

A. C. FITCH.

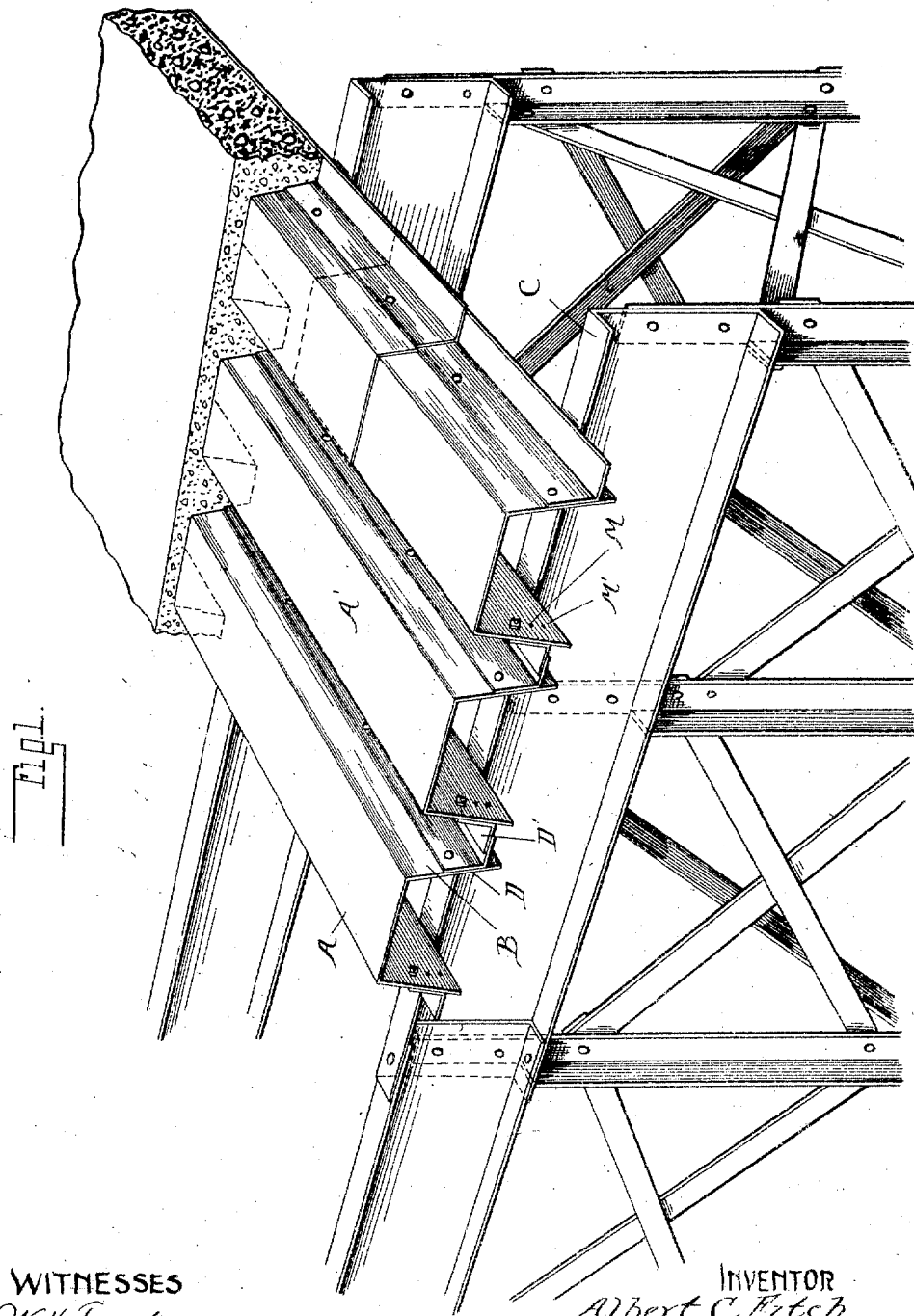
ADJUSTABLE FORM FOR MOLDING CONCRETE STRUCTURES.

APPLICATION FILED OCT. 8, 1914.

1,227,769.

Patented May 29, 1917.

