May 20, 1958 N. J. GUIMONT 2,835,018

MOLD

Filed May 21, 1956

Fig. 1.

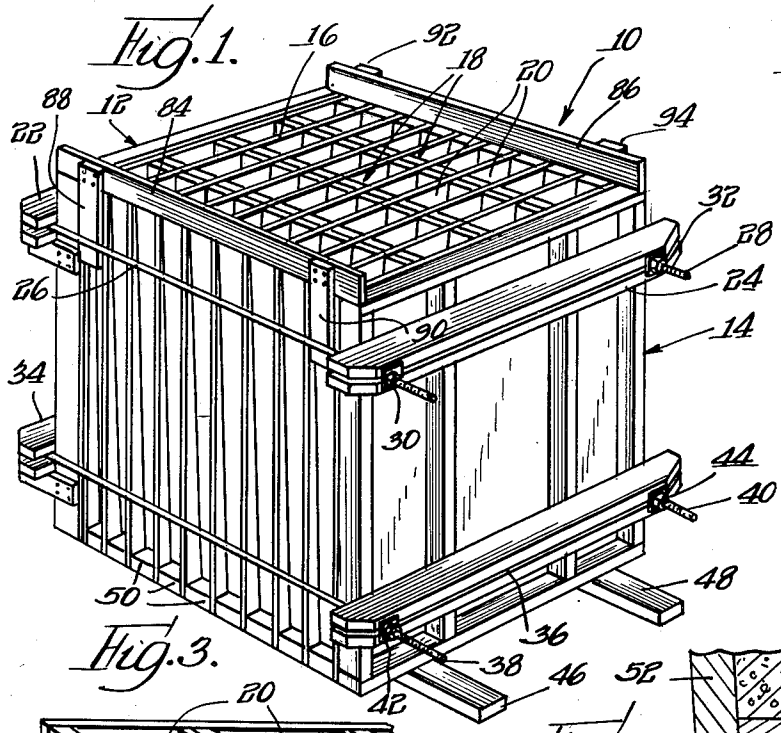


Fig. 2.

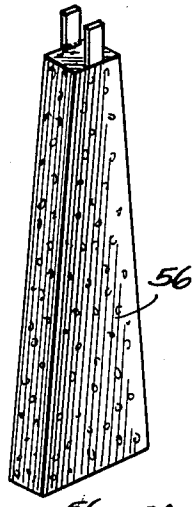


Fig. 3.

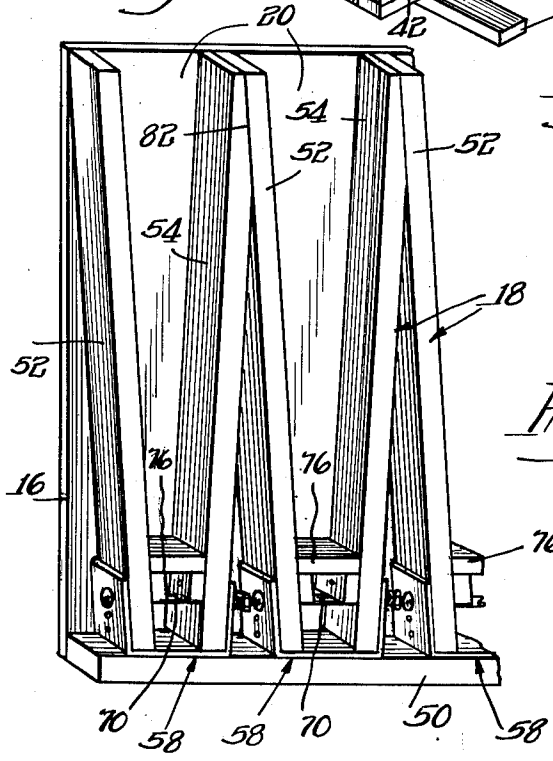


Fig. 4.

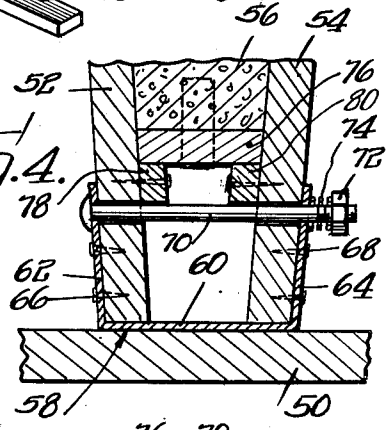
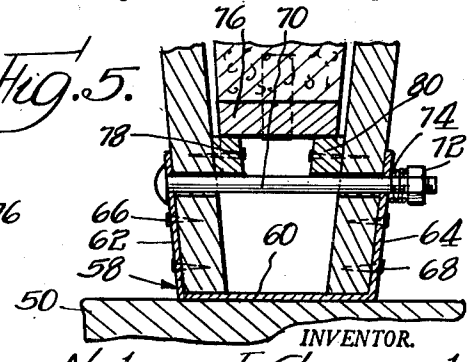


Fig. 5.



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MOLD

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4 Claims. (Cl. 25—121)

The present invention relates to a novel mold structure, and, more particularly, to a novel mold structure for forming cast concrete tapered piers or the like.

In order economically to precast concrete articles such as piers or the like which are then to be conveyed to a building site, it is desirable to provide a multicavity mold. Various mold structures have heretofore been proposed, but difficulties have been encountered in providing a mold structure which may be quickly and easily assembled so as to reduce labor costs and which, at the same time, is formed so that the finished concrete articles or piers may be easily removed therefrom. It is, therefore, an important object of the present invention to provide a novel multipart multiple cavity mold structure for concrete articles such as piers and the like, which mold structure may be easily and rapidly assembled and disassembled, and from which mold structure the finished concrete articles may be easily removed.

A more specific object of the present invention is to provide a novel mold structure of the above described type wherein cooperable elements at least partially defining each mold cavity are interconnected so that they may be handled as a unit and so that they normally assume proper cavity defining position and also so that they may be readily shifted relative to each other to permit a finished article to be removed therefrom.

Other objects and advantages of the present invention will become apparent from the following description and the accompanying drawings wherein:

Fig. 1 is a perspective view showing a multiple cavity mold structure incorporating the features of the present invention;

Fig. 2 is a perspective view showing an article such as a concrete pier which may be cast in the mold structure of this invention;

Fig. 3 is an enlarged fragmentary perspective view showing an internal portion of the mold structure;

Fig. 4 is a further enlarged fragmentary sectional view showing a portion of the mold structure in greater detail and showing a portion of a concrete pier or the like in a mold cavity; and

Fig. 5 is a fragmentary sectional view similar to Fig. 4 but showing how opposite sides of a mold cavity may be shifted relative to each other in order to free the concrete article for removal from the mold structure.

Referring now more specifically to the drawings wherein like parts are designated by the same numerals throughout the various figures, a multiple cavity mold structure **10** incorporating the features of the present invention is shown in Fig. 1. This structure comprises a pair of opposite end walls **12** and **14**, a plurality of spaced removable separator panels **16** disposed in parallel relationship between the end walls, and a plurality of removable units **18** described fully hereinbelow disposed between the separator panels and cooperating with the panels and end walls to define a plurality of mold cavities **20**. The above mentioned elements, when in assembled relationship, are releasably clamped together by suitable means

including bar structures **22** and **24** respectively traversing upper end portions of the end walls **12** and **14** and connected together by tie rods **26** and **28** extending along opposite sides of the mold structure and cooperable nut members **30** and **32** threaded onto the rods **26** and **28**, respectively. Similar bars **34** and **36** traverse lower portions of the opposite end walls and are connected by elongated threaded tie rods **38** and **40** and cooperable nut members **42** and **44**.

The mold structure is preferably spaced above the floor or ground by a plurality of spaced members **46** and **48** which may be formed from wood two-by-fours or the like and which extend longitudinally between the opposite end walls. The end walls and the intermediate panels **16** may rest directly on the members **46** and **48**, but preferably the lower ends of the units **18** rest on removable separator members **50** formed from two-by-fours or the like and supported by the members **46** and **48**.

As shown best in Figs. 3, 4 and 5, each of the units **18** comprises a pair of generally upstanding members **52** and **54** which may conveniently be formed from two-by-fours or the like. Of course, if thicker concrete articles are desired the members **52** and **54** may be formed from wider stock material. Also, these members could be formed from narrower stock material if desired. In the embodiment shown the members **52** and **54** are disposed in diverging relationship so that the mold cavity is defined to form a tapered pier **56** shown in an upright position in Fig. 2.

In accordance with a feature of the present invention lower end portions of each pair of members **52** and **54** are interconnected by a generally U-shaped metal strap **58**. A bottom section **60** of each of the metal straps is preferably sufficiently long so that the lower end portions of the associate members **52** and **54** are disposed in spaced apart relationship, and these lower end portions are connected to upstanding leg sections **62** and **64** of each of the metal straps **58** by a plurality of screws **66** and **68** or any other suitable means. These strap members **58** connect each pair of upstanding members **52** and **54** together so that they may be easily handled and positioned in the mold structure as a unit. While the strap members **58** are sufficiently strong and rigid to perform this function, it will be appreciated that they are also inherently sufficiently resilient to permit the associated members **52** and **54** to be pulled away from each other and away from a finished concrete article as shown in Fig. 5 so that the article may be easily removed.

In order to prevent the upstanding members **52** and **54** of each unit **18** from being pulled too far apart and also normally to retain these members in the desired diverging relationship for properly defining a mold cavity, the means shown best in Figs. 4 and 5 is provided. This means includes a bolt **70** extending through oversized apertures in lower end portions of associated members **52** and **54** and upper end portions of the upstanding sections **62** and **64** of an associated metal hinge strap **58**. A nut **72** is threaded onto the bolt, and a compression spring **74** is disposed on the bolt between the nut and the metal strap or hinge section **64**. The head of the bolt and the nut, of course, limit movement of the members **52** and **54** away from each other and the bolt and nut cooperate with the spring to bias the members **52** and **54** toward each other. A removable wedge-shaped member **76** is disposed between each pair of members **52** and **54** for defining the bottom of the mold cavity and also for limiting movement of each pair of the members **52** and **54** inwardly toward each other. Supporting blocks **78** and **80** are respectively secured to each of the members **52** and **54** for supporting each of the bottom members **76**. Thus, when the members **52** and **54** are spread apart as shown in Fig. 5, the blocks **78** and **80** prevent the bottom

member **76** and the concrete article thereon from sliding down into the widened mold cavity.

A brief résumé of the manner in which the mold structure described above may be used will now be given. Assuming the mold structure to be completely disassembled, one of the end walls, for example the end wall **12**, is raised to an upstanding position and placed on the base members **46** and **48**. Then one of the transverse bottom separator members **50** is positioned across the base members **46** and **48** and against the bottom edge of the wall **12** and several of the units **18** are placed on this bottom separator member **50**. It is to be noted that upper end portions of the members **54** are bevelled as indicated at **82** in Fig. 3 for providing surfaces adapted to mate with the upper end portion of an adjacent member **52** of an adjacent unit **18** so as to facilitate proper positioning of the adjacent units with respect to each other. Then the mold cavity bottom members **76** are placed on the support or abutment members **78** and **80** of the assembled units **18** and a separator panel **16** is placed on the base members **46** and **48** and against the installed units **18**. Successive units **18** and separator panels and members **16** and **50** and the opposite end wall **14** are installed in the same manner, and the fully assembled structure is clamped together by the cross bars and tie rods described above. Then opposite side rails **84** and **86** are positioned along the upper side edges of the mold structure for preventing the concrete from spilling over these edges. These side rails are respectively provided with legs **88—90** and **92—94** adapted to extend within the tie rods **26** and **28** for retaining the side rails in position. Then, of course, the concrete is poured into the mold cavities and allowed to set. When the concrete articles are finished, the clamping bars are removed from the mold structure and one of the end walls is removed to expose the first series of the units **18** and concrete articles therebetween. Then the members **52** and **54** of an endmost unit **16** in the exposed series of units are relatively pulled apart so as to permit the article therebetween to be removed, and this action is repeated with all of the units **18** of the exposed series. Alternatively, the units **18** may be removed from the mold structure and then manipulated to free the articles. After the first series of articles has been removed, the adjacent separator panel **16** is removed to expose the next series of articles and the above described action is repeated.

While the preferred embodiment of the present invention has been shown and described herein, it is obvious that many structural details may be made without departing from the spirit and scope of the appended claims.

The invention is claimed as follows:

1. In a mold structure of the type described comprising a plurality of separable generally parallel spaced apart and upstanding separator panels, a plurality of separate units removably disposed between and cooperable with the separate panels for defining a plurality of mold cavities, each of said units including a pair of upstanding spaced apart and generally upright and opposed cavity defining members disposed between and substantially abutting opposed faces of a pair of said panels, means connecting lower end portions of said members for permitting said members to be moved relatively away from each other and from a finished article therebetween, a cavity bottom member freely disposed between lower end portions of said upright members and limiting movement of the upright members toward each other, and means connected with said members beneath said bottom member and vertically spaced from said connecting means and yieldably restraining said members against relative movement away from each other.

2. In a mold structure of the type described comprising a plurality of separable generally parallel spaced apart

and upstanding separator panels, a plurality of separate units removably disposed between and cooperable with said separator panels for defining a plurality of mold cavities, each of said units including a pair of upstanding spaced apart and generally opposed cavity defining members, a generally U-shaped strap hingedly connecting lower end portions of said members for permitting said members to be moved relatively away from each other and from a finished article therebetween, a bottom member separate from and extending between lower end portions of said upstanding members above a bottom of said strap, a bolt-like element extending through apertures in lower end portions of said members spaced vertically from a bottom end of said U-shaped strap and located beneath said bottom member, and spring means carried by said bolt-like elements for resiliently restraining said members against relative movement away from each other.

3. In a mold structure of the type described comprising a plurality of separable generally parallel spaced apart and upstanding separator panels, a plurality of separate units removably disposed between and cooperable with said separator panels for defining a plurality of mold cavities, each of said units including a pair of upstanding spaced apart and generally opposing cavity defining members, means hingedly connecting lower end portions of said members for permitting said members to be moved relatively away from each other and from a finished article therebetween, a pair of support means respectively disposed on and projecting inwardly of lower end portions of said members, a mold cavity bottom element freely disposed on said support means, and means connected with said members and yieldably biasing said members against opposite edges of said bottom element and yieldably restraining said members against relative movement away from each other.

4. In a mold structure of the type described comprising a plurality of separable generally parallel spaced apart and upstanding separator panels, a plurality of separate units removably disposed between and cooperable with said separator panels for defining a plurality of mold cavities, each of said units including a pair of upstanding spaced apart and generally opposing cavity defining members, a generally U-shaped strap hingedly connecting lower end portions of said members for permitting said members to be moved relatively away from each other and from a finished article therebetween, a pair of support means respectively disposed on and projecting inwardly of lower end portions of said members, a mold cavity bottom element freely disposed on said support means, a bolt-like element extending through generally aligned apertures in lower end portions of said members and vertically spaced from a bottom end of said U-shaped strap, and spring means carried by said bolt-like element for resiliently biasing said members against opposite edges of said bottom element and for resiliently restraining said members against relative movement away from each other.

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