July 3, 1928. 1,675,749

P. M. CRAWFORD

FORM FOR CONCRETE

Filed March 25, 1927

Fig. 2

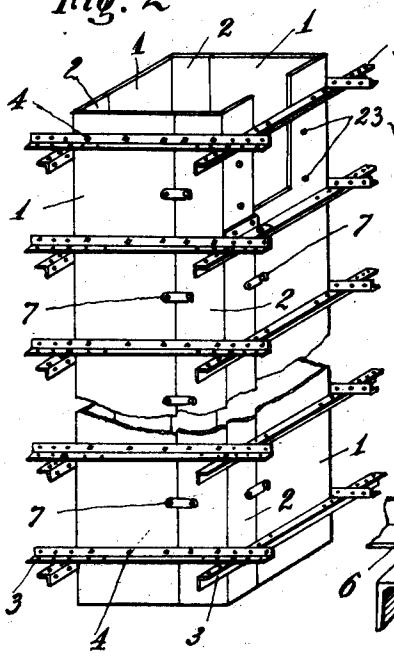


Fig. 3

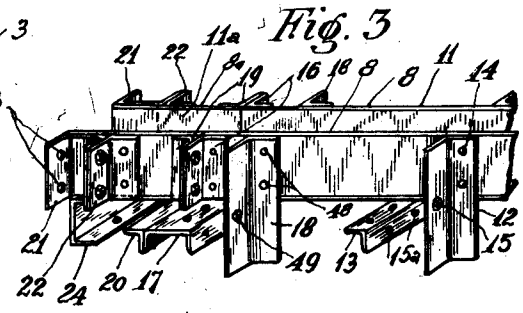


Fig. 5

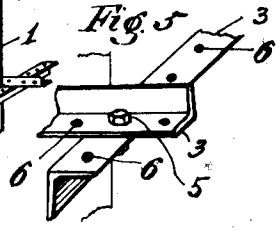


Fig. 4

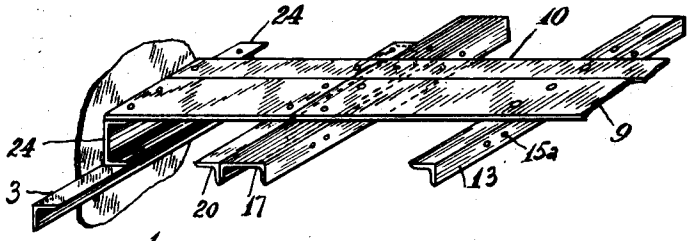
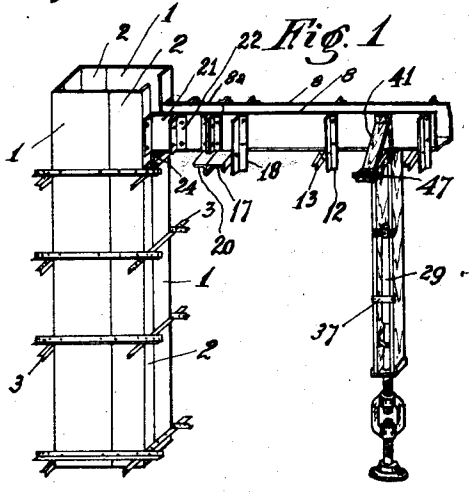


Fig. 1



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UNITED STATES PATENT OFFICE.

PRESTON M. CRAWFORD, OF PITTSBURGH, PENNSYLVANIA.

FORM FOR CONCRETE.

Application filed March 25, 1927. Serial No. 178,302.

This invention relates to forms used for making concrete structures and more in particular to metallic forms for concrete beams.

The primary object of this invention is to provide means whereby the forms for casting concrete beams may be easily connected and secured to the forms for the concrete columns by which said beams are to be supported.

Another object of this invention is the provision of metallic concrete forms for beams which are strong and durable and which, owing to the smoothness of the material used, will produce concrete casts of finished appearance.

A further object is to provide beam-forms which may be easily removed after the concrete has hardened and in which the component parts thereof may be used indefinitely. Additional features and advantages of this invention will appear from the following description considered in connection with the accompanying drawing forming a part of this application, and in which:

Fig. 1 is a perspective view showing a form for a concrete beam used in connection with a form for a concrete column and supported by a shore-post of the adjustable type.

