



July 21, 1959

C. M. PAXTON  
CONCRETE WALL FORM

2,895,208

Filed Sept. 24, 1953

3 Sheets-Sheet 2

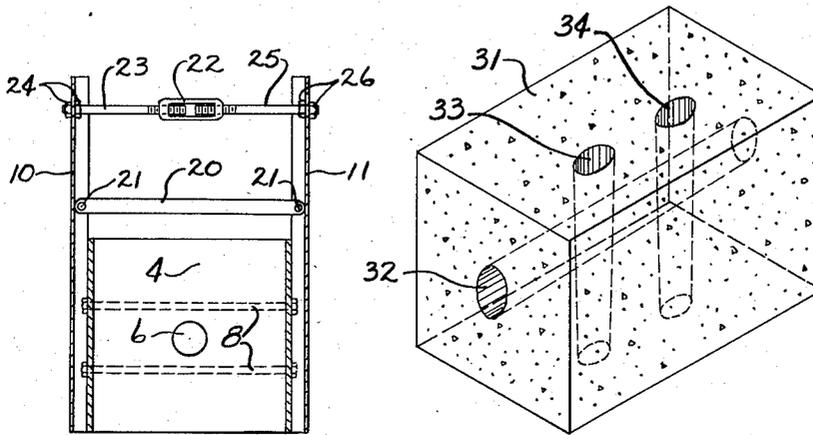


Fig. 3

Fig. 5

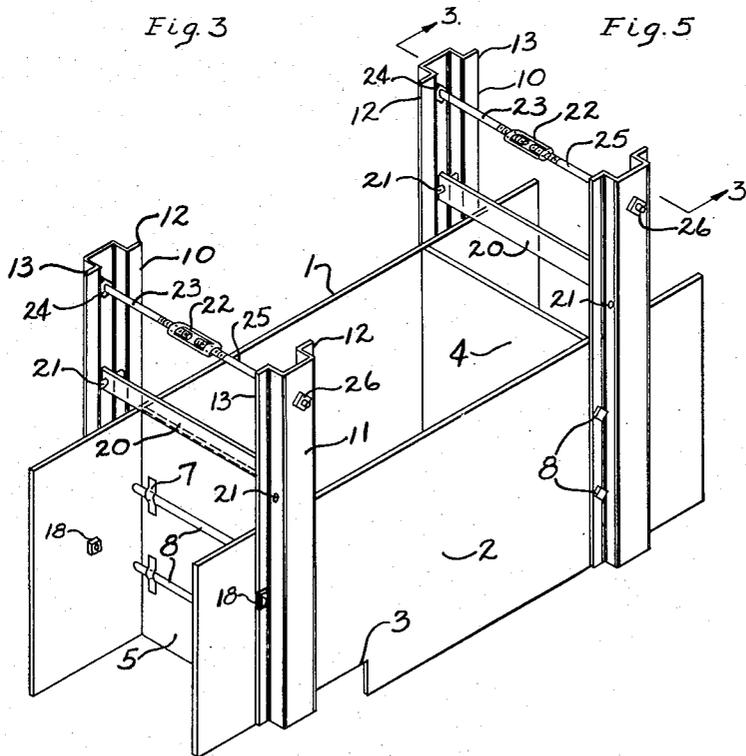


Fig. 2

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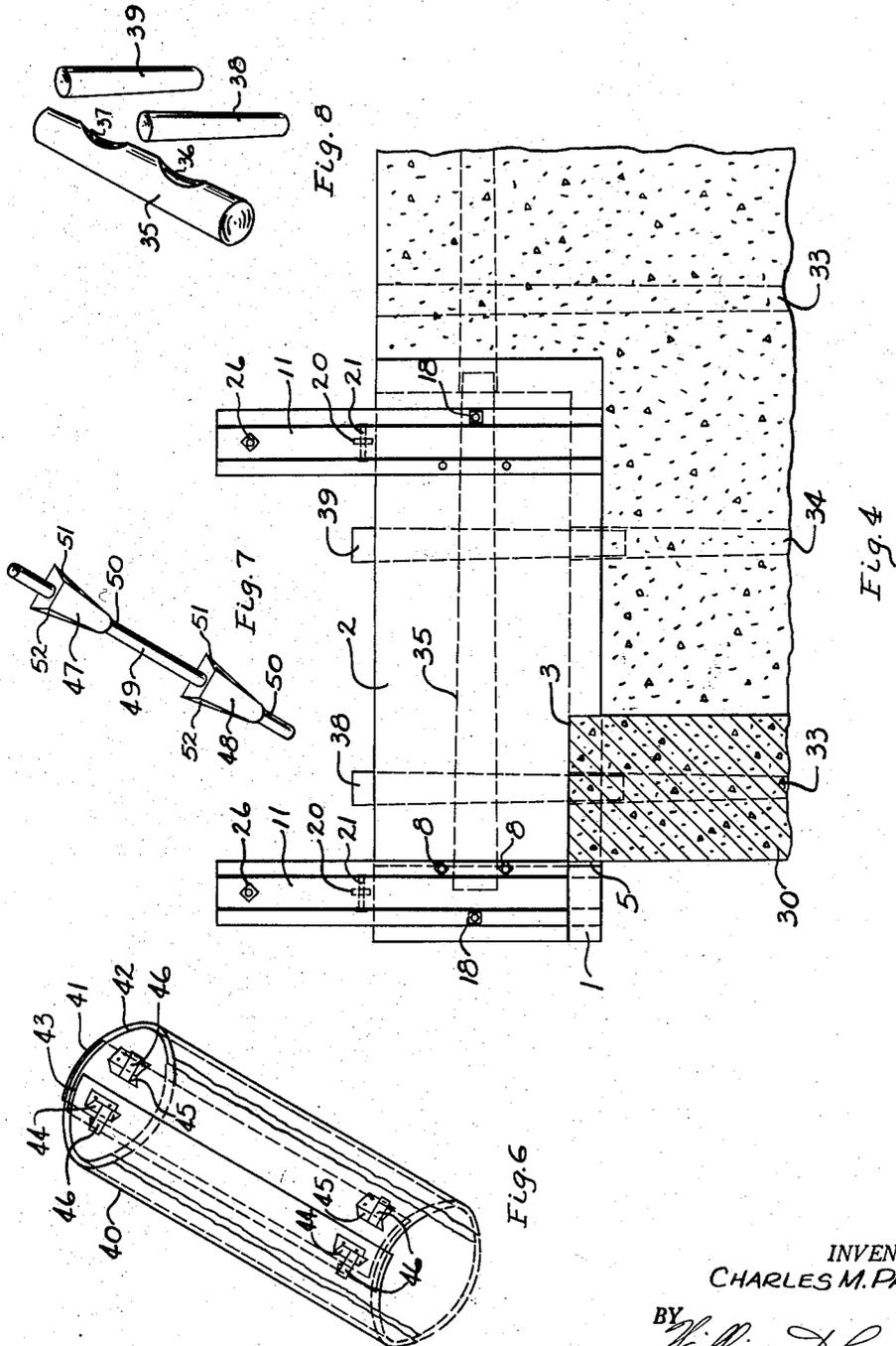
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**CONCRETE WALL FORM**

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Application September 24, 1953, Serial No. 382,046

1 Claim. (Cl. 25—131)

This invention relates generally to molds or forms for building concrete walls and more particularly to a form for making a large concrete block as an integral part of a wall being fabricated.

The pouring of an integral concrete wall is costly because of the expensive forms, men and equipment required to pour the concrete in these forms and the cost of removing them from the wall.

The ordinary concrete block employed for house foundations is not heavy enough to make a strong wall. A basement wall made of the ordinary concrete block must be well braced if any grading is made around the house, yet it would be more expensive to pour the wall with a specific or reusable form.

