

June 14, 1927.

G. J. SEILER
WALL BUILDING DEVICE

Filed Jan. 12, 1927

1,632,514

3 Sheets-Sheet 2

Fig. 5.

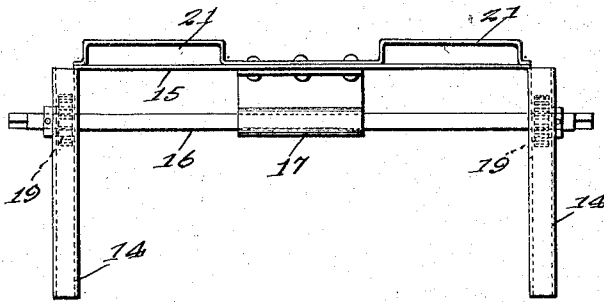


Fig. 6.

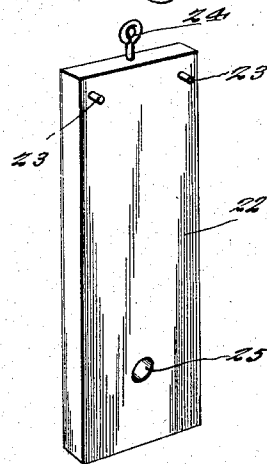


Fig. 7.

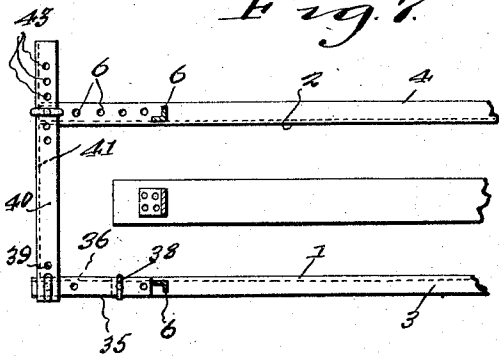


Fig. 8.

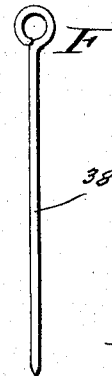


Fig. 9.

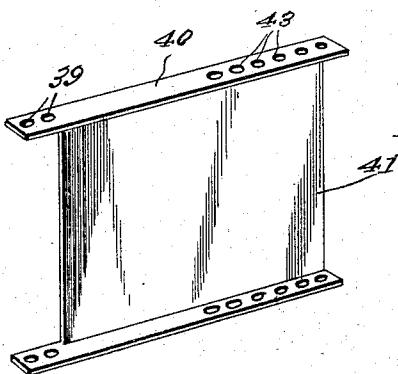


Fig. 10.

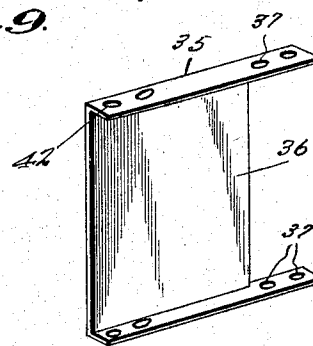
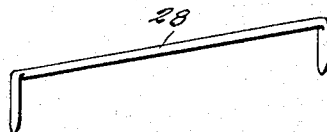


Fig. 11.



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WITNESS:

