J. ROBERTSON.

MOLD FOR CONCRETE STRUCTURES.

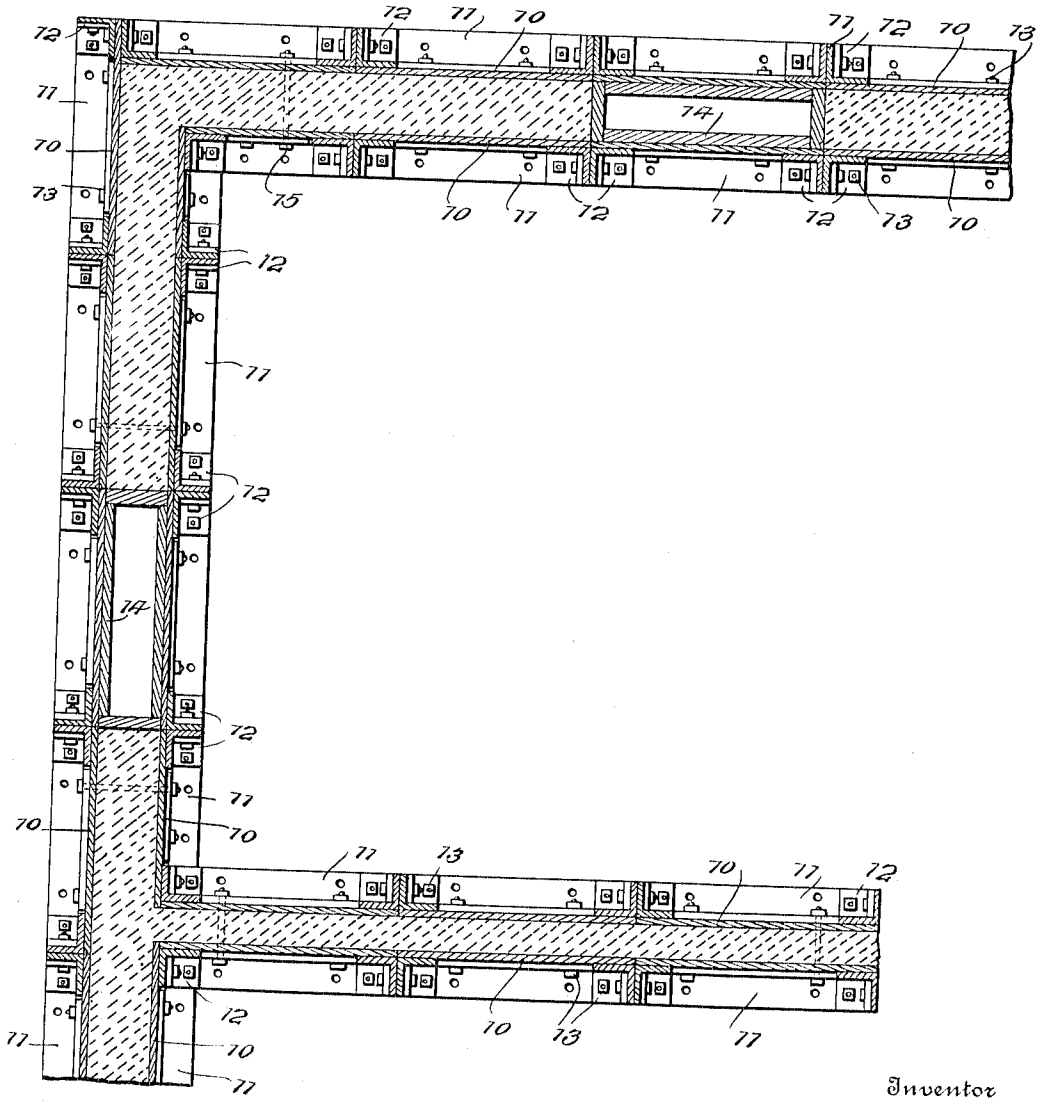
APPLICATION FILED APR. 8, 1913.

1,117,519.

Patented Nov. 17, 1914.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

Inventor

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2 SHEETS—SHEET 2.

Fig. 2.

