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C. A. LANDON
MOLDING FORM FOR USE IN PRODUCING CONCRETE
BURIAL VAULTS AND THE LIKE

2,486,038

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2 Sheets-Sheet 1

FIG. 1.

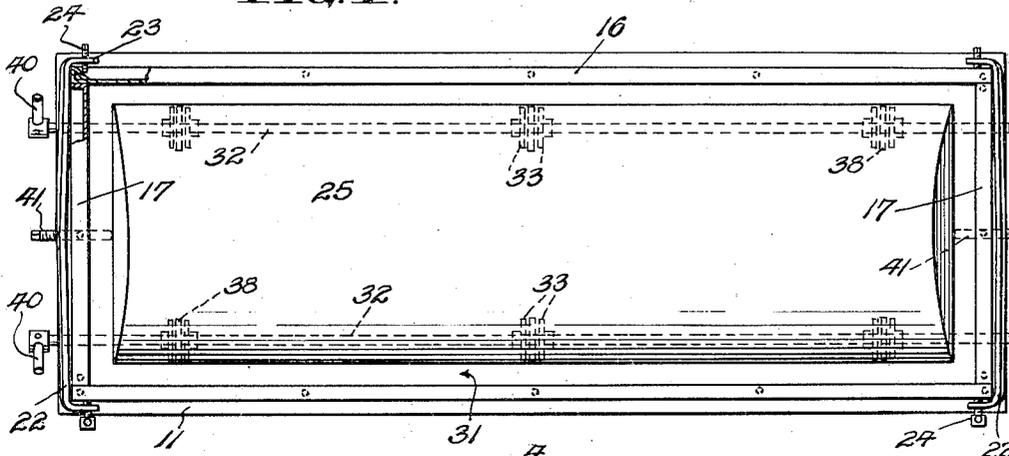


FIG. 2.

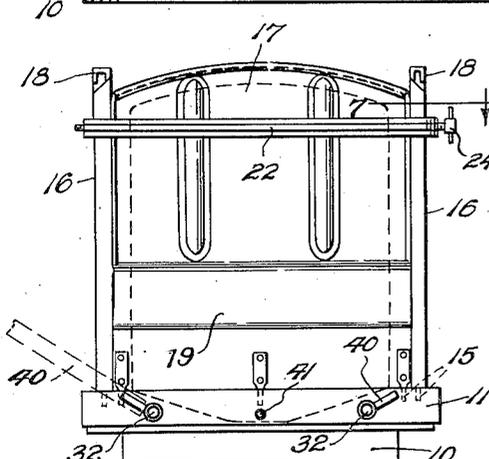
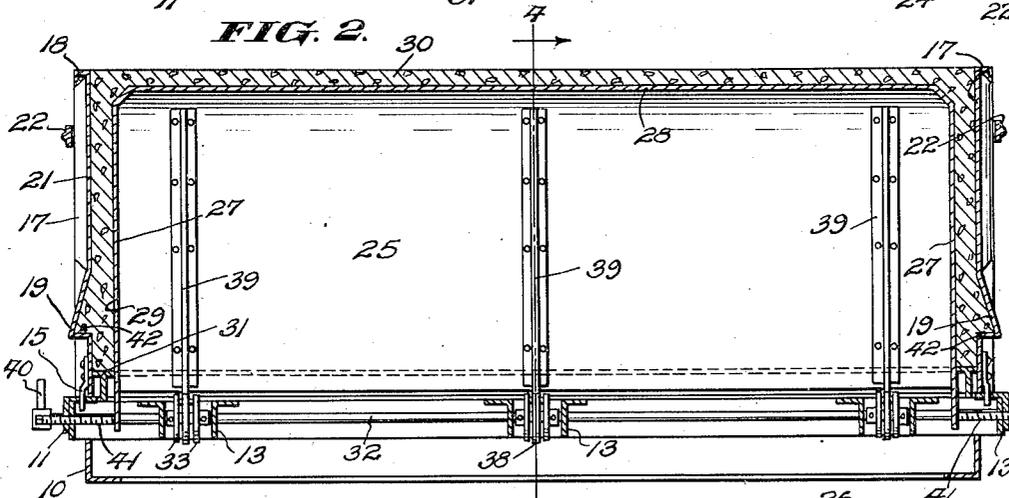


FIG. 3.

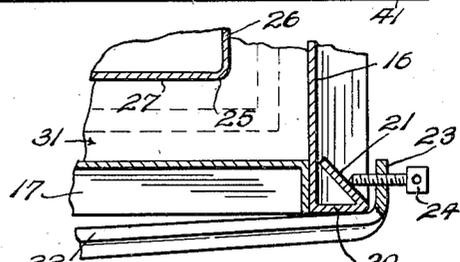


FIG. 7.

