

Feb. 28, 1939.

A. JAKOBSEN

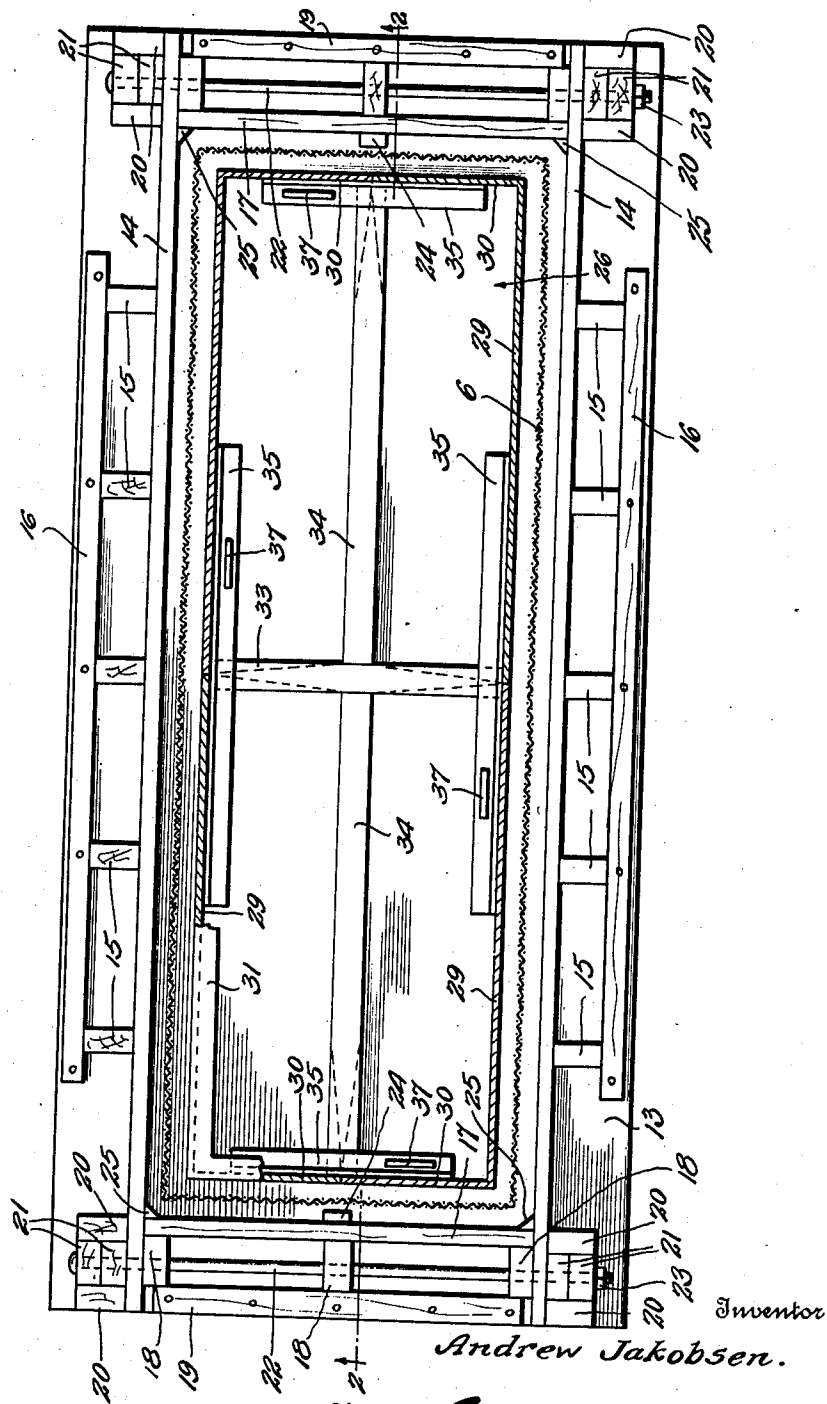
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CONCRETE VAULT MOLD

