

May 20, 1941.

J. HALLISY

2,242,973

BUILDING MOLD

Filed April 21, 1939

3 Sheets-Sheet 1

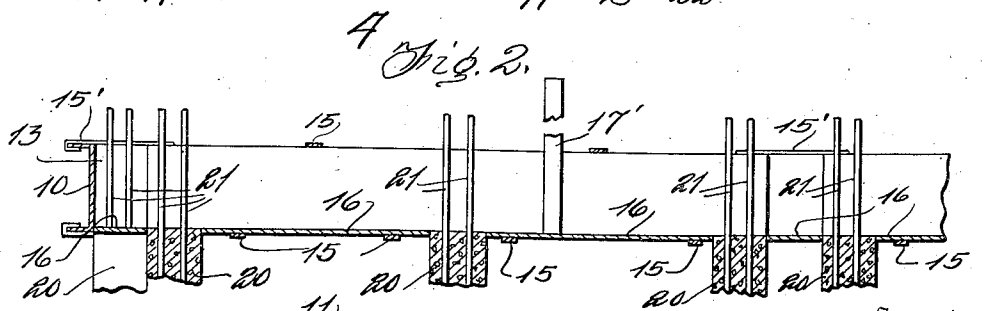
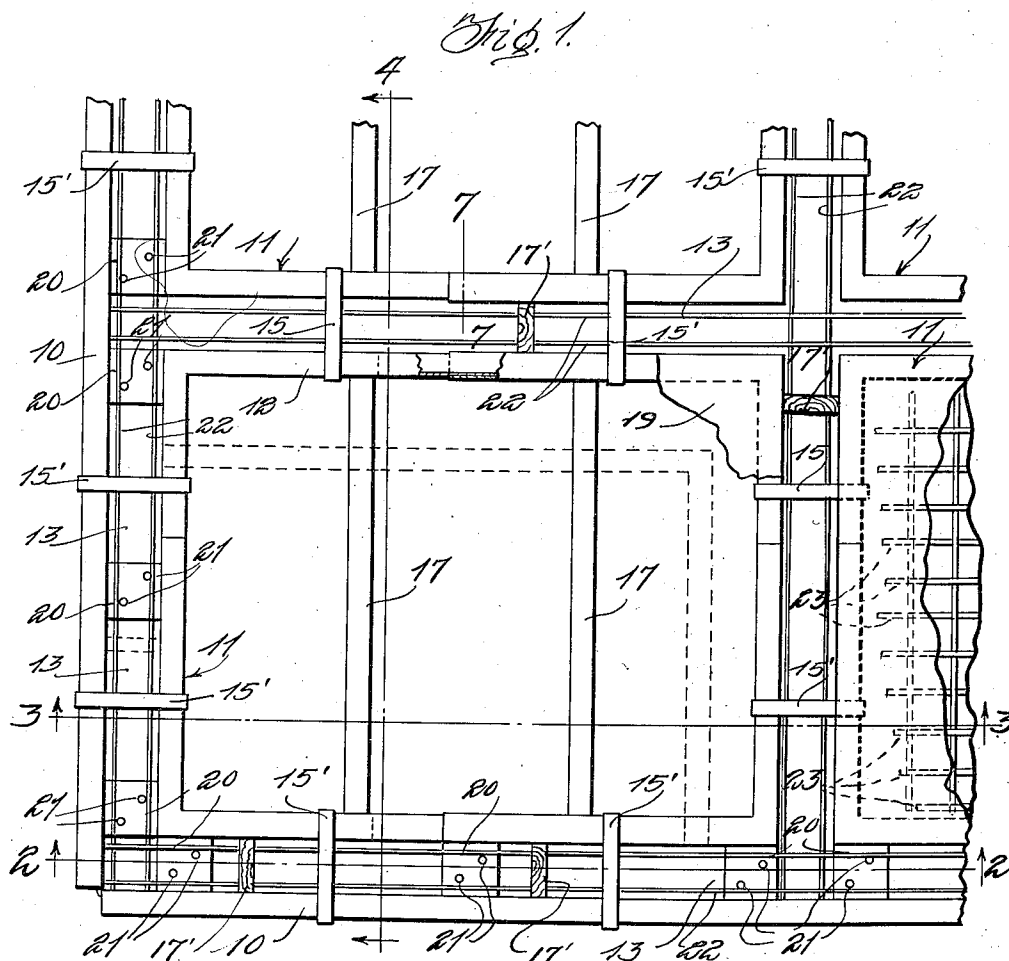
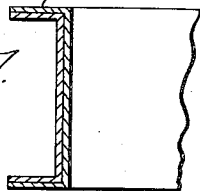


Fig. 7.



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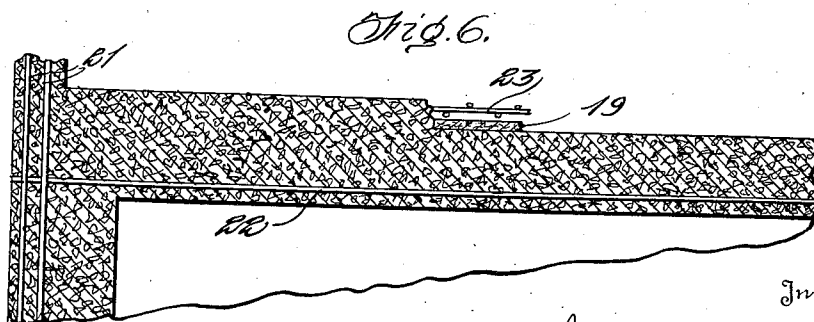
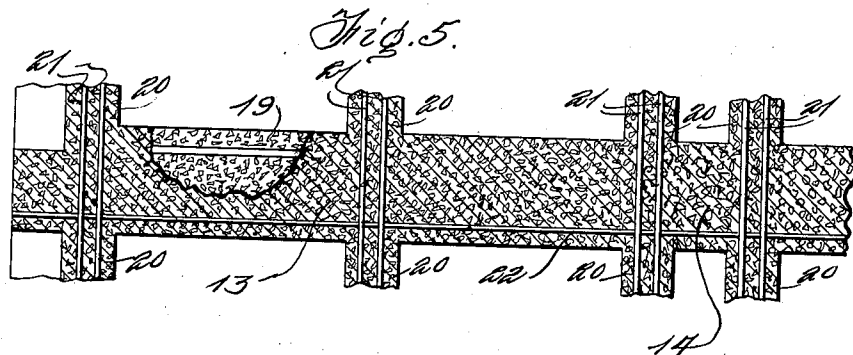
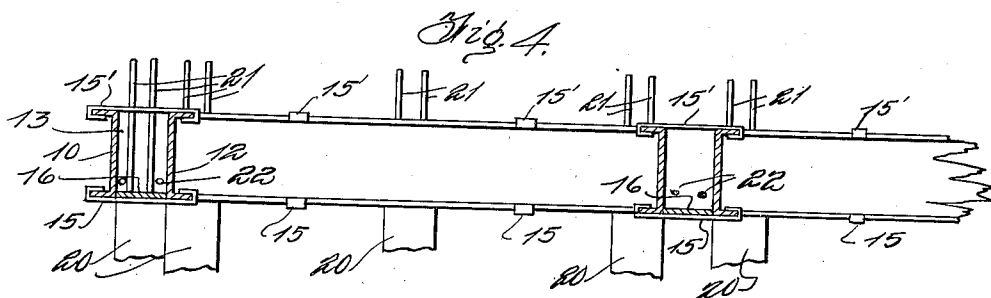
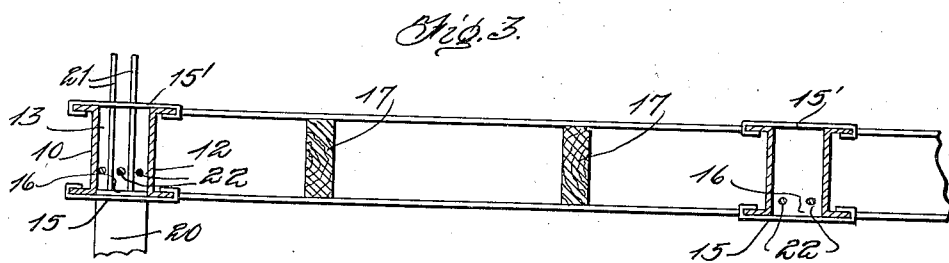
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BUILDING MOLD

