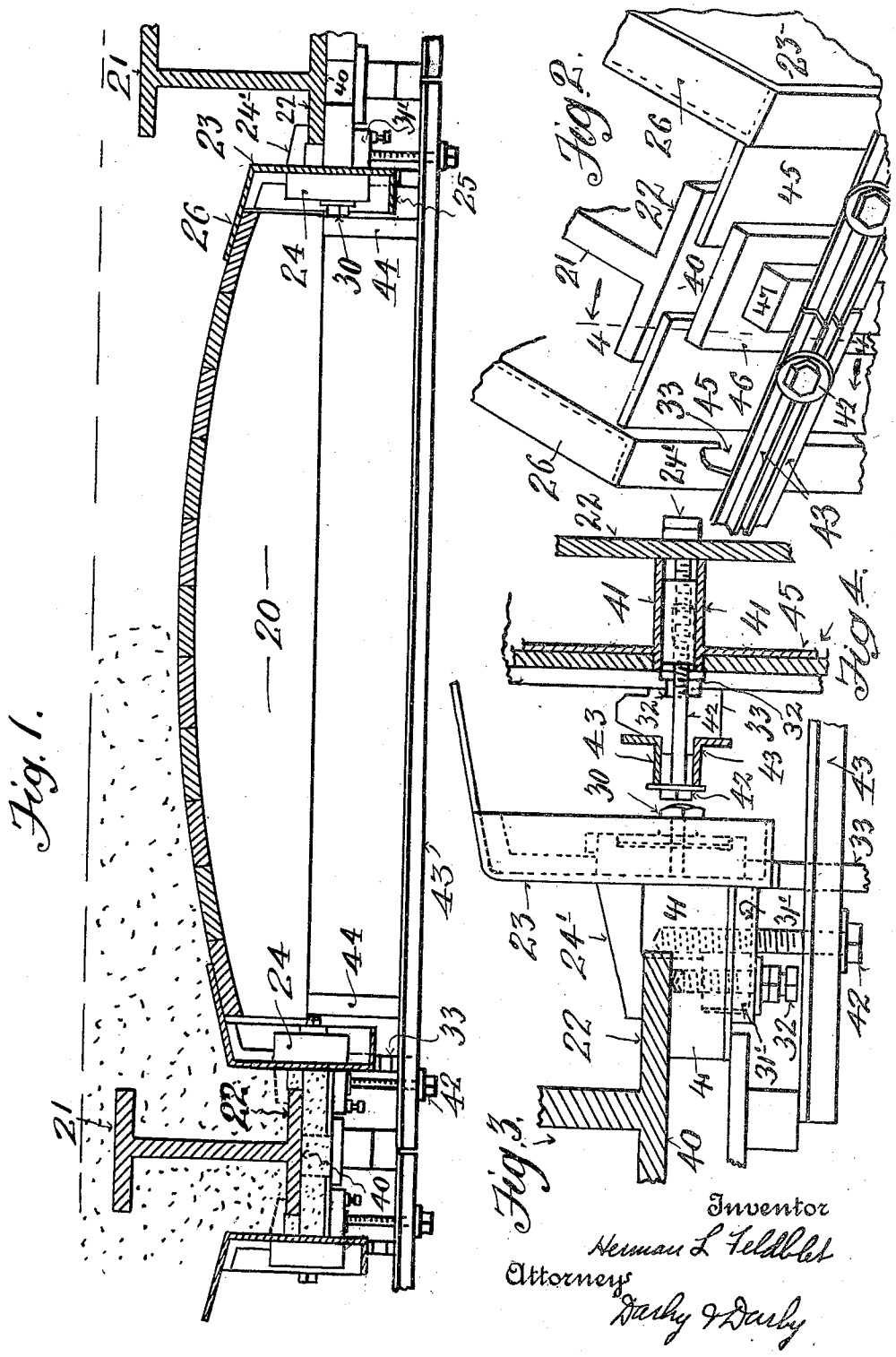
Nov. 1, 1932. H. L. FELDBLET 1,885,699

METAL FORM HOLDER FOR CONCRETE WALL CONSTRUCTION

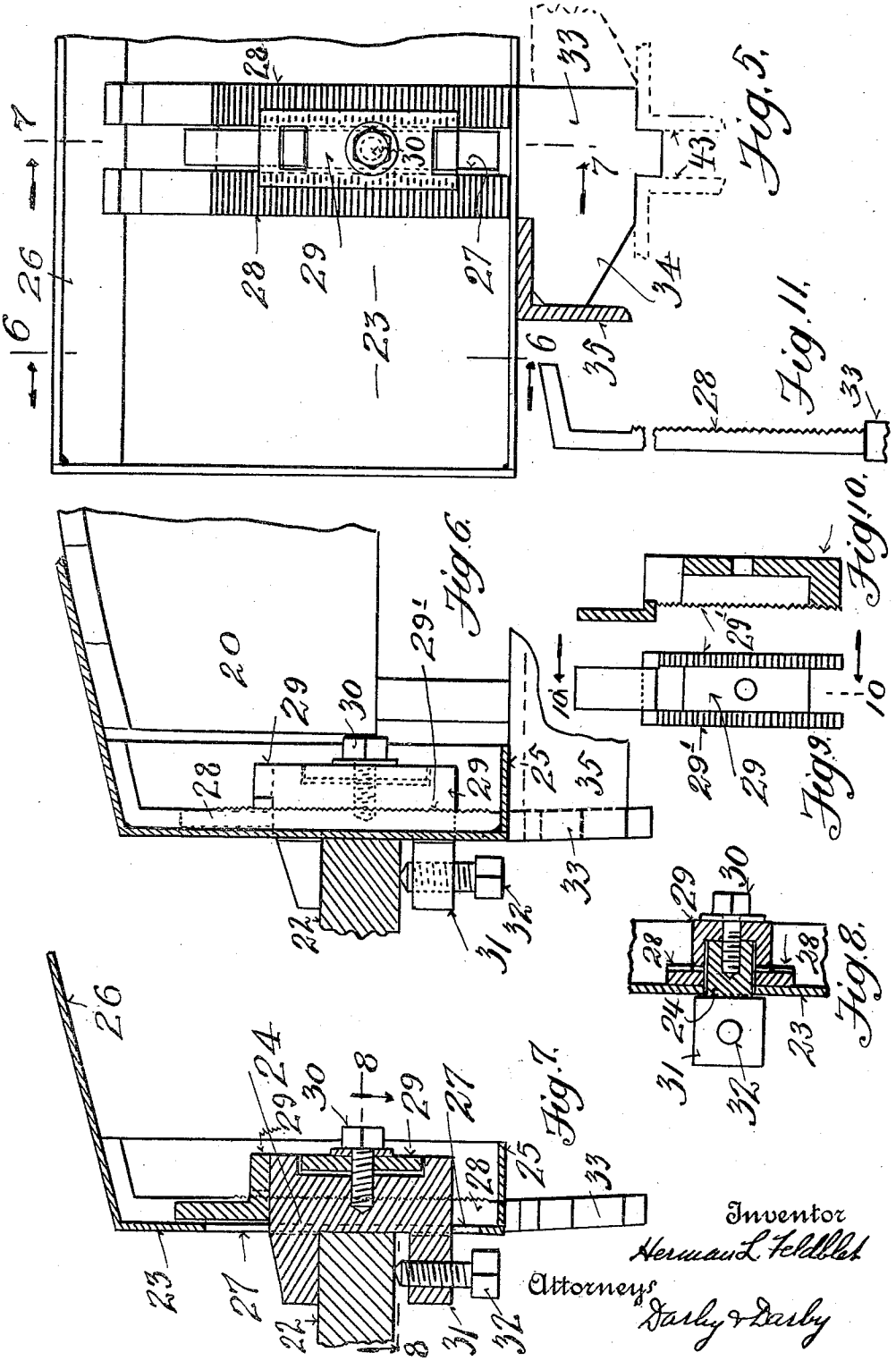
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METAL FORM HOLDER FOR CONCRETE WALL CONSTRUCTION

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Patented Nov. 1, 1932 1,885,699

UNITED STATES PATENT OFFICE

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METAL FORM HOLDER FOR CONCRETE WALL CONSTRUCTION

Application filed October 30, 1928. Serial No. 316,000.