Filed June 26, 1937

3 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

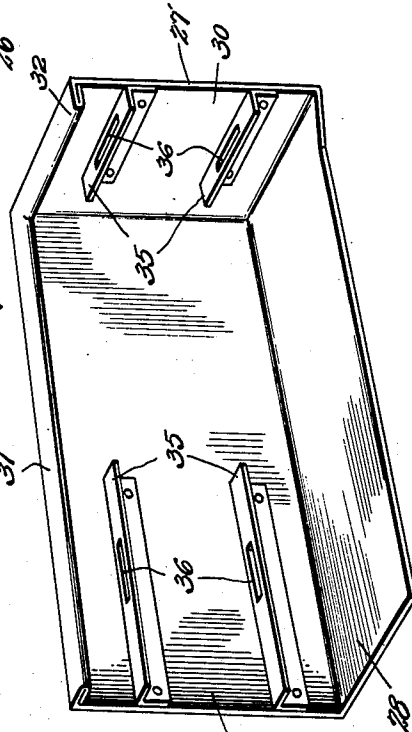
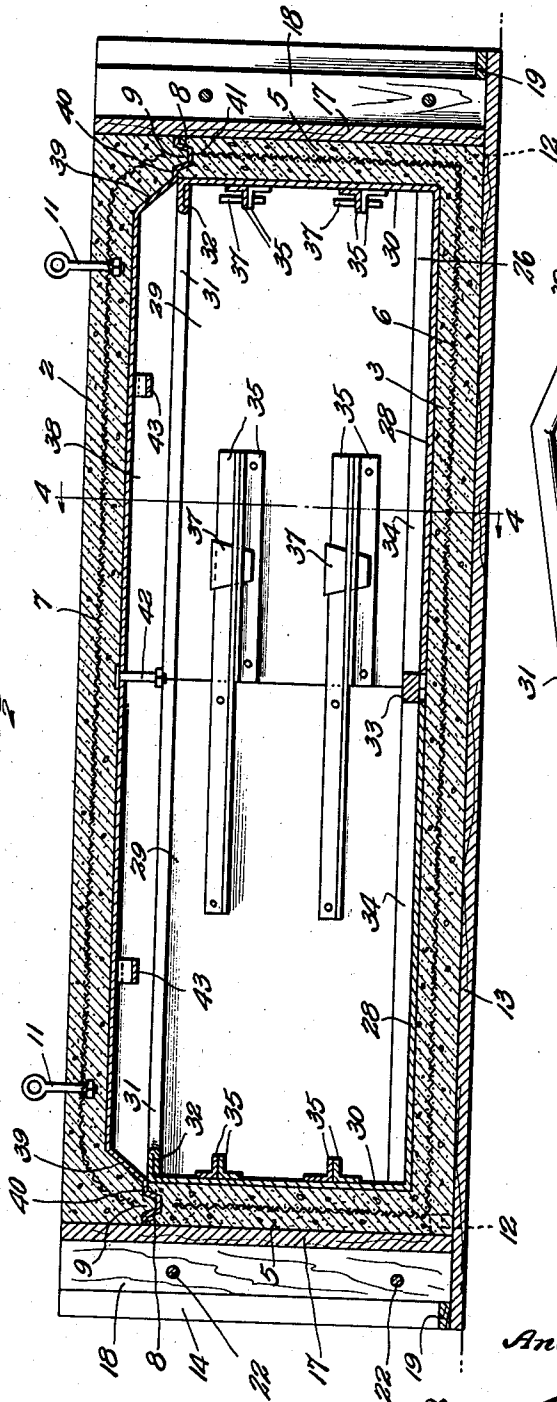


Fig. 3.