4 SHEETS—SHEET 1.



WITNESSES

W. H. Fitch
James P. Barry

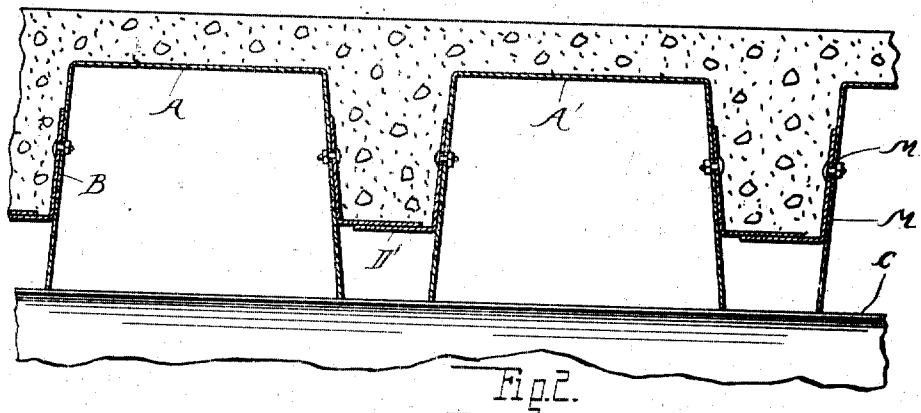
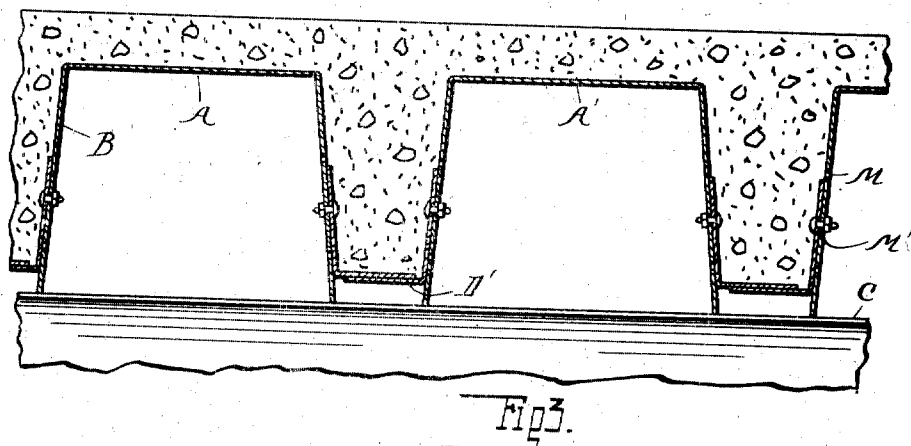
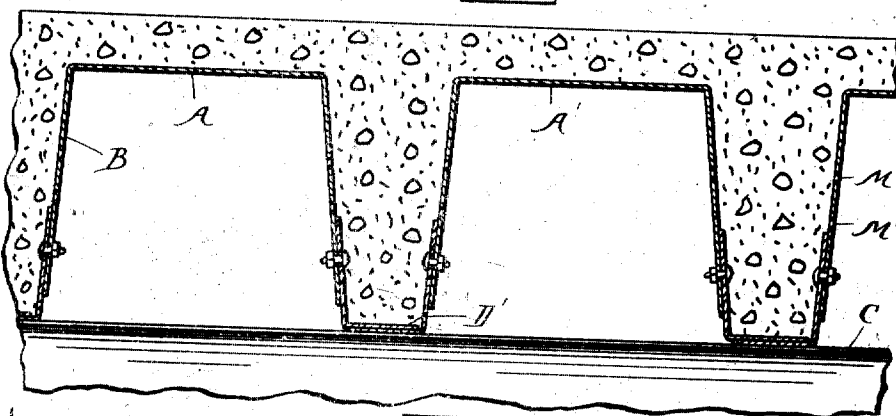
INVENTOR

