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FORM FOR CONCRETE CONSTRUCTION

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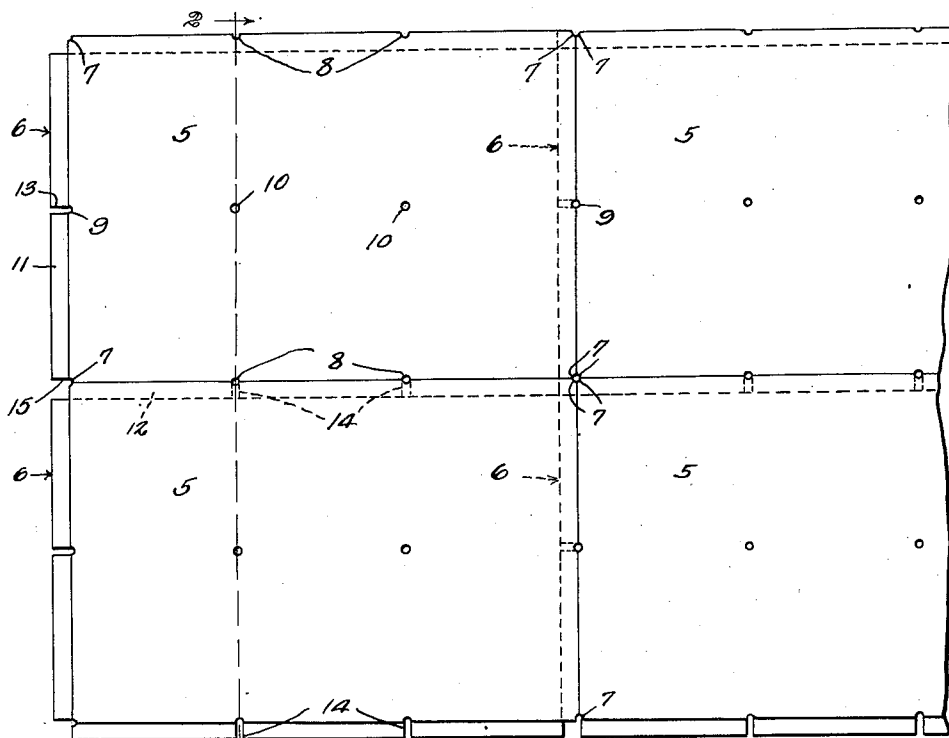


Fig. 1.

