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Andersen et al.

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[54] **LOCKING RING FOR CORNERS OF PLYWOOD FORM PANELS**

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[52] **U.S. Cl.** ..... **249/47,** 249/192, 249/219 R

[51] **Int. Cl.** **E04g 17/02**

[58] **Field of Search** ..... 249/192, 193, 219 R, 249/47

[56] **References Cited**

UNITED STATES PATENTS

2,763,048	9/1956	Sullivan	249/193
3,124,858	3/1964	Blondé	249/193
975,943	11/1910	French	249/193 X
3,503,583	3/1970	Jester et al.	249/176

FOREIGN PATENTS OR APPLICATIONS

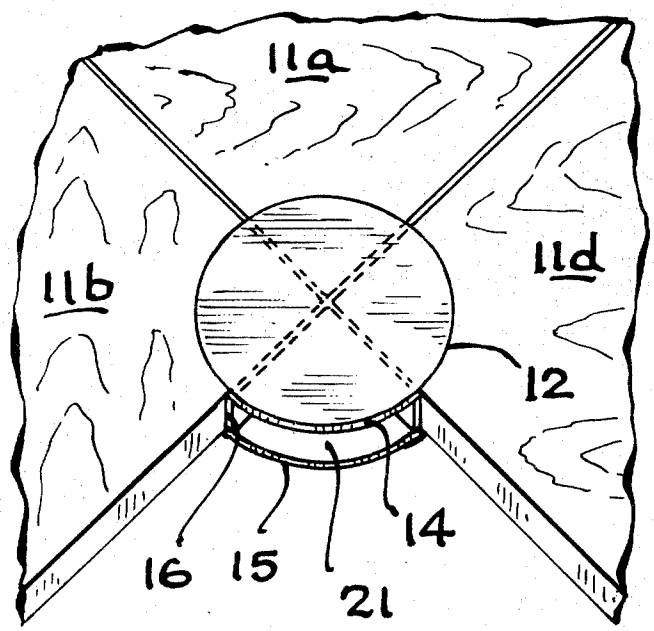
957,163	1/1957	Germany	249/192
965,694	9/1950	France	249/193

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[57] **ABSTRACT**

The plywood panels of a deck on which concrete is poured have the adjacent corners aligned with a fixture. This fixture comprises top and bottom plates connected by vertical webs and defines four pockets of a size to receive the four adjacent corners of four plywood panels and hold them aligned.

2 Claims, 4 Drawing Figures



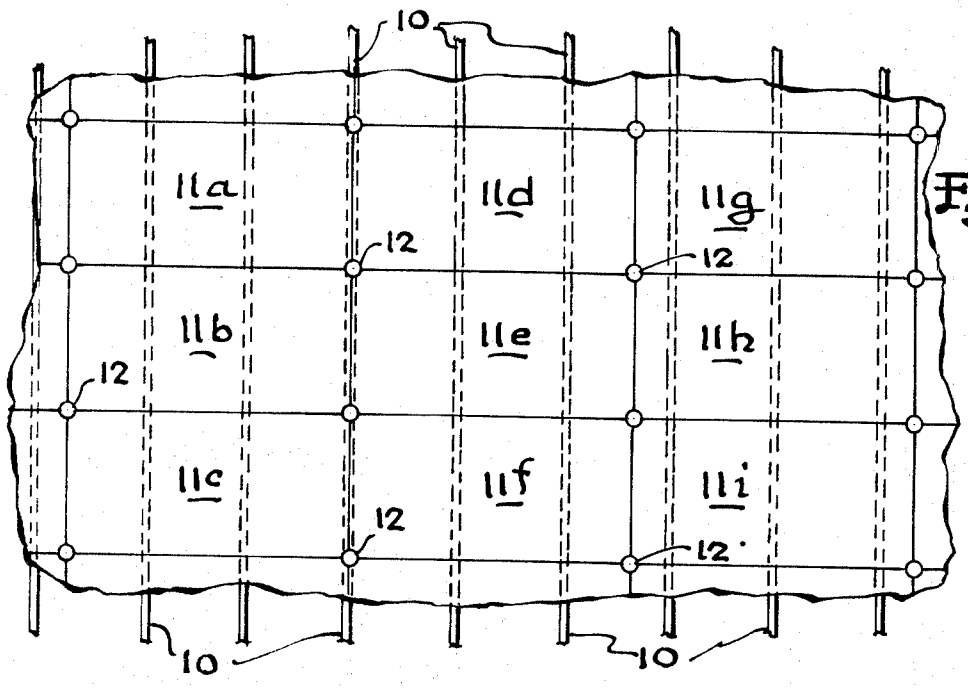
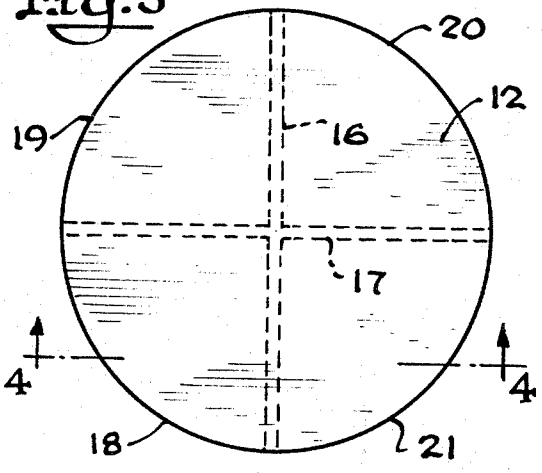