Albert C. Fitch

BY

Whittemore Haller & Whittemore
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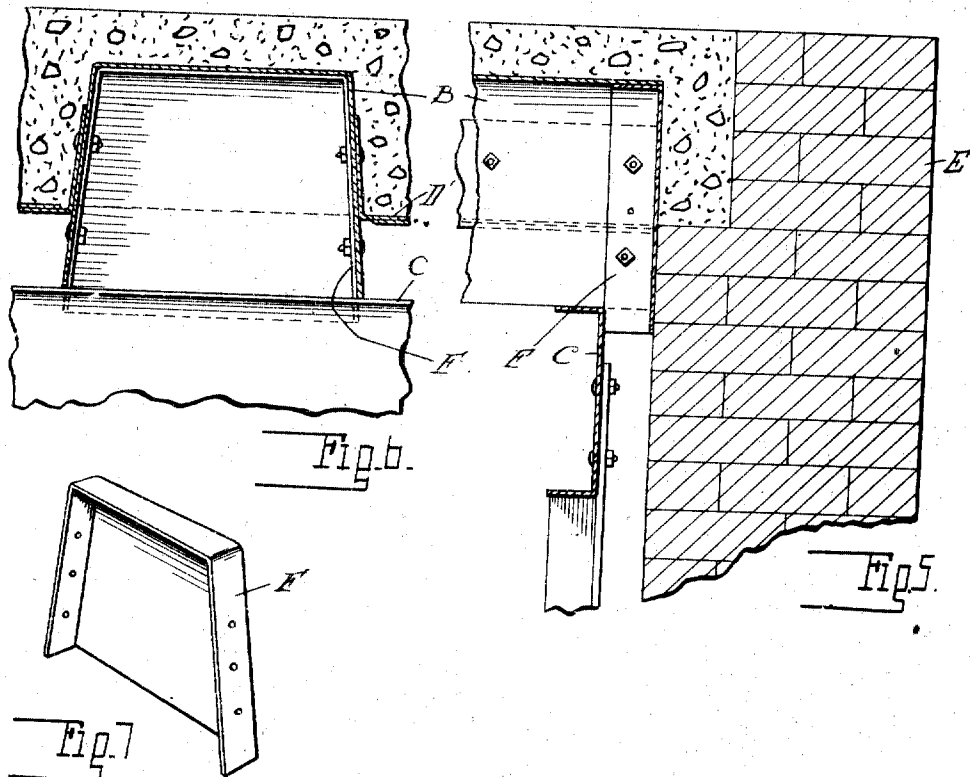
Fig. 4.

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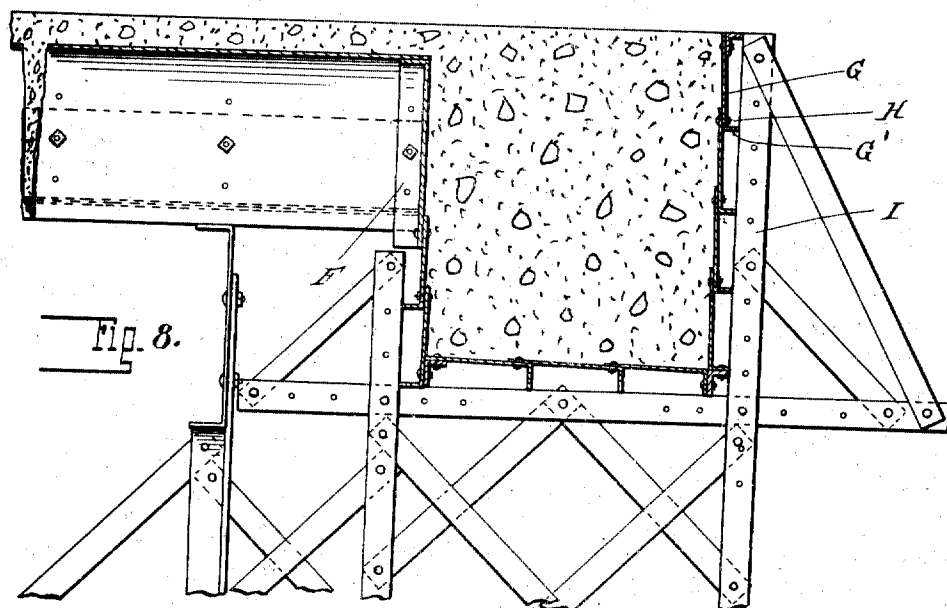
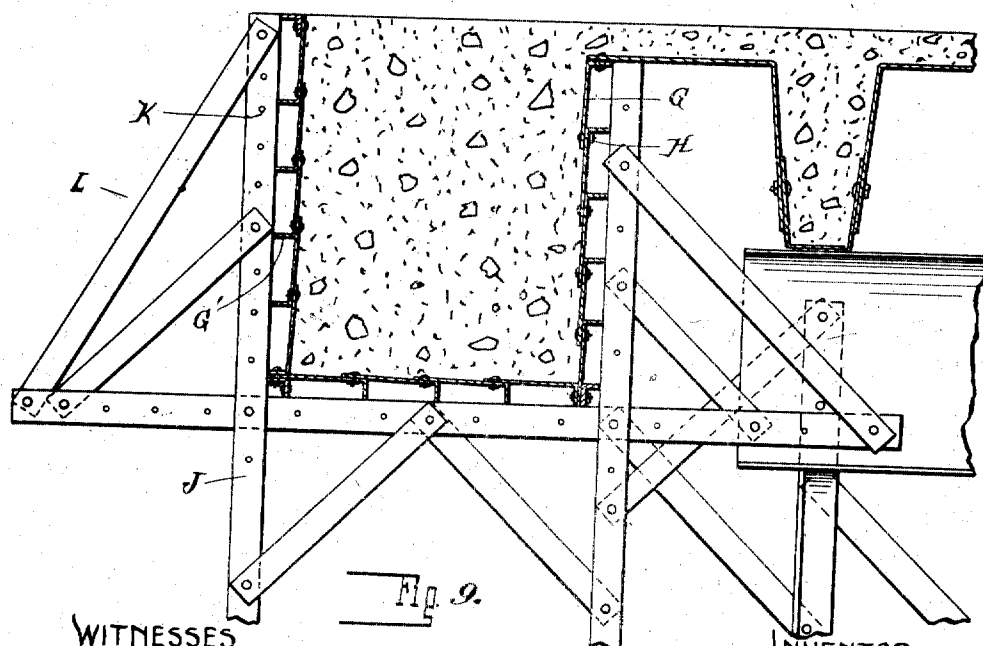
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UNITED STATES PATENT OFFICE.