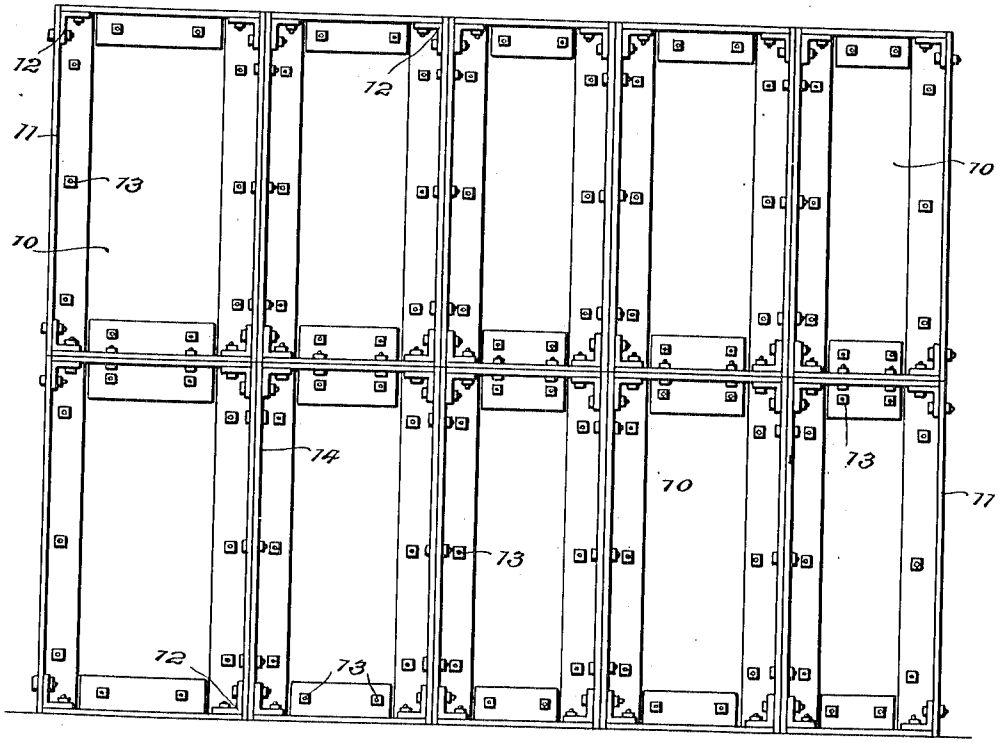


Fig. 3.

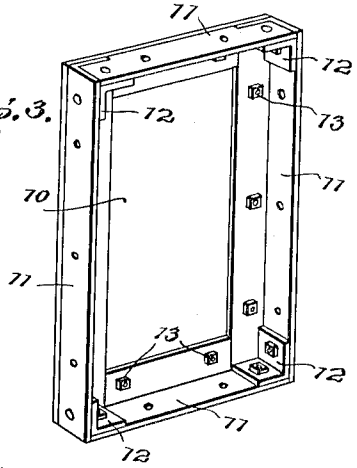
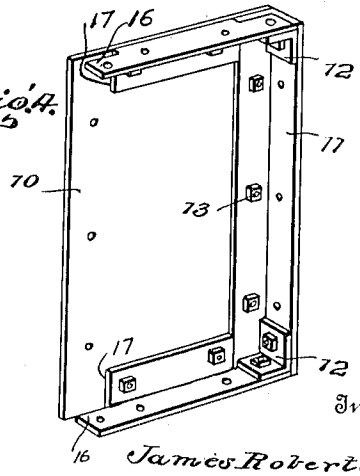


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES ROBERTSON, OF KEARNEY, NEW JERSEY.

MOLD FOR CONCRETE STRUCTURES.

1,117,519. Specification of Letters Patent. Patented Nov. 17, 1914.

Application filed April 8, 1913. Serial No. 759,767.

To all whom it may concern:

Be it known that I, JAMES ROBERTSON, citizen of the United States, residing at Kearney, State of New Jersey, have invented certain new and useful Improvements in Molds for Concrete Structures, of which the following is a specification.

This invention relates to molds for concrete structures, more particularly for concrete buildings or "poured houses," and has for one of its objects to provide a plurality of mold units of varying dimensions and of novel construction whereby buildings and like structures of various sizes and proportions may be readily constructed by transposing and arranging the various mold units to conform to the size of the structures required.

Another object of the invention is to provide mold units which may be partly dismembered and rearranged to adapt the device to mold door and window openings, partitions, bay windows and other irregular conformation, and the like.

With these and other objects in view the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims, and in the drawings illustrative of the preferred embodiment of the invention.

Figure 1 is a portion of the floor plan of a conventional structure with the improved mold units arranged to form the walls of the same and in transverse section. Fig. 2 is a front elevation of a part of the structure illustrated in Fig. 1. Fig. 3 is a perspective view of one of the mold units. Fig. 4 is a view similar to Fig. 3 with one of the angle members detached, to illustrate the manner of uniting the units at inner corners and where partitions are to be located.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved device comprises a plurality of units each formed from a plate 10, and with marginal angle members formed in sections 11 and reinforced at the corners by L or angle members 12. The plates, angle members and reinforcing members are united by bolts or like detachable fastening devices 13, so that they may be readily dismembered and rearranged as hereafter explained. The plates are preferably of sheet metal and of any required size, but the main plates for an ordinary house will generally be about four feet wide and six feet long, and a plurality of minor units will likewise be provided of varying widths, but of uniform lengths, and a plurality of minor units of varying lengths. By this means structures of various sizes and proportions may be constructed by combining units of varying sizes, as hereafter explained. For instance, a plurality of the mold units will be provided with the smallest about six inches wide and six feet long and advancing in regular order of six inch increase of width up to 42 inches, so that the narrower units may be united with the side units to form any width of wall required. The units being six feet long, if two are placed end to end they will form a complete wall 12 feet high, and if a higher wall is required the units may be likewise arranged to any required extent one above the other. It will be understood however, that these dimensions and proportions may be varied as required, and it is not desired to limit the invention to any specific size or outline of the mold units.

