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3,148,444

METHOD OF ERECTING A CONCRETE FORM

Filed Jan. 15, 1962

2 Sheets-Sheet 1

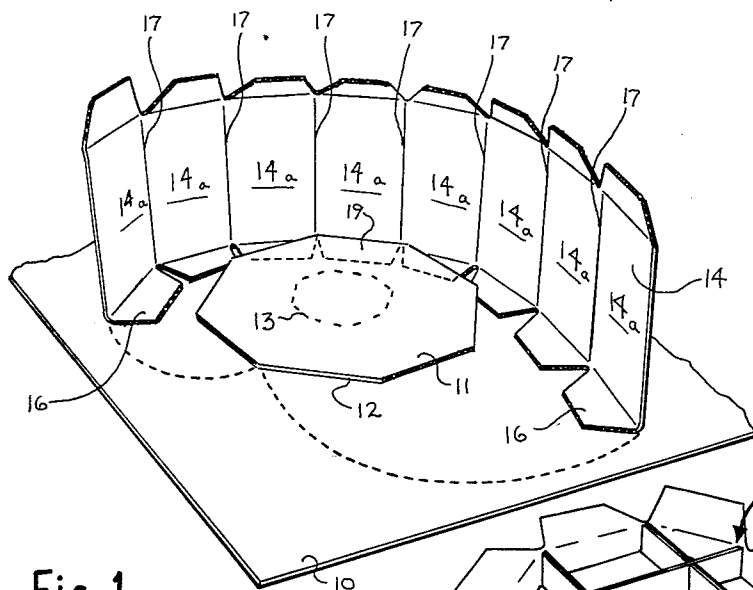


Fig. 1

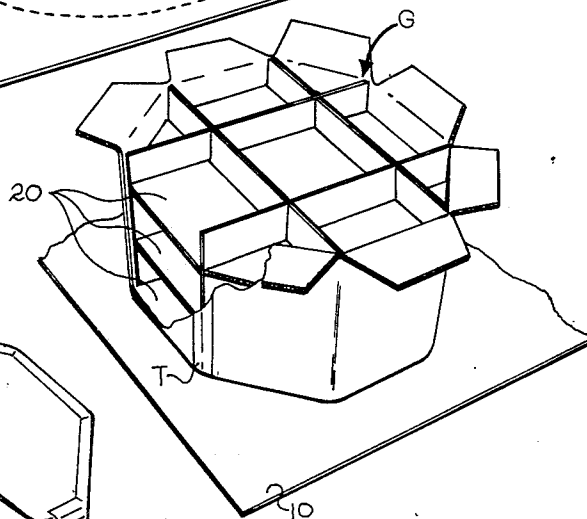


Fig. 2

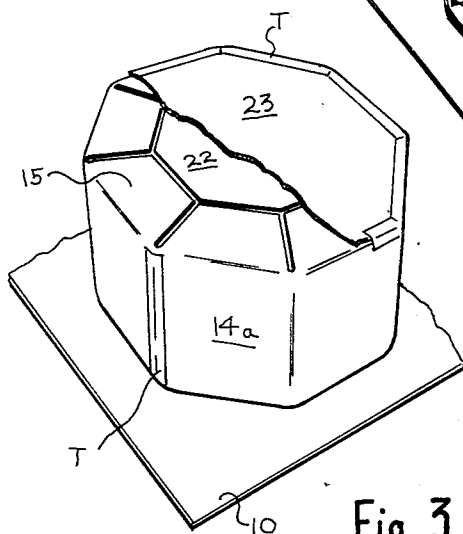


Fig. 3

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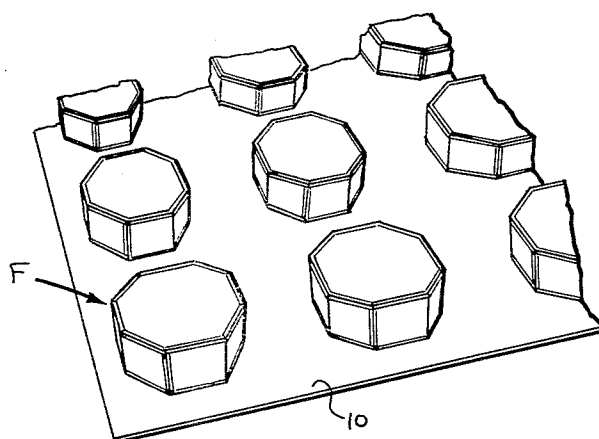


Fig. 4

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METHOD OF ERECTING A CONCRETE FORM
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This invention relates to a method of erecting a concrete form, and more particularly to a method of erecting or fabricating a paperboard concrete form.