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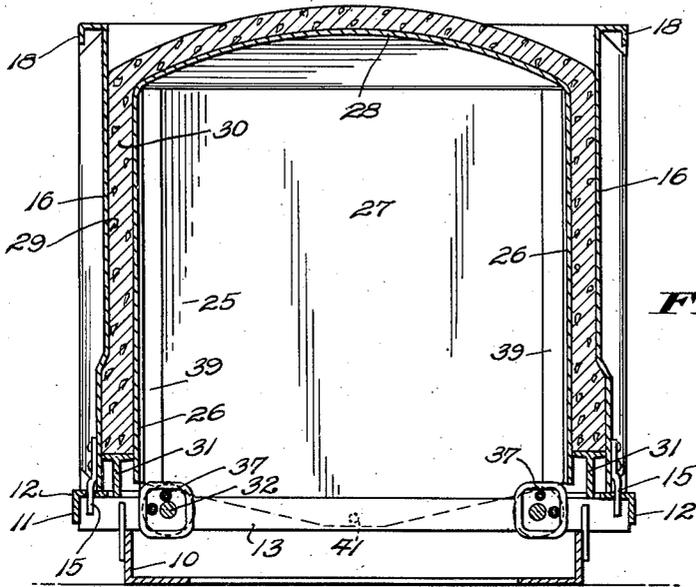


FIG. 4.

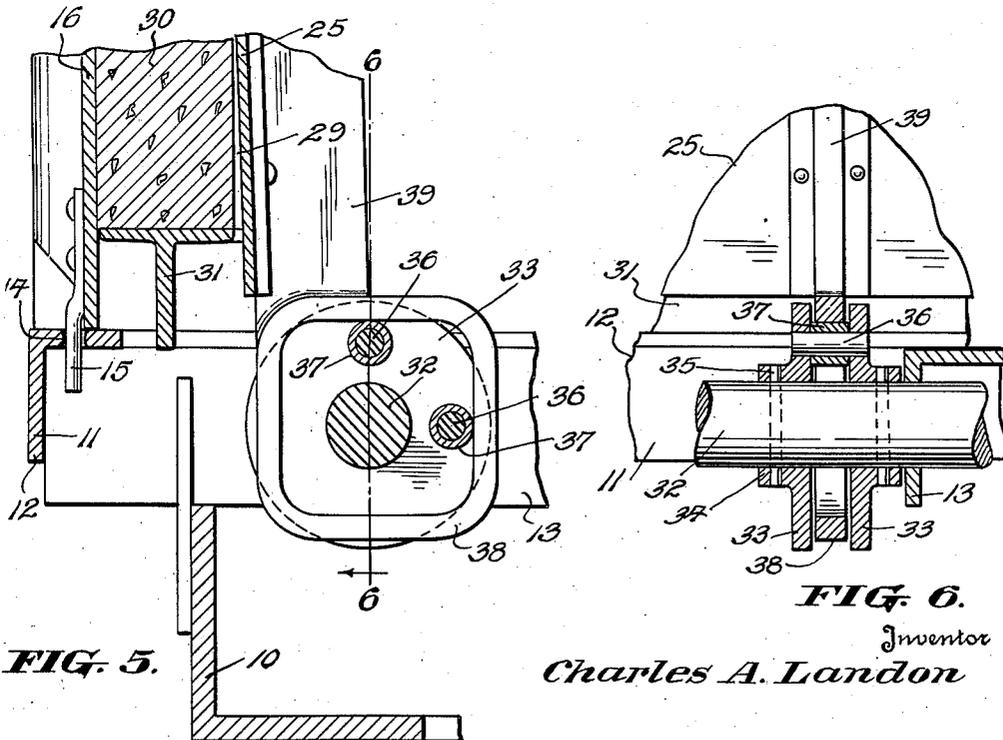


FIG. 5.

FIG. 6.

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MOLDING FORM FOR USE IN PRODUCING CONCRETE BURIAL VAULTS AND THE LIKE

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2 Claims. (Cl. 25—130)

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This invention relates to molds or forms for use in the casting of concrete articles or devices and, more particularly, to the formation of concrete burial vaults.

Molding forms hitherto used in the formation of the open-bottomed hood sections of concrete burial vaults have been objectionable in several important respects, particularly in the matter of the difficulty encountered in their use when removing the forms from the molded concrete bodies. Usually, the forms must remain within and around the concrete body for extended periods of time, that is, until the body, following pouring, sets and hardens to a degree permitting the connected form members to be separated from contact with the walls of the concrete body and removed therefrom.