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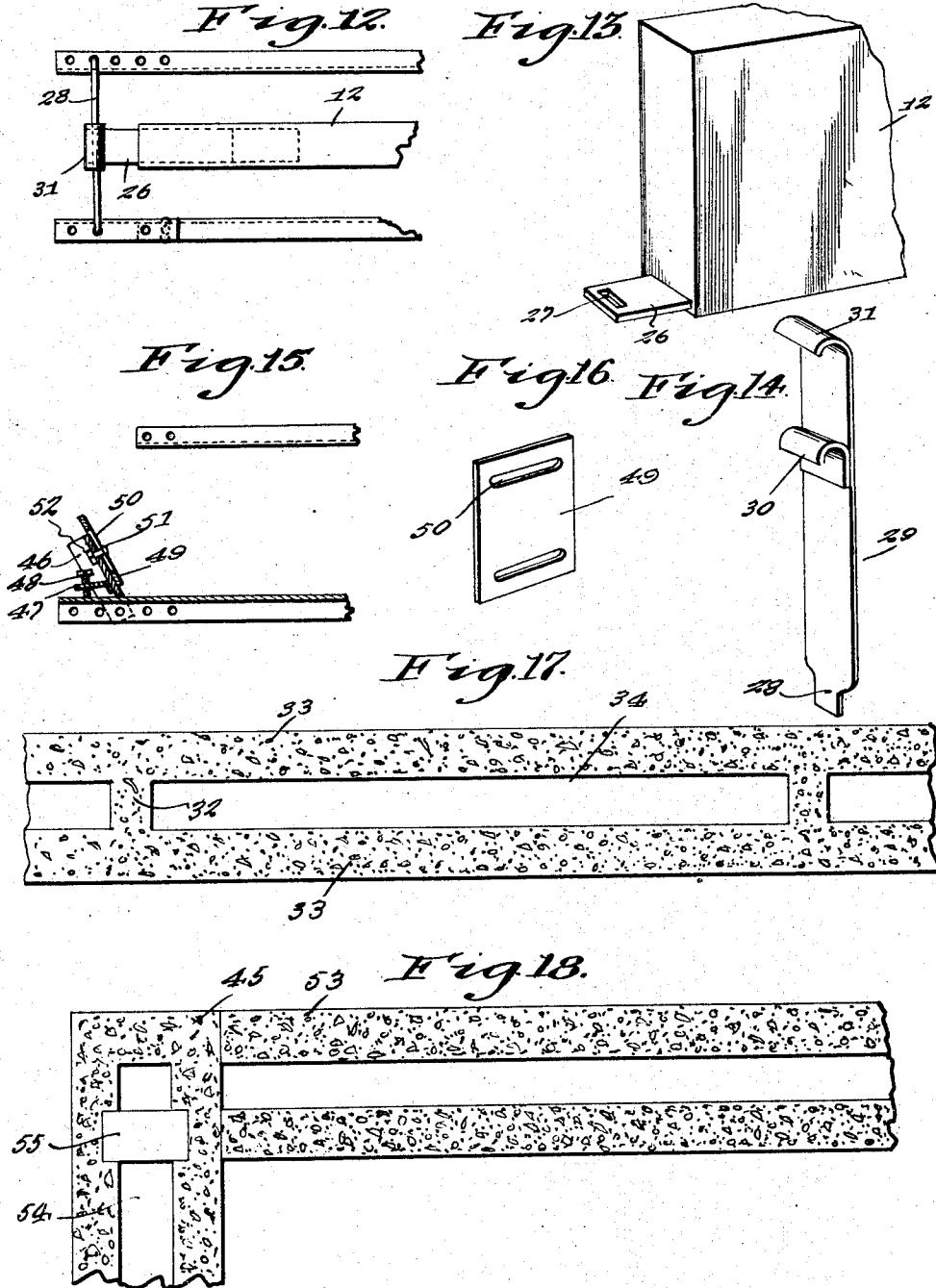
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INVENTOR

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WITNESS:

UNITED STATES PATENT OFFICE.

GEORGE J. SEILER, OF DANVILLE, ILLINOIS.

WALL-BUILDING DEVICE.

Application filed January 12, 1927. Serial No. 160,873.

My present invention has reference to a molding machine of that type designed for use in the construction of concrete walls.

An important object is the provision of a mold for building concrete walls and which has associated therewith longitudinally arranged toothed racks that provide a track for a carriage, the later having boards or plates associated therewith that form the end of the mold and being also provided with a shaft having toothed wheels to engage with the racks, and whereby, after a wall section is formed in the mold, and the shaft is revolved, the wheels thereon will cause the mold to be moved bodily in a line with but outward of a wall, a turning of the shaft in a reverse direction also moving the carriage over the rails and arranging the parts for molding a continuation of the wall.

Another object of the invention is to provide a machine for this purpose by whose use either a solid or double wall with air spaces therebetween may be formed in an expeditious manner and with only a minimum amount of physical exertion.

A further object is the provision of a molding machine capable of producing walls of different widths and wherein the said walls may be spaced but tied together by webs at predetermined intervals.

A further object is the provision of a molding machine capable of easy manipulation and by whose use both the side walls and corners of buildings may be easily erected and further wherein the superimposed wall structures may be molded in bridging relation one with respect to the other, so that such molded walls may represent stone or tile.

