Dec. 9, 1952 L. FONTAINE 2,620,542

CONCRETE FORM

Filed Oct. 17, 1949 2 SHEETS—SHEET 1

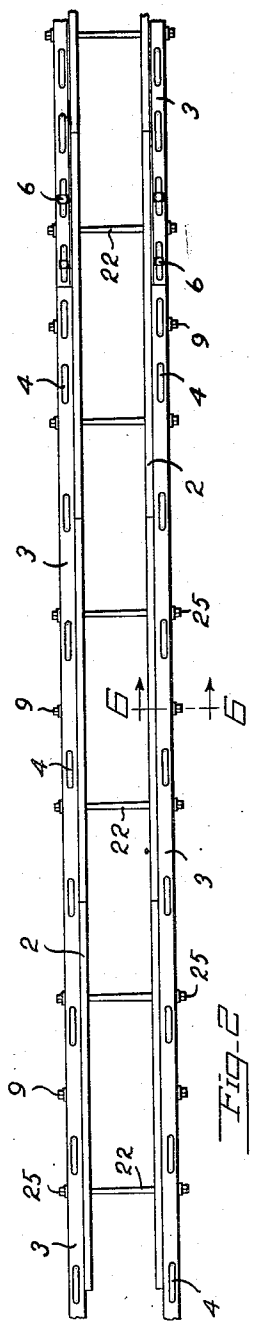


Fig. 2

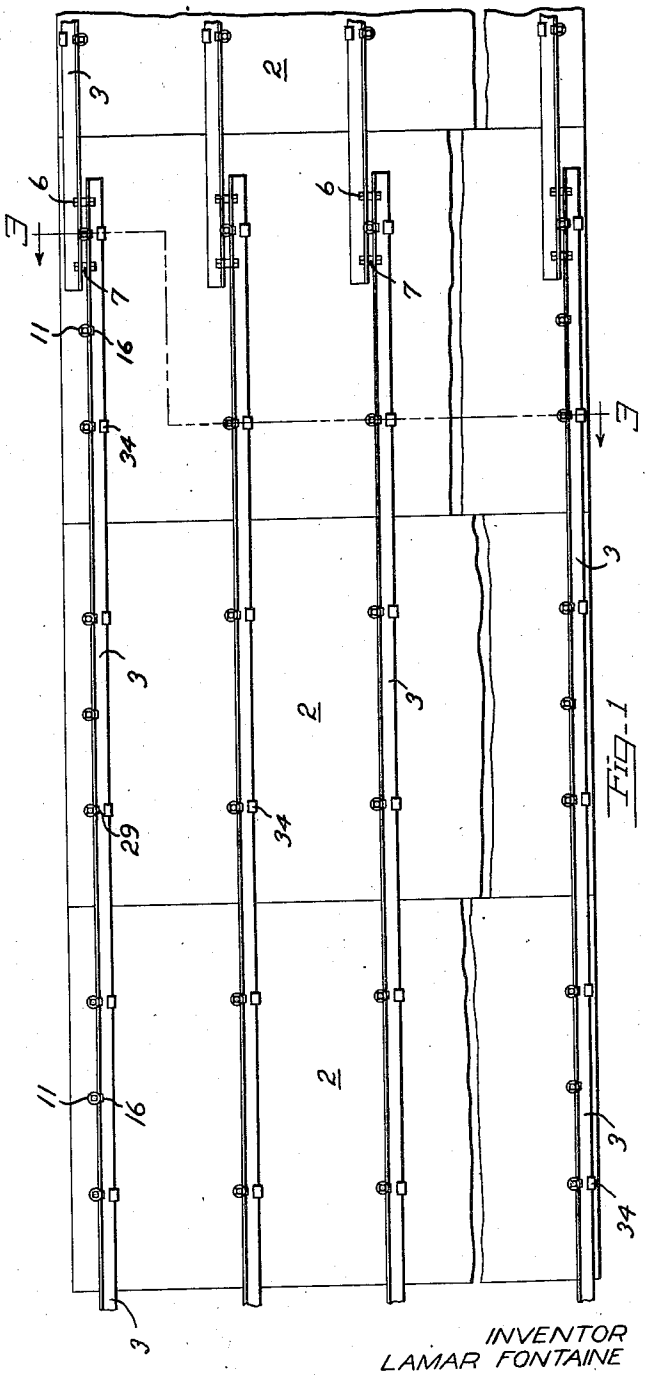


Fig. 1

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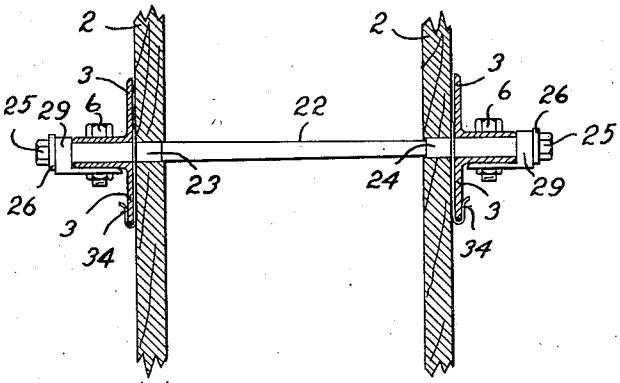
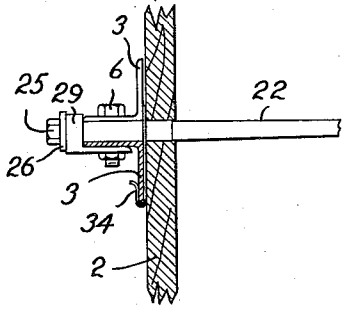