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3 Sheets-Sheet 2



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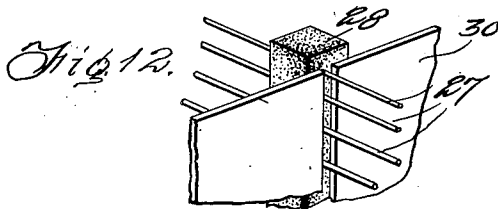
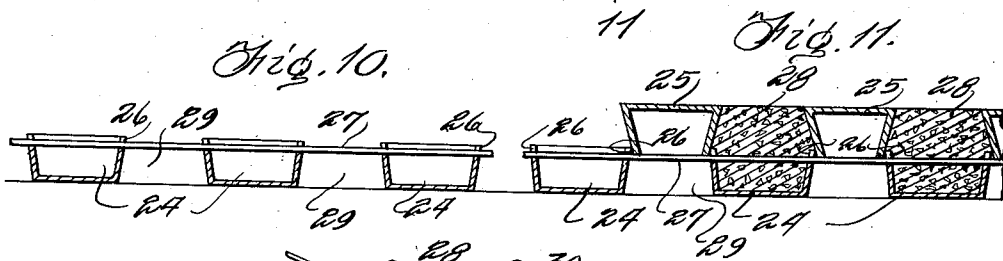
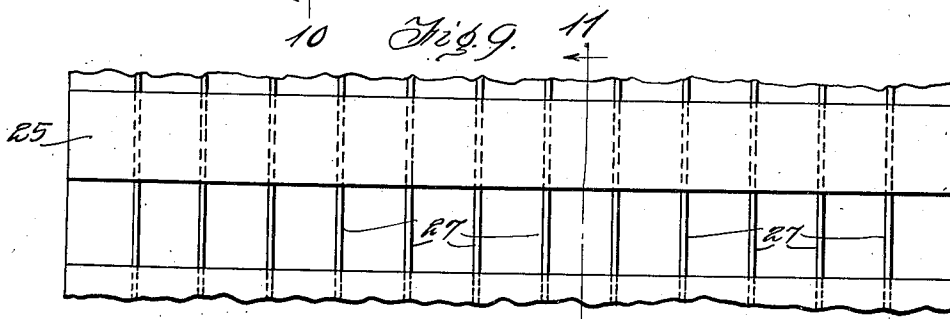
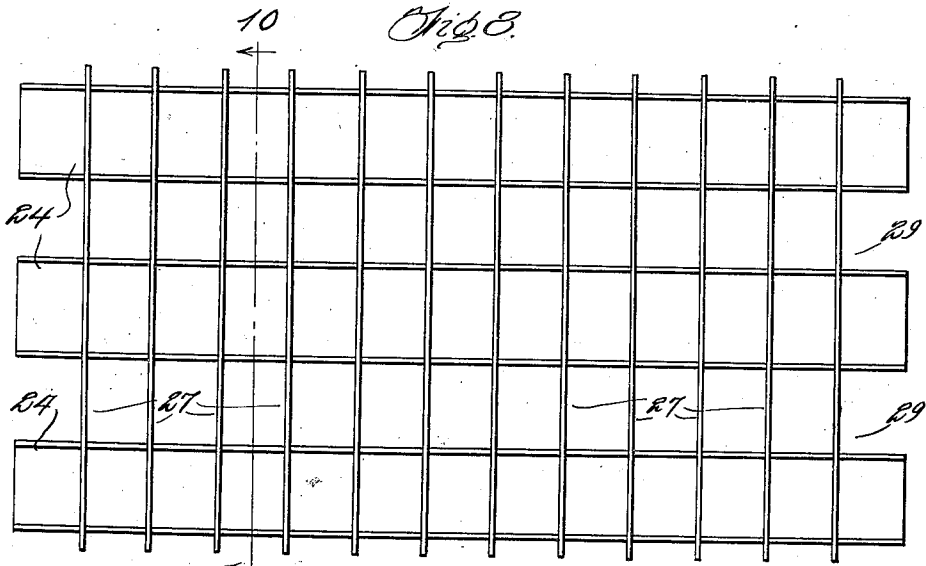
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2,242,973

BUILDING MOLD

Filed April 21, 1939

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,242,973

BUILDING MOLD

James Hallisy, Parma, Ohio

Application April 21, 1939, Serial No. 269,271

4 Claims. (Cl. 25—131.5)

This invention relates to building construction and has special reference to concrete building construction.

One of the important objects of the present invention is to provide a novel arrangement of molds for molding a building as a single concrete unit.

A second important object of the invention is to provide a novel arrangement of means for molding the outer and inner beams of a building constructed of concrete.

A third important object of the invention is to provide a novel means of molding the floor in such a building.

A fourth important object of the invention is to provide novel means for molding the various parts of a concrete building, which means are adaptable to be arranged for any particular size or shape of building.

A fifth important object of the invention is to provide novel means for so molding the outer and inner beams of a concrete structure and the floors that they are connected together to form a unitary construction.

A sixth important object of the invention is to provide means of this character which can be permanently used, that is to say can be used for one building and then transferred to another, so that there is no loss in material in the molding of the concrete for various buildings.

A seventh important object of the invention is to provide a novel means for molding posts or columns for such a building.

With the above and other objects in view, the invention consists in general of certain novel details of construction and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and—

Figure 1 is a plan view of a portion of the mold arrangement for one corner of a building construction;

Figure 2 is a detail section on the line 2—2 of Fig. 1;

Figure 3 is a detail section on the line 3—3 of Fig. 1;

Figure 4 is a similar section on the line 4—4 of Fig. 1;

Figure 5 is a view similar to Figure 2, but showing the entire application of the concrete thereto but offset to the edge of the floor;

Figure 6 illustrates a view similar to Figure 3,

but similarly showing the application of the concrete;

Figure 7 is a detail section on the line 7—7 of Fig. 1;

Figure 8 is a plan view of the lower parts of a mold for forming the columns or posts;

Figure 9 is a view similar to Figure 8 but showing part of the lower molds and part also of the upper molds;

Figure 10 is a detail section on the line 10—10 of Fig. 8;

Figure 11 is a detail section on the line 11—11 of Figure 9, but showing certain of the molds filled with the material to form the posts; and

Figure 12 is a fragmentary view showing the relation of the posts to the side wall members of the construction.

In the form of the invention herein shown, in Figure 1 there is provided a construction at each floor which consists of an outer or girdle mold member 10, preferably of channel form. At various intervals within this girdle 10 there must be provided internal mold members capable of molding the girdle beams around the outer part of the floor and also of molding the longitudinal and transverse beams of the structure. Each of the members provided for this purpose consists of a generally rectangular structure 11 having telescopic flange members 12, each of which is of rectangular construction and forms an inwardly facing channel so that between each of the general structures 11 and the girdle 10 there is formed a space 13 for the reception of the cement forming the girdle beams. The several members 11 are separated, one from another, as shown in Figure 1 so that they are spaced in such manner that cement may be poured between these members. Thus, cement may be poured between the girdle members 10 and the structures 11 to form the girdle beams indicated in Figure 5 at 13, and also, cement may be poured between adjacent members 11 to form cross beams indicated at 14 in Figure 5.

In order to effect the pouring of the cement and retain it in its position between the various members 11 and 10, the flanges of such members are connected by cross ties 15, whereon rests bottom flange members 16. Thus, the ties 15 are merely temporary ties, so that after the cement is poured, the ties 15 can be removed and the bottoms 16 can likewise be removed. It will be observed that each of the tie members 15 has upwardly and inwardly bent ends so that these tie members not only prevent spreading of the members 10 and 11 but are, by engage-

ment with the lower flanges of these members, themselves supported to in turn support the bottom members 16 without the necessity of using bolts or other like fastenings.

It will be observed from Figure 1 that the individual element 11 may be expanded as shown in full lines or contracted as shown in dotted lines so that these members may be arranged to accommodate any particular size or arrangement of building that may be desired.

In the construction of the separate panels formed by the members 11, these members 11 are spaced by wooden cross bars 17 in order that a suitable plate or covering may be applied to cover each panel, the upper flanges of the panels being connected by tie bars 15'. It is to be understood that the tie bars 15 and 15' are so arranged that they are yieldable under pressure and may be disconnected from the flanges of the respective members 12 and 10. Thus, when the mold is set up, there is provided around the building an outer trough to receive the outer beams of the building, and also there is provided a series of transverse troughs to receive the transverse beams of the building. Furthermore, the panels 11 are each covered at the top to receive the floor of the building. As shown in Figure 5, the covering for each panel is indicated at 19, and when the floor is poured, it is poured above this panel 19. It is to be understood that the floor may be made entirely of cement or either of cement combined with a supporting web of insulating material so constructed and arranged as to insulate from fire, sound and heat, or in any other manner preferred.

Between each pair of floors there is provided a series of posts 20. These posts preferably have reinforcing rods 21 therein, and also, it is further to be noted that the floor beams likewise have reinforcing rods 22 disposed therein. In addition to all this, the floor itself is preferably provided with the usual meshed reinforcing 23 which is shown best in Figure 6.