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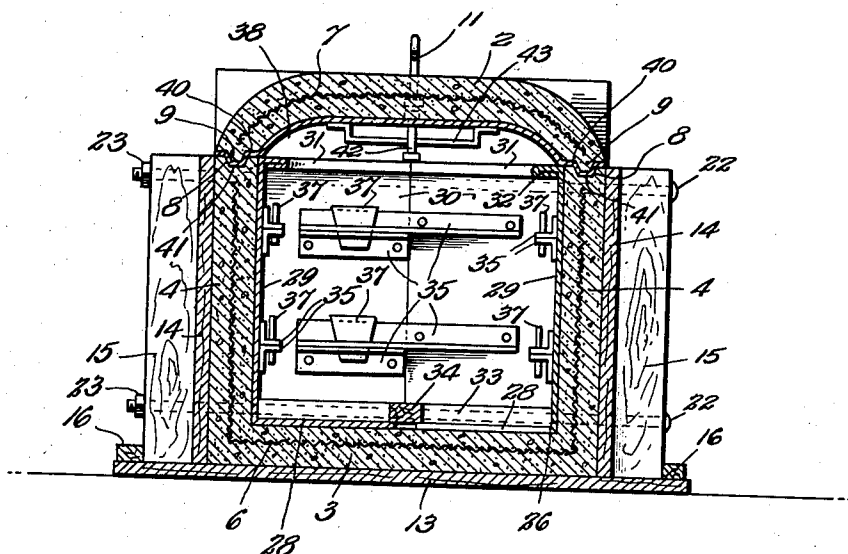
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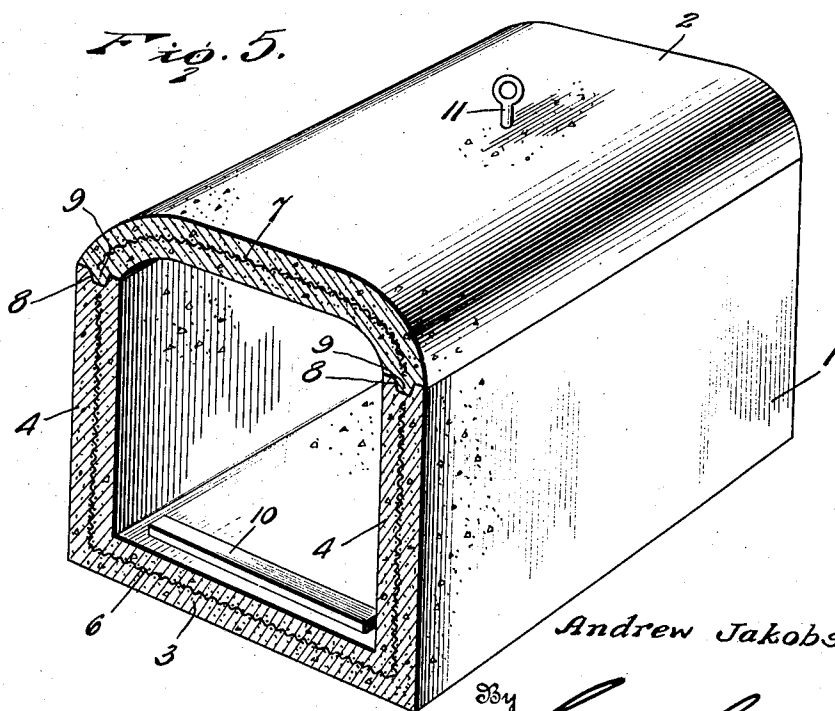
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*Fig. 4.*



*Fig. 5.*



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## UNITED STATES PATENT OFFICE

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## CONCRETE VAULT MOLD

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7 Claims. (Cl. 25—130)

This invention relates to a concrete vault used for burial purposes and one object of the invention is to provide a vault which will be formed of set concrete or the like and have a body and a cover so constructed that they will be very strong and durable and not liable to easily crack.

It is another object of the invention to so form the body portion and the cover of the vault that, when the cover is set in place upon walls of the body, a very good joint will be formed between contacting edge faces of the cover and the walls of the body.

