

April 16, 1957

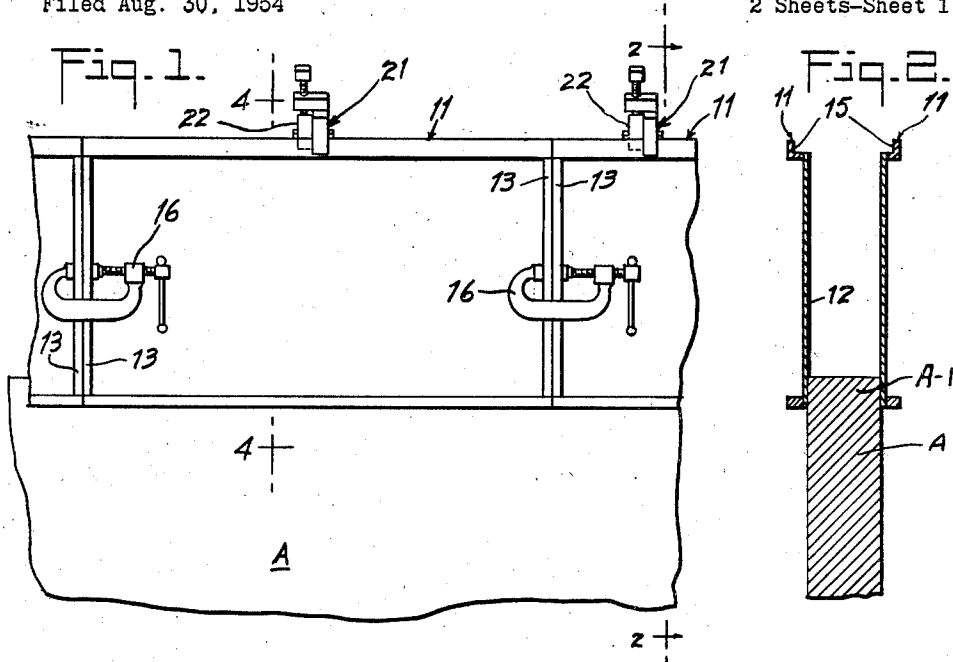
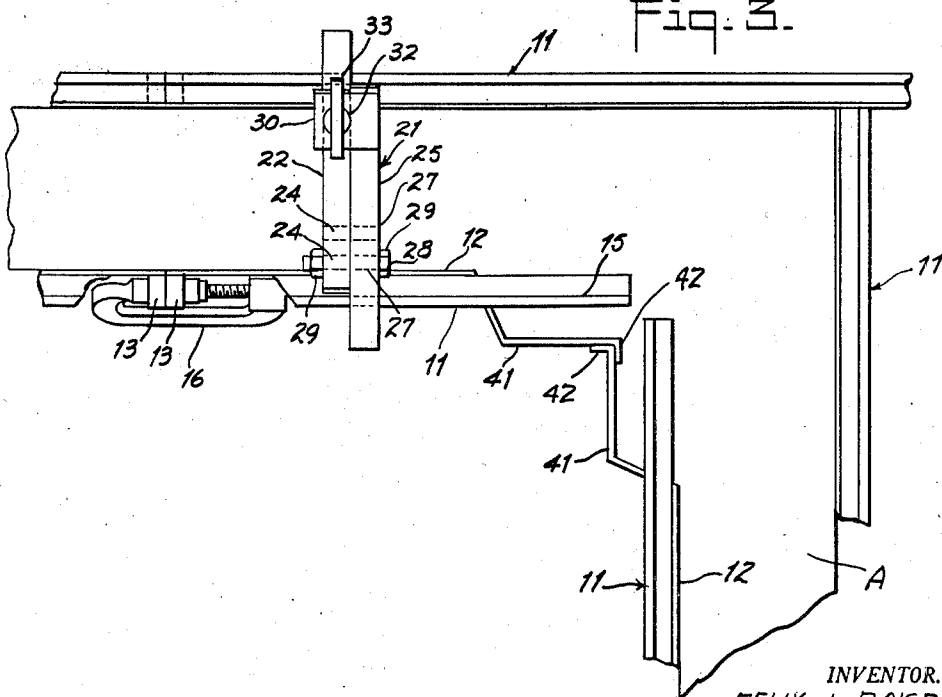
F. J. DE BOISBLANC

2,788,560

CONCRETE FORM

Filed Aug. 30, 1954

2 Sheets-Sheet 1



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Fig. 4.