The principal object of this invention is the provision of a concrete form or mold for constructing an integral wall and for making heavier blocks of concrete that may later be fabricated into a wall.

This form or mold may be constructed of any suitable material such as metal, wood, wood product or plastic. The form has removable side and end plates and is provided with a plurality of clamps to retain the shape of the form during the setting of the concrete. The end plates are provided with aligned clips through which a bolt may be passed. The end of the bolt extends through the side members to receive a nut. Only two of these bolts are necessary for each end plate. The clamps are opposed channels each having outwardly extending flanges which are provided with aligned holes to receive the end plate bolts. A single bolt with a flat head, and counter-sunk in the side plates, is employed in the opposite flange of each channel member to assemble the channel member to the side plate. These bolts are inwardly of the end plate.

The clamping forces are produced by having a fulcrum connecting each pair of channel members just above the side plates and providing a turnbuckle connecting the tops of each pair of channels to force the lower portion of the channels against the sides of the side plates forcing them against the side edges of the end plates. A clamp is employed at each end and one intermediate thereof if the mold is sufficiently long to require it.

This mold is preferably made larger than the ordinary cement block. It may make a block 12" wide, 16" high and 42" long. Obviously, blocks having other dimensions may be employed. Such a block is heavy and if it is not made as an integral wall, it requires a hoist to construct the wall, but such a wall is not subject to failure when grading therearound. When forming an integral wall after the first block is made and permitted to solidify, the mold is removed and one end plate taken therefrom. This end of the mold is then placed over the end of the finished block which functions as the end of the mold and the clamp is tightened to securely hold the mold in place on the formed block without crushing the same while pouring the new block. In this manner the wall may be constructed by the use of one or more molds or frames. Although it takes longer to form a large wall

and each block made integral with the wall is approximately eight to twenty-four hours old before the mold is removed, this gives the green cement a better chance to dry than does the large form that is kept on the wall for days. The side plates overlap the sides of the wall below the mold and at the end of the mold. The one end plate on the form is short on the bottom side to permit it to rest on the top of the formed wall. A part of the bottom edge is notched out to the same length as the end wall and as long as the wall is wide to permit the mold to overlie a corner in the wall.

This mold block has openings in the end plates to receive tapered pins which cooperate with vertical tapered pins to produce longitudinal and vertical openings through each block which connect with the blocks already formed, both on the end and on the top, the vertical holes may be slightly offset and the pins similarly constructed. These pins may be substituted for expansion sleeves, or concentric expansion sleeves having overlapping edges with the inner sleeve having abutments to receive a wedge to expand it into an outer sleeve.

Solid reinforcing rods may be placed horizontally or vertically in the wall construction. The vertical rods provide no problem as the mold can be assembled around them. The horizontal rods require the end plate to be slotted and closed with a slide which can be removed to permit the removal of the mold.

The mold or form produces an improved and sturdy wall which is well ventilated and reinforced and is the principal object of this invention.

Other objects and advantages appear hereinafter in the following description and claim.

The accompanying drawings show for the purpose of exemplification without limiting the invention or claim thereto, certain practical embodiments illustrating the principles of this invention wherein:

Fig. 1 is an exploded view of the parts making up the mold comprising this invention.

Fig. 2 is a view showing the assembled mold.

Fig. 3 is a sectional view of the assembled mold taken on the line 3—3 of Fig. 2.

Fig. 4 is a view showing the mold as applied to a corner of the wall.

Fig. 5 is a view illustrating a block made from this mold form.

Fig. 6 is a perspective view of the inner and outer expansion shells for producing holes in the block.

Fig. 7 is a perspective view of the wedge to expand the inner shell of Fig. 6.

Fig. 8 is a perspective view of the vertical and horizontal tapered pins for producing holes in the block.

Referring to the drawings, the mold comprising this invention is made up of the side plates 1 and 2, each of which is provided with a series of six holes in two groups of three as shown in Fig. 1. The plate 2 is provided with an offset as indicated at 3 adjacent one corner thereof. The end plates 4 and 5 are each provided with a central opening 6 to receive a pin or other expanding member to produce an opening to the block being constructed. The back of each plate is provided with straps as indicated at 7 which are welded or otherwise secured to the back face of the plate and are arched to removably receive the bolt members 8.

Each mold is provided with at least two or more clamping members. As shown in Fig. 1 each pair of clamping members is composed of a pair of vertical extending channel members 10 and 11. Each channel is provided with elaborately projecting flanges 12 and 13. The flange 12 of each channel member is provided with two openings 14 which correspond with the openings 15 in the plates 1 and 2 and match therewith. The flanges 13 are each provided with holes 16 that match with the holes

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17 of the plates 1 and 2. The matching holes 14 and 15 are arranged to receive the bolts 8 that are strapped to the back face of the plates 4 and 5, whereas the holes 16 and 17 are arranged to receive bolts which hingedly secure the vertical channel members 10 and 11 to the side plates 1 and thus form a mold assembly. The bolts 18 secure the flanges 13 to the sides 1 and 2.

In addition to the clamping members being secured to the plates 1 and 2 by the bolts 18, each pair is connected by the pivot or fulcrum member 20 which is hingedly attached to their respective vertical channel members 10 and 11 as indicated at 21. Each fulcrum member 20 is positioned above the side plates 1 and 2 allowing sufficient distance therebetween to permit the vertical members 10 and 11 to provide a jaw type action. Adjacent the top of the channel members 10 and 11 a turnbuckle 22 is provided having one stem 23 secured by means of the nuts 24 to the channel member 10 and the other section 25 secured to the channel section 11 by means of the nuts 26. These nuts 24 and 26 prevent the stem sections 23 and 25 of the turnbuckle from being able to rotate in either direction so that when the turnbuckle 22 is rotated to spread the upper ends of the vertical channel members 10 and 11, the latter swing on their pivot points 21 and press the lower section of these vertical channel members tightly against the side plates 1 and 2 forcing them toward each other thereby exerting pressure on the contents placed in the form. The link 20 and the pivot points 21 are chosen with respect to the width of the intakes 4 and 5 so that when assembled without pressure the vertical channel members 10 and 11 embrace the sides 1 and 2 of the mold. It will also be noted that the bolts 18 are rearwardly of the bolts 8 and thus the pressure exerted by the clamping members through the vertical clamping bars 10 and 11 is directed against the end plate so that the clamping members do not tend to bow or flex the side plates 1 and 2 inwardly. A third or fourth pair of clamping members such as formed by the vertical channel members 10 and 11 may be constructed and placed intermediate of the end plates 4 and 5 if the box mold is sufficiently long to require it.

In constructing blocks independent of each other the mold assembly as illustrated in Fig. 2 may be inverted with the clamping members disposed in the opposite direction so that the offset 3 is at the top and the bottom of the mold is plain as shown.

If however, the mold is employed to produce an integral wall such as illustrated in Fig. 4, the offset 3 is employed to construct the corner as shown in this view. The offset 3 straddles the wall 30 whereas the end plate 5 extends below the same. Thus the mold completely encloses the block being poured and the end wall 4 has been removed. The side plates 1 and 2 overlap the wall that has previously been formed in the manner similar to that of the end plate 5. This overlap is preferably approximately three inches.

After the block has been formed as shown in Fig. 4, the mold may be provided with its end wall 4 and placed on top of the corner to form a fresh or newly added course and when the first block is poured and permitted to rest sufficiently until the green concrete is able to have the mold removed, the mold is then removed and the appropriate end of the mold is also removed to permit the newly formed block to form the end of the mold. Thus after the first block is formed on each course, the end of each consecutive block poured integral therewith becomes integral with the bottom and along one end wall.

