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2,228,123

APPARATUS FOR MOLDING CONCRETE BURIAL VAULTS

Filed June 28, 1939

2 Sheets-Sheet 1

FIG. 1.

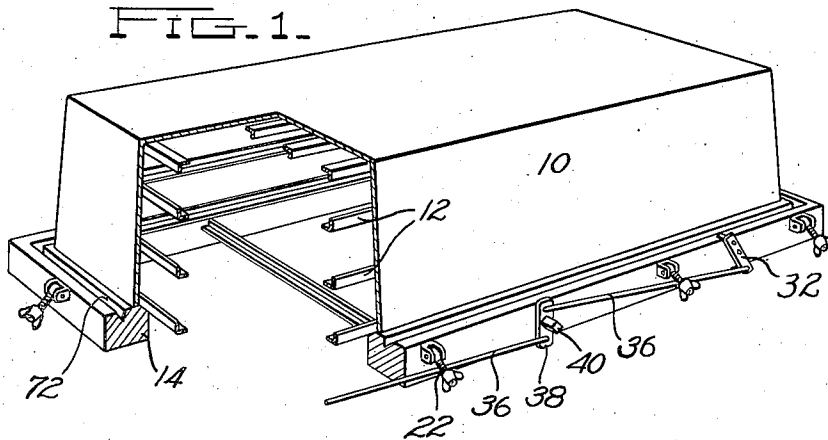


FIG. 2.

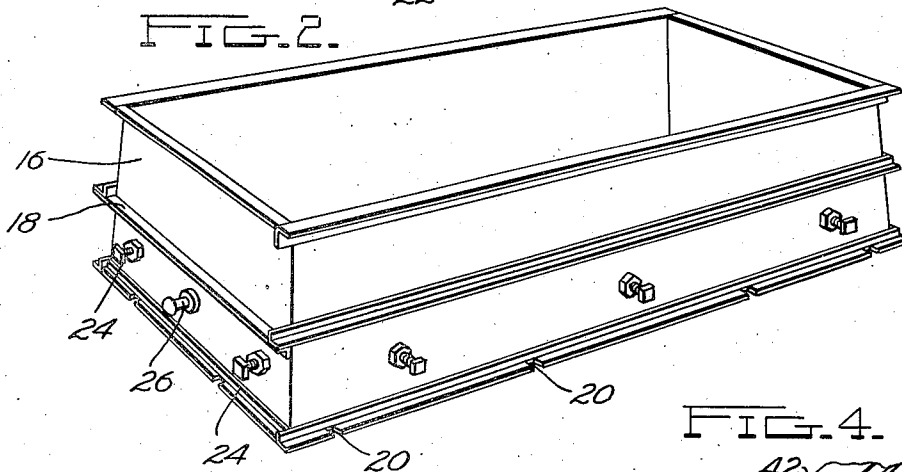


FIG. 4.

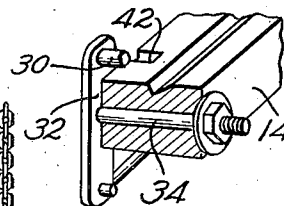
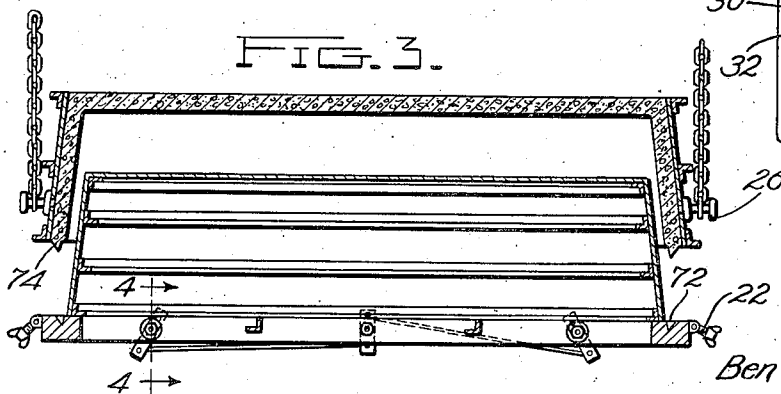


FIG. 3.



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FIG. 5.