Fig. 2 is an enlarged perspective view of a column-form shown in Fig. 1.

Fig. 3 is a fragmentary perspective view showing one end portion of a form for a concrete beam, built according to this invention.

Fig. 4 is a fragmentary perspective view of the bottom plate of the beam-form.

Fig. 5 is a fragmentary view showing the method of connecting the clamps of the column-form at the corners of said form.

In Fig. 1 I have shown my invention as used in connection with a column-form intended for molding a square concrete column, the four sides of this form being preferably built up of more than one plate, such as the plates 1 and 2. These plates are held in proper alinement by means of angle iron clamps 3 which are removably secured to the plates by means of bolts 4 having preferably conic heads adapted to fit countersunk holes drilled in the plates, so as to leave the interior of the form quite smooth. The clamps are disposed on the form in such a manner that the horizontal flange of one clamp will contact with the horizontal flanges of the two adjacent rectangularly disposed clamps, as plainly shown in the drawing.

The four sides of the form are firmly held together by securing these clamps at the four corners of the form by means of bolts 5 inserted through registering holes 6 suitably located on the horizontal flanges of said clamps. If desired, the plates may be additionally bound together by means of the hinged cleat and pin connections 7 disposed intermediate the angle-clamps.

The form for a concrete beam comprises two side walls 8 of suitable height and a bottom made of two plates 9 and 10. This beam-form is furthermore characterized by the fact that its length is made up of two parts, the long part 11 corresponding to the minimum span of standard beams and the short part 11^a being of such length as to make up for the difference in longer spans.

The sides and the bottom of the beam-form are secured together by means of the angle iron stiffeners 12, the ties 13 and the bolts 14 having conic heads to insure smooth surfaces inside the form. Bolts 15, inserted through holes 15^a in the ties, are used to secure the stiffeners and ties together.

The long and short portions of the beam-form are preferably united together in the manner shown especially in Fig. 3. As shown therein, at both ends of the long side plates are permanently secured the short angles 16 having one flange flush with the end of the form. A channel tie 17 is removably bolted to the bottom plates and the side stiffeners 18 are secured to the side-plates 8 by means of the bolts 48 and to the inner flange of the channel 17 by the bolts 49. Similarly, at the corresponding end of the short section, short angles 19 are permanently secured to the sides 8^a and an angle iron tie 20 is removably secured to the bottom plates. Both sections are connected together by bolting together the short angles 16, 19 and the ties 17 and 20.

To secure the short beam section to the column-form, I make use of the auxiliary channel-shaped spacers 21 and the short angles 22. The former are first secured on the column-form by means of cone-headed bolts inserted in suitable holes 23 provided in the column-form and in the outer flange of the channel-spacers; the beam-form is then connected to the column-form by bolting the short angles 22 to said spacers. The

reason for using the spacer elements is that it facilitates the attachment or removal of the beam-form by providing more working space in a normally crowded location, also because of the fact that the columns are cast before the beams so that the insertion of the bolts through the apertures 23 should be done before pouring the concrete to prevent plugging of said apertures. The bottom-plates of the short section are supported on the column-form by the upright channel-tie 24, secured in any desired manner to the column-form.

Changes in the precise construction, arrangement and combinaton of the various parts may be made without exceeding the scope of the claim and I reserve the liberty of making such changes, as may be thought desirable.

I claim:

In means for molding concrete columns and beams into a monolithic structure, the combination of hollow forms for said columns and of forms for said beams, and means for securing the ends of said beam forms to their corresponding column forms; said means consisting for each beam-end of two channel-shaped members secured by one flange to the column form in spaced parallel relation to receive between their webs the vertical sides of said beam form, of two angle-iron members each secured by one flange to one vertical side of the beam form, the other flanges of said angle-iron members being adapted to contact with the outer flanges of the channel-members, said contacting flanges having registering apertures, and bolts engaging said apertures for securing said angle-iron members to said channel-iron members.

In testimony whereof I affix my signature.

PRESTON M. CRAWFORD.