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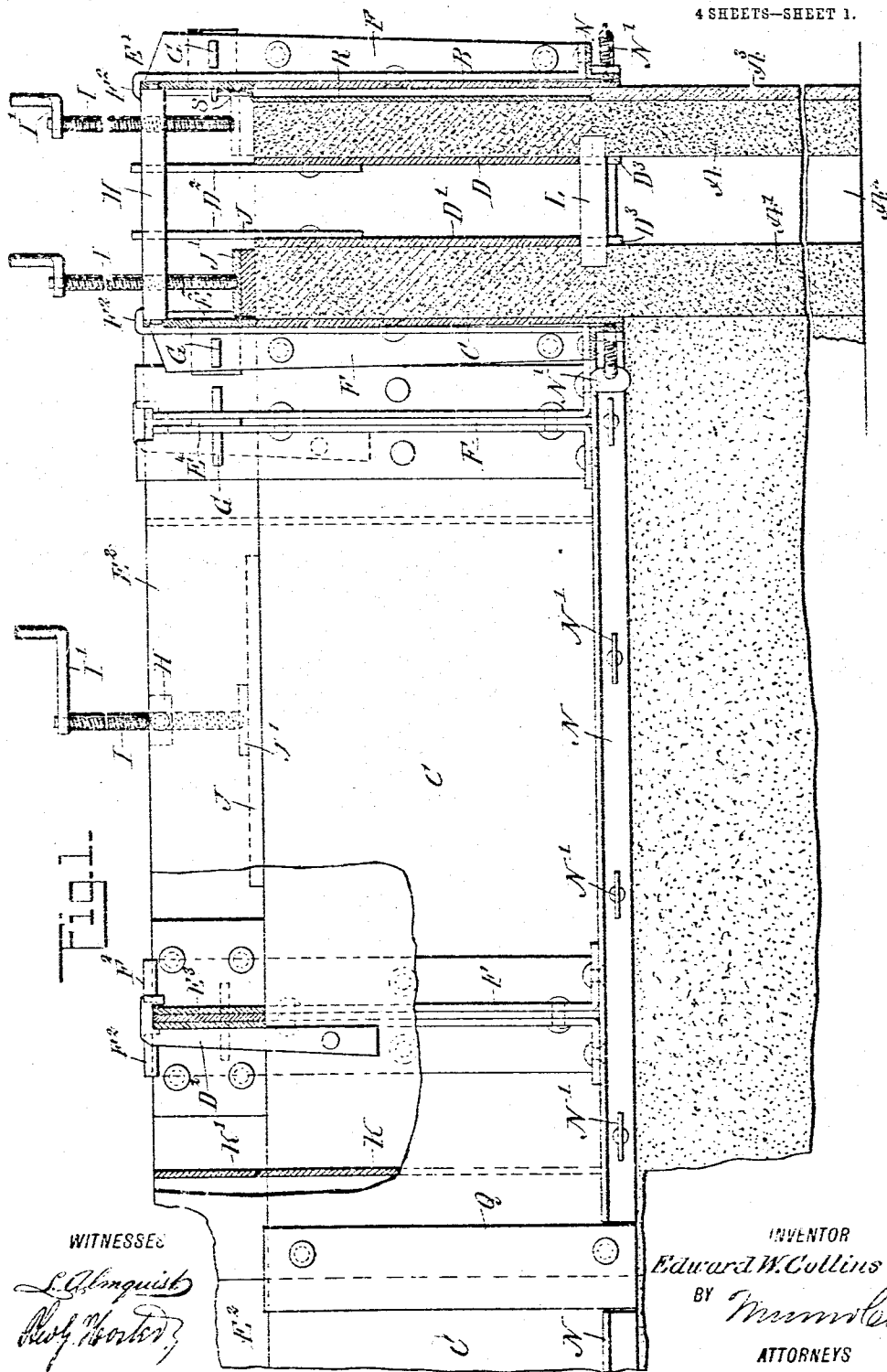
WALL MOLD.

APPLICATION FILED FEB. 23. 1909.

Patented Feb. 15, 1910.

4 SHEETS—SHEET 1.

949,521.