A still further object is the provision of a wall molding machine by whose use either straight or angle corners of a building may be provided.

To the attainment of the above broadly stated objects and others which will present themselves as the nature of the invention is better understood, the improvement also consists in certain other novel features of construction, combination and operative association of parts, a satisfactory embodiment of which is disclosed by the accompanying drawings.

In the drawings:

Figure 1 is a plan view of the improvement.

Figure 2 is a side elevation thereof.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is a sectional view on the line 4—4 of Figure 1.

Figure 5 is a top plan view of the carriage.

Figure 6 is a perspective view of one of the presser boards.

Figure 7 is a horizontal section illustrating the manner in which the end of a wall is formed.

Figure 8 is a view of the pin employed for holding the removable end sections of the mold associated with each other and with the mold.

Figure 9 is a perspective view of one of the removable end sections.

Figure 10 is a similar view of the cooperating end section.

Figure 11 is a perspective view of the brace rod.

Figure 12 is a fragmentary top plan view showing the brace rod in position and the manner in which the connecting web between the spaced walls are formed.

Figure 13 is a fragmentary perspective view of one end of the core.

Figure 14 is a perspective view of the hooked plate employed on the core illustrated in Figures 12 and 13.

Figure 15 is a plan view to illustrate the manner in which angle corners may be formed on the wall.

Figure 16 is a perspective view of the adjustable corner plate.

Figure 17 is a plan view of a wall constructed in accordance with this invention.

Figure 18 is a similar view showing the corner of the wall.

Referring now to the drawings in detail, the numerals 1 and 2 indicate the side plates of the mold. These plates have both their upper and lower edges flanged outwardly, as at 3 and 4, respectively. By reference to the drawings it will be noted that the side plate 2 is of a greater length than is the side plate 1 and has its ends projected approximately the same distance from the ends

of the said plate 1. Also by reference to the drawings it will be noted that the upper flanges 3 and 4 of the respective plates 1 and 2 are provided with spaced series of longitudinally arranged apertures 5—5 and 6—6, respectively. The purpose of this arrangement will be presently set forth.

Fixed to the flanged or channeled side plates 1 and 2 of the mold on the outer faces, and adjacent to the ends thereof, there are uprights 6, respectively. These uprights are oppositely arranged and project a suitable distance above the plates 1 and 2. The uprights are also preferably of angle irons which are suitably bolted or otherwise secured to the plates 1 and 2. Preferably, the upper or outer ends of the uprights 6 have flat inwardly extending head portions 7 provided with bolt openings, and passing through these openings and through aligning series of openings 8 in cross heads 9 there are bolts 10 which are engaged by suitable nuts. By this arrangement it will be noted that the side plates are laterally adjustable with respect to each other. Also adjustably secured to the transverse plates which I have called the cross heads 9, by removable means, such as nuts and bolts there are the widened head portions of plates 11 which are fixedly secured to a core 12. The core is preferably in the nature of a block and is gradually reduced in thickness from its upper to its lower end.

Fixedly secured between the uprights carried by each of the mold plates, and arranged above such plates there are rails 13 whose under faces are toothed. Embracing these rails there are cross sectional U-shaped or channeled members 14 whose outer ends have fixed therebetween a plate 15. The plate and the channel members provide a carriage. The inner sides of the channeled members 14 are of a width equaling that of the body plate 15 of the carriage, and have journaled therethrough a shaft 16. The shaft is also journaled through a bearing 17 that extends centrally from the body portion 15 of the carriage, and the ends of the shaft are squared for the reception of a removable operating handle 18. Fixed on the ends of the shaft there are toothed wheels 19 that engage with the teeth 20 on the under face or edges of the rails 13. The body 15 of the carriage has on its rear face, substantially U-shaped pockets 21 arranged at points equidistant from the center of said carriage. The pockets are preferably formed by bending a single strip of metal and each of the pockets is designed to receive therethrough a plate or board 22. The boards have outstanding stop elements 23 to contact with the body of the carriage and have on their upper ends handle members 24 whereby the boards 22 may be received through or drawn out of the pockets 21. Each board 22 has

one or more openings 25 therethrough and these openings are designed to receive therethrough reinforcing rods or wires for the concrete wall. The boards 22 provide the end members of the mold.