In the forming of the posts described above, it is preferable to form a number of these posts at the same time. In Figure 11 there is provided a series of slightly trough-shaped members 24 which are spaced so that other members 25 may rest thereon, some of the members 24 being provided with notches 26 to receive rods 27 which support the members 25. The side walls of the members 24 flare outwardly while the side walls of the members 25 flare inwardly. These members are all timely spaced, as best shown in Figure 11, so that there is provided a hexagonal space for the reception of a hexagonal portion 28 of cement extending along the members 24 and through which reinforcing members 27 pass. Thus, a number of the vertical posts may be made at the same time simply by filling the spaces as shown in Figure 11. Then these molds are separated, as at 29, in Figure 10 in order that the several columns are left separate and may be set up as shown in Figure 12 with the column there indicated at 28 and the reinforcing indicated at 27 as projecting from the column, whereby the side wall portions 30 may be attached to the column.

In the operation of the device, after the foundation has been laid, a certain number of the columns are erected on this foundation, as clearly shown in Figure 1, and the inner and outer molds are assembled as also shown in that figure. Then the panel units are covered as previously described and the cement poured. Of course the

necessary reinforcing will be inserted wherever desired during this operation. When these parts have all been poured, then the story from the foundation to the first floor will have been made.

After this has been done, the mold may be removed by first removing the members 15 and 15' by bending out their ends to leave the remaining parts free. After this, the members 17 may be removed by angular displacement within the frames 11, whereupon the latter may be collapsed telescopically and dropped. Then the operation may be started all over by again assembling the columns 20 above the lower columns 20 and replacing the mold devices as before stated.

Obviously, it may be necessary, in some cases, to provide wooden supports for the panel between the mold members, but nevertheless these wooden supports can be used repeatedly without injury.

From the foregoing construction, it will be seen that all of the mold members used in this device can be used repeatedly and that there will be no injury to any one of them except such as may occur by improper handling. In other words, these mold members will form mold members which can be taken from one building to another and accommodated to any size of building with any sizes of floor panels and any number or arrangement of cross beams.

There has thus been provided a simple and efficient device for accomplishing the entire molding of a building in accordance with the present invention.

It is obvious that changes may be made in the form and construction of these molds and the various arrangements of parts without departing from the material principles thereof. It is not therefore desired to confine the invention to the exact form herein shown and described, but it is desired to include all forms which properly come within the scope of the appended claims.

I claim:

1. In a building mold, an outer girdle member, inner panel members of rectangular construction having sides parallel to the outer girdle member and spaced therefrom, said girdle and panel members being of channel cross sections having vertical webs and outwardly extending flanges, tie bars connecting the lower flanges of the adjacent panel and girdle members and having intumed ends embracing the flanges of the girdle and panel members, the tie bars being straight between the intumed ends, mold bottoms resting on said tie bars and having their ends spaced from the ends of the girdle and panel ends to provide openings for the reception of the upper ends of upright posts, and means to hold the upper sides of said channel members in spaced relation.

2. In a building mold, an outer girdle member, inner panel members of rectangular construction having sides parallel to the outer girdle member and spaced therefrom, said girdle and panel members being of channel cross sections having vertical webs and outwardly extending flanges, tie bars connecting the lower flanges of the adjacent panel and girdle members and having intumed ends embracing the flanges of the girdle and panel members, the tie bars being straight between the intumed ends, mold bottoms resting on said tie bars and having their ends spaced from the ends of the girdle and panel ends to provide openings for the reception of the upper ends of upright posts, and means to hold the upper sides of said channel members in spaced

relation, said panel members having the channel sides telescopically connected.

3. In a building mold, an outer girdle member, inner panel members of rectangular construction having sides parallel to the outer girdle member and spaced therefrom, said girdle and panel members being of channel cross sections having vertical webs and outwardly extending flanges, tie bars connecting the lower flanges of the adjacent panel and girdle members and having inturnd ends embracing the flanges of the girdle and panel members, the tie bars being straight between the inturnd ends, mold bottoms resting on said tie bars and having their ends spaced from the ends of the girdle and panel ends to provide openings for the reception of the upper ends of upright posts, means to hold the upper sides of said channel members in spaced relation, said panel members having the channel sides telescopically connected, and means to releasably hold the panel members in expanded position.

4. In a building mold, an outer girdle member, inner panel members of rectangular construction having sides parallel to the outer girdle member and spaced therefrom, said girdle and panel members being of channel cross sections and having their flanges extending outwardly, tie bars connecting the lower flanges of the adjacent panel and girdle members, said tie bars having inturnd ends engaging over the said flanges whereby the tie bars prevent spreading of the girdle and inner panel members and are removably supported by said flanges, said tie bars being straight between the inturnd ends, mold bottoms resting on said tie bars and having their ends spaced from the ends of the girdle and panel ends to provide openings for the reception of the upper ends of upright posts, and means to hold the upper sides of said channel members in spaced relation.

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