

Sept. 11, 1923.

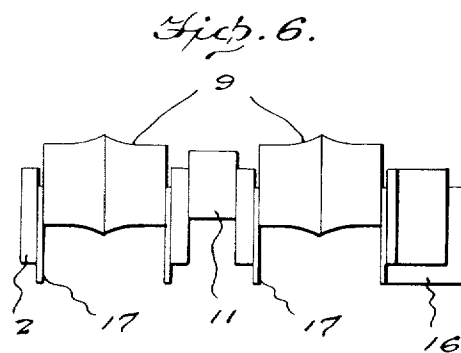
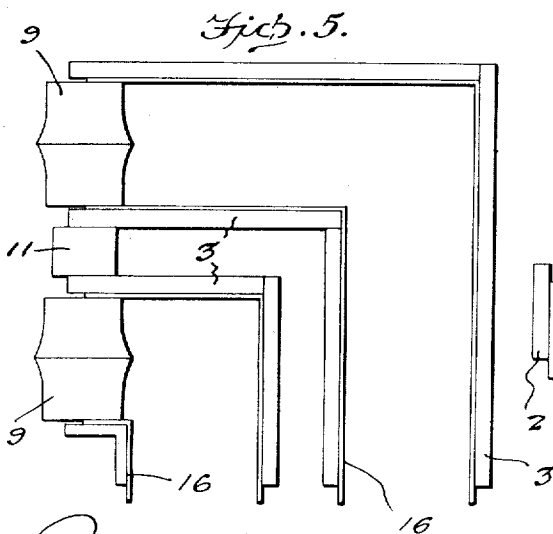
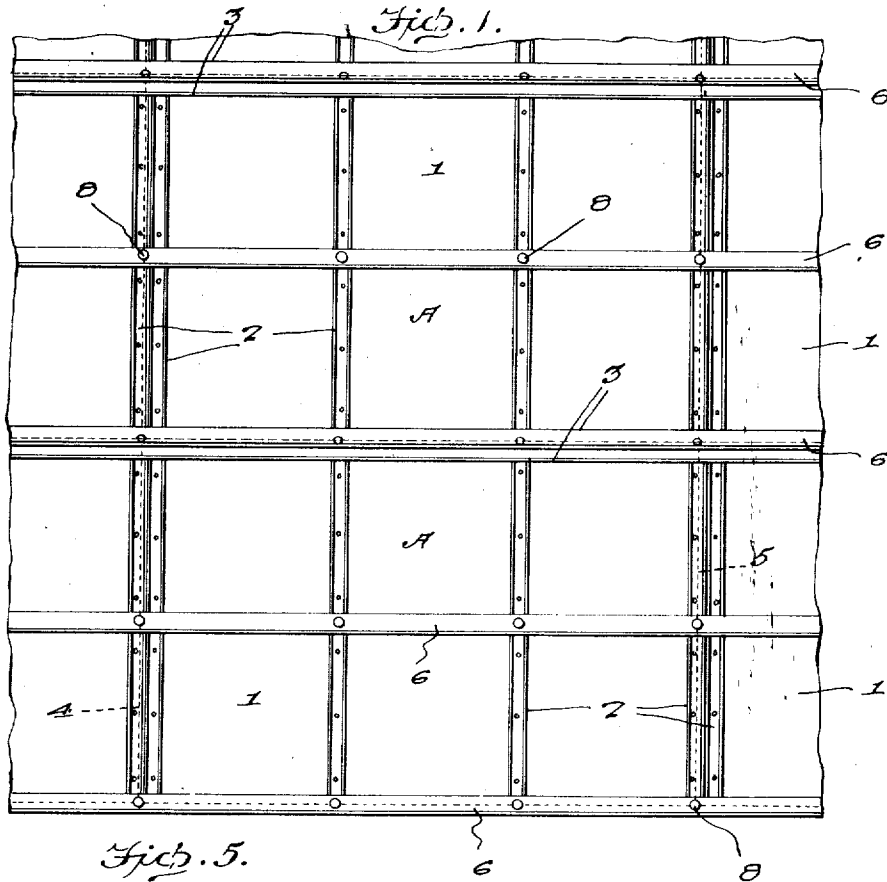
A. E. McCALLUM

1,467,903

WALL FORM

Filed Dec. 9, 1922

3 Sheets-Sheet 1



Paul M. Hunt
J. B. Middleton

WITNESS:

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INVENTOR
BY *Victor J. Evans*

ATTORNEY

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3 Sheets-Sheet 2

Fig. 2.