It is another object of the invention to provide improved apparatus for making the vault, this apparatus being in the form of a mold of such construction that the body portion and the cover can be formed in the same mold and thus fit together accurately when removed from the mold.

Another object of the invention is to provide a mold which may be formed of wood and will be very strong and durable and capable of withstanding hard usage.

Another object of the invention is to provide the mold with inner sections formed of sheet metal and of such construction that, while the vault may be molded about the inner section, the sections can be very easily removed after the concrete has set.

It is another object of the invention to so form the inner mold for the cover that it will serve to separate the cover from the body portion of the vault during molding thereof and in addition serve to provide the contacting edge faces of the cover and the walls of the vault with interfitting portions to form a tight joint between the cover and the walls of the vault.

The invention is illustrated in the accompanying drawings, wherein

Figure 1 is a top plan view of the mold for forming the vault, the inner sheet metal sections of the mold being shown in section.

Figure 2 is a vertical sectional view taken longitudinally through the mold along the line 2—2 of Figure 1.

Figure 3 is a perspective view of one of the sections forming the sheet metal inner form for the mold.

Figure 4 is a sectional view taken transversely through the mold along the line 4—4 of Figure 2, and

Figure 5 is a perspective view of approximately one-half the form and its cover.

The vault formed in accordance with this invention has a body 1 formed of concrete or similar material and a cover 2 which is also formed

of concrete, and referring to Figure 5, it will be seen that the body of the vault has a bottom 3 from marginal portions of which extend side walls 4 and end walls 5 which are shown in Figure 2. The bottom and walls of the body and also the top should be reinforced to prevent cracking, and in order to do so, there have been provided wire mesh reinforcements 6 and 7 which are embedded in the top and in the bottom and walls of the body during molding thereof. Upper edge faces of the walls of the body are formed with longitudinally extending grooves 8 and marginal edge faces of the cover are formed with depending longitudinally extending ribs 9 which fit into the grooves 8 and not only serve to prevent the cover from shifting longitudinally or transversely of the body out of its proper position thereon but also cause tight joints to be formed between the cover and the walls of the body when the cover is cemented into place. A suitable number of supporting strips 10 may be placed in the body upon the bottom thereof so that, when a coffin is placed in the vault, it will be held spaced slightly above the bottom of the vault. These cross strips may be merely set into the body upon the bottom thereof or secured in place upon the bottom in any desired manner. Eye bolts 11 which have their lower ends secured through reinforcing mesh 7 of the cover extend upwardly from the cover in order that the cover may be lifted with suitable hoisting mechanism and the body portion of the vault may be formed at its ends with recesses or notches 12 in which grapples of a hoist may be engaged when lifting the vault.

This concrete vault is formed by a molding operation, and referring to Figures 1, 2 and 4, it will be seen that the mold in which the vault is formed has a flat bottom 13 which may be formed of wood or any other desired material having sufficient strength and thickness to prevent flexing and consequent distortion of the bottom. Side walls 14 extend longitudinally of the bottom in spaced relation to side edges thereof and are reinforced by uprights 15 which extend the full height of the side walls and are secured thereto. When the side walls are in place upon the bottom, lower end portions of the outer edge faces of the uprights having abutting engagement with inner side edge faces of abutment strips 15 secured along the side edge portions of the bottom, as shown in Figures 1 and 4. Therefore, outward movement of the side walls toward side edges of the bottom will be prevented and bulging of the mold cannot occur. End walls 17 of the mold are also provided with uprights 18 corresponding

to the uprights 15 and having their lower ends engage inner edge faces of strips 19 which correspond to the strips 16 and are secured upon the bottom along end edges thereof. The uprights 20 adjacent ends of the side walls are closer to each other than the uprights 15 and between these uprights 20 are located uprights 21 which are disposed transversely of the uprights 20 and fit snugly between the same with their outer side faces flush with outer edge faces of the uprights 20. These uprights 20 and 21 cooperate with each other to provide the side walls with corner posts, and upon referring to Figure 1, it will be seen that the uprights 18 and the uprights 20 of the corner posts are formed with openings through which to receive metal rods 22 which serve as tie rods, means being provided at one end with a head and having its other end portion threaded to receive a securing nut 23. When the securing nuts are tightened, end portions of the side walls will be held firmly in abutting engagement with side edge faces of the end walls and certain of the uprights 16 and the walls of the mold will thus be firmly held in proper cooperative relation with each other to form a rectangular mold. By removing the tie rods the side and end walls will be released and piled upon the bottom. It will thus be seen that the mold is of a knock-down construction. Blocks 24 are carried by the end walls to form the grapple-receiving recesses 12 at ends of the body portion of the vault and corner strips 25 may be employed to form tight joints between the side walls and meeting side edge faces of the end walls.

After the side and end walls have been set up upon the bottom to form the body of the mold, concrete is poured into the mold to form the bottom of the vault. When approximately one-half the quantity of concrete necessary has been distributed over the bottom of the mold, the wire mesh reinforcements for the bottom and walls of the vault will be set in place and the remainder of the concrete for forming the bottom of the vault poured into the mold and evenly distributed therein so that the bottom of the vault will be of the same thickness throughout its entire area. The inner form for the mold is then set in place. This inner form, which is indicated in general by the numeral 26, is formed of strong sheet metal and consists of companion sections 27. Four of the companion sections constitute the inner form and each is constructed as shown in Figure 3. Referring to this figure, it will be seen that each section of the inner form has a bottom 28 and side and end walls 29 and 30 which are preferably formed integral with the bottom and each other but may have their abutting side edges welded or otherwise firmly secured to each other. Upper marginal portions of the side and end walls are bent inwardly to form a flange 31 which extends along the side and end walls and since the flange has a folded under portion 32, it will have a rounded edge. It will thus be seen that the section may be easily grasped by the flange and lifted without danger of cutting a person's hand, and in addition the flange will be reinforced and prevented from being easily broken or bent downwardly out of its proper position. The three side and end edges of the bottom 28 are so cut that, when the sections are assembled to form the inner metal form for the mold, slots or spaces will be provided between confronting edges of the sections, as shown clearly in Figures 2 and 4, and thus permit the sections to be shifted and easily removed after a vault has been formed and the

concrete set. The sections may, therefore, be prevented from having such engagement with each other that removal will be difficult. These spaces should be covered during the molding operation; and in order to do so, there have been provided strips 33 and 34. The strips 34 may be omitted if so desired. These strips serve not only to cover the spaces between confronting marginal edges of the bottom of the formed sections but also serve to prevent these sections from accidentally shifting out of their proper position.

In order to secure the form sections 27 in cooperating relation to each other, there have been provided strips 35 which are secured against the side and end walls of the sections. These strips are formed of angle metal in order to provide flanges projecting from inner faces of the wall and certain of the strips are so applied to the walls that their wall-engaging portions extend downwardly while others have their wall-engaging portions extending upwardly from their outstanding portions. It will thus be seen that when the sections are assembled the strips 35 which are of such length that they project beyond ends of the walls to which they are attached and overlap the cooperating strips 35 of an adjoining mold section may have their outstanding flanges rest flat upon the outstanding flanges of the strips which they overlap. Slots 36 which are to be disposed in registering relation to each other are formed through the outstanding flanges of the strips 35 and through these aligned slots are passed tapered wedges which, when driven into place, will firmly hold the sections of the inner form in cooperating relation to each other. It will thus be seen that after the concrete to form the bottom of the vault has been poured into the mold and evenly distributed the sections of the inner form can be assembled and the completed inner form then set in place within the mold or the sections 27 may be individually lowered into the mold and then secured to each other to form the completed inner form. With the inner form in place concrete may then be poured into the space between walls of the inner form and walls of the mold to form the side and end walls of the vault. The space between the walls of the inner form and the walls of the outer mold will be filled with concrete to substantially the full depth thereof.

In order to form the top 2, a sheet metal support or form 38 is employed. This form is arcuate in cross section, as shown in Figure 4, and formed with sloping end portions 39 which are diagonally disposed, as shown in Figure 2. Marginal portions of the top form are flat to provide a flange 40 extending along sides and ends of the form and intermediate the width of the flange the material thereof is stamped downwardly to provide a depending rib or trough 41. By forming the flange with the combined rib and trough 41 the groove 8 will be formed in the upper edge faces of the side and end walls of the body portion of the vault when the form is set in place. Concrete or the like can then be poured onto the form and since a portion of this concrete will enter the trough the depending rib 9 along sides and ends of the cover will be formed. It should also be noted that since the combined rib and trough form both the grooves 8 and the ribs 9 the ribs 9 will fit properly into the grooves 8 when the cover is applied and a tight joint formed when the ribs are cemented into the grooves. A bolt 42 is engaged through an opening formed intermediate the length and width of the form 38 in order that this form may be easily lifted and

set into place, the opening through which the bolt extends being of such diameter that after the form is in place the bolt may drop downwardly to the position shown in Figures 2 and 4 when released. There have also been provided handles or straps 43 which extend transversely of the form in spaced relation to each other longitudinally thereof. These handles or straps are provided so that, when the form is in an inverted position, it may be lifted. After approximately one-half the concrete required to form the cover has been deposited upon the form and evenly distributed, the wire mesh reinforcements are applied and the remainder of the concrete then poured over the reinforcement and evenly distributed. The eye bolts 11 are secured through the reinforcement, as shown in Figure 2, and projects upwardly from the finished cover so that grapples may be engaged in the eye bolt and the cover lifted when it is to be applied to the body portion of the vault. Attention is called to the fact that the end walls 17 of the mold extend upwardly beyond the side walls 14 thereof, as clearly shown in Figure 4, so that during forming of the cover the concrete may have abutting engagement with the projecting upper end portions of the end walls. The upper surface of the cover conforms to the transverse outline of the form 38, and when it is troweled to shape it will have side portions of its upper surface curved downwardly. The ends of the cover will have flat faces due to contact of the concrete with the end walls of the mold but if so desired these end portions may be shaped to conform to the curvature of the side portions of the cover. After the concrete forming the cover has fully set, the cover can be lifted out of the mold and set upon the floor in an inverted position. The grapples of the hoisting mechanism used for lifting the cover from the mold can then be engaged with the straps or handles 43 and upward pull exerted to detach the form from the cover. It will thus be seen that the form can be again used. After the cover has been removed, it is merely necessary to remove the cross bars and the wedges to release the sections 37 and the sections can then be easily shifted away from the inner surfaces of the side and end walls of the body of the vault and removed. The tie rods 22 can then be removed and the side and end walls of the mold detached from the bottom, after which the body of the vault can be lifted by a suitable hoist. The mold can then be reassembled and again used as previously set forth.

Having thus described the invention, what is claimed as new is:

1. Apparatus for forming a vault and a cover of set plastic material, said apparatus comprising an outer mold having a bottom, side and end walls rising from the bottom, means to maintain the walls in a centered position upon the bottom, means for detachably securing the side walls in engagement with the end walls when in a set up position, an inner form of dimensions adapting it to be set into the outer mold in spaced relation to the bottom and walls thereof, the inner form having a bottom and side and end walls and consisting of companion sections having means for detachably securing the same in cooperating relation to each other and permit the sections to be easily removed after plastic material between the inner form and the walls and bottom of the outer mold have set to form the body of a vault, and an upper form supported upon upper edges of the walls of the inner form and having

marginal portions extending from walls of the inner form to the side and end walls of the outer mold whereby plastic material may be distributed over the upper form and when set form a cover for the body of the vault.