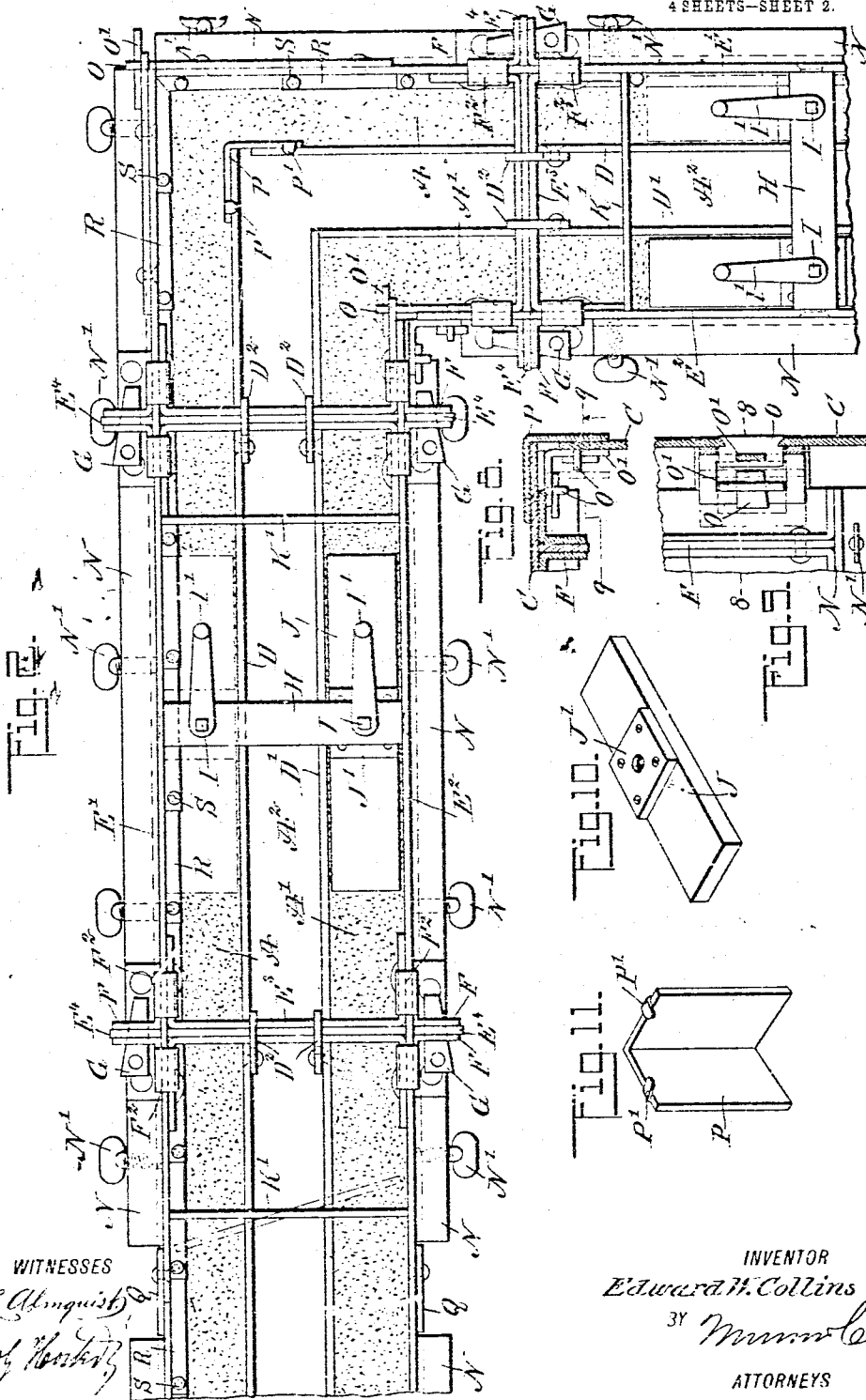


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4 SHEETS—SHEET 2.