After a section of a wall has been formed in the mold the handle 18 is turned to revolve the shaft 16 in the direction of the arrow in Figure 2. This brings the push plates or boards 22 tightly against the ends of the wall, so that the resistance offered thereby will cause the mold as a unit to travel longitudinally in line with but outward of the wall section erected. When the mold has been thus moved its full length the handle 18 is turned in a second direction to reverse the turning of the shaft 16, causing the toothed wheels 19 to move the carriage as a unit outwardly on the mold to permit of the molding of another wall section. This operation is repeated until the wall is entirely formed.

It is desirable that the spaced walls be connected at determined intervals for reinforcing and bracing the walls with respect to each other. To accomplish this I arrange on the lower corner of the mold a removable plate 26 that has a notch 27, adjacent to its outer end. I now arrange in two of the oppositely disposed openings in the flanges 5 and 6 of the mold boards 1 and 2 the angle ends of a rod 28. I now pass through the slot 27 of the plate 26 the tongue 28' formed by reducing the lower end of a plate 29. The plate is of a width equaling that of the core and the said plate has a hook 30 to be received over the rod 28. Above the hook the plate is formed with a handle part 31. By this arrangement it will be noted that the plastic concrete will not only flow between the mold boards and the core but between the plate 29 and the end of the core and thus provide connecting webs 32 between the wall sections 33, as disclosed by Figure 17 of the drawings.

When one side wall is completed the mold is removed therefrom and arranged right-angulantly thereto so that the second side wall may be molded. In starting the first mentioned side wall it is necessary that the end thereof be closed in order to seal the dead space 34. In this connection it should be stated that the end of the mold board 2 projects beyond the end of the mold board 1, a distance equaling the thickness of the wall. I adjustably connect to the flanges at the end of the mold board 1 flanges 35 formed on the edges of a plate 36. By reference to Figure 10 of the drawings it will be seen that the flanges 35 will project beyond one end of the plate or board 36 and that both the upper and lower flanges 35 have spaced series of apertures 37 therethrough. Passing through one of these apertures and through an aligning aperture

in the flange 5 of the plate 1 there is a pin 38 best illustrated in Figure 8 of the drawings, the said pin having an outer headed end. A similar pin is passed through any one of a desired number of apertures 39 on the flanges 40 of a second plate 41. The parts of the flanges 40 provided with the apertures 39 project beyond one end of the plate 41 and the said pin passes through the outer aperture, indicated for distinction by the numeral 42 on the flanges 35 of the plate 36, the flanges 40 having series of apertures 43 adjacent to the second end of the flanges 40 and a pin similar to the pin 38 passes through one pair of these apertures and through one pair of the apertures 6 on the flanges 4 of the plate or mold board 2. Thus the plates 36 and 41 close the outer end of the mold, and thus the outer face of the wall 45, Figure 18, is closed when the concrete is poured.

When it is desired to erect walls whose corners are arranged at an angle, I employ flanged plates 46 which are pivotally secured in any one of the apertures or openings in the flanges of one of the mold plates or to one of the extensions thereof. These plates 46 have outstanding brackets 47 through which there are threaded adjusting screws 48, and whereby the angular relation of the plates 46 with respect to the mold board is obtained. On the inner face of the plates 46 I arrange stop plates 49. Each of these plates has elongated openings 50, adjacent to its ends, and passing through the plates 46 and through these openings 50 there are bolt members 51, which, of course, are engaged by suitable nuts 52.

Obviously the mold may be of any desired height and length, and after one course of a wall has been erected the mold is elevated for molding the second course. Any suitable means may be provided for supporting the mold when thus elevated and when the mold is arranged on the side wall 53 in Figure 8 I insert in the space 54 in the wall 45 a block or plug 55. The block is arranged in a line with the inner part of the wall 53 that serves to prevent the passage of mortar into the said space 54. Plastic material is arranged in the mold and treated, as previously described throughout the erection of the building, and it is thought that the foregoing description, when carefully read in connection with the accompanying drawings, will render my construction, its operation and its advantages perfectly apparent to those skilled in the art to which such invention relates. Obviously I do not wish to be restricted to the precise details herein set forth and, therefore, hold myself entitled to make such changes and modifications therefrom, providing such changes fall within the scope of my claims and do not depart from the spirit of my invention.