Fig. 3



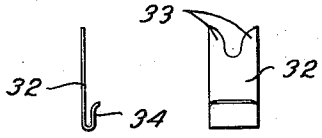


Fig. 5

Fig. 4

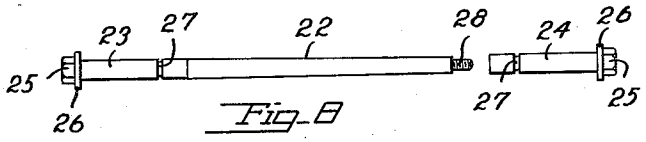


Fig. 8

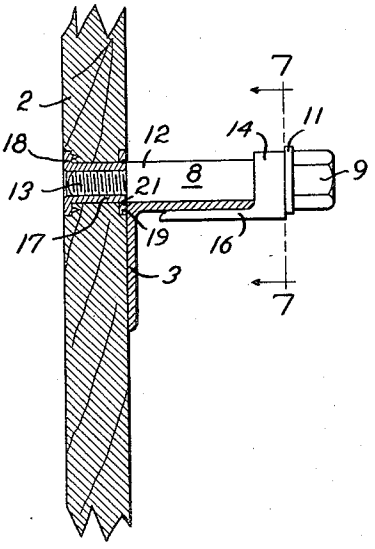


Fig. 6

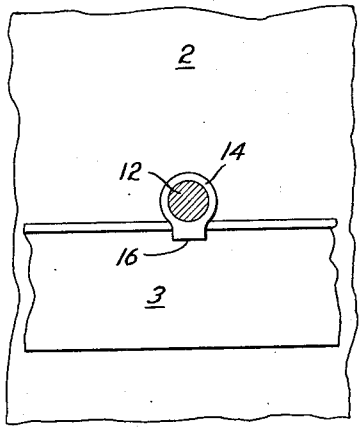


Fig. 7

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UNITED STATES PATENT OFFICE

2,620,542

CONCRETE FORM

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Application October 17, 1949, Serial No. 121,695

4 Claims. (Cl. 25—131)

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My invention relates to concrete forms; and one of the objects of my invention is the provision of an easily assembled form.

Another object is the provision of a concrete form that may be easily dismantled and reassembled for use on another job.

Still another object is the provision of a concrete form that may be adjusted in length.

The invention has other objects and features of advantage, some of which with the foregoing, will be explained in the following description of that form of the invention illustrated in the drawings. It is to be understood that the invention is not limited to the embodiment shown by the drawings, but may be included in a plurality of forms as set forth in the claims.

Referring to the drawings:

Figure 1 is a side elevation; and Figure 2 is a plan view of the concrete form of my invention, portions being broken away to reduce the length.

Figure 3 is a fragmentary sectional view on a larger scale taken in the plane indicated by the line 3—3 of Figure 1; and Figure 4 is an end elevation showing the shape of the lower portion of the bifurcated clip that forms a part of my concrete form. Figure 5 is a side elevation of the clip shown in Figure 4.

Figure 6 is an enlarged fragmentary sectional view taken in the plane indicated by the line 6—6 of Figure 2; and Figure 7 is a sectional view, partly in elevation, taken in the plane indicated by the line 7—7 of Figure 6. Figure 8 is an elevation of one of the tension rods forming a part of the concrete form of my invention.

Broadly, my concrete form comprises two series of vertical panels arranged in spaced parallel relation to form the boundary surfaces between which concrete is to be poured. The abutting panels of each series are held in alinement by spaced bars extending longitudinally along the panels, the bars being held adjacent the panels by suitable tension rods. The tension rods extend transversely through the panels and across corresponding bars of each series of panels. Preferably the rods are located each adjacent the abutting edge of each panel, and are vertically spaced in pairs. Any number of tension rods may be used but the minimum will be determined by the height and thickness of the wall to be poured. Means are also provided to prevent the two series of alined panels from collapsing toward each other.

More specifically, my concrete form comprises two parallel series or progressions of alined

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panels 2, preferably of plyboard, and conveniently a standard 4' x 8' in size.

The panels of each series are arranged vertically, each of the panels being positioned so that its lateral vertical edges abut against the adjacent lateral vertical edges of the next succeeding panel in the series. Thus an unbroken surface is formed by the panels of each series; and two such series spaced apart form the boundary surfaces between which concrete is to be poured.

The alinement of each series of panels is maintained by bars 3, preferably of angle iron and extending longitudinally along the outer side of the panels. For convenience in handling, the bars are preferably about twelve feet long and are vertically spaced on the panels so that the alined panels are properly supported against the pressure exerted by the concrete.