ALBERT C. FITCH, OF DETROIT, MICHIGAN.

ADJUSTABLE FORM FOR MOLDING CONCRETE STRUCTURES.

1,227,769.

Specification of Letters Patent.

Patented May 29, 1917.

Application filed October 8, 1914. Serial No. 865,656.

To all whom it may concern:

Be it known that I, ALBERT C. FITCH, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Adjustable Forms for Molding Concrete Structures, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to the art of forming monolithic cement structures, such for instance as reinforced cement buildings. It is the object of the invention to obtain a construction of adjustable form by which the same forms may be employed for structures having different dimensions. It is a further object to provide means for bracing and strengthening the form so as to prevent distortion of the same; and further to obtain various advantageous features of construction as hereinafter set forth.

In the drawings:

Figure 1 is a perspective view of my improved form as arranged for the molding of a monolithic floor;

Fig. 2 is a cross section thereof showing one adjustment;

Figs. 3 and 4 are similar views showing different adjustments for varying depths of joist;

Fig. 5 is a section showing the means for capping the ends of the form;

Fig. 6 is a cross section through Fig. 5;

Fig. 7 is a perspective view of the end cap detached;

Fig. 8 is a cross section through the form for molding a beam and adjacent joist;

Fig. 9 is a section at right angles to Fig. 8.

In the construction of monolithic, reinforced cement buildings it is usual to construct forms of wood for molding the columns, girders, beams, floors and other elements of the building. As the timber used for this purpose must be cut into suitable lengths and as it is exposed for a considerable time to the moist cement it is seldom available for use in another structure. Furthermore, as there are no standard dimensions a form constructed for one building would not suit another. With my improvement in place of wooden forms I employ metallic forms, and to permit of varying the dimensions these forms are composed of

sections adjustably attached to each other. Each section comprises a plate forming a molding face and an angle flange constituting a strengthening rib or reinforcement projecting outward from the mold. The adjacent sections are joined by overlapping their molding faces and by adjustably securing the overlapping sections to each other so that the dimensions may be varied.