This invention relates to forms or moulds for pouring concrete arches of a given radius between steel columns or girders of variable dimensions.

The object of the invention further includes the provision of adjustable holding members for supporting the forms or form holders at definite positions on the flanges of the columns or girders.

A further object includes the provision of metal form-members having clamp adjustment means for supporting a system of moulds in specified positions between columns or girders of varying depth of body and varying width of flange.

Other objects will appear hereinafter and I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a top view through a section of wall and showing a preferred type of form-system supported on the flanges of adjacent columns;

Fig. 2 is a view in perspective of a portion of a column flange having the moulds assembled in readiness to pour the concrete arch, and at the same time fire proof the columns;

Fig. 3 is an enlarged detail of the adjustable form-clamp and associated parts;

Fig. 4 is a view taken on the line 4—4 of Fig. 2;

Fig. 5 is a view, in elevation, of a part of a metal form-member or pan with clamp fully assembled;

Fig. 6 is a view on the line 6—6 of Fig. 5;

Fig. 7 is a view on the line 7—7 of Fig. 5;

Fig. 8 is a view on the line 8—8 of Fig. 7;

Fig. 9 is a detailed front view of the clamp;

Fig. 10 is a view on the line 10—10 of Fig. 9; and

Fig. 11 is a side view of the toothed clamp ribs or adjustment means.

The same numerals of reference refer to like parts throughout the several views.

The prime object of my invention is to provide means for adjustably supporting a given set of forms or moulds to a fraction of an inch between columns of varying web depth and varying flange width, so that a concrete arched wall of a given radius may be poured, thus permitting a given set of moulds to be repeatedly used regardless of varying dimensions of flange width or web depth of supporting columns. In other words, the problem which is to be solved by my invention is to pour concrete arches (for subway walls and the like) of a given radius between columns of the same or of varying dimensions with the same set of moulds.

To this end I employ a center form or mould 20 which is constructed of wood or other suitable material and is supported in the desired position between adjacent steel columns or girders 21 by my improved form member 23 and clamping device 24 for supporting the assembly from flanges 22 of said columns or girders.

My improved form-member is preferably made of sheet metal and comprises a pan shaped structure with overhanging parts 25 and 26. The pan is further provided with a slot 27 and a double ribbed toothed member 28 welded on said pan at the slot opening, to thus provide means with which engage teeth 29′ on the face of the clamp block 29 which is held by a set screw or bolt 30 in position on the flange clamp or clamping device 24. The lower jaw 31 of said flange clamp is provided with a set screw 32 for securely fastening the flange clamp on the flange of the supporting column.

It will be noted that the double ribs 28 extend the length of the pan and reinforce the same at its upper part, while at the lower part said members merge into a head 33 having a hook 34 turned to the left on which is supported a spreader bar 35 for use as a left hand support. For the right hand support the hook 34 is on the opposite side of head 33 as is indicated in dotted lines on Fig. 5. This type of hook construction and the form of clamp (of Figs. 6 and 7) closely engage flange 22 and no concrete is, therefore, applied to the outer flange faces.