Such molding forms include an internal metallic core section and an outer form section having side and end walls which are spaced from the adjacent walls of the core section. After the setting and hardening of a concrete body formed between said section, the outer section is removed from contact with the body so that the latter may be lifted to remove the same from the internal core section. During such lifting operations, the tendency has been for the walls of the concrete body in contact with the core section to scale or score, leaving substantial deposits thereof in adherence with the walls of the core section, a condition rendering the cast body unsuitable in many cases for use.

The present invention, therefore, has for its objects, among others, to provide an improved mechanical molding form for producing the hood sections of concrete burial vaults wherein improved means are provided of a mechanical nature by which the side and end walls of the internal form or core section are flexed laterally and inwardly in a manner to break adherence with the cast concrete body in contact therewith, whereby to avoid injury to the latter in the operation of removing the cast body from the form; to provide a molding form of this character in which the wall-flexing means for the core section is so constructed that, following inward flexing of the core walls, the entire core section may then be moved vertically and downwardly to break adherence between the top wall of the core section and the adjacent top wall of the cast concrete body; to provide a molding form for the use set forth wherein the outer vertical and end walls of the form, which are spaced from those of the core section, may be swung outwardly and downwardly to remove the same from engage-

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ment with the outer walls of a cast concrete body, so that following the releasing of the walls of the core section, and the outer side and end walls from engagement with the cast body, the latter is rendered freely accessible for a lifting operation in which it is removed completely from the molding form; and to provide a molding form which permits of rapid production of cast concrete bodies and in which the form remains in active position in contact with the cast body for a reduced period of time as compared with the forms of the prior art, whereby to permit a single molding form to be used in a given period of time in a greater number of molding operations than is now possible with conventional apparatus.

With these and other objects and advantages in view, the invention consists in the novel features of construction, combinations of elements and arrangements of parts hereinafter more fully described and pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a top plan view of a molding form for producing cast concrete articles, and constructed in accordance with the present invention;

Fig. 2 is a vertical longitudinal sectional view taken through the molding form;

Fig. 3 is an end elevational view thereof;

Fig. 4 is a vertical transverse sectional view taken through the form on the plane disclosed by the line 4—4 of Fig. 2;

Fig. 5 is a detail vertical transverse sectional view on an enlarged scale and disclosing more particularly the cams employed for flexing the side walls of the core section of the form;

Fig. 6 is a sectional view on the plane indicated by the line 6—6 of Fig. 5;

Fig. 7 is a detail horizontal sectional view on the plane indicated by the line 7—7 of Fig. 3.

Referring more particularly to the drawings, my improved molding form in a preferred embodiment comprises a base frame 10 composed of angle irons and substantially rectangular in configuration. Positioned on the base frame is a platform 11 which, also, is substantially rectangular in configuration, being composed of longitudinally extending angle irons 12 and a plurality of relatively spaced transversely extending angle irons 13, all of which being rigidly united. The horizontal webs of the angle irons 12 and the end angle irons 13 are formed with openings 14, which loosely receive positioning studs 15 carried by the lower edges of the outer vertically disposed side plates 16 of the molding form and the adjoining vertically disposed end

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plates 17 thereof. The upper edges of the plates 16 and 17 may be formed with outwardly and downwardly directed flanges 18 for reinforcing and handling purposes. Also, the end plates, and the side plates if desired, may be formed with outwardly directed shoulder-producing formations 19.

The side plates 16 have their vertical end edges, as shown in Fig. 7, formed with laterally turned flanges 20 which terminate in inwardly directed angularly disposed webs 21. To fasten the adjoining edges of the side and end plates in a detachable but rigidly joined manner, use is made of end yokes 22. The ends of these yokes terminate in laterally extending lugs 23, which are formed with threaded apertures for the reception of clamping screws 24. The inner ends of these screws bear on the angular webs 21 of the flanges 20. When the screws are tightened, the side plates 16 are forced against the edge flanges of the end plates in a firm and secure manner.

By this construction, the outer walls of the molding form are retained in rectangular order during casting and setting operations, and when these operations have been completed, the screws 24 are loosened and the yokes 22 removed, so that the side and end plates may oscillate about the axes provided by the positioning of the studs 15 in the openings 14 of the platform, thus removing the side and end plates from engagement with a cast cementitious body produced in the form.

In association with the outer walls of the form, use is made of an inner form or core section 25. This core section is formed preferably from sheet metal and comprises an open-bottomed structure having vertical side walls 26, end walls 27 and an arched top wall 28. The side and end walls 26 and 27 of the core section are appropriately spaced from the side plates 16 and the end plates 17 forming the outer walls of the molding or casting form, whereby to provide spaces 29 for the reception of the cementitious mixture which is poured into such spaces for the purpose of producing the hood section 30 of a concrete grave vault. The bottoms of the spaces 29 are closed by means of a rectangular frame 31, which is substantially T-shaped in cross-sectional configuration, the frame 31 resting loosely on the platform 11.