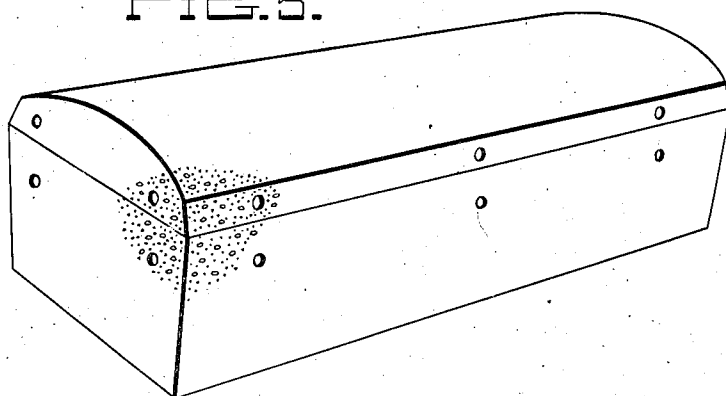


FIG. 6.

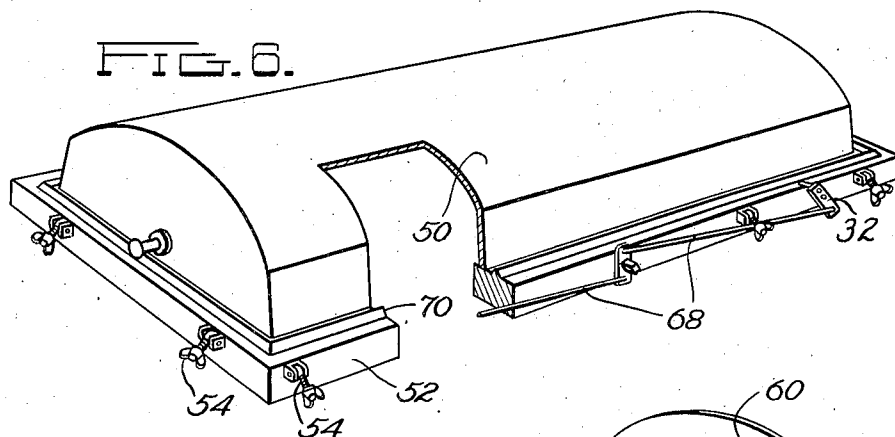


FIG. 7.

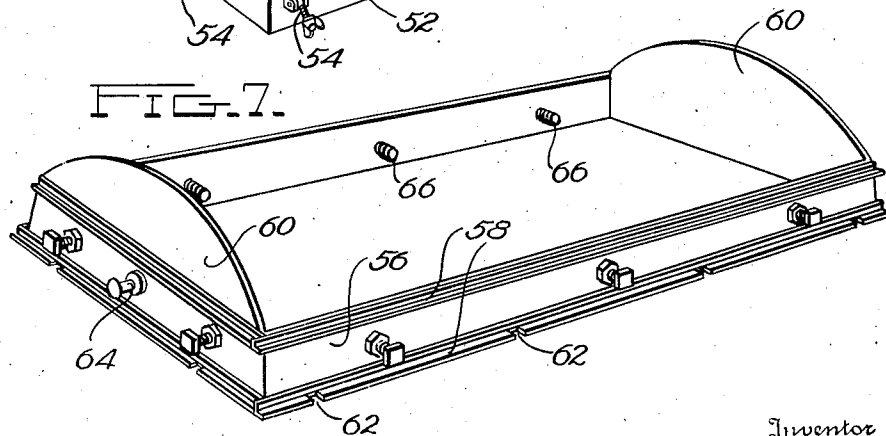
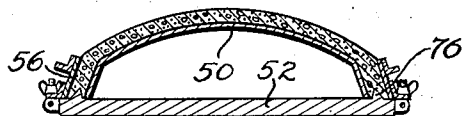


FIG. 8.



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APPARATUS FOR MOLDING CONCRETE
BURIAL VAULTS

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Application June 28, 1939, Serial No. 281,670

4 Claims. (Cl. 25—130)

This invention relates to apparatus for molding concrete burial vaults and has for its primary object the provision of a simple and inexpensive mold set for burial vaults or similar articles whereby the time consumed in casting a concrete burial vault is materially reduced.

Another object of the invention is the provision of a casting apparatus for concrete burial vaults or similar articles in which the finished, cast product is removed directly from the forms without dismantling the latter, whereby material saving in time and labor results.