Fig.1

Fig.3



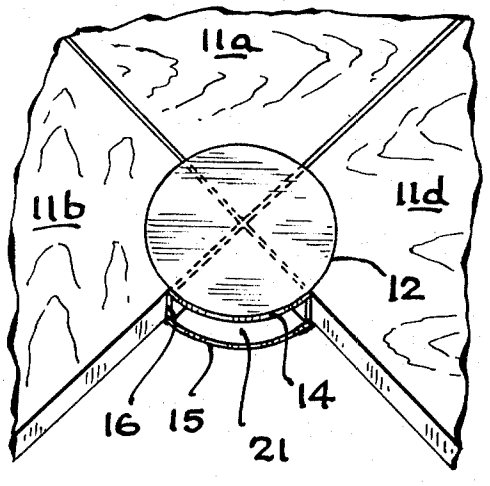


Fig.2

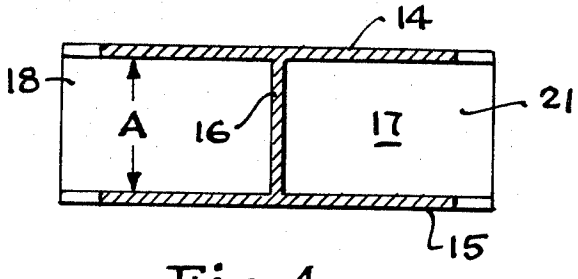


Fig.4

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LOCKING RING FOR CORNERS OF PLYWOOD FORM PANELS

BACKGROUND AND SUMMARY OF THE INVENTION

When forming a horizontal concrete slab, as for example a floor in a high rise building, the common procedure is to erect a metal framework on which a plywood deck is arranged. This framework and deck then forms a temporary support on which the concrete slab is poured. The plywood generally is in the form of 4 × 8 feet panels of uniform thickness. These are laid flat on the supporting framework but are not, as is the case with some other types of concrete forms, each nailed to a wooden backing board along the edges to hold them aligned. As a consequence, where there is a warped or twisted sheet, problems are created because of the fact that the adjacent sheets are not all in a common plane. Wind may get under such a twisted sheet and displace it from its desired location; when the fluid concrete is poured some of it may run through an opening thus created by the twisted sheet; a worker walking across the plywood deck may inadvertently trip on the uneven deck thus created and injure himself; etc. While it would be possible to put wood, e.g. 2 × 4's, etc., behind each of the joints where the plywood sheets meet, this is not a practical solution because of the added cost involved in labor, materials, etc.

The principal object of the present invention is to provide a fixture for locking together the four adjacent corners of four plywood sheets on such a deck to ameliorate the problems otherwise present. An important feature of the present invention is that embodiments thereof are extremely inexpensive, thus they can even be a disposable item. While they are salvageable, the contractor need not worry about trying to salvage them when the concrete is hardened sufficiently for the supporting framework and deck to be removed. Furthermore, they are relatively easy to put in place at the time the deck is formed and thus do not substantially add to the cost of forming such a deck.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a plan view of a section of a deck employing embodiments of the present invention;

FIG. **2** is an enlarged perspective view of an embodiment of the invention with three plywood panels;

FIG. **3** is a plan view of the embodiment employed in FIGS. **1** and **2**; and

FIG. **4** is a section viewed at line **4—4** of FIG. **3**.

DESCRIPTION OF SPECIFIC EMBODIMENT

The following disclosure is offered for public dissemination in return for the grant of a patent. Although it is detailed to ensure adequacy and aid understanding, this is not intended to prejudice that purpose of a patent which is to cover each new inventive concept therein no matter how others may later disguise it by variations in form or additions or further improvements. The claims at the end hereof are intended as the chief aid toward this purpose, as it is these that meet the requirement of pointing out the parts, improvements, or combinations in which the inventive concepts are found.