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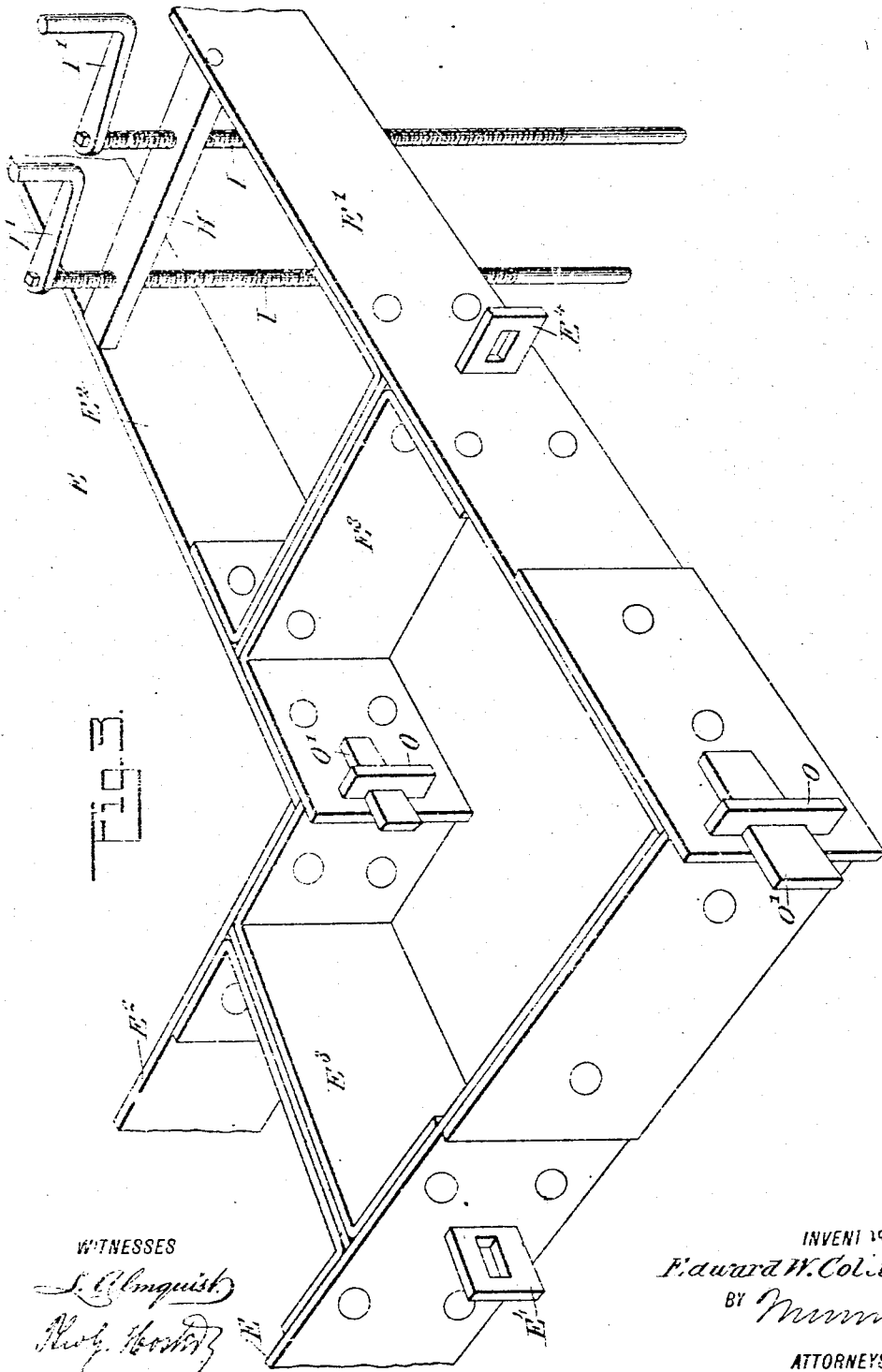
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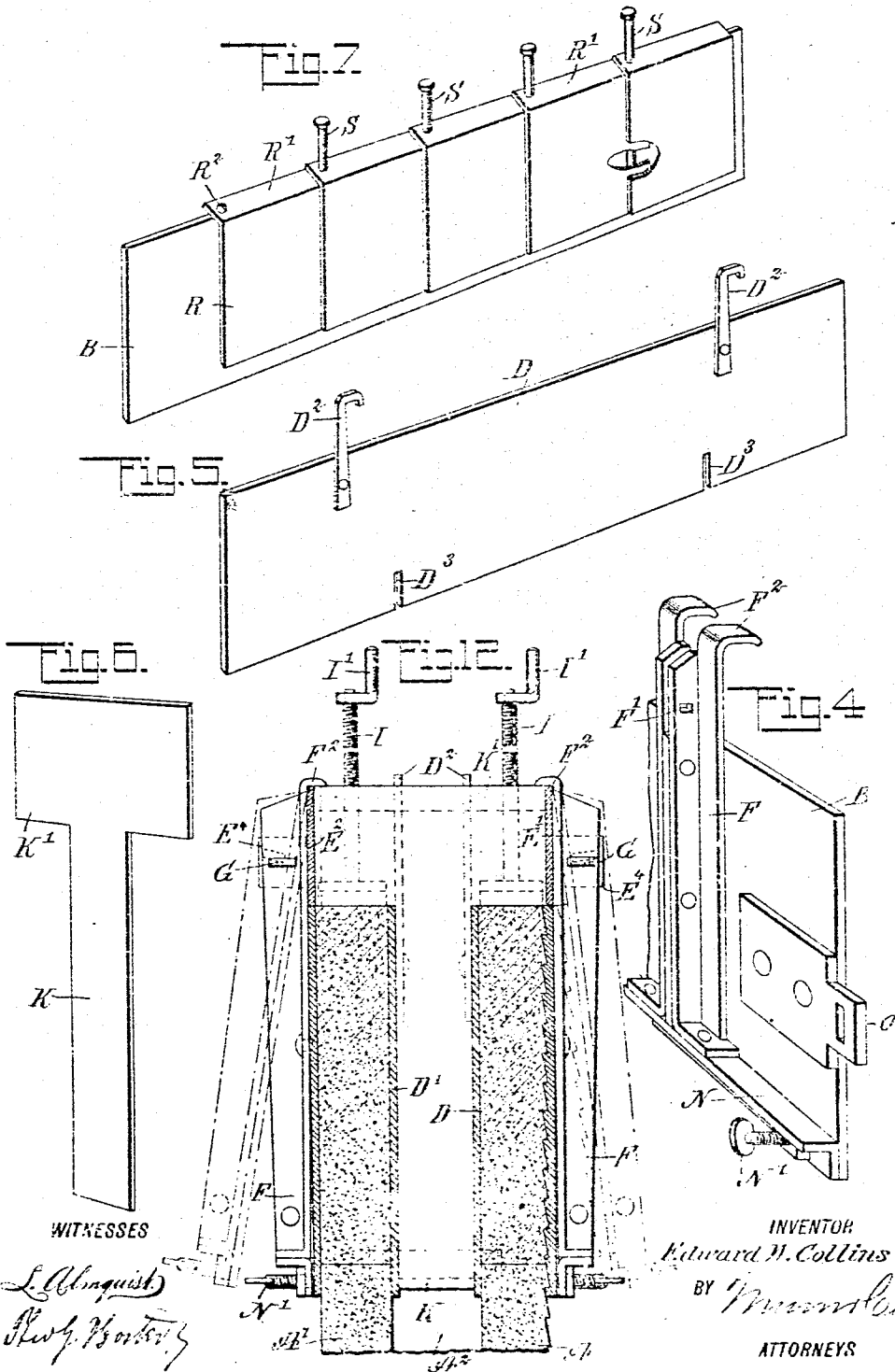
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4 SHEETS—SHEET 1.