Other objects and advantages of the invention will become apparent as the description proceeds, reference being had to the accompanying drawings disclosing a suitable apparatus for carrying out the method and in which—

Figure 1 is a perspective view, with parts broken away, of the inner form and pallet for a bottom of a burial vault;

Fig. 2 is a perspective view of an outer form which cooperates with the form shown in Fig. 1;

Fig. 3 is a center vertical section illustrating a finished bottom half of a burial vault being removed from the lower form in accordance with the present invention;

Fig. 4 is a section on line 4—4 of Fig. 3;

Fig. 5 is a somewhat diagrammatic, perspective view of a finished burial vault;

Fig. 6 is a perspective view, with parts broken away, of an inner form and pallet for a burial vault cover;

Fig. 7 is a perspective view of an outer form for the cover which cooperates with the form shown in Fig. 6, and Fig. 8 is a center vertical section showing a cast cover between the forms shown in Figs. 6 and 7.

Referring to the drawings, the apparatus includes a rectangular inner form of continuous sheet metal or similar material 10, suitably reinforced on the interior by angle irons 12 and permanently fixed to a pallet ring 14. The form 10, as above noted, is in effect at least, a continuous, single sheet of metal or other material of sufficient strength and rigidity to suffice to support concrete poured thereover in sufficient mass to form the lower, rectangular portion of a burial vault.

To cooperate with the inner form 10, an outer rectangular form 16 similarly reinforced on its perimeter by angle irons or similar metal members 18, is provided and is adapted to rest in a predetermined position on the pallet ring 14 so that it may be fixed in predetermined spaced relation to the inner form 10. The lower angle

iron 18 may be slotted at intervals as at 20, to receive hold-down bolts 22 carried by the pallet ring 14. The hold-down bolts serve to center the outer mold 16 with relation to the inner mold 10 and to hold the outer mold firmly in position on the pallet during a casting operation. The hold-down bolts may be made in any suitable form.

At spaced intervals on the periphery of the outer mold 16 means are provided for the insertion of pins 24 which project partially into the space between the molds and hence into an article cast therein as will be more fully described hereinafter. In addition to the provision of pins 24, the outer mold 16 also carries lifting lugs 26 at each end thereof positioned slightly below the resulting center of gravity of a completed, cast section and the outer mold 16.

In order to start separation of a cast concrete vault section from the pallet ring 14, break-away means are provided on each longitudinal side of the pallet ring and, as shown in Fig. 4, include pins 30 carried on the ends of rocking levers 32 pivoted on pins 34, which may extend through the adjacent portion of the pallet ring 14. Each lever 32 is connected by a tension link 36 to an operating lever 38 which may be manually turned by a suitably formed shaft 40. A socket wrench or similar device may engage the crank 40 and be used to impart turning movement thereto and hence exert tension on the links 36 to turn the end levers 32 and pull pins 30 upwardly. From an inspection of Figs. 3 and 4, it will be apparent that pins 30 underlie the resting position of the lower angle iron 18 on the perimeter of the outer mold 16 and are normally received in slots 42 in the pallet ring but may be pulled out of the slots and cammed against the angle iron and hence the outer mold section to start the latter away from the pallet ring.

The method of casting the lower half of a concrete burial vault with the apparatus so far described is extremely simple and saves considerable time over the methods previously employed. The outer mold section 16 is assembled with the inner mold section merely by lowering it onto the pallet ring 14 and by tightening the hold-down bolts 22 to center the mold sections. Pins 24 are then inserted in the space between the molds to a predetermined distance so that they project substantially half-way between the outer mold section 16 and the adjacent side surface of the inner mold section 10. Concrete of suitable consistency is thereafter poured between the forms to the upper level of the outer mold

section 16. The concrete is permitted to set and assume a predetermined hardness after which the hold-down bolts are released. The outer mold section and cast body are then broken away from the pallet ring 14 by camming them slightly upwardly by means of the pins 30. In this manner the outer mold section and the cast article are started away from the pallet ring and inner mold 10 and the separation is completed by lifting the outer mold and cast member upwardly away from the inner mold by attaching chains or similar lifting devices to the lugs 26 on each end of the outer mold. As above noted, the lifting lugs 26 are placed below the center of gravity of the outer mold section and cast body so that after these parts are separated from the inner mold the mold and cast body are inverted and rested on any suitable support which does not extend beyond the marginal edge of the cast body. The pins 24 are then removed and the outer mold 16 stripped from the vault section merely by tapping it a few times with a hammer to loosen it. The holes left by the pins 24 may be conveniently used as handling holes or the body can be moved in any suitable manner and allowed to cure. The outer mold is then ready to be again associated with the inner mold 10 for a repetition of the casting operation.

In order to complete the type of burial vault shown in Fig. 5, a cover must be cast by means of the molds shown in Figs. 6, 7 and 8. The inner mold section includes a domed metal member 50, the various walls of which are made functionally integral with each other and are associated with a pallet ring 52 carrying hold-down bolts 54 in the same manner as previously described in connection with the inner mold section 10.