One procedure for forming a horizontal concrete slab, as for example a floor, is to construct it in situ. To do so a temporary deck must be supplied on which the fluid concrete is poured. The deck remains in place until the concrete has cured sufficiently so as to have a self-sustaining form, considering the loads thereon. Using sheets of plywood of rectangular form and common dimensions, such a temporary deck may be readily produced. The sheets of plywood are in turn resting on, and supported by, a suitable temporary framework. FIG. **1** illustrates a plurality of horizontal beams **10** forming such a framework. As illustrated, the beams run only one direction, but in other forms they will also be supporting members at right angles thereto. On this supporting framework are a plurality of plywood panels **11***a*, **11***b*, etc. These panels are of a uniform thickness, say for example, 1 inch. At a meeting point where the corners of four of the panels come together is positioned one of the fixtures **12** of the present invention. This fixture comprises parallel top and bottom plates **14** and **15.** These plates are connected by two webs **16** and **17** positioned at right angles to each other. This thus defines four pockets of a quadrant configuration as indicated by the numbers **18–21.** The two plates **14** and **15** are positioned a distance A apart which substantially corresponds to the thickness of the plywood panels **11.** For example, if the plywood panels are one inch thick the dimension A would be approximately 1 inch so that the corners of the plywood panels can be slid into the respective pockets **18–21.**

The fixtures **12** are molded of plastic, as for example polypropylene or nylon. Thus the plates **14** and **15** and the webs **16** and **17** are an integral unit. The fixtures could be made of metal but molding them of plastic has some desirable attributes, not the least of which is cost. They can also be brightly colored so that they are easily seen. While the particular dimensions may be appropriately varied, in a specific embodiment the plates **14** and **15** were 3 inches in diameter. They and the webs had a nominal wall thickness of 0.06 inches.

As the deck is being assembled by the arranging of the plywood sheets **11** thereon, the fixture **12** would be slipped onto the corner of one of the plywood sheets, as for example sheet **11***a*. It aligns itself. The bottom face of the sheet abuts the bottom plate **15** and the upper face of the sheet abuts the top plate **14.** The vertical edges of the sheet abut the webs **16** and **17.** The remaining sheets would be sequentially brought into position and the appropriate corner would be slipped into the respective pocket of the fixture. For example, sheet **11***d* would be brought up and its corner slipped into pocket **20.** The corner of sheet **11***b* would be slipped into pocket **18,** and finally sheet **11***e* (not shown in FIG. **2**) would be slipped into pocket **21.** To the extent that the plywood sheets are warped, the adjacent corners of the four sheets **11***a*, **11***b*, **11***d* and **11***e* are held in alignment with each other by the fixture. Since the four corners of each sheet, as for example sheet **11***a*, are held in alignment by fixtures at each of the four corners, this serves to hold the whole sheet in a proper positioning. The tendency of the wind to catch an individual sheet and displace it (sometimes even blowing it off an upper story of a high rise building and allowing it to fall to the ground) is combatted. Likewise, a worker walking across the deck before the concrete is poured is not likely to trip because of substantial unevenness in adjacent sheets of plywood.

While the fixtures could be made substantially larger than described, we strongly recommend against it. One obvious reason is, of course, an increase in cost. How-

ever, even more important is that by making them substantially larger one creates the problem of substantially difficulty in assembling the deck; that is, fitting more and more of the edges of each of the plywood sheets into the holder. With the small fixtures used only at the corners there is substantially no more problem in assembling a deck than would be the case if such fixtures were not employed.

We claim:

1. In a construction form including a supporting frame, a deck resting on said frame and serving as the base on which concrete is poured, said deck comprising a plurality of rectangular sheets of plywood or the like laid flat, having top and bottom faces, edges therebetween and with their edges substantially abutting and defining at least one corner at which four of said sheets meet, the improvement comprising:

a fixture at said corner, said fixture comprising a top plate abutting the upper face of the four sheets at said corner, a bottom plate abutting the lower face of the four sheets at said corner, and connecting means connected to and extending between said plates in juxtaposition to the edges of the sheets and holding the plates against separation; whereby the four sheets at said corner are held in vertical alignment with respect to each other, said connecting means comprising two vertical webs positioned at right angles to each other and integral with said plates and, with said plates, defining four sheet receiving pockets of quadrant configuration.

2. In a construction form as set forth in claim 1, wherein said plates and said webs are formed in one piece of plastic.

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