Concrete structures such as concrete floors, for example, are formed by placing a number of inverted steel pans on temporary flooring, e.g., a plywood deck, and then pouring concrete over the steel pans. The steel pans serve as void forms to create voids in the concrete when the concrete is poured, and are arranged on the temporary flooring in spaced apart relation to define channels into which the concrete is poured to form beams and the like. After the concrete has hardened, the temporary flooring and pans are removed to leave a concrete floor whose undersurface has a waffle-like appearance. It has been found desirable to use paperboard shells with internal reinforcing as concrete void forms. Paperboard void forms offer several substantial advantages, such as low initial cost and ease of handling.

This invention is directed primarily to the provision of a method of erecting or fabricating paperboard concrete void forms on the job; that is, at the location where the concrete is to be poured. This invention has for an important object the provision of a novel method of fabricating paperboard concrete forms so that forms of a great variety of cross-sectional shapes may be formed from one basic system. A variety of paperboard concrete forms having different cross-sectional shapes is desirable when the undersurface of the floor is left exposed to form a lacunar. A great variety of cross-sectional shapes allows the architect to assemble the void forms in pleasing geometrical formations while still retaining the required structural utility of the floor.

Another object of this invention is to provide a novel method of erecting or fabricating paperboard concrete formations which is timesaving and inexpensive.

Other objects and advantages of this invention will become apparent from the following description taken in conjunction with the accompanying drawings wherein is set forth, by way of illustration and example, the preferred embodiment of this invention.

In the drawings:

FIGS. 1 through 3 show perspective views of the steps performed in assembling a void form by the method of this invention; and

FIG. 4 is a perspective view showing a series of void forms arranged on a plane surface.

In the practice of the method of this invention, temporary flooring 10, for example, a plywood deck, is constructed in the conventional manner to provide a plane surface. A series of bottom pads 11 are arranged on the temporary flooring 10 in the desired pattern usually in uniform spaced apart relationship from each other. See FIG. 4. The bottom pad 11 is preferably formed from sheet-like material, such as corrugated paperboard. The perimeter 12 of the pad 11 is shaped or contoured to conform to the desired cross-sectional configuration of the void form F. The pad 11 serves as a guide in the formation of the side wall of the void form F, which will be described hereinafter, and can be of any geometrical shape, such as any polygonal configuration, circle, ellipse, or any geometrical figure composed of straight line and arcuate sides. The bottom pad 11, as illustrated, has an octagonal configuration. Referring to FIG. 1, the bottom pad 11 is secured to the temporary flooring 10 by means of staples 13 located in the central portion

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of the pad so as to leave the marginal portions of the pad free.

The next element used in assembling a void form by the method of this invention is a side wall member 14, which is preferably formed of foldable sheet-like material, such as corrugated paperboard. The side wall member 14 has foldably attached to its upper and lower free edges trapezoidal shaped tabs 15 and 16, respectively. The side wall member 14 has a length equal to the perimeter of the pad 11 and is divided into eight uniform side panels 14a by longitudinal score lines 17. Each side wall panel 14a corresponds to a side edge of the bottom pad 11.

The side wall member 14 is assembled by folding one of the tabs 16 normal to its associate side wall panel 14a and tucking it between the pad 11 and the temporary flooring 10. A staple 19 is then driven through the pad 11 into the flooring 10 in the area of the tab 16 to secure the tab in place. The remaining side wall panels are then folded around the pad 11, with the tabs 16 being tucked between the flooring and the pad 11 until a continuous upstanding side wall or sleeve is formed for the void form. The side wall or sleeve, which is open at its upper end, has a cross-sectional configuration corresponding to the perimeter of the pad 11. The end side wall panels of the side wall member 14 are secured together by a length of pressure sensitive adhesive tape T.