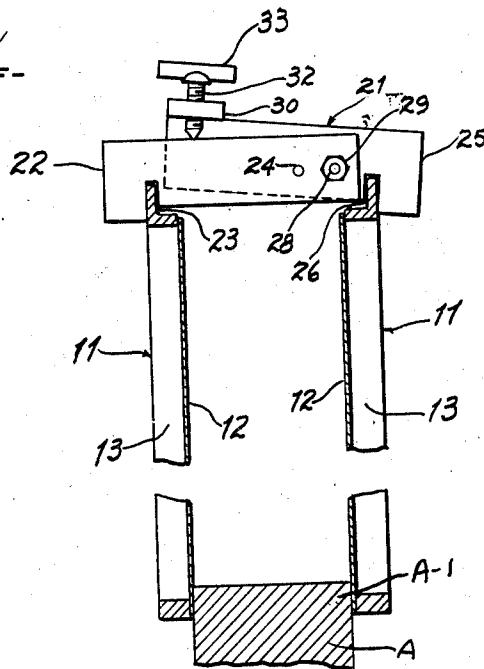
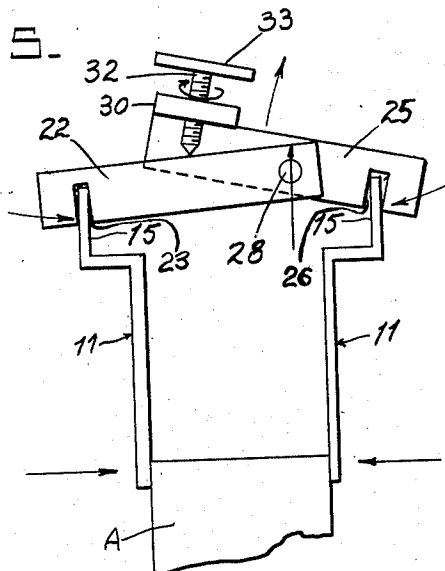


Fig. 5.



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This invention is concerned with construction equipment. It is illustrated here by equipment adapted for wall construction but it is not limited to such construction.

The object of the invention is to simplify and speed up construction using concrete and other material requiring pouring and setting, providing a demountable form that is simple, light, easily set in place and removed, and rigidly held in place.

The invention attains this object by providing a form consisting of interchangeable panels with flat face portions and flanged ends that can be easily joined together end-to-end on each side of the desired form, and that are held in proper spaced relation by a special clamping means. A form for wall construction can be made of these panels by setting up two upright panels, or two horizontal rows of upright panels, parallel to each other. Concrete or the like is poured in the space between the two panels. Such a form can be set up to permit pouring the material onto any kind of base such as the ground, a floor, or a previously poured layer of material. Each panel has at its top a portion at an angle to its face. When the panels are set up parallel to each other, a funnel-like formation results, making pouring easier and faster.

The invention also provides a clamp, readily applied and removed, for holding the parallel panels in position relative to each other when their lower portions are suitably spaced and braced, preferably from the inside as when the panels are set above and slightly overlying a previously set course of concrete. The clamp has two sets of jaws, each of which grips one of two oppositely facing panels at the top and prevent it from moving either toward or away from the other. The clamp is applied at the top.

The preferred form is shown in the accompanying drawings to illustrate the invention. In these drawings:

Figure 1 is an elevation showing part of the construction form;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a plan view of a corner construction with the tops of two panels partly broken away;

Figure 4 is a section on the line 4—4 of Figure 1; and

Figure 5 is a schematic view of the clamp.

