

Fig. 1.

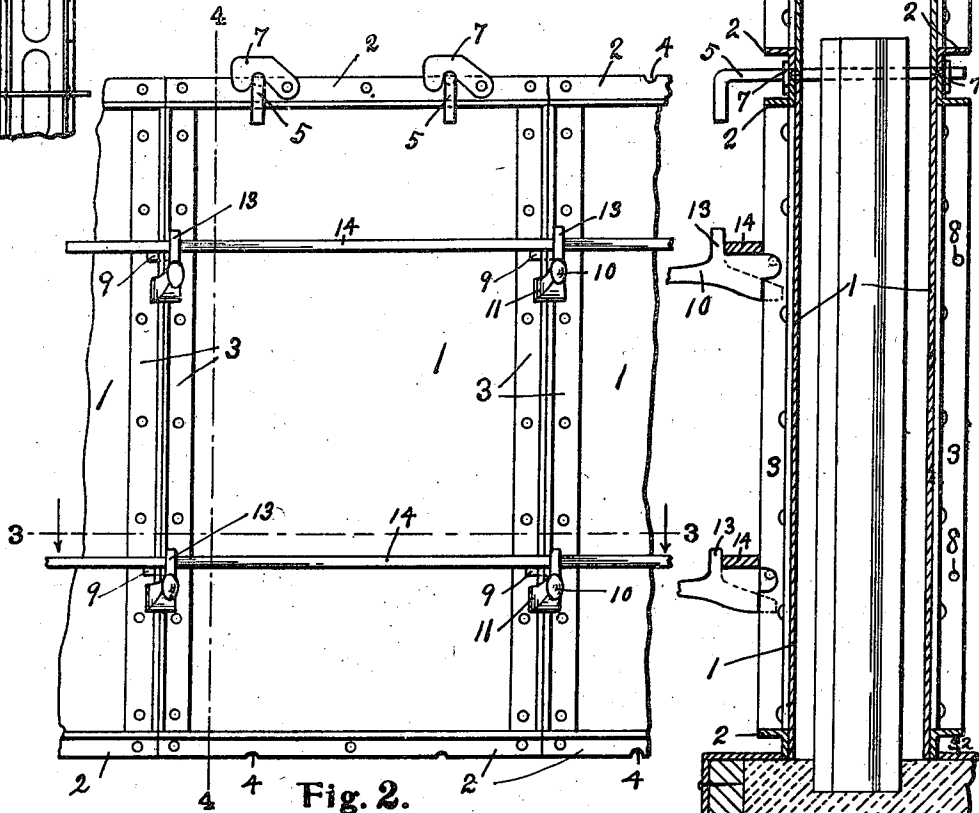
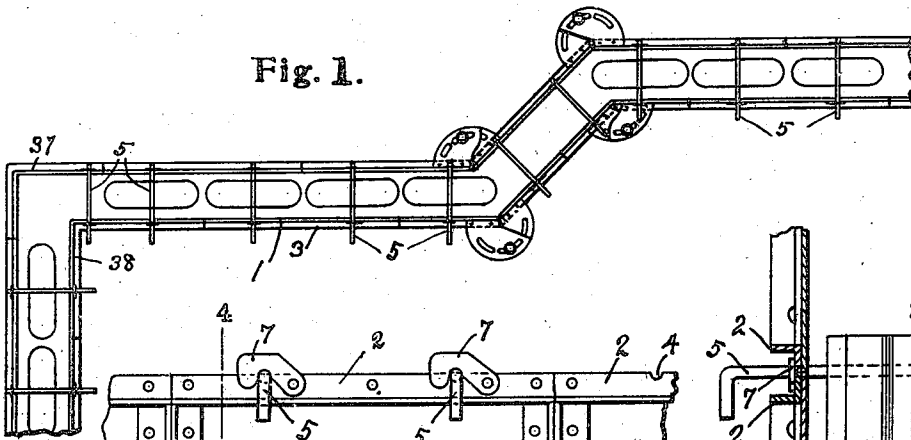


Fig. 2.

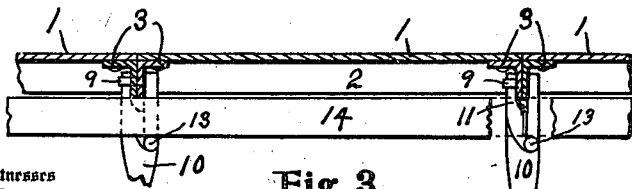


Fig. 3.

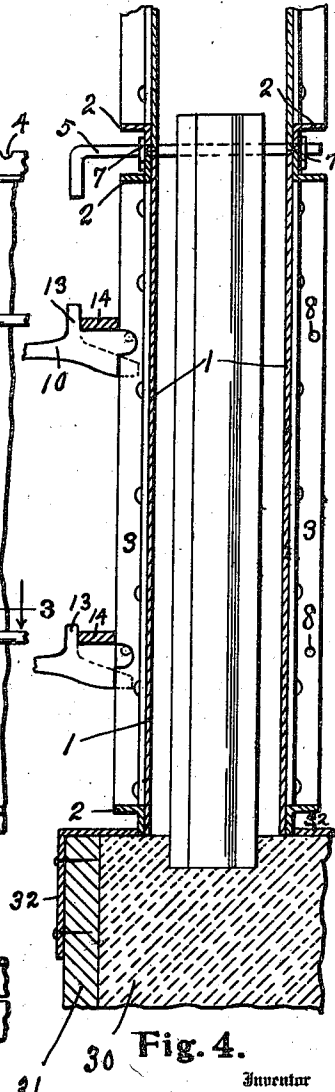


Fig. 4.

Witnesses

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33

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 WALL MOLD.  
 APPLICATION FILED MAR. 16, 1909.

953,383.

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3 SHEETS—SHEET 2.

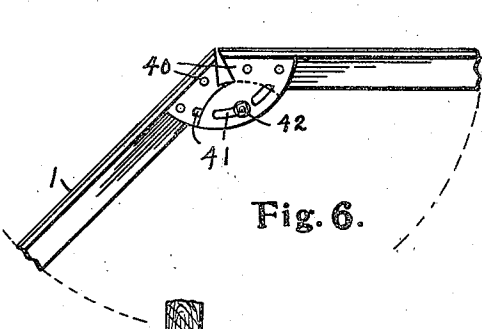


Fig. 6.

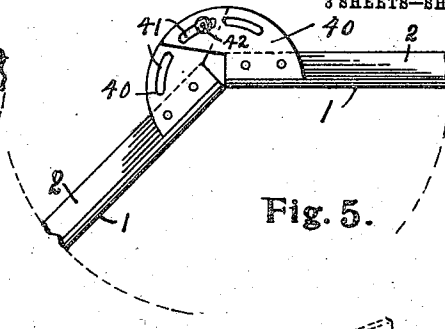


Fig. 5.

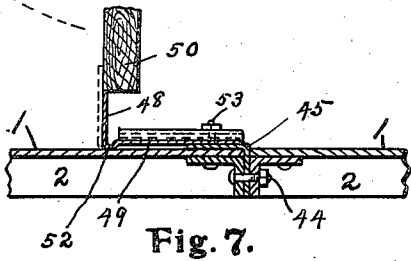


Fig. 7.

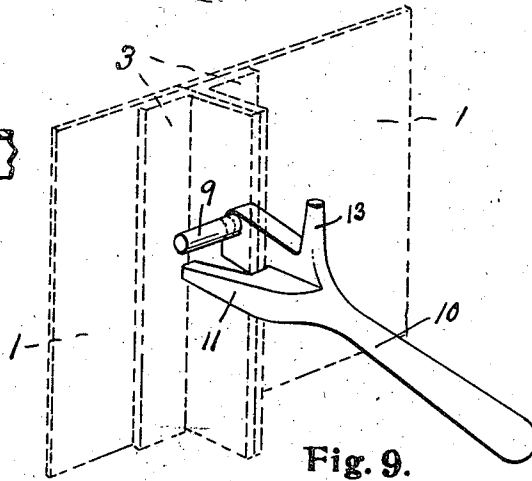


Fig. 9.

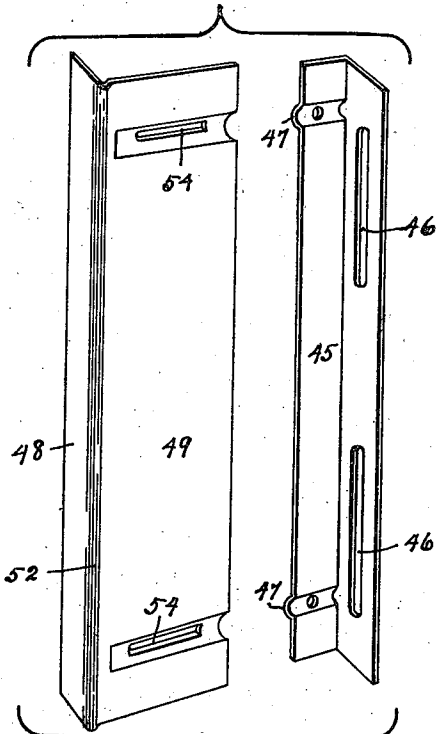


Fig. 8.

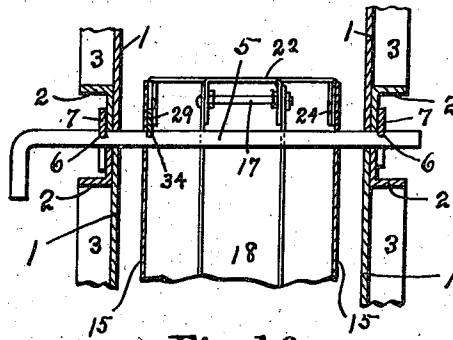


Fig. 10.

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3 SHEETS—SHEET 3.

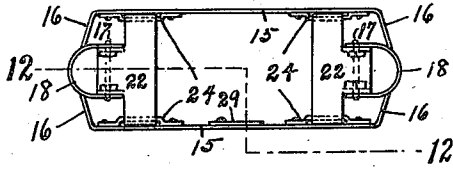


Fig. 11.

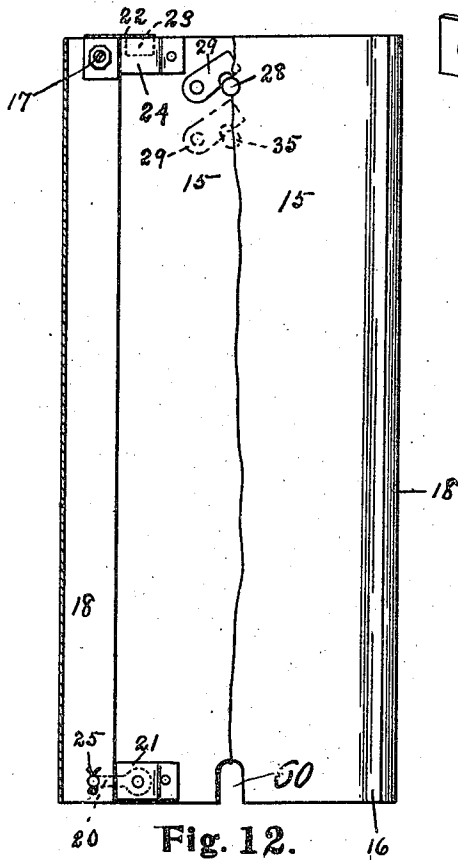


Fig. 12.

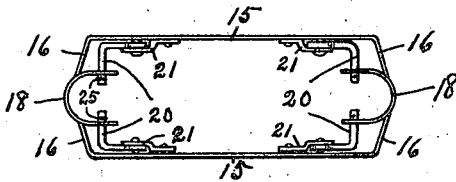


Fig. 13.

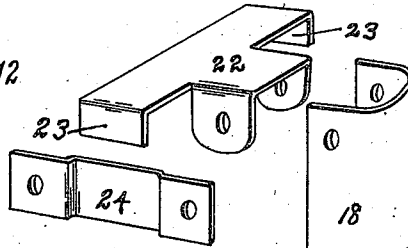


Fig. 14.

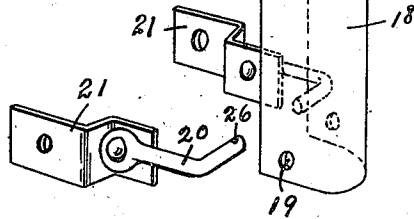


Fig. 15.

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# UNITED STATES PATENT OFFICE.

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WALL-MOLD.

953,383.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed March 15, 1909. Serial No. 483,525.

To all whom it may concern:

Be it known that I, JOSEPH W. HOLMAN, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Wall-Mold, of which the following is a specification.

My improvements relate to side molds and cores for the forming of building walls of plastic material, and the object of this invention is to provide wall molds that shall be of sufficient strength and which may be easily erected and removed.

In the accompanying drawings, Figure 1 is a plan of a set of molds in position. Fig. 2 is an elevation of a portion of the side mold. Fig. 3 is a longitudinal cross section of a side mold on the line 3—3 of Fig. 2. Fig. 4 is a vertical cross section of the wall mold on the line 4—4 of Fig. 2. Figs. 5 and 6 are views of two forms of angle braces. Fig. 7 is a horizontal cross section showing a device to hold window casings in position. Fig. 8 shows portions of this securing device in perspective. Fig. 9 is a perspective view of the locking device for wall sections. Fig. 10 is a vertical cross section showing the spacer in position. Fig. 11 is a plan of the core. Fig. 12 is an elevation and cross section on the line 12—12 of Fig. 11. Fig. 13 is a view of the bottom end of the core. Figs. 14 and 15 are details of the core.

Similar reference characters refer to like parts throughout the several views.

Walls of plastic material have been molded between upright faces of false-work and around cores for many years. A great expense of such construction has been the false-work which is usually of lumber and which becomes broken during removal. Because of the moisture in the concrete, the lumber in the false work often warps badly so that it cannot be used again.

The accompanying drawings illustrate a wall mold of metal, comprising face sections and cores, together with locking, spacing and bracing devices to hold the parts of the mold in predetermined position. The face sections are preferably rectangular, and if about forty two inches long and twenty four inches wide can be easily handled. They are formed of metal sheets 1 with angles 2 and 3 secured to the edges. In the top and bottom edges are notches 4 to receive the spacers 5. These spacers are preferably round rods with one end bent at right angles

to form handles and provided with notches 6 to receive the hooks 7 pivoted to the upper edges of the face sections. The side angles 3 are provided with holes 8 to receive the pins 9 on the locking handles 10, the fingers 11 of these handles being so disposed that when the pin 9 is pushed through holes 8 in two adjacent angles and the handle is swung down as shown in Fig. 9, the finger 11 will engage one angle, and being inclined, the two angles and the plates attached thereto will be drawn together. Each locking handle has a pin 13 projecting upward. Bars 14 may therefore be placed on the handles between the pins 13 and the adjacent flanges of the angles, and, thus hold the handles in locking position and at the same time act as braces to prevent the sections from bulging. The cores are preferably formed of four main portions and connections between them. The sides 15 have intumed edges 16. Liners 18 substantially semi-circular in cross section are adapted to hold the sides 15 separated. These liners are provided at their lower ends with holes 19 which receive the ends of the pivoted links 20. These links are mounted on the lugs 21 secured within the lower end of the core. At the upper ends of the liners on the pins 17 are pivoted the hooks 22 having fingers 23 that are adapted to engage between the clevises 24 and the sides 15 to which they are secured.

When the parts are as shown in Figs. 11, 12 and 13, the links 20 will hold out the lower ends of the liners and the hooks 22 will hold the upper ends out. The fingers 23 engaging the clevises 24 at the upper end, and the spring pins 25 in the small holes 26 in the links 20, prevent the sides 15 separating too far. When it is desired to collapse the cores, the hooks 22 are swung up and the liners 18 are lifted. The lower ends will swing in with the links 20, thus carrying the liners inwardly from between the inclined edges 16 of the sides. This permits the sides to approach each other, that is, the upward movement of the liners collapses the cores.

The method of forming a wall by means of this mold is as follows. The usual footing course 30 (Fig. 4) is first rammed in between side boards 31 and a trough may be left in the upper surface by embedding a plank therein and afterward removing it. Guide braces or clips 32 are attached to the

side boards and furnish supports for the lower ends of the side plates. These are then placed in position with the spacers 5 holding their upper edges apart. It is desirable that the sections should "break joints" as shown in Fig. 1. The core molds are then suspended in place on the spacers 5 which pass through holes 28 in the sides 15. The cores are held in position by a hook 29 secured to an inner side of each, which hook engages a notch 34 in the spacer. These cores are preferably longer than the side sections of the mold, and for this reason a trough is made in the footing course. After the mold has been filled and set sufficiently to stand, the cores are removed, a second tier of side plates built up on the first and the cores again positioned. The cores being long enough, their lower ends will enter the air spaces previously formed and being formed with the slots 60, they may extend down below the spacers 5 which have been left in the wall to hold the lower ends of the side plates in position.

It would be unnecessary to form a trough in the footing course if some other method of positioning the bottoms of the cores were adopted. In this case the hole 35 would be formed in each side 15 of the cores and a second hook 29 secured to the same. The spacers 5 are easily removed when the wall sections resting on them are taken away.

Where square corners are to be formed the sections will be properly constructed as shown at 37 and 38 in Fig. 1. The number of such corners makes it advisable to have a stock of this type of sections. But for the many angles other than right angles it might be difficult to carry a complete line on hand. The construction shown in Figs. 5 and 6 may be employed for practically every angle greater than a right angle. For exterior angles the plates 40 may be secured to the upper angles 2 of any side sections as shown in Fig. 5. These plates have slots 41 into which a bolt 42 may be inserted and thus secure them in any desired position. The opposite side edges of the sections are as shown in Fig. 2.

When interior angles are to be formed in walls, the side angle bars 3 of the side sections are either omitted or shifted back and the angle bars 2 are beveled as shown in Fig. 6. The plates 40 are similar to those for exterior angles.

Where window openings are to be formed in walls, and where the casings are of less width than the thickness of the wall, the construction shown in Figs. 7 and 8 may be employed. The side angles 3 in this case are secured together with bolts 44 instead of locking handles 10. A sheet metal angle plate 45 having slots 46 and perforated ridges 47 is secured between adjacent angles as shown in Fig. 7. An angular guard

plate having a plain side 48 and corrugated slotted side 49 is secured to the angle 45 and the edge of the side 48 may contact with the casing 50 as shown in solid lines in Fig. 7 or as in dotted lines. To prevent concrete flowing between the side 48 and the section face plate 1, a rib 52 may be formed on the guard plate. When this device is employed, the wall is filled in up to the lower side of the sash which is then positioned. As a rule, one face of the sash is flush with one face of the wall, usually the inner face. The sash is therefore placed directly against one side mold. The other face of the sash, however may be several inches from the opposite face of the wall. The angle 45 is then properly positioned and the guard plate secured thereto. The slots 46 in the angle 45 and 54 in the side 49 admit of full adjustment. The ridges and grooves in the plates serve as guides and also admit the heads of the bolts 53. When the concrete is now rammed in, the side 48 will prevent it flowing between the side molds and the face of the casing.

Many changes in the proportions and details of the various parts may be necessary to adapt these various parts to walls of different designs, but they can be made without departing from the spirit of my invention.

Having now explained my construction, what I claim as my invention and desire to secure by Letters Patent is:—

1. In a wall mold, the combination of sections for forming the outer and inner faces of the wall consisting of sheets of metal with angle bars secured to their edges, said sections having notches formed in their upper and lower edges, spacers adapted to rest in said notches and provided with transverse grooves, and latches mounted on the upper edges of the sections to engage in said grooves to position the sections.

2. In a wall mold, the combination of outer and inner sections for the sides of the wall, cores for forming air spaces in said wall and comprising sides and ends, and a spacing device having transverse grooves adapted to rest in notches formed in the upper edges of the side sections and to extend through holes in the cores, and latches secured to the inner sides of the cores and the outer sides of the side sections to engage in the grooves in the spacing devices to hold the parts in proper position.

3. In a wall mold, the combination of cores comprising sheet metal sides and liners to separate the sides, the sides formed flat with inwardly beveled edges, the liners being substantially semi-circular in cross-section, said liners having holes in their upper and lower ends, links pivoted to the lower ends of the sides and engaging in the holes in the lower ends of the liners to guide

them when moving inwardly, and hooks pivoted to the upper ends of the liners to engage the upper edges of the sides to hold the liners outward and the sides separated.

5 4. In a wall mold, the combination of cores comprising sheet metal sides and liners to separate the sides, the engaging portions of the sides and liners being beveled so that an outward movement of the liners  
10 will separate the sides, connecting links between the lower ends of the liners and sides, and connecting hooks between the upper ends of the liners and sides to hold the core in its expanded form.

15 5. In a wall mold, the combination of side sections having notches at their upper and lower edges, cores comprising sides and liners formed with beveled engaging surfaces, connecting links between the lower ends of  
20 the sides and liners, locking hooks between the upper ends of the sides and liners, spacers resting in the notches of the side sections and passing through holes in the sides of the cores, and latches mounted on  
25 the upper edges of the side sections and on the inner face of one side of each core adjacent to the hole therein to engage in notches in the spacers to position the parts.

30 6. In a wall mold, the combination of side sections having angle bars at their edges,

connecting means between the angle bars of adjacent sections, an angle plate secured between said sections and adapted for vertical adjustment, and a laterally adjustable angle plate mounted on the first.

7. In a wall mold, the combination of side sections, an angle plate vertically mounted between adjacent sections and having vertical slots and horizontal ridges, a second angle plate mounted on the first, and having  
40 a vertical head to contact with the side sections and transverse grooves to receive the ridges on the first angle plate, and bolts to secure all the parts together.

8. In a wall mold, the combination of side sections having angles along the vertical edges, locking handles to secure the angles of adjacent sections together, said handles having vertical pins, and a stiffening bar extending along a plurality of sections and  
50 lying between the angles on the same and the pins on the locking handles.

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

JOSEPH W. HOLMAN.

Witnesses:

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EDWARD N. PAGELSEN.