UNITED STATES PATENT OFFICE.

EDWARD WILLIAM COLLINS, OF FORT DODGE, IOWA.

WALL-MOLD.

949,521.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed February 23, 1909. Serial No. 479,386.

To all whom it may concern:

Be it known that I, EDWARD W. COLLINS, a citizen of the United States, and a resident of Fort Dodge, in the county of Webster and State of Iowa, have invented a new and Improved Wall-Mold, of which the following is a full, clear, and exact description.

The invention relates to cement or concrete walls, and its object is to provide a new and improved wall mold for building a monolithic concrete wall, with or without air spaces, and with a facing of a different, finer material to enhance the appearance of the wall.

In the construction of this wall use is made of an outer or facing mold board, and removable plates spaced from the facing mold boards at the inner face thereof, to allow of building up the concrete wall and on removal of the auxiliary plates after the wall has partly set, to allow of placing the facing in position to unite with the wall.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a cross section of the improvement as arranged for building the corner of a wall; Fig. 2 is a plan view of the same; Fig. 3 is a perspective view of the top section of the corner mold; Fig. 4 is a perspective view of part of the outer mold board; Fig. 5 is a like view of one of the inner mold boards; Fig. 6 is a similar view of one of the spacing plates for the inner mold boards; Fig. 7 is a perspective view of one of the outer mold plates and the auxiliary facing plates in position thereon, parts being broken cut; Fig. 8 is a sectional plan view of the connecting device for the rear mold boards, the section being on the line 8--8 of Fig. 9; Fig. 9 is a sectional side elevation of the same on the line 9--9 of Fig. 8; Fig. 10 is a perspective view of one of the spacing plates for the screw rods; Fig. 11 is a perspective view of one of the corner or angle plates; and Fig. 12 is a cross section of the improvement arranged for giving the facing of the wall a clapboard appearance.