In this illustration a number of construction panels 11 are set up end to end in two parallel rows, partially enclosing a space directly above a base A, shown here as including a spacer portion A-1 extending between the bottom parts of the panels. The base, for example, can be a previously laid course of a concrete wall. Each panel 11 has a face portion 12. Each face portion 12 has at each of its vertically extending ends a flange 13 extending substantially from top to bottom. At the top of each panel is an L-shaped member 15, the horizontal web of which is welded to the top edge of the panel so as to project outwardly, its vertical web then being parallel to but spaced out from the panel. The ends of this L member overlie the top edges of the flanges 13. When the panel is set in place, the vertical web of the L is remote from the op-

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posite row of construction panels 11. The construction panels 11 in each row are held in position relative to each other by C-clamps 16 which clamp together the abutting flanges 13.

At intervals along the top of each row of panels is a clamp 21 which engages the vertical web of the L-shaped members 15 of opposite panels 11. The clamp 21 (see Figs. 4 and 5) comprises (1) a member 22 with a recess 23 at one end, forming a pair of jaws, and a series of holes 24 extending through it from side to side at the other; and (2) a co-acting member 25 lying alongside the member 22, having a like recess 26 at its end remote from the recess 23, and having also a series of holes 27 similar to the holes 24 in line with the holes 24. Each recess in effect forms a pair of jaws, the clamping action of which is described below. Projected through one of the holes 24 and its adjacent hole 27 is a pin 28 which serves as a pivot for the two clamp members 22 and 25, thus making them a scissors-like hinged pair. The pin 28 is threaded at both ends to receive retaining nuts which hold the members 22 and 25 against each other but permit them to be swung or canted relative to each other about the pin 28.

At the end of the member 25 opposite the recess 26 is a lug 30 extending over the member 22 and carrying a threaded operating rod 32 with a turning head 33. When the head 33 is turned, the rod 32 presses against the top of member 22 and causes the member 22 and the member 25 to rotate relative to each other in opposite directions about the pin 28. This rotation is continued until the side edges or jaws of each recess 26 grip its associated L-shaped member 15 tightly, thereby preventing the top of each opposite panel 11 from moving toward or away from the other. The threaded operating rod 32 then serves as a holding means. Each recess is only slightly wider than the web of its associated L-shaped member, and the recess is so located that when the clamp member is in a generally horizontal position the side edges of the recess are generally parallel to the sides of the vertical web 15, and readily receive the web between them. However, when the clamp member is canted by the action of the operating rod 32, both side edges or jaws of the recess assume an oblique position in which they are jammed against the web. Wider recesses should be avoided to prevent the web from clearing one edge of the recess.

To vary the length of the clamp the pin 28 may be placed in any of the holes 24 in the member 22 and any of the holes 27 in the member 25.

It will be noted, from Fig. 5, that the jaw at the left hand side of recess 26 grips the vertical web at the top of the panel (preferably provided by the L-shaped member 15) by pressing against it at a higher point on the inner side than does the other jaw which grips the web on the outer side. The jaws formed by recess 23 in the co-acting clamp member 22 grip the vertical web of the other panel in the same manner. This gripping action creates a turning moment tending to cause the bottom of each panel 11 to press toward the other. It can be increased until the bottom of each panel presses laterally against the sides of the base layer A, helping to hold the panels in place and also insuring that the surface of the molded material will be smooth.

During the pouring operation the L-shaped members 15 at the panel tops act as a funnel, enabling the material to be poured easily and quickly. When it has hardened sufficiently the clamp 21 may be released simply by turning the handle 33 in reverse. The clamp 21 may then be removed and the row of panels 11 withdrawn in any convenient direction, either all panels at once, or, upon removing the C-clamps 16, one at a time.