Following the pouring of the cementitious mixture forming the hood section 30, and the subsequent setting and hardening period therefor, and when it is desired to remove the molded hood section from the form, the side walls 26 and the end walls 27 of the core section are first flexed inwardly and laterally for the purpose of breaking any adherence between these walls and the cementitious body. Such flexing may be accomplished advantageously by mounting rotatably in the transverse angle members 13 of the platform a pair of spaced longitudinally extending shafts 32.

As shown more particularly in Figs. 5 and 6, these shafts have fixed thereto at longitudinal intervals pairs of spaced disks 33, each disk being formed with a hub 34, which is pinned as at 35 to one of the shafts 32. Each complementary pair of disks carries studs 36, which receive roller sleeves 37. These sleeves are disposed for engagement with the inner surfaces of substantially square, ring-like cam members 38, the latter being welded or otherwise permanently secured to the lower ends of bars 39, which are rigidly fastened to the inner surfaces of the side walls 26. The shafts 32 are provided at one end of the

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form with manipulating handles 40, by which the shafts may be conveniently rocked. By reference to Fig. 4, it will be noted that when the shafts are rocked to position the roller sleeves on the outside, the side walls 26 will be flexed, or caused to assume true vertical positions in parallelism with the side plates 16. However, as shown in Fig. 5, when the shafts 32 are rocked to position the sleeves 37 on the inner sides of the cam members 38, the side walls are flexed laterally about their regions of joinder with the top wall 28, thus removing the side walls from adhering engagement with the surfaces of the concrete body 30.

The end walls 27 are similarly flexed by the provision of the screws disclosed at 41. These screws are mounted in threaded openings provided therefor in the end members of the platform 11, and the inner ends of the screws press on the lower flexible portions of the end walls 27 to flex the latter inwardly and free the same from adhering engagement with the cast concrete body.

After such lateral flexing of the side and end walls 26 and 27 of the core section, the latter is moved downwardly and vertically by continuing the rocking action of the shafts 32, so that the rolled sleeves 37 will engage with the lower portions of the cam members 38, thus removing the arched top wall 28 of the core section from adhering engagement with the cementitious top wall of the hood section 30. Following such release of the core section of the molding form, the side and end plates 16 and 17 are disconnected by removing the end yokes 22, allowing these plates to swing upwardly and laterally or, if desired, to be removed entirely from the platform 11. The formed vault section may then be removed from the form by engaging cable means, not shown, with the shoulders 42 formed on the ends of the hood section 30 by the beveled formations 19 of the end plates 17. The cable means may form a part of a commercial hoist or crane, by which the completed hood section may be lifted and transferred to desired positions of deposit.

It will thus be seen that the present invention provides a readily assembled forming means for the casting of various concrete articles, such, for example, as vault sections, although the apparatus is not limited to this particular use. The apparatus may be quickly set up to permit of a given pouring operation, and upon the conclusion of this operation, and the subsequent setting and hardening period, the vault may be conveniently removed from the form in a manner preventing injury to the cast product, this object being attained primarily by the lateral flexing of the walls of the core section before the core section is lowered to release the top wall thereof from engagement with the top wall of the cast product, and, also, by the outward lateral movement of the outer side and end plates 16 and 17 of the form.

I claim:

1. In apparatus for molding hollow cementitious bodies, a base, an open bottom core positioned on said base, said core embodying side, end and top walls of sheet metal, a pair of longitudinally extending transversely spaced rock shafts journaled in bearings carried by said base, bars secured to the inner surfaces of the side walls of said core, cam extensions formed with the lower ends of said bars and through which extensions said rock shafts pass disk means disposed in registration with said bars and rotatable with said shafts, and transversely disposed studs

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carried by said disk means and engageable with said cam extensions to flex the side walls of said core inwardly upon initial movement of said rock shafts in one direction and move said core downwardly upon the following movement of said rock shafts in the same direction.

2. In a form for molding cementitious articles, a base frame, an open bottom core positioned on said base frame, said core embodying side, end and top walls forming a unitary one-piece structure, said side walls having limited flexibility in a lateral direction, substantially rectangular cam devices carried by said side walls contiguous to their lower edges, rock shafts journaled in said base frame and extending through said cam devices, and studs positioned in said cam devices and rotatable with said rock shafts for flexing

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said side walls inwardly upon initial rotation of said rock shafts in a given direction and move the core bodily downwardly toward said base frame upon continued subsequent movement of said rock shafts in said given direction.

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The following references are of record in the file of this patent:

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