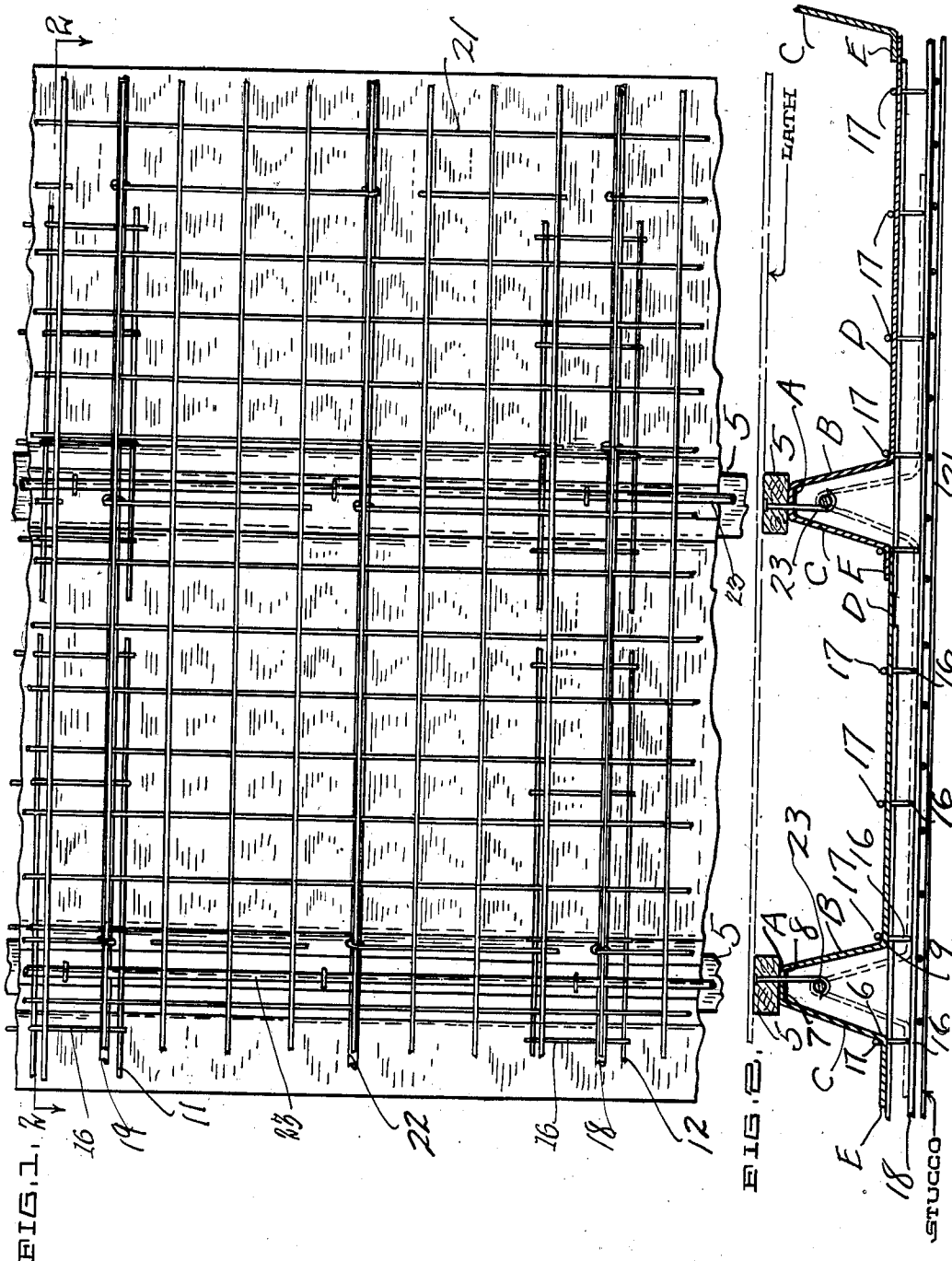
April 25, 1939. A. Y. PREBLE 2,156,027

BUILDING CONCRETE STRUCTURES

Filed Dec. 9, 1937 3 Sheets-Sheet 1



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BUILDING CONCRETE STRUCTURES

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FIG. 4.

