Dec. 12, 1939. F. HOLZ 2,182,808

CASTING MOLD

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Fig. 1

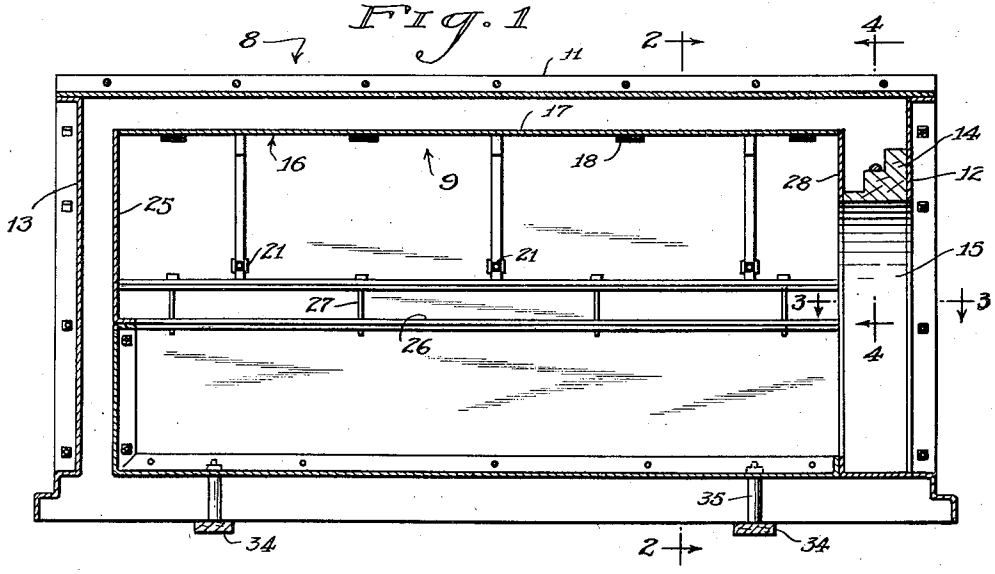


Fig. 2

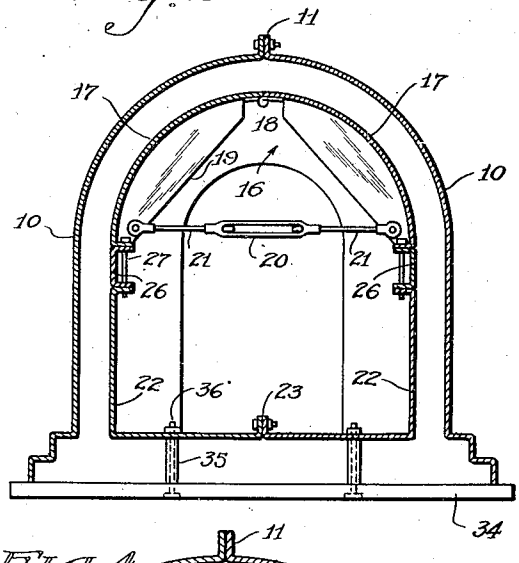


Fig. 3

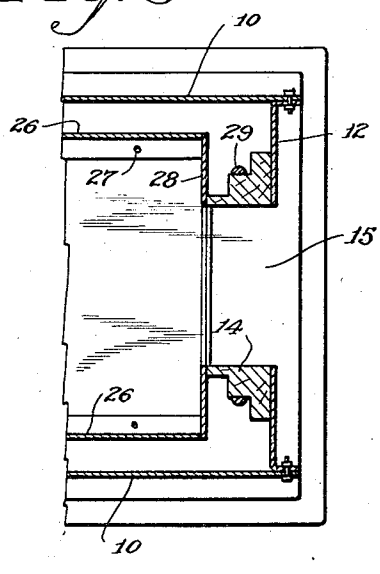
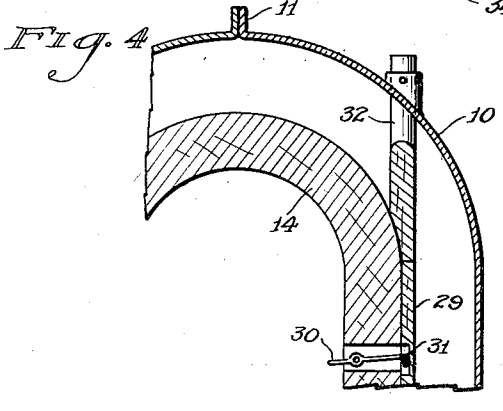


Fig. 4



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Fig. 5

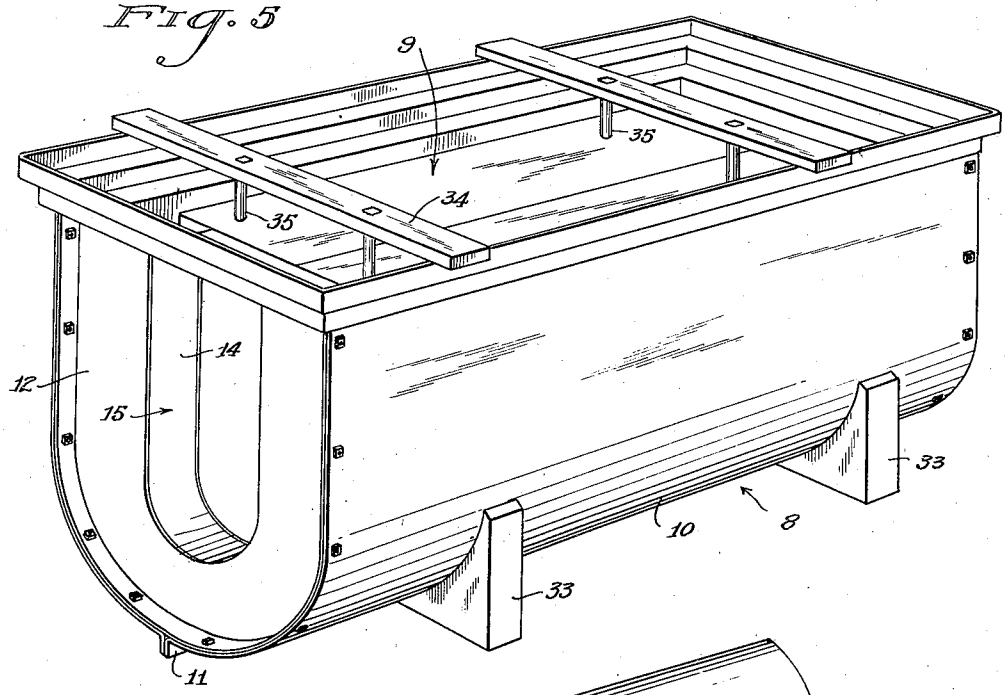


Fig. 6

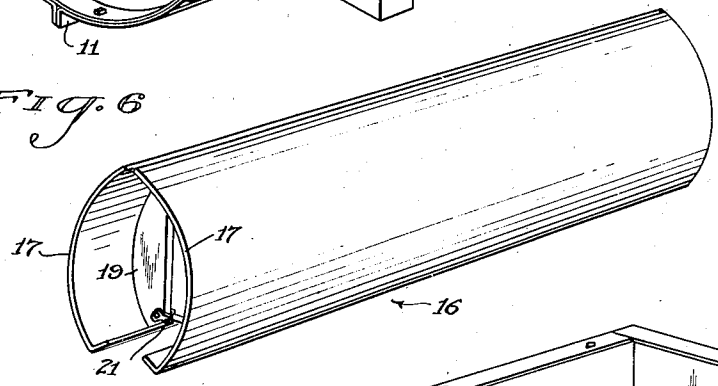
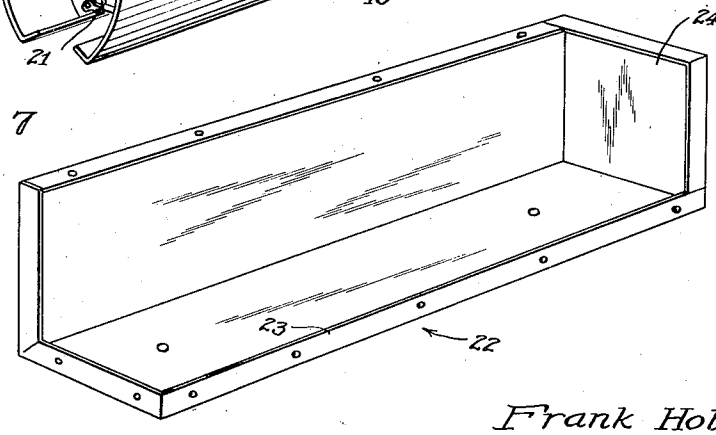


Fig. 7



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Patented Dec. 12, 1939 2,182,808

UNITED STATES PATENT OFFICE

2,182,808

CASTING MOLD

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Application February 25, 1937, Serial No. 127,782

2 Claims. (Cl. 25—130)

The present invention relates to casting molds for the formation of poured concrete burial vaults or similar articles presenting a full sided house-like structure having a hollow interior accessible, for example, thru a doorway or other opening in the structure.

The general object of the invention is to provide a highly practical casting form or mold of simple and rugged construction particularly adapted for the fabrication of vault structures and the like, the mold being so assembled as to facilitate rapid removal of same from the finished casting in a manner to obviate the risk of breakage or other damage to the partly congealed plastic substance.

Another object resides in the provision of a core structure forming part of the casting mold and directed to shape the interior or hollow portion of a structure, the core comprising a minimum number of separable sections so united as to be rapidly erected and easily collapsed or disassembled to permit removal of the component core members thru a relatively small opening in the finished structure.

A further object is to provide, in a casting mold for the formation of house-like structures, doorway forming elements including recess producing members therein adapted to form for example a sealing groove about the door jamb, the mentioned members being secured in place during the casting process in such manner as to afford means for removing the doorway forming elements while the groove forming elements remain temporarily in place.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form part of the application.

In the drawings:

Fig. 1 is a longitudinal section thru the erected casting mold.

Fig. 2 is a transverse section thru the mold taken on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary horizontal section taken on line 3—3 of Fig. 1 and illustrating the doorway forming means.

Fig. 4 is a fragmentary enlarged section taken on line 4—4 of Fig. 1 and showing the means for forming a sealing groove in the doorway.

Fig. 5 is a perspective view of the entire casting mold, the same being inverted in readiness to receive the plastic material therein.

Fig. 6 is a perspective view of the dome forming member comprising the mold core, the same being shown in contracted condition; and

Fig. 7 is a perspective view of another member of the collapsible core comprising the mold.

With reference to the drawings illustrating the preferred physical embodiment of the invention, it will be noted that the casting mold comprises substantially two main structures namely, the outer shell 8 forming the exterior surface of a casting structure and an inner shell or core 9 defining the inner surface of the structure. It will be observed after a detailed description of the invention is had that the shells 8 and 9 may each be suitably shaped so as to define the desired contour of the respective inner and outer surfaces of the finished product.

In employing the casting mold for the formation of concrete burial vaults for example, the shells 8 and 9 are shaped to define a house-like structure including a dome and depending side walls, the latter being cast integral with a base or floor member so as to form a composite imperforate structure. For access to the interior of such a vault, a doorway is formed preferably in an end wall thereof, the doorway forming members providing an opening for the removal of the disassembled members of the inner shell or core 9.

The outer shell 8 comprises preferably two longitudinal members 10 suitably joined at the dome portion such as by the flanges 11. The members 10 present a tunnel-like structure closed and reinforced at each extremity by end members 12 and 13, the latter being suitably joined at their peripheries to the members 10. The finished structure includes a doorway, the jamb of which is formed by a block 14 carried on the end member 12, the block 14 being preferably shaped in a series of steps to define a door jamb capable of being readily sealed. It will be noted that the block 14 presents an opening 15 therethru providing access to the interior of the mold particularly for erecting and removing the members of the inner shell 9.

The inner shell 9 comprises a dome-forming structure 16 including flexibly joined longitudinal members 17. The members 17 are flexibly joined preferably by being hinged together as at 18 and are equipped with reinforcing flanges 19 to assure rigidity. The interior dome structure 16 is held in extended form by suitable expansible means preferably a turnbuckle 20 having rods 21 threadedly engaged therein, the free ends of the rods being flexibly secured to opposite portions of the flanges 19 at the base of the dome structure 16. The turnbuckle 20 and the associated rods 21 serve also to contract the dome structure 16 as will be hereinafter described.

The inner shell 9 also includes a pair of angle plates 22 joined at abutting edges as at 23, being adapted to form the floor or base of the structure and a substantial portion of the longitudinal walls. As shown in Fig. 7, the angle plates 22 have end plates 24 thereon to serve in forming an end wall of the structure in conjunction with the end member 13. To complete the inner surface of this end wall a plate 25 is carried on top

of the plates 24 and has the periphery thereof shaped to substantially define the transverse contour of the dome structure 16. It will be observed that the top edge of the vertical member of the angle plates 22 is spaced from the corresponding edge of the member 17 which spacing is retained by the insertion of a key plate 26 therein, the respective members 17, 22 and 26 being held in association with each other as by inserting pins, one of which is designated at 27, therethru. At the opposite end of the structure it will be observed that the members 17, 22 and 26 abut a plate 28 serving to complete the portion of the mold directed to form the corresponding end wall in association with the block 14.