After the side wall member 14 has been assembled into an upstanding sleeve, and secured relative to the flooring, internal reinforcing members are placed within the sleeve. The preferred reinforcing member is a partition grid G, although it is to be understood that reinforcing members of a great variety of shapes can be formed and are well known in the art. They serve the function of providing longitudinal and lateral support to the void form to allow it to withstand the pressure of the concrete. Partition grids G comprise strips of corrugated paperboard that are transversely slotted at uniform intervals along their lengths and then telescoped together to form a grid-like configuration. These partition grids are well known in the art and are commonly used for the purpose of forming cells to keep articles separated within a container. The partition grids G are separated from one another by pads 20. The stacked partition grids G extend vertical from the bottom pad 11 to the top free edge of the side wall member 14. The individual strip of paperboard that forms a partition grid extends laterally to the side wall panels 14a. After the partition grids G are in place the tabs 15 are inwardly folded normal to the side wall panels 14 to overlie the partition grids. A central panel 22 is then placed on the top partition grid and within the ends of the tabs 15. The central panel 22 serves to maintain a uniform height within the void form. A top panel or pad 23, which is substantially identical to the bottom pad 11, is then placed on the tabs 15 and central panel 22. The top panel or pad 23 is secured to the side wall member 14 by means of pressure sensitive adhesive tape T. The void form F is thus assembled and is ready for the pouring of the concrete.

The paperboard used for the elements of the void form used herein are preferably coated on their exterior surfaces with a thin film of polyethylene to increase their resistance to water.

It is to be noted that while the void form described herein has an octagonal cross-sectional configuration, void forms of any desired cross-sectional configuration may be formed by the method of this invention. The cross-sectional shape of the void form is determined by the configuration of the pad 11. For example, when the bottom pad has straight edges, such as in the present

embodiment, the side wall member 14 is scored to provide panels having a width equal to each side edge. When the contour of the bottom pad is arcuate the sleeve 14 can be left unscored and merely folded about the pad to conform to the arcuate shape of the bottom pad, and secured in place in the same manner as previously described.

It will, of course, be understood that various details of construction may be modified through a wide range without departing from the principles of this invention, and it is not, therefore, the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim:

1. Method of forming a concrete form, which comprises, securing to a plane surface a pad having a perimeter corresponding to the cross-sectional shape of said form, surrounding said pad with an upstanding side wall defining an open ended sleeve, securing said side wall relative to said plane surface, reinforcing the interior of said sleeve, and sealing the upper open end of said sleeve.

2. Method of forming a concrete void form, which comprises, securing to a plane surface a bottom pad having a perimeter corresponding to the cross-sectional shape of said void form, closely surrounding said pad with a continuous upstanding side wall to form an upstanding sleeve defining an opening corresponding to the perimeter of said pad, securing said sleeve relative to said plane surface, placing a series of load bearing members within said sleeve to a height substantially equal to the height of said sleeve, and closing the upper open end of said sleeve.

3. Method of forming a concrete void form, which comprises, securing to a plane surface a bottom pad having a perimeter corresponding to the cross-sectional shape of said void form, completely encircling said pad with an upstanding side wall, said side wall being placed in contiguous relation with the perimeter of said pad to form an upstanding sleeve having a cross-sectional shape corresponding to the perimeter of said pad, securing said sleeve relative to said pad and plane surface, stacking a plurality of partition grids within said sleeve to a height substantially flush with the top of said sleeve, covering

said grids with a panel similar to said pad and securing said panel to said sleeve.

4. Method of forming a concrete void form, which comprises, securing to a plane surface a bottom pad having a perimeter corresponding to the cross-sectional shape of said void form to prevent relative lateral movement between said surface and pad, completely encircling said pad with an upstanding side wall, said side wall being contiguous with the perimeter of said pad whereby said side wall defines a sleeve having a cross-sectional shape corresponding to the perimeter of said pad, a plurality of tabs foldably attached to the lower free edge of said side wall, tucking said tabs between said pad and plane surface to prevent relative lateral movement between the side wall and plane surface and securing said tabs to said plane surface, stacking a plurality of partition grids within said side wall to a vertical height equal to the height of said side wall, covering said grids with a panel similar to said pad, and taping said panel and sleeve together.

5. Method of erecting concrete void forms, which comprises: arranging on a planar, load supporting surface in a predetermined pattern, a plurality of planar pads having a peripheral configuration similar to the desired cross section of said void forms; securing said pads to said surface to prevent relative lateral movement therebetween; completely and closely encircling said pad with an upstanding side wall to form an upstanding sleeve; securing said sleeve relative to said pad and planar surface; stacking a plurality of partition grids within said sleeve to a height substantially flush with the top of said sleeve to form a load bearing element extending to the top of said sleeve; and enclosing the upper end of said sleeve to complete said void form.

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