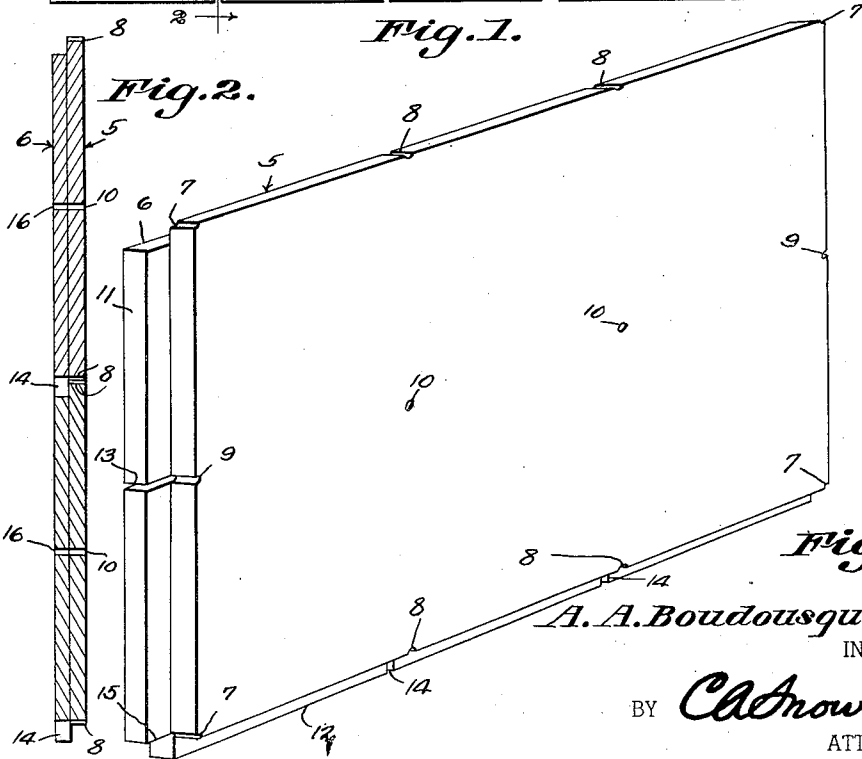


Fig. 2.

Fig. 3.

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## UNITED STATES PATENT OFFICE

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## FORM FOR CONCRETE CONSTRUCTION

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1 Claim. (Cl. 25—131)

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This invention relates to a building form for use in erecting walls of concrete or the like.

By way of background, it may be noted that in the art, the most conventional type of form used for pouring concrete is still that requiring the erection of a special form, using boards and wooden framing, designed for the erection of a particular wall. After this single-use form has been erected, and after the concrete which has been poured therein has fully set, the form is broken away, and another form must be erected anew for the next wall to be poured. Forms adapted for assembly and disassembly for reuse have previously been devised, but have not found wide and satisfactory use.

It is an important object of the present invention to provide a form construction constituting interlocking panels capable of assembly and disassembly with maximum speed, that can be reused, and which moreover can be made very inexpensively.

It is a further important object to provide a form construction as described wherein the speedy assembly and disassembly mentioned is readily permitted through cooperating aligning means between the panels which in effect automatically brings about proper placement of each panel relative to each other panel in erection of the form.

Still another important object of the invention is to provide a form as stated wherein the panels used are so designed as to be capable of easy manufacture on a modular plan, that is the panels readily lend themselves to construction in multiples of a designated number of inches.

Another important object is to provide a form for concrete construction which when erected will be unusually strong, despite the fact that there is not required, in the assembly thereof, the use of fastening means such as bolts, nails, or the like.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is a face view of a portion of a partially erected form embodying panels constructed in accordance with the invention, the form being viewed from the outside.

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Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a perspective view of one of the panels.

Referring to the drawing in detail, each panel comprises a pair of permanently connected panel sections. These comprise an outside panel section generally designated 5, and an inside panel section generally designated 6. The panel sections are of any suitable strong material, such as plywood or cement asbestos board, to provide examples of material that can be used. Other materials having the requisite strength for resisting the pressure of the poured concrete after assembly of the form can well be used. It is worthy of note at this point, additionally, that the panels may be of any desired size. Preferably, panels formed in accordance with the invention are on a modular plan, and can, for instance, be in multiples of 16", both as to length and width.

The panel sections 5 and 6 are each placed flat against the other, in an offset arrangement to be described in greater detail hereinafter, and are permanently secured by any suitable means. They can, for example, be permanently bonded together or otherwise adhesively secured to bring forth the completed panel.

Referring to the outer panel section 5, this is rectangular and flat conformation. In each of the four corners of the section, a quarter-round transverse recess 7 is provided. Spaced apart half-round transverse recesses 8 are formed in the top and bottom edges of the section, the number of the recesses 8 varying according to the length of the panel.

Formed in the respective end edges of the panel section 5 are half-round recesses 9, and as in the case of the recesses 8, the number of these can vary according to the width of the panel section.

Formed centrally of the section are spaced openings 10, the number of which also can be varied according to requirements, two being shown in the present instance.

The inside panel section 6 is of the same dimensions, as to length and width, as the outside panel section 5. However, when the section 6 is positioned against section 5 for the purpose of being secured thereto, it is offset relative to the section 5 so that one end portion 11 projects beyond the adjacent end edge of the section 5, and one side portion 12 projects beyond the adjacent side edge of the outside panel section. In the present instance, the projecting side portion 12 is at the bottom of the completed panel.