As aforementioned the block 14 is of stepped formation to provide a door jamb adapted to receive a suitable door, the latter being hermetically sealed therein. In structures such as burial vaults it is desired to apply to the interstice between the door and jamb a suitable sealing compound, the same being preferably poured into grooves formed in the adjoining surfaces of the door and jamb. Such a groove is formed by removably attaching to the block 14 an elongate bead 29 extending substantially along the entire vertical side of the door jamb. In removing the block 14 from the finished structure it is necessary to permit the bead 29 to remain temporarily in the casting. Accordingly same is detachably secured preferably by a series of hooks 30 swingably mounted in the block 14 and having their hooked ends adapted to engage the pins 31 on the bead 29, the hook 30 and pin 31 being disposed in suitable recesses cut in the respective members. To provide a pouring passageway for admission of a sealing compound into the groove formed by the bead 29, a rod 32 extends from the upper end thereof and is retained in the dome portion of the corresponding member 10. It is to be understood that each side of the doorway block 14 is equipped with a similar bead 29 and a corresponding rod 32. It will also be noted that the bead 29 may be extended over the arched portion of the doorway to provide a continuous groove therein.

In pouring a concrete mixture or other plastic substance into the mold the latter is preferably inverted substantially as illustrated in Fig. 5, being retained in position by suitable shoring blocks 33. It will be noted that the outer shell 8 is rested in upright position on a series of cleats 34 and the inner shell 9 is supported also thereon by suitable spacer members preferably the sleeves 35 thru which bolts 36 are passed. When the entire mold is inverted for pouring, the inner shell 9 is suspended on the cleats 34 by the bolts 36 which may be removed at any time after the major portion of the mold is filled.

As soon as the plastic material is sufficiently congealed, the outer mold is removed by separating the longitudinal members 10 at the joint 11 and detaching same from the end members 12 and 13 which are subsequently removed. The removal of the end member 12 includes the doorway block 14, the withdrawal of which is effected after detachment of the several hooks 30 holding the bead 29, the latter remaining in the casting until after the block 14 is withdrawn. It will be readily apparent that the bead 29 and the rod 32 may thereafter be readily removed from the finished casting.

The inner shell 9 is now removed by first releasing the key members 26 and passing same thru the opening 15. The dome structure 16 is now initially contracted to free same from adherence to the ceiling of the casting, this contraction being effected by turning the buckle 20. The members 17 of the dome structure 16 are now brought substantially together so that same assumes a contracted form substantially as illustrated in Fig. 6 and may be easily removed thru the opening 15. The angle plates 22 are now separated at the joint 23 and each may be individually passed thru the opening 15, after which the plates 25 and 28 are withdrawn. It will be apparent that by pouring the entire mold thru the bottom area that substantially all surfaces of the structure are formed by actual contact with the mold thus producing a finished product having a substantially smooth surface and a homogeneous structure.

It is to be understood that this improvement is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

What is claimed as new is:

1. A mold for forming arched substantially imperforate burial vaults comprising a horizontally extending outer shell open at the top defining on the inner portion thereof the extrados portion of said vault; an inner shell, within said outer shell, defining on the outer portion thereof the intrados portion of said vault; supporting means for holding said inner shell in predetermined relationship to said outer shell comprising cross-members temporarily and disengagedly attached to said inner shell and resting across the open top of said outer shell; means supported in a portion of the void between said outer and inner shells for forming an opening in a wall of the molded vault materially smaller in area than the area of any side surface of said vault, said inner shell comprising a plurality of cooperating articulated members adapted for removal through said opening.

2. A mold for forming arched substantially imperforate burial vaults comprising an outer shell defining on the inner portion thereof the extrados portion of said vault; an inner shell, supported within said outer shell, defining on the outer portion thereof the intrados portion of said vault; means supported in a portion of the void between said outer and inner shells for forming an opening in a wall of the molded vault materially smaller in area than the area of any side surface of said vault, said means including peripheral beading removably retained thereon adapted to form a sealing channel on the periphery of said opening; and means for forming a filling passage in the molded product communicating with said channel and opening at the top of the vault, said means comprising a removable elongate member cooperating at one end with said beading and terminating at the other end in an opening formed in said outer shell.

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