When building a wall having an outer section A and an inner section A' spaced from the outer section to form an air space A², use is made of a facing board or plate B, a rear board or plate C and intermediate

or inner boards or plates D, D', of which the board D is spaced from the facing board B, to form a space for receiving concrete material and the facing A² for forming the outer section A, and the inner board D' is spaced from the rear board C, to receive the concrete material for forming the inner section A' of the wall.

In order to connect the facing board B with the rear board C, use is made of a top or connecting frame E (see Figs. 1, 2 and 3) formed of spaced parallel boards or plates E', E² set on top of the boards B and C, and rigidly connected with each other by cross bars E³ having apertured lugs E⁴ extending through openings in the plates E', E² to project from their outer faces, as indicated in Figs. 1, 2 and 3. The apertured lugs E⁴ pass between vertical reinforcing bars F, riveted or otherwise secured to the outer face of the boards B and C, and the bars F are provided with longitudinally-extending openings F', through which are driven keys G, which also pass through the apertured lugs E⁴ to rigidly connect the top frame E with the boards B and C, it being understood that the bars F extend above the boards B and C, and their upper ends are formed with hooks F² reaching over the top edges of the plates E' and E², to allow of swinging the boards B and C (see dotted lines in Fig. 12) outwardly for washing and other purposes, whenever the keys G are withdrawn or removed.

The plates E' and E² are also connected with each other by cross bars H, in each of which screw the vertically disposed screw rods I, provided at their upper ends with crank arms I', to permit the operator to conveniently turn the screw rods I, with a view to screw the same up or down in the cross bars H. The lower ends of the screw rods I are adapted to engage sockets or steps J', attached to or formed on foot boards J, adapted to rest on top of the courses of the walls A and A' already finished, to allow of raising the boards B, C, D, D' and the top frame E, for lifting the said parts to form other courses on the sections A and A' already produced.

The inner boards D, D' are provided with upwardly-extending hooks D², adapted to hook onto the cross bars E⁴ of the frame E, so that when the latter is raised by the operator turning the screw rods I, as previously mentioned, then the inner boards D, D' are

carried along in an upward direction. In order to hold the inner boards D, D' spaced apart while filling concrete material between the corresponding boards B, D and C, D', use is made of spacing plates K provided with heads K' adapted to rest on the top edges of the boards D, D', and reaching with their terminals to the inner faces of the plates E', E², and which plates practically clamp the heads K' in transverse position. The lower edges of the inner boards D, D' are provided with notches D³, to allow the insertion of binding keys L of any approved material, to unite the wall sections A and A' with each other at suitable intervals, as indicated in Fig. 1.

The boards or plates B and C are liable to warp, and in order to bring the same into proper alinement use is made of angle irons or rails N, extending along the lower ends of the boards B and C and secured to the lower ends of the reinforcing bars F (see Fig. 4). Thumb screws N' screw in the angle irons or rails N against the outer faces of the boards B and C, to enable the operator to bring the boards B and C into a straight line position, thus insuring the formation of straight walls. The boards B and C as well as the plates E' and E² are connected at the corners of the wall sections A and A' by suitable fastening devices, such as apertured lugs O and removable keys O', as plainly indicated in Figs. 3, 3 and 9.

In case the inner boards D, D', D' do not join properly at the corners of the wall sections A and A', then use is made of angle plates P (see Figs. 2 and 11) having lugs P' at their upper ends for supporting the angle plates P from the top edges of the boards D, D'. Joint plates Q are used on the adjacent ends of the boards B and C, as indicated to the left in Fig. 2, but other suitable means may be employed for the purpose.

In order to provide a facing A³ of a finer cementitious material than that used for building the main portions of the wall, use is made of plates R (see Figs. 1 and 7), arranged spaced from the inner face of the facing board B, the plates R overlapping one the other in the direction of the length of the mold, as indicated in Fig. 7. Each of the plates R is provided at its top with an outwardly-extending flange R' extending over the top of the board B, and each flange is provided with an aperture R² for the insertion of a pin or a rod S extending downward between the opposite faces of the corresponding plate R and the board B, so that the plate K is spaced from the board B corresponding to the diameter of the pin S. Now in forming the outer wall section A the concrete or other cementitious material is filled in between the board D and the plates R, and a like material is filled in between the boards C and D'. After the material has

somewhat set the plates R and the pins S are removed and then the space between the outer face of the wall section A and the inner face of the facing board B is filled in with fine cementitious material, which readily adheres to and forms the facing A³ for the wall section A, as plainly indicated in the lower portion of Fig. 1.