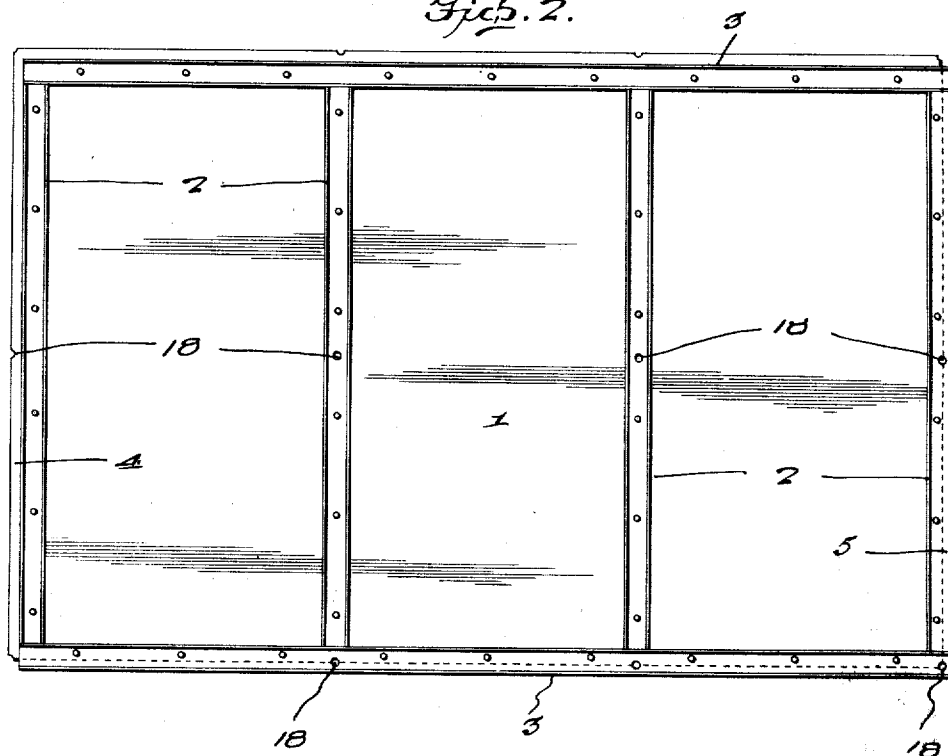
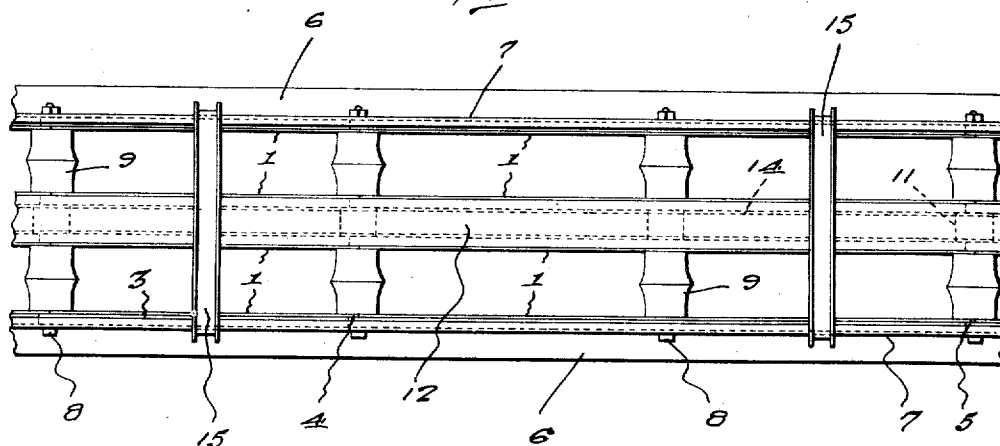


Fig. 3.