As shown in Figs. 6, 7 and 8 two forms of pins or molds for making openings in the blocks are illustrated. The block as illustrated at 31 in Fig. 5 is provided with the horizontal opening 32 and the vertical openings 33 and 34. The horizontal opening 32 is formed by the pin member 35 which is tapered as illustrated and is provided with two offset sections 36 and 37 for receiving

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the vertical tapered pins 38 and 39 which form the openings 33 and 34 respectively. By providing these tapered members one can produce openings that are vertically and horizontally through the wall that connect for the purpose of drainage and for aerating the wall to maintain its strength. The tapered pins 35 may be inserted in the holes 6 through the end members 4 and 5. These openings are shown in Figs. 1 and 3. The pins 35, 38 and 39 may be greased or otherwise prepared before being placed in the mold. The openings 33 and 34 in the wall are previously formed blocks constituting the wall and serve as a means for supporting the vertical pins 39. In this way the mold is maintained true and the wall is provided with proper horizontal and vertical openings.

In place of the pins 35, 38 and 39 an expanding member such as illustrated in Figs. 6 and 7 may be employed. This device is illustrated in Figs. 6 and 7 wherein the outer shell 40 overlaps as indicated at 41 and the inner shell 42 overlaps as indicated at 43. The inner shell member 42 is provided with a pair of opposed abutments 44 and 45 at each end. Each abutment is braced by means of the brace members 46. These abutments being raised from the wall of the inner expanding member 42, are formed by a bracket to provide opposed surfaces which are substantially radial to each other for the purpose of receiving the wedge members 47 and 48 that are formed on the rod member 49. These wedge members are pointed at one end as indicated at 50 and they have lateral faces 51 and 52 which correspond with the radial planes of the abutments 44 and 45 and when the wedge members 47 and 48 are placed between the abutments 44 and 45 they cause the inner sleeve member 42 to expand against the outer sleeve member 40 and cause the latter to expand against the hole 6 and the opening 32 within the concrete block. This type of expansion member for producing the horizontal openings is used. The vertical openings are still produced by the tapered pins 38 and 39 which are permitted to merely engage the side of the expanding sleeve 41 and thus make a connecting opening therewith.

I claim:

A mold for casting continuous block sections in building a cement wall comprising parallel side plates having their mold surfaces facing each other and having aligned openings therethrough spaced materially from the ends of said side plates, two pairs of vertical posts, each post constructed to provide a vertical channel member defined by a web with parallel flanges having their outer portions bent outwardly in opposite directions and lying in a common plane to form widely spaced inner and outer face flanges that embrace in full vertical contact the outer face of said side plates, the outer face flange of each post that is positioned on the side toward the end of said mold having fastening means to detachably secure the post to its respective parallel side plate, the other or inner face flange of each post having openings to align with said openings in said parallel side plates, at least one transverse end plate means positioned between said side plates and having on one side an outer surface with sockets and on the other side an inner molding surface, bolt means passing through the aligned openings in the inner face flanges of said posts and side plates and received in said sockets on said end plates to detachably support the same in position directly between said inner face flanges of a pair of said posts, a fulcrum member for each pair of posts having its ends pivotably secured to said parallel flanges immediately above said side plates to hold them in proper assembled relation, turnbuckle means for each pair of posts with stem sections secured to their respective channel members adjacent the tops of said posts to spread the upper ends of said posts and press said inner and outer face flanges of the lower portions of said posts against the outer surface of said side plates

to exert pressure on the contents of the mold and on said transverse end plate means.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 2,895,208

July 21, 1959

Charles M. Paxton

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 44, for "mold" read -- molding --.

Signed and sealed this 22nd day of December 1959.

(SEAL)

Attest:

KARL H. AXLINE  
Attesting Officer

ROBERT C. WATSON  
Commissioner of Patents