The outer mold for the vault cover includes a substantially rectangular body 56 reinforced on its perimeter by upper and lower angle irons 58 and having upstanding end portions 60. The lower angle iron 58 may be slotted as at 62 for the reception of the hold-down bolts 54, as previously described. Lifting lugs 64 are carried at each end of the outer mold 56 in order that the outer mold and its associated cast cover may be stripped from the inner mold. Pins 66 are provided which enter the intervening space between the assembled mold sections and hence are cast into the cover to serve as a means to hold the cover and outer mold together during the stripping operation.

The same mechanism may be used to break the cast body and outer mold 56 away from the pallet ring 52 as described in connection with the forms for the lower portion of the burial vault. This mechanism may include tension links 68, the remainder of the mechanism being exactly as previously described. In the use of the mold sections shown in Figs. 6, 7 and 8, it is only necessary for the operator to lower the outer mold section 56 into position on the pallet ring 52 and center it by means of the hold-down bolts 54 working in slots 62. Concrete is then poured over the domed inner form 50 to the proper depth and permitted to harden. The cast section and outer mold 56 are then broken away from the inner mold 50 and pallet 52 by means of the tension links 68 and their associated camming pins. The completed casting is then stripped from the inner mold, the pins 66 removed from the outer mold and the latter stripped from the casting. The holes left by the removal of pins

66 in the case of the cover, and by pins 24 in the case of the lower portion of the vault, are subsequently used for the insertion of handling devices in the transportation and use of the vault.

It will be noted that the method employed in the present invention strips the cast section away from the inner mold and in addition, strips the cast section away from the pallet so that only the outer mold section remains to be stripped from the completed cast article.

In burial vaults of the character with which the present invention is concerned, some sealing means are generally provided between the upper and lower vault sections, generally in the shape of a groove or reentrant portion in the top of the lower section. Difficulty is experienced in closing vaults of this character for the reason that dirt falling on to the vault fills the groove and prevents setting of the two halves of the vault. The present invention reverses the grooving procedure and provides the groove in the cover and a cooperating V-shaped extension on the lower section. Thus the pallet ring 52 is provided with an upstanding V-shaped projection 70, and the pallet ring 14 is provided with a V-shaped groove 72 of identical form. The projection 70 thus formed on the lower part of the vault deflects dirt falling thereon and assures a tight setting of the cast cover on the lower portion of the vault. In addition to reversing the usual grooving and gaining the advantage above noted, the present invention so constructs the V-shaped projection as to make it considerably stronger than those heretofore used. It has been customary for the V-shaped projection to be "centered," that is, with the apex of the V over the midpoint of the base thereof. In the present instance the V-shape employed is "off-set," that is, the apex is removed toward the interior of the vault, thus providing a long leg 76 for the V, which latter is substantially in alignment with the side thrust exerted by the cover when acting as a supporting arch. The resulting projection has been found to be much stronger than the centered type previously employed.

While the present invention has been shown in connection with a particular form of apparatus, various modifications and changes will suggest themselves to those skilled in the art, and such changes may be made without departing from the invention as defined in the appended claims.

What I claim as new and desire to secure by United States Letters Patent is:

1. In an apparatus for molding concrete burial vaults or similar articles, a functionally one-piece inner mold section, a pallet ring fixed to said mold section, an outer mold section adapted to be seated upon said pallet ring in predetermined spaced relationship to said inner mold section, means to center said mold sections and to hold them in said predetermined spaced relationship, means to break a cast article away from said inner mold section and said pallet, and lifting means carried by said outer mold section to strip the cast article from said pallet and from said inner mold section.

2. In an apparatus for molding concrete burial vaults or similar articles, a functionally one-piece inner mold section, a pallet ring fixed to said mold section, an outer mold section adapted to be seated upon said pallet ring in predetermined spaced relationship to said inner mold section, means to center said mold sections and to hold them in said predetermined spaced re-

relationship, means to break a cast article away from said inner mold section and said pallet, and lifting means disposed below the center of gravity of said cast article and carried by said 5 outer mold section to strip the cast article from said pallet and from said inner mold section.

3. Apparatus in accordance with claim 2 and releasable means to connect the cast article and

outer mold section during the initial stripping operation.

4. Apparatus in accordance with claim 2 in which said means to break the cast article from the pallet includes camming members working 5 against said outer mold section and carried by said pallet.

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