure has been laid, the first or lowest horizontal row of plates must be rigidly held in the required place on the foundation. In building cylindrical walls, the following construction may be used. A series of radial tie or stay rods G extending from near the center of the structure to the walls, are provided, whose outer ends are shaped similarly to the spacing bars C, so as to adapt them to enter the slots *c* in the sections or plates A and B and to be secured by means of the bolts *b'* to the flanges of the plates. The inner ends of these rods are detachably secured to a holding hub or plate H located at the center of the form, preferably by engaging the hooked inner ends of the rods in holes in the center plate. These tie-rods are all made of the same length and thus serve the double purpose of spacing the walls the proper distance apart and of holding them in circular form concentric with the center of the structure. The center plate H is preferably provided with a central hole *h* through which a plumb line or perpendicular center post may be passed for insuring the proper location of the form. When the lower horizontal row of form plates, or sections, is thus properly placed in position on the foundation, the other plates can be bolted to the upper flanges thereof in the manner described. These radial tie bars may be again used after the wall has been built to some height to insure the proper positioning of the form plates with respect to the perpendicular axis of the structure.

The manner of using the form in building a wall is as follows: The lower horizontal rows of inner and outer sections or plates is set up on the foundation and secured in position as described, and the concrete is poured between the walls of the form. The second horizontal row of plates is then secured to the upper flanges of the lower row as described and each of the succeeding rows is similarly secured to the next lower row. After the concrete hardens, the inner plates of one or more lower rows are removed by withdrawing the wedge or wedges E and taking out the bolts *b'*. The outer plates can be removed from the wall by simply taking out the bolts *b'*. The tapered spacing bars C and the tie rods G can be driven out of the wall and the holes left by the bars are filled with cement or other suitable material. The upper horizontal row of plates is not removed from the wall and is securely held thereon by the spacing bars C so that the next rows of plates can be secured thereon. In this manner the form can be built up to any desired height and is supported by the wall itself without requiring any scaffolding.

It will be understood that no means,

other than the spacing bars C, have to be employed to support the form while the lower sections are being removed from below and secured on top of that portion of the form which is secured on the wall, and as the sections are comparatively small and can be removed and secured one at a time, no hoisting or other means for handling the sections are required.

The tie rods G can be secured to the form plates or sections of any desired row, whenever this is deemed necessary as the construction proceeds, and connected to the center plate H, as shown in Fig. 5, for the purpose of keeping the wall absolutely perpendicular and concentric with the vertical axis of the structure. It is not, however, necessary to apply the tie rods to every row of form plates and only one set of tie rods with their center plate is necessary.

If desired, a working platform can be supported on the form. In the construction shown I represents a support for a platform, which comprises a horizontal member *i* and a brace *i'*, which are secured at one end to the inner forming wall of the molding device by means of the bolts *a''*, and which are connected at their outer ends. Any other means for securing the platform to the walls may be employed, or in the case of low walls, this support may be dispensed with.

I claim as my invention:

1. In a form for molding plastic walls, the combination of inner and outer form walls each composed of a plurality of connected plates having flanged side and end portions, the flanges of one of said plates being adapted to be secured to the flanges of adjacent plates, means for securing said flanges together and means for spacing said form walls at the desired distance apart, said spacing means being secured to the inner and outer walls by said flange securing means, substantially as set forth.

2. In a form for molding plastic walls, the combination of inner and outer form walls each composed of a plurality of connected plates having flanged side and end portions, the flanges of one of said plates being adapted to be secured to the flanges of adjacent plates, a spacing member for said form walls which passes through openings in said plates adjacent to said flanges and is secured at its opposite ends to the flanges of plates of said inner and outer form walls, substantially as set forth.

Witness my hand this 1st day of June, 1911.

ANTHONY BARONE.

Witnesses:

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