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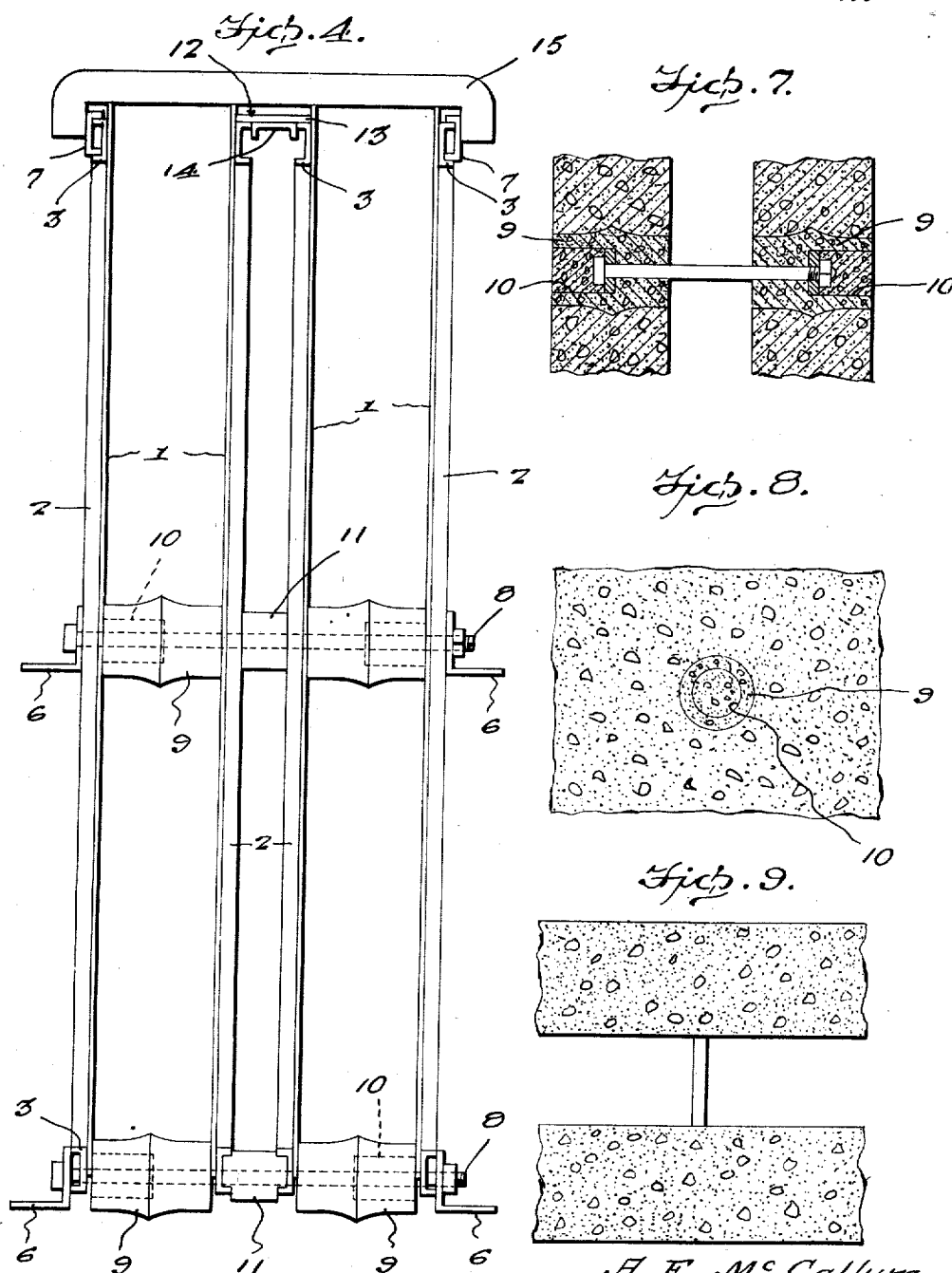
A. E. McCALLUM

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WALL FORM

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3 Sheets-Sheet 3



Paul M. Hunt.
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UNITED STATES PATENT OFFICE.

ALBERT E. McCALLUM, OF YPSILANTI, MICHIGAN.

WALL FORM.

Application filed December 9, 1922. Serial No. 605,863.

To all whom it may concern:

Be it known that I, ALBERT E. McCALLUM, a citizen of the United States, residing at Ypsilanti, in the county of Washtenaw and State of Michigan, have invented new and useful Improvements in Wall Forms, of which the following is a specification.

This invention relates to a form for building concrete walls, ceilings and floors, the general object of the invention being to so form the parts that they can be easily and quickly put in place to form either single or double walls, the parts being entirely formed of metal and connected together by bolts so that they can be used over and over again.

Another object of the invention is to provide concrete spacers for the walls of the form through which the tie bolts pass, said spacers having recesses therein for receiving the heads of the permanent tie bolts and tie plates, said recesses being adapted to be filled with cement so as to cover up the plates and bolts and thus leave no metal part upon the surface of the wall.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a side elevation of a portion of the invention.

Figure 2 is a view of one of the sections of the form.

Figure 3 is a top plan view of a form for a double wall.

Figure 4 is an end view of Figure 3.

Figures 5 and 6 are views of a corner portion of the form.

Figures 7, 8 and 9 are views of the cement wall with the form removed.

As shown in these views the form consists of a number of sections A, each section consisting of a number of sheet metal plates 1 which are secured to the vertical channel members 2 and the horizontal channel members 3. At one end of each section the sheet 1 overlaps the end channel member 2, as shown at 4, while at the opposite end the

channel member overlaps the sheet, as shown at 5. Thus the end channel members of two abutting sections will engage each other with the overlapping part 4 of one section engaging the space formed by the overlapping part 5 of the other section so that a tight connection is formed between the sections. The top and bottom parts of each section are also formed with these overlapping portions, as shown, so that one section can be placed upon the top of another. Angle-shaped liners 6 are placed at the bottoms and centers of the sections and channel-shaped lines 7 at the top of the upper tier of sections. The tie bolts 8 pass through the liners. I also provide spreaders 9 which taper from the center towards each end and which are provided with the recesses 10 in their outer ends. These spreaders are preferably formed of cement and are bored or cored to receive the tie bolts. These spreaders are placed between the sections of each wall and when the wall is to be of double construction with a space between the two walls I provide small spreaders 11 which are placed between the inner sections of the two forms and which are bored or cored to receive the tie bolts. When the forms are to be removed the sections 11 are broken to permit the inner sections to be removed after the tie bolts are withdrawn. A cap 12 is provided for covering the space between the two inner sections of the forms, said cap being formed of a plate 13 secured to a channel iron 14. This cap also acts as a spacer for the two inner members as well as to prevent material from dropping into the space between the two members. A liner clamp 15 formed of channel iron is also provided for clamping the tops of the forms together. The depending ends of this clamp engage the liners 7. Some of the sections are formed of angle shape, as shown at 16, to form the corners of the walls and I also provide short sections 17 which are used for inserts when necessary. The sections are provided with holes 18 for receiving the tie bolts 8.

From the foregoing it will be seen that the forms can be easily and quickly set up and the walls thereof are held in spaced relation by the spreaders and liners, the spreaders 9 and 11 acting to receive the tie bolts. After the walls are formed the spreaders 11 are broken and then the tie bolts withdrawn and the sections of the forms removed. Tie plates are then placed

in the recesses 10 and permanent tie bolts passed through the bores of the spreaders and bolted in place. The recesses 10 are then filled with cement so that the tie bolts and plates are embedded in the walls and are hidden from view and cannot mar the surface of the walls through rust and the like.

In the double wall construction the air space is continuous and this space acts to make the building cooler in summer and warmer in winter and it also makes the walls damp proof. All the walls are poured at the same time, making a solid monolithic construction. As the forms are easily and quickly assembled and dissembled the construction cost is low and as the forms are of steel they may be used over and over again. They are also usable for almost any type of building. Unskilled labor can be used and the cost of handling the material is reduced.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A form of the class described comprising a plurality of sections, each formed of sheet metal plates and channel members to which the plates are connected, liners for the sections, cement spreaders for the walls

of the form through which the tie bolts pass, said spreaders having recesses therein for receiving the ends of the permanent tie bolts and their tie plates and a filling of cement so that the tie bolts will be embedded in the finished wall.

2. A form of the class described comprising two pairs of walls, spreaders for spacing the inner walls apart, spreaders for spacing the outer walls from the inner walls, said spreaders being bored or cored to receive the tie bolts and the outer spreaders having recesses in their outer ends for receiving the ends of the permanent tie bolts and their tie plates and a filling of cement.

3. A form of the class described comprising two sets of walls, spreaders for spacing the inner walls apart, spreaders for spacing the exterior walls from the inner walls, said spreaders being bored or cored to receive the tie bolts, a cap-spacer for engaging the upper edges of the interior walls for covering the space between the two walls and clamps for holding the walls together.

4. A form of the class described comprising walls formed of a plurality of metal sections, liners associated with the sections of the outer walls, tie bolts for connecting the walls together, said bolts engaging some of the liners, spreaders for the walls through which the bolts pass, clamps at the upper edges of the walls and having depending ends engaging the top liners.

In testimony whereof I affix my signature.

ALBERT E. McCALLUM.