The length of the wall to be poured will often determine the length of bars to be used and means comprising slots 4, in the outstanding flanges of the angle bars provide adjustability as to length when two or more short bars are to be overlapped. The slots are preferably located in the bars so that a pair of slots in each bar may be placed directly opposite a pair of slots in the overlapping bar. Cap screws 6, which pass through the outstanding flanges of the bars and through spacers 7 interposed therebetween fix the overlapping bars together.

Means are provided for fastening at least two such longitudinal bars to each series of panels. Said means comprise pins 8, each pin formed with a head 9 including a base flange 11, and a shank 12 having a threaded end portion 13. A flanged ring 14 is disposed on the shank portion of the pin, the flange 16 projecting under the outstanding flange of the bar which lies against the pin, thus binding the structure together.

The threaded end portion 13 of the pin engages an internally threaded bushing 17 fixed in the panel. The bushing is formed with an annular flange 18 on the inner end and provided with points for seating in the panel. Preferably the panel is countersunk so that a smooth surface is maintained on the inside of the panel. A washer 19 is retained on the other end of the bushing by a split spring ring 21. When desired, the bushing may be removed from the panel simply by removing the split ring 21 and giving the bushing a light tap.

Preferably, two pins are fixed to each panel, one pin being located at the longitudinal midpoint of the panel at the top thereof; and the second pin correspondingly positioned but adja-

cent the lower edge of the panel. Thus each series of panels is held in alinement while means are interposed between the two series to retain them in spaced parallel relation.

Said means comprise tension rods **22**, extending transversely through alined apertures located adjacent the abutting vertical edges of the panels.

Each tension rod comprises two connected sections **23** and **24**, each section being formed with a head **25** including a base flange **26**, and having an annular groove **27** spaced therefrom. The section **23** of the tension rod tapers slightly, commencing beyond the groove and terminating in an externally threaded end portion **28**. The section **24** ends at a point corresponding to the point on the section **23** where the taper begins; and has internal threads tapped therein adapted to engage the threaded end portion **28**. Each of the sections **23** and **24** is designed to receive a flanged ring **29** therearound in a manner similar to that already explained in connection with the pins **8**.

To insure easy extraction of the rod from the concrete, the parts are so proportioned that the tapered portion of each rod lies wholly between the inside boundary surfaces of the form; and the separate section **24** and the section **23** extend from adjacent the inside surface of the head.

Means are provided for still further interlocking the bars and rods, comprising a plurality of bifurcated clips **32**. Each clip is interposed between the bar and the panel, with the bifurcated end **33** engaging a groove **27** in the tension rod. With the bifurcated end of the clip thus engaged, the clip extends downwardly to a looped portion **34** adapted to fit about the downwardly extending flange of the bar. Thus the bars remain in fixed spacing on the rods and the various parts cooperating with each other form a readily assembled or disassembled structure.

I claim:

1. A concrete form comprising two series of alined panels to form the boundary surfaces of the wall to be poured in said form, a plurality of rigid bars engaging the outer surface of each series of alined panels and extending longitudinally therealong to retain them in alinement, tension rods extending transversely across one side of said bars, interlocking clips interposed directly between the bars and the rods, said clips also being interposed directly between the bars and panels for retaining the bars in fixed spacing on the rods and threaded pins secured to each panel of each series and to the associated bars between adjacent rods and binding the clips in interposed position between the bars and panel.

2. A concrete form comprising two series of alined panels to form the boundary surfaces of the wall to be poured in said form, a plurality of rigid bars engaging the outer surface of each series of alined panels and extending longitudinally therealong to retain them in alinement, tension rods extending transversely across one side of said bars, interlocking clips interposed directly between the bars and the rods, said clips also being interposed directly between the bars and panels for retaining the bars in fixed spacing on the rods, threaded pins secured to each panel of each series between adjacent rods, and a flanged ring surrounding each pin and engaging each associated bar for binding the panel to the bar and binding the interlocking clips in interposed position between the bar and panel.

3. A concrete form comprising two series of alined panels to form the boundary surfaces of the wall to be poured in said form, a plurality of rigid angle bars extending longitudinally and associated directly adjacent each series of panels to retain them in alinement, tension rods comprising two connected sections and extending transversely across one side of said bars, each of said rods having an annular groove thereabout adjacent each associated bar, a clip engaging each groove and folded about the bar and positioned directly between the bars and panels for retaining the bar in fixed spacing on the rod, a pin in threaded engagement with each panel between adjacent rods, and a flanged ring surrounding each pin and rod and engaging the associated bar for securing the panels of each series to the bars and binding the clips in interposed position between the bars and panels.

4. In a concrete form, the combination with a vertical panel and a horizontal angle bar having only two outside faces at right angles to each other of a pair of spaced rods extending transversely across one face of the bar and through the panel, a clip interposed between each rod and the other face of the angle bar to fix the two together, a threaded bushing fixed in the panel between the rods, a pin threaded into the bushing and extending across the first mentioned face of the angle bar, and a ring surrounding the pin and having a flange engaging the angle bar.

LAMAR FONTAINE.

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