Where, however, it is desired to fire-proof the entire column, a special clamp is used. The construction illustrated in Figs. 1, 2 and 3 provides means for fire-proofing the entire column. In the example shown in Figs. 1 and 3 provision is made for fire-proofing

the column with two inches of concrete on the outer flange face 40. To this end is the clamp supplied with elongated jaws 24′ and 31′ to provide the required space for the concrete. Concrete protecting plates 41 are also supplied to keep the concrete from the clamp jaws, the set screw 32 and the spreader screw 42. A number of screws 42 hold the spreader bars 43 and these bars are spaced in adjusted positions on heads 33 and are the means for adjustably supporting the center mould 20 by suitable blocks 44. Concrete spreading soffit plates 45 on the outer face of the form-member on pan 23 and the soffit board 46 afford means associated with said adjustable pan for fire-proofing said column. It will be noted that block 47 also supports the soffit board 46 on the spreader bars.

From the construction herein disclosed it is clear that variations in width of flanges (22) is compensated by the over-lapping part 26 of pan 23, and any variation in depth of column web is taken care of by the vertical adjustment of the toothed ribs on pan 23 and the toothed adjusting block on the flange clamp. The simplicity of said adjusting feature provides means for quickly lowering or raising the assembly by merely loosening set screws 30, then adjusting the pan and again fastening said set screws.

It will be noted that the form construction consists of a pair of metal form-members or pans spaced by a wooden filler or center form from the flanges of the main columns. The wooden filler is further held on the spreader bars by wedges and the entire assembly is adjustable in directions at right angles to each other by the clamps on the metal form-members. The clamping members being adjustable vertically, as explained above, and the jaws of the clamp being adjustable horizontally on the girder or column flange to meet conditions of varying dimensions. The construction moreover admits of adjustment to the fraction of an inch which is a very valuable feature in concrete construction. This feature also provides means for pouring concrete walls or ceiling arches of constant radius, having the required thickness, thereby making it possible to accommodate basic supporting structures of various dimensions without waste or loss of concrete.

Having now described my invention, what I claim as new and useful and desire to secure by Letters Patent is:—

1. A form construction for pouring concrete walls of given thickness between supporting members of varying dimensions, comprising a center-form of constant radius, a pan-shaped form-member at either extremity of said center-form, said form-member having a slot therethrough, toothed rib members boardering said slot and ending in a head outside of said form-member, a clamp member in said slot, a clamp block riding on said clamp member, means for positively engaging said clamp block with said toothed members, and means for protecting said clamp block from concrete as the wall is poured.

2. In a form structure for pouring concrete walls of required dimensions, a form-member comprising a pan shaped structure having overhanging parts, toothed reinforcing members in said pan, and means engaging said toothed reinforcing members for supporting said pan at varying depths from a supporting structure of varying dimensions said reinforcing member terminating in a head outside of the pan and having a hook.

3. In a form structure for pouring concrete walls of required dimensions, a form-member comprising a pan shaped structure having a slot therein, toothed members in said pan adjacent said slot, a clamp having parallel jaws extending from said pan, said clamp operating through said slot, and a clamp block having teeth to engage the toothed members adjacent said slot.

4. In a form structure for pouring concrete walls of required dimensions, a form-member comprising a pan shaped structure having a slot therein, toothed members in said pan adjacent said slot, said rib members having a head with a hook to support a spreader bar, a clamp having jaws extending from said pan, said clamp operating in said slot, a clamp block having teeth to engage the toothed members adjacent said slot, and means to protect said clamp from concrete when the wall is poured.

5. In a form structure for pouring concrete walls of required dimensions, a form-member comprising a pan shaped structure having a slot therein and toothed ribs adjacent said slot, said ribs having a head without said pan and means for holding spreader bars in spaced relation on said pan.

6. In a form construction for pouring concrete walls of given thickness between supporting members of varying dimensions, the combination of a center-form of constant radius and an overlapping pan-shaped form-member at either extremity of said center-form, said form-member having a slot therethrough and reinforcing members adjacent said slot, said reinforcing members united in a common head which extends from the form-member, and spreading bars supported from said head.

In testimony whereof I have hereunto set my hand on this 5th day of October A. D., 1928.

HERMAN L. FELDBLET.