Obviously, so positioning the section 6 results

in the other end edge portion of said section being inset relative to section 5, and also results in the other side portion being inset relative to the section 5.

Extended inwardly from the edge of projecting portion 11 is a slot 13, the bottom of which registers with the half-round recess 9 of section 5. Similar slots 14 are extended inwardly from the edge of projecting side portion 12, and the inner ends of these slots register with the adjacent half-round recesses 8 of section 5.

At the intersection of the projecting portion 11 and the projecting portion 12 of the inside panel section, the panel section is cut away as at 15 to provide a recess the walls of which are at right angles to each other, the intersection of said walls being rounded off to correspond and register with the adjacent quarter-round recess 7. This construction is best shown in Figure 1.

The formation of the inside panel section 6 is completed by providing therein middle openings 16 that register with the openings 10 of section 5.

Assembly of the panels to provide a form ready for the pouring of concrete can be achieved in various ways. However, one way of conveniently assembling the panels is as follows. As a first step, vertical posts, not shown, are erected, it being understood that as in the construction of conventional building forms, these are to be disposed at the outside of the opposed walls of the form.

Starting at the bottom of the form to be erected, one of the panels is placed against each of the opposed upstanding posts, with the outer panel section 5 of each panel bearing against the inside face of the adjacent post. Tie wires, not shown, are then threaded through the openings 10 of the respective panels and around the posts, these wires extending transversely across the space intervening between the opposed panels, said intervening space defining the area into which concrete is to be poured for the erection of the building wall. The tie wires thus secure the panels to the supporting posts, and can be looped through the openings 10 in any manner desired for the purpose of retaining the respective panels tightly against their supporting posts and in proper spaced relation to each other.

After one panel has been so secured, other tie wires can be placed in the half-round recesses 8 at the top of the panel, and extended around the post. Additionally, the tie wires can be positioned in the end half-round recesses 9 and also extended around or looped around the supporting posts closest thereto.

Other panels can now be assembled with the first panels, being capable of entry from the side or from above, by provision of the respective slots 13 and 14. In other words, even though tie wires may be lying in recesses 8 and 9 respectively, these wires will not prevent assembly with the first panels of other panels from the side and above, since the slots 13 and 14 will pass around said wires and will permit the desired interlocking

arrangement. By reason of this construction, the threading of wires through any openings is limited to the threading through the openings 10, all other wires being simply placed in recesses at the sides or ends of the panels, preliminary to mounting of other panels upon those already secured.

In this way, the opposed walls of the building form can be conveniently and speedily erected, the net result being an interlocked wall of great strength, capable of assembly and disassembly with maximum speed, and capable additionally of erection to any desired height or length without the necessity of taking special measurements. The use of a modular plan as mentioned hereinbefore is, as will be clearly seen, particularly effective in the use of panels formed and assembled in accordance with the invention.

Other important characteristics of the invention may also be noted. Each panel can be manufactured at very low cost, the panel in its simplest form being merely two sheets of rectangular material formed with suitable openings, recesses, and slots and adhesively secured to form the completely built-up panel. Additionally, the panels can be stored away or packed upon a truck in a manner wherein they will occupy a minimum of space, and are available for reuse indefinitely.

What is claimed is:

In a form for concrete construction, a panel for interlocking assembly with other panels of like formation, comprising connected flat panel sections rectangular in outer conformation, one of said sections being offset relative to the other whereby said section will have one end and one side portion projecting beyond the other section, and one end and one side portion inset relative to the other section, said panel sections having registering openings formed substantially centrally thereof, the first-named section having slots formed in its projecting portions, and the second-named section having a quarter-round recess formed in each of its four corners and half-round recesses formed in its respective edges, the half-round recesses formed in those edges that are adjacent said projecting portions being in register with the bottoms of the slots, said openings, slots, and recesses being adapted to receive connections to a form support, and said first named section having a right angled cut-away portion at the intersection of its projecting end and side portions, the inner corner of the cut-away portion being rounded off and in register with one of the quarter-round recesses.

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