If desired, when the base layer A includes a spacer portion A-1 as shown, or when a separate spacer is used, this gripping action can be increased until the bottom of

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each panel exerts a substantial pressure against the spacer, holding the panels more securely and better insuring a smooth surface for the molded material. In many situations, a spacer is not needed and the panels are held well enough by the friction of their bottom edges on the ground or on any other generally flat surface encountered as the base on which the form is mounted.

When a corner construction is desired, certain panels 11 are modified so that the face portion 12 is bent to form an off-set projection 41 with an edge portion 42 extending as a lip at a right angle, to turn the corner. Two such modified panels are placed at right angles to each other, with the lip 42 of one projection 41 overlapping the other projection 41 as shown in Fig. 1. These panels enclose a space into which concrete may be poured to form a strengthening rib at the corner. No additional clamping means are necessary, or separate corner parts requiring additional steps of assembly and disassembly.

I claim:

1. A construction form for concrete or the like comprising a pair of oppositely facing metal panels adapted to be mounted in spaced relation on a base, an upwardly extending web portion at the upper rim of each panel, and a means for holding said panels in spaced relation without interposed bracing which comprises a pair of arms hinged together, each arm having a recess to receive one of said upward webs, and means for canting said arms and holding them whereby the sides of each recess grip the web and the panels are held in spaced relation to each other.

2. A construction form for concrete or the like comprising a pair of oppositely facing metal panels adapted to be mounted in spaced relation on a base, a web portion extending outwardly and upwardly from the upper rim of each panel, and a means for holding said panels in spaced relation without interposed bracing which comprises a pair of arms hinged together, each arm having a recess to receive one of said web portions, and a member extending between the arms to swing them and hold them whereby the sides of each recess grip the web and the panels are held in spaced relation to each other.

3. A construction form for concrete or the like comprising a pair of oppositely facing metal panels adapted to be mounted in spaced relation on a base, each of said panels comprising a face portion, a second portion substantially at right angles to the face portion, and a third portion substantially parallel to but offset from the face portion extending from the free end of the second portion, and in combination with said panels a clamp comprising two hinged arms, each having a recess to receive one of said third portions, and a threaded rod extending through a cooperatively threaded hole in one of the arms and pressing against the other arm to swing said arms and hold them whereby the sides of each recess grip the web and the panels are held in spaced relation to each other.

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4. For use with a pair of oppositely facing panels in a construction form for molding concrete or the like, a clamp comprising a pair of arms each of which has a pair of fixed jaws at its outer end adapted to receive a web portion of a panel, a pivot for said arms so located in relation to said jaws that upon swinging of the arms thereabout each pair of jaws assumes an oblique position relative to the panel web whereby to grip it, and means for holding said arms in such gripping position.

5. For use with a pair of oppositely facing panels in a construction form for molding concrete or the like, a clamp comprising a pair of arms each of which has a pair of fixed jaws at its outer end adapted to receive a web portion of a panel, a pivot for said arms located between the pairs of fixed jaws so that upon swinging of the arms thereabout each pair of jaws assumes an oblique position relative to the panel web whereby to grip it, and a member extending between the arms to hold them in such gripping position.

6. For use with a pair of oppositely facing panels in a construction form for molding concrete or the like, a clamp comprising a pair of arms each of which has a pair of fixed jaws at its outer end adapted to receive a web portion of a panel, a pivot for said arms located between the pairs of fixed jaws so that upon swinging of the arms thereabout each pair of jaws assumes an oblique position relative to the panel web whereby to grip it, and a threaded rod extending through a cooperatively threaded hole in one of the arms and pressing against the other member whereby the arms are held in such gripping position.

7. In a construction form for concrete and the like, the combination of a first panel, a first projection joined to one of its vertically extending ends at an angle along a line from top to bottom and forming an off-set extension of said panel, said projection having a portion substantially parallel to the first panel and a lip at right angles to and extending away from the first panel, a second panel at an angle to the first panel, and a second projection similar to the first projection joined to the second panel, with each projection having its lip abutting the other projection to enclose a corner space into which concrete may be poured.

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