As shown in Fig. 1, the form is arranged for molding monolithic floors having strengthening beams or joists depending at intervals. The floor spans are supported by metallic inverted U-shaped members or channels A and A', etc., the sides B of which form the joist molds. These channel members may be supported upon a suitable false work, such as C, and in the spaces between them are arranged angle strips D, one flange of each being attached to the side flange B of the channel, while the opposite flange extends outward and overlaps the corresponding flange on the adjacent channel. By adjusting the strips D as to their point of attachment to the channel A, the depth of the joist may be varied, as shown in Figs. 2, 3 and 4. This adjustment may be made independent of the spacing between centers of the floor spans or between centers of the joists, as the overlapping flanges D' of the strips D permit of lateral adjustment.

The floor spans and their reinforcing joists are in turn supported by beams or girders, or by the supporting walls of the building. As shown in Figs. 5 and 6, the floor span is joined to a supporting wall E, and as shown in Figs. 8 and 9 the spans and beams are jointed beams monolithically formed. In each case it is necessary to close the ends of the channels A A', etc., and for this purpose caps F are provided. These may be bolted or otherwise secured to the ends of the joist, and when in position exclude the fluid cement from the space within the channel.

For forming the molds for the girders a plurality of angle sections G are employed, these being adjustably secured to each other with an overlapping engagement by bolts H. The outwardly-extending angle flanges G' constitute bracing ribs which hold the molding faces from lateral deflection, and which also serve as bearings for abutting against the false work, as indicated

at I. Any desired dimension of girder may be obtained by using a larger or smaller number of the sections G and by adjusting these in relation to each other to overlap a greater or lesser extent.

The false work is preferably formed of metallic bars J having a series of apertures K therein for the securing of brace bars L and other elements of the frame.

- 10 With the construction of the various elements as above described in the construction of a building the bars G, channels A, angles D, bars J and K, etc., may be readily assembled according to the design of the structure, to form the columns, girders, beams and floor spans, suitably proportioned and arranged in relation to each other. The cement with its reinforcement is then placed in the mold cavities, and after setting the forms may be removed by detaching one section after another. These forms are not injured by use, and as the elements may be made of standard sizes they will be available for use in other structures.
- 25 For permitting adjustment of the overlapping flanges of adjacent sections a series of apertures are provided for the securing bolts, as indicated at M M' Figs. 1 to 4. It is also to be understood that similar series of holes are provided for each of the overlapping angle sections, which however are not shown in the drawings.

What I claim as my invention is:—

- 35 1. An adjustable form for molding cement structures, comprising a plurality of adjacent channel sections and angle sections, the latter having flanges secured to the former and oppositely-extending flanges overlapping each other.
- 40 2. An adjustable form for molding cement structures, comprising a plurality of channel sections, angle sections having flanges adjustably secured to the flanges of said channel sections and oppositely-extending flanges adjustably overlapping each other.
- 50 3. An adjustable form for molding cement structures, comprising a plurality of parallel inverted U-shaped sections, angle sections intermediate said U-shaped sections, having flanges adjustably secured to the flanges of the U-shaped sections and oppositely-extending flanges overlapping each other.

4. An adjustable form for molding cement structures, comprising a plurality of parallel inverted channel sections having flaring sides, angle sections between said channel sections, each having one flange adjustably secured to the flaring side of said channel section, the other flange adjustably overlapping the corresponding flange of the angle section of the adjacent channel section.

5. An adjustable form for molding cement structures, comprising a plurality of inverted channel sections, angle sections secured to the sides thereof, having flanges between said channel sections adjustable in position to vary the depth of space therebetween.

6. An adjustable form for molding cement structures, comprising a plurality of adjacent channel sections, flanged members secured to said channel sections and overlapping each other in the space therebetween, said flanged members being adjustable in position to increase or diminish the depth of the intermediate space in relation to the sides of the channel sections.

7. An adjustable form for molding cement structures, comprising a plurality of parallel inverted channel sections adjustable to varying distances between centers, and angle sections adjustably secured to and projecting from the adjacent channel sections overlapping each other in the space therebetween, permitting of the adjustments to varying distances between centers of said channel sections while still overlapping each other.

8. An adjustable form for molding cement structures comprising a plurality of adjacent channel sections and angle sections, said angle sections having flanges adjustably secured to portions of the respective channel sections, and means for securing said flanges to said portions of the channel sections in different positions of adjustment, the other flanges of said angle sections extending in opposite directions and overlapping each other.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT C. FITCH.

Witnesses:

JAMES P. BARRY,
ARTHUR D. PULVER.