The angle members may be of any required width, but will generally be about 8 inches wide, and may be of any weight or "gage" of metal. The plates 10 are provided with a plurality of apertures around their margins to receive the angle member securing bolts, the bolt apertures being spaced at any required distance apart, but the longer sides of the plates will generally be provided with three of the apertures and with two of the apertures located upon the narrower sides, and the angle members will be provided with similar apertures and registering with the apertures of the plate so that clamp bolts may be employed to secure the angle members to the plates. By this means the angle members may be readily removed when required, as hereafter explained.

The longitudinal or side angle members extend the full length of the body or base

plate 10, while the inwardly directed webs of the terminal angle members are cut away at their ends as shown at 17 in Fig. 4, to receive the terminals of the inwardly directed webs of the side angle members as shown in Fig. 3. By this means the portions of the inwardly directed webs of the end angle members which are located opposite the cut away portion form tongue-like projections, as shown at 16 in Fig. 4. By this arrangement when the mold units are arranged to form the inner wall face at corners and partitions, one of the side angle members is removed and the portion of the base from which the angle member has been removed is disposed over the inwardly directed web of the first unit of the adjacent wall with the tongue like portions 16 beneath the inwardly directed webs of said first wall unit and secured thereto by the clamp bolts. By this arrangement the wall units which are to form the inner corners of outer walls or of partition walls may be united without producing irregularities or unevenness of surface or visible joints.

When the wall units are to be united as above described, the corner members 12 of the unit which receives the tongues 16 will be also removed to avoid the necessity for unduly bending the tongues.

The apertures in the plates, angle members and reinforcing members will be uniformly arranged so that the parts may be readily interchanged, the object to be hereafter explained.

A plurality of the plates are arranged side by side with the longer sections of the angle members in contact, and with another set of the plates arranged endwise thereon with the shorter sections of the angle members in contact, so that a mold face of any required area may be produced to correspond to the area of the wall required.

In Fig. 1 is shown a floor plan of a portion of a conventional building including doors, windows and partitions with the mold units arranged to receive the cement between them. The outer mold face for the outer wall is made up of a plurality of lower units arranged side by side and a plurality of upper units located upon the upper ends of the lower units and likewise arranged side by side with the abutting angle members united by clamp bolts or other similar suitable readily detachable devices. The inner face of the wall is formed by another set of the mold units spaced a distance equal to the thickness of the wall from the outer set of units with the angle members presented inwardly and united and arranged in substantially the same manner as the outer wall.

At the corners of the outer mold structure the angle members of one set of units are located against the outer portion of the face of the adjoining unit, and at the corners of the inner mold structure the side angle members of one set of corner units are detached and the portion of the plate previously covered by the detached angle member bolted to the side angle member of the unit of the adjacent wall, as illustrated in Fig. 1. The outer walls will generally be about 12 inches thick, for an ordinary two-story building, and will be increased in thickness for higher buildings, while the partitions will generally be about 4 inches thick. Where partitions occur the mold units are spaced apart the requisite distance to form the partitions as illustrated in Fig. 1. The mold units will be arranged without openings of any kind, but where window, door and other openings are to occur blocks or frames corresponding in outline to the openings are located between the walls of the units, as represented at 14, and the cement when poured between the units will pass around the members 14.

The mold units, as noted, are substantially the same in construction, and differ only as to the sizes of the plate members 10, which may be varied to any required extent to correspond to the size and proportion of the building to be erected or "poured."

At suitable intervals the clamp bolts whereby the angle members are united to the plates 10 will be replaced by tie rods represented at 15 extending transversely of the wall space which thus support the mold units and prevent them from being distended by the pressure of the concrete when the latter is poured in to form the wall, and if required other clamp bolts 15 may likewise be arranged to unite the intermediate portions of the plates, but generally the plates will be of sufficient strength to withstand the pressure exerted by the concrete, and will not require additional holding means.

Having thus described the invention, what is claimed is:

1. A mold unit comprising a rectangular base member, side angle members extending the full length of the base and each detachably secured by one of its webs to the rear face of the base, and end angle members secured by one web to the rear face of the base, the outer webs of the end angle members being cut away to receive the terminals of the side angle members and likewise to produce tongues to engage the end angle members of an adjacent mold unit when the molds are united to form a wall corner and prevent the production of irregularities or unevenness of surface.

2. A mold unit comprising a rectangular base member, side angle members extending the full length of the base and each detachably secured by one of its webs to the rear face of the base, end angle members secured by one web to the rear face of the base, the

outer webs of the end angle members being cut away to receive the terminals of the side angle members and likewise to produce tongue-like portions at the terminals of end angle members, and angle brackets connected to said tongue-like portions and to the side angle members.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES ROBERTSON. [L. S.]

Witnesses:
HENRY WM. RHOADS, Jr.,
DAVID WATSON.