After the outer and inner wall sections A and A' have been filled to about the height of the boards B, C, D and D', then the mold is raised by the use of the screw rods I and the foot boards J resting on top of the wall sections just finished. By having two screw rods I on each cross bar H and turning the same simultaneously, it is evident that the mold is properly raised without danger of moving any of the boards in a transverse direction, that is, the boards are raised vertically until the lower ends of the boards B, C, D, D' contact with the upper portions of the wall sections A, A' already built, as will be readily understood by reference to Fig. 1. The keys L are set in position immediately previous to starting the next course for the wall sections A and A', so that the keys are partly embedded at their ends in the two succeeding courses.

From the foregoing, it will be seen that by the arrangement described, the wall can be readily built in sections spaced apart to form an air space, and the outer section can be provided with a facing of finer material than that forming the body of the wall, and the wall can be readily built up in courses to any desired height by periodically raising the mold on the operator turning the screw rods I, as above explained.

If desired, the inner face of the facing board B may be made in step form, as indicated in Fig. 12, so as to give the outer face of the wall section A a clapboard appearance, otherwise the construction of this mold is the same as before described, except that the plates R and the pins S are omitted.

By providing the boards B and C with the rail N and adjusting screws N', all leakage of the concrete material and facing material is prevented, and by arranging the plates R and the pins S in the manner described, the plates R are firmly held in place while filling in the concrete material for the wall section A, and when this has been finished the pins S can be readily pulled up, to loosen the plates R and thereby allow their convenient withdrawal for the subsequent filling of the facing material. It will also be noticed that by having the rigid frame E locked to the upper ends of the reinforcing bars F, the mold boards B and C are firmly held in position, to insure the formation of perpendicular wall sections without requiring adjustment of the parts of the mold.

The reinforcing bars F are preferably

made of two angle irons with a plate between them up to the top of the board B or C, respectively, and the cross bar E² may be similarly formed of a number of pieces, but this construction of the bars F and E² may be varied.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A wall mold, comprising a facing board, a rear board, removable plates held spaced from the inner face of the said facing board to allow of filling the concrete wall material between the said rear board and the said plates, and on removal of the said plates to allow filling the space between the concrete wall material and the said facing board with plastic facing material, and rods extending between the plates and the facing board for holding the said plates spaced from the said facing board.

2. A wall mold, comprising a facing board, a rear board, removable plates overlapping each other in the direction of their length and spaced from the inner face of the said facing board, the plates having angular apertured flanges at their upper ends extending across the top of the facing board, and rods inserted in the apertures of the said flanges and extending downward between the said plates and the facing board for spacing the plates from the inner face of the facing board.

3. A wall mold comprising a facing board, a rear board, spaced reinforcing bars secured to the outer faces of the said boards and extending beyond the top edges of said boards, a top frame having apertured lugs extending between said reinforcing bars, and keys engaging openings in the said reinforcing bars and passing through the said apertured lugs.

4. A wall mold comprising a facing board, a rear wall board, reinforcing bars secured on the said boards and extending beyond the top edges of the boards, a top frame having plates connected with each other by cross bars, the said plates resting on the said boards, the upper ends of said reinforcing bars being provided with inwardly extending hooks engaging the upper edges of the top frame, to permit of swinging the facing board and rear wall board outwardly, the said cross bars being provided with apertured lugs for engagement with the said reinforcing bars, means for removably fastening said lugs to said bars, and means for raising the top frame.

5. A wall mold comprising a facing board, a rear wall board, reinforcing bars secured on the said boards and extending beyond the top edges of the boards, a top frame having plates resting on the said boards, and connecting cross bars having apertured lugs extending through openings

in said plates and projecting therefrom for engagement with the said reinforcing bars, means for removably fastening said lugs to said reinforcing bars, cross bars on said top frame, two screw rods screwing in each of the said cross bars, and foot boards having steps for the lower ends of the said screw rods.

6. A mold board comprising a facing board, a rear wall board, a top frame having plates resting on the said boards, cross bars having apertured lugs extending through openings in the plates and projecting from their outer faces, reinforcing bars secured on the said boards and extending beyond the top edge of the same, the said reinforcing bars being spaced apart for the passage between them of said apertured lugs, and means for removably securing the said lugs to said reinforcing bars.

7. A mold board comprising a facing board, a rear wall board, a top frame having plates resting on the said boards, cross bars connecting said plates and having apertured lugs extending through openings in the plates and projecting from their outer faces, vertical reinforcing bars secured on the said boards and extending beyond the top edge of the same, the said reinforcing bars being spaced apart for the passage between them of said apertured lugs, keys engaging openings in the extensions of said reinforcing bars and passing through the apertures of said lugs, the upper ends of said reinforcing bars having inwardly extending hooks engaging the top edges of the said plates of the top frame.

8. A wall mold, comprising a facing board, a rear wall board, intermediate boards, spacing devices for the said intermediate boards, vertical bars on the said facing board and the said rear wall board and projecting beyond the top thereof, a top frame having plates connected with each other by cross bars, the top frame plates resting on the said facing board and the said rear wall board, the cross bars having apertured lugs for engagement with the said vertical bars, and keys for fastening the said lugs to the said vertical bars.

9. A wall mold, comprising a facing board, a rear wall board, intermediate boards, spacing devices for the said intermediate boards, vertical bars on the said facing board and the said rear wall board and projecting beyond the top thereof, a top frame having plates connected with each other by cross bars, the top frame plates resting on the said facing board and the said rear wall board, the cross bars having apertured lugs for engagement with the said vertical bars, keys for fastening the said lugs to the said vertical bars, and hooks on the said intermediate boards and adapted to hook onto the said cross bars of the top frame.

10. A wall mold, comprising a facing board, a rear wall board, intermediate boards, spacing devices for the said intermediate boards, vertical bars on the said facing board and the said rear wall board and projecting beyond the top thereof, the upper ends of the said vertical bars being provided with inwardly extending hooks for the boards to swing outward, a top frame having plates connected with each other by cross bars, the top frame plates resting on the said facing board and the said rear wall board, the cross bars having apertured lugs for engagement with the said vertical bars, and keys for fastening the said lugs to the said vertical bars.

11. A wall mold having a mold board, vertical bars secured to the said board, a rail secured to the lower ends of said bars and extending along the lower end of the mold board, and screws screwing in the said rail and abutting against the outer face of said board.

12. A wall mold having a facing board, a rear board, vertical bars secured to the outer faces of said boards and extending beyond the tops thereof, rails secured to the lower ends of the said bars and extending along the lower ends of the boards, screws screwing in the said rails and abutting against the outer faces of said boards, a top frame resting on the said boards, and means for removably securing said frame to the extensions of said vertical bars.

13. A wall mold comprising a facing board, removable plates held spaced from the inner face of the facing board, a rear board, vertical reinforcing bars on the facing board and the rear board and projecting beyond the tops thereof, a top frame having plates resting on the facing board and the rear board, cross bars connecting the plates and having apertured lugs for engagement with the said reinforcing bars, and means

for removably securing the lugs to said reinforcing bars.

14. A wall mold comprising a facing board, removable plates held at the inner side of the facing board, means for spacing said plates from the facing board, a rear board, reinforcing bars on the facing board and the rear board and extending beyond the top thereof, a top frame having plates resting on the facing board and the rear board, cross bars having apertured lugs extending through openings in the said plates and projecting therefrom for engagement with the said reinforcing bars, and means for removably securing said lugs to said reinforcing bars, the said reinforcing bars having hooks at their upper ends resting on the top edges of the plates of said top frame.

15. A wall mold comprising a facing board, a rear wall board, intermediate boards, spacing means for the intermediate boards, reinforcing bars on the facing board and the rear wall board and projecting beyond the tops of said boards, a top frame having plates resting on the facing board and the rear wall board, cross bars connecting said plates and having apertured lugs extending through openings in said plates and projecting therefrom for engagement with the extensions of said reinforcing bars, keys for fastening the said lugs to the said reinforcing bars, means for suspending the intermediate boards from the said top frame, means for bringing the facing board, and rear wall board into a straight line position, and means for raising the said top frame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD WILLIAM COLLINS.

Witnesses:

H. J. LOHR,

N. F. ELLEDGE.