Having described the invention, I claim:—

1. A wall building machine, comprising a mold made up of spaced mold boards, a carriage mounted on the mold and normally arranged at one end thereof for closing the mold, and means between the carriage and mold for causing the carriage to move on the mold and the mold to be moved on the carriage.

2. A machine for building plastic walls, comprising side plates, means for adjustably connecting the plates whereby walls of different widths may be molded therebetween, means between the plates and normally closing one end of the mold and said means being susceptible to longitudinal movement in the mold and to likewise move the mold longitudinally thereover.

3. A machine for erecting plastic walls, comprising a mold arranged for longitudinal movement in a line with the wall to be erected, said mold including side members, adjustable means connecting the members, for permitting walls of different widths being molded therebetween, a core arranged centrally between the members, plates forming one end of the mold arranged between said members and core, and means for moving the mold longitudinally on said plates or for moving said plates on said mold.

4. A machine for erecting concrete walls, comprising a mold which includes side plates, uprights fixed on said plates, cross heads to which the uprights are adjustably connected, a plate forming one end of the mold and arranged between the side plates, said end plate having openings there-through, for the reception of reinforcing rods, a carriage supporting said end plate, and means for imparting a longitudinal movement to the carriage.

5. A machine for erecting concrete or like plastic walls, including a longitudinally movable mold, comprising side plates whose edges are flanged, uprights on the upper faces of the plates adjacent to the ends thereof, cross heads to which the uprights are adjustably connected, a longitudinally arranged core between the plates and supported from the uprights, plates between the core and side plates of the mold forming one end of the mold, means supporting the end plates susceptible to longitudinal movement, said core having a notched plate extension on one end thereof, a member of a width corresponding to that of the core having a tongue end to be received in the notch of the last mentioned plate, a rod arranged transversely over the upper flanges of the side plates of the mold and adjustable and removably attached thereto, a hook on the last mentioned plate engaging with the rod and a handle on the outer end of the plate for the purpose set forth.

6. A machine for erecting concrete or like

plastic walls in connected sections, comprising a mold which includes side plates, uprights fixed on the outer faces of the plates, adjacent to the ends thereof, cross heads to which the uprights are adjustably connected, a core arranged longitudinally between the plates and supported from the cross heads, rails secured to the uprights and having their under faces toothed, a carriage having angularly extending U-shaped ends which are arranged over the rails, a shaft journaled through said ends and having teeth thereon in mesh with the teeth of the rails, a central journal for the shaft, pockets on the outer face of the carriage, a plate adapted to be passed through each pocket and to be received between the core and the sides of the mold, and means for revolving the shaft to impart a longitudinal movement to the carriage.

7. A machine for erecting concrete or like plastic walls in longitudinal series, comprising a longitudinally movable mold which includes side plates having their edges flanged and apertured, one of said plates being of a greater length and extending beyond the ends of the other plate, uprights secured to the outer faces of the plates adjacent to the ends thereof, cross heads to which the uprights are adjustably connected, a longitudinally extending core between the plates and supported from the uprights, rails fixed to the respective pairs of uprights, a carriage on the rails and normally sustained in one end of the mold, removable plates supported from the carriage, dis-

posed between the core and side plates of the mold and forming ends for the mold, means for imparting a longitudinal movement to the carriage and to the said last mentioned plates, and comparatively short plates having flanged edges which are apertured and which last mentioned plates are removably connected to arrange the same rightangularly with respect to each other, whereby the flanges of the respective last mentioned plates may lap the flanges of the side plates of the mold, and removably connected fingers adapted to be passed through aligning apertures in all of said plates and whereby to close the second end of the mold.

8. A machine for erecting plastic walls in longitudinal series, comprising a longitudinally movable mold which includes side plates, means adjustably connecting the plates for varying the widths of a wall to be cast between said plates, plates arranged between the side plates and closing one end of the mold, means for imparting a longitudinal movement to the last mentioned plates between the side plates of the mold, members pivotally secured to one of the side plates at the open end of the mold, brackets on said members, adjustable means carried by the brackets for contacting the said side plate, whereby to arrange the brackets angularly with respect to said plate, and a laterally adjustable plate supported by said members.

In testimony whereof I affix my signature.

GEORGE J. SEILER.