2. Apparatus for forming a concrete vault and cover therefor comprising an outer mold having a bottom, side and end walls rising from the bottom with upper portions of the end walls extending upwardly above the side walls, an inner form of dimensions adapting it to be set within the outer mold in spaced relation to the bottom and walls thereof whereby the said space may be filled with concrete to form the body portion of the vault, and a top form supported upon the inner form with marginal portions extending from walls of the inner form to the walls of the mold and constituting spacing means when concrete is distributed over the top form between the upwardly projecting portions of the end walls to form a cover for the body of the vault.

3. Apparatus for forming a concrete vault and cover therefor, said apparatus comprising an outer mold, an inner form fitting within the outer mold in spaced relation to the bottom and walls thereof whereby the space may be filled with concrete to form a body for the vault, and a top form supported upon the inner form and having marginal portions extending across the space between the inner form and walls of the outer mold, the said marginal portions of the top form constituting means for preventing contact between walls of the body of the vault and marginal portions of a cover formed by concrete distributed over the top form, the said marginal portions of the top form being shaped to form the upper edge faces of the walls of the body of the vault with grooves and marginal portions of the cover with depending ribs for engaging in the grooves.

4. Apparatus for forming a concrete burial vault and cover therefor, said apparatus comprising an outer mold having a bottom, side walls and end walls rising from the bottom, uprights disposed against outer faces of said walls, strips extending along said bottom and engaging lower portions of said uprights to brace lower portions of the walls, the side walls having portions projecting beyond the end walls, corner posts carried by the projecting portions of the side walls, tie rods extending through the corner posts and through the uprights of the end walls to detachably secure the walls in engagement with each other and maintain the walls in an upright position, an inner form fitting within the outer mold and having a bottom and walls spaced from the bottom and walls of the outer mold whereby a body of a vault may be formed by concrete filling space between the inner form and the bottom and walls of the outer mold, and a top form supported upon the inner form with portions extending from walls of the inner form to the side and end walls of the outer mold and constituting means for preventing contact between walls of the vault body and a cover formed by concrete distributed over the top form.

5. An apparatus for forming a concrete vault and a cover therefor, said apparatus comprising an outer mold, an inner form fitting within the outer mold in spaced relation to the bottom and walls thereof whereby a body for a vault may be formed by concrete filling space between the inner form and the bottom and walls of the outer mold, the inner form consisting of a plurality of companion sections each having a bottom, a side wall and an end wall, upper portions of the walls of

said sections being extended inwardly to form an inwardly projecting flange, marginal edges of the bottom being cut to dispose confronting edges of the bottoms of companion sections in spaced relation to each other when the sections are assembled and permit movement of the sections relative to each other during removal of the sections, and means for releasably holding said sections in engagement with each other to provide an assembled inner form.

6. Apparatus for forming a concrete vault comprising an outer mold having a bottom and side and end walls, an inner form of dimensions to fit within the outer mold in spaced relation to the bottom and walls thereof whereby space between the inner form and the outer mold may be filled with concrete to form a body of a vault, said inner form consisting of companion sections each having a bottom and a side wall and an end wall, strips extending horizontally along inner surfaces of the wall of said section and provided with flanges projecting from the wall, certain of said strips having portions projecting from the walls to which they are secured and extending in overlapping relation to walls of adjoining sections

with their flanges resting upon the flanges of the strips carried by the last-mentioned sections, the said flanges being formed with registering slots, and fasteners passed through the registering slots to securely but releasably hold the sections in an assembled position to form the inner form.

7. Apparatus for forming a concrete vault and a cover therefor, said apparatus comprising an outer mold, an inner form fitting within the outer mold in spaced relation thereto whereby space between the inner form and the outer mold may be filled with concrete to form a body for a vault, a top form resting upon the inner form with marginal portions extending across space between the inner form and walls of the outer mold and resting upon walls of the outer mold, a member constituting a lifting member engaged through an opening formed through the top form and shiftable through the opening from an elevated position to a lowered position, and handles extending transversely of the top form in spaced relation to each other longitudinally thereof and secured against the inner surface of the top form.

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