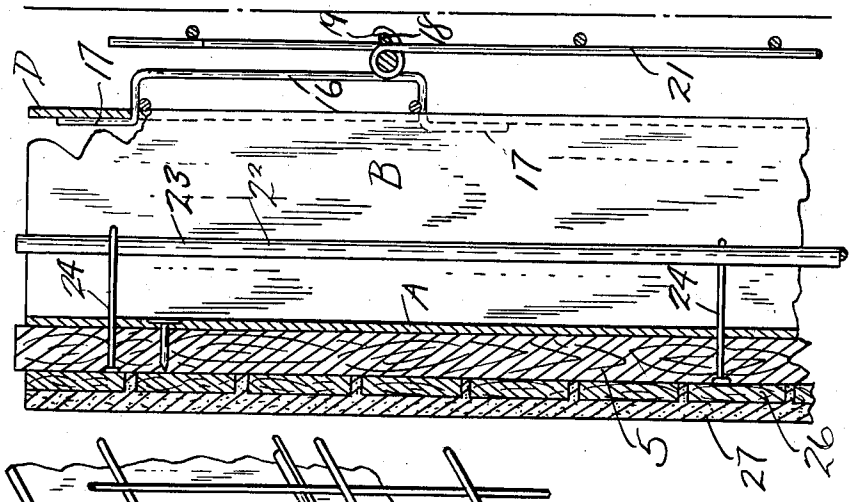
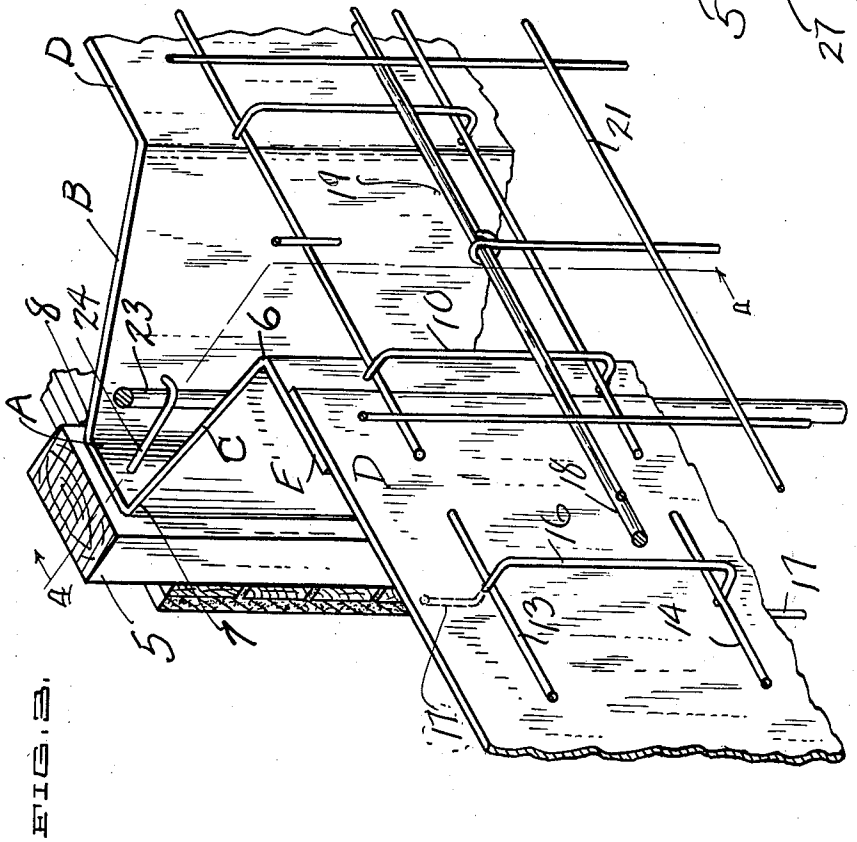


FIG. 3.



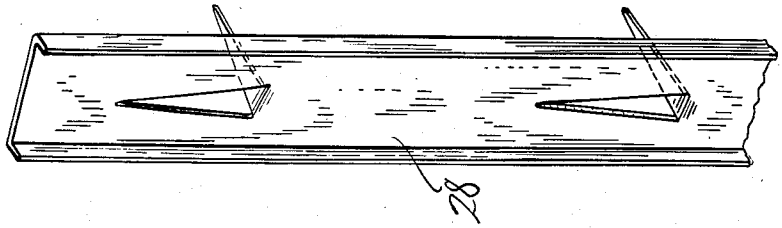
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FIG. 6.



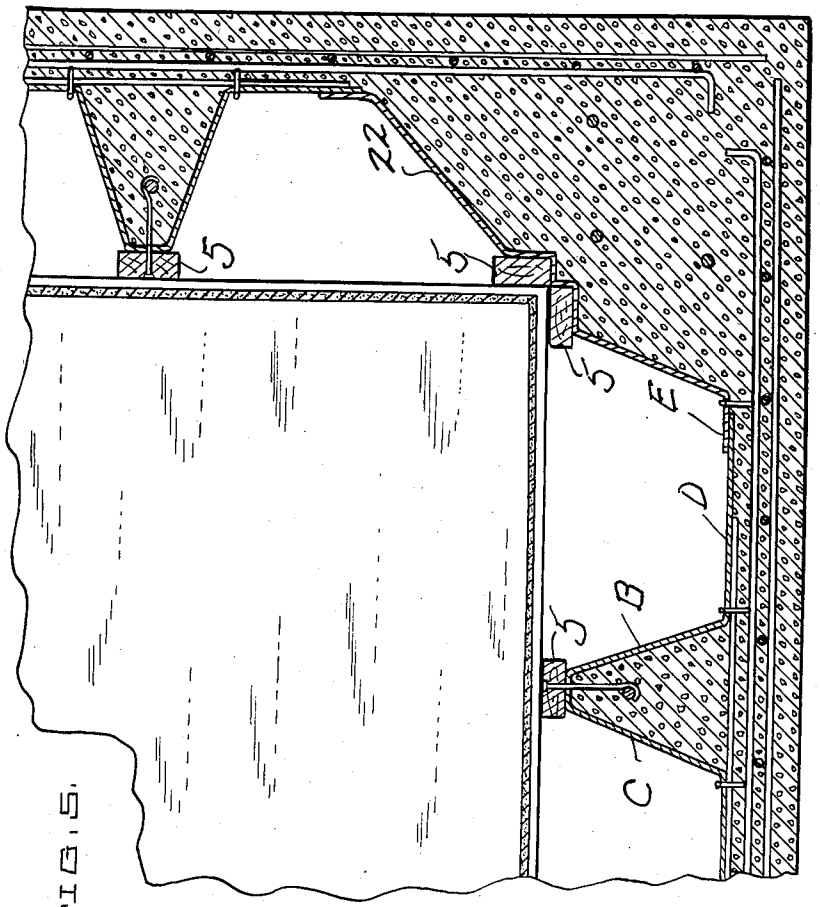


FIG. 5.

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BUILDING CONCRETE STRUCTURES

Andrew Young Preble, El Centro, Calif.

Application December 9, 1937, Serial No. 179,002

3 Claims. (Cl. 72—1)

This invention relates to improvements in building concrete structures and has particular reference to a system of erecting a backing surface, reinforcing rods, and reinforcing material and holding these parts in proper spaced relation while moist concrete is placed with respect thereto.

A further object is to provide means for accomplishing the above-mentioned objects in an economical manner.

A further object is to reduce the cost of ordinary heavy wood forms, as well as the labor required in erecting and tearing down the said forms.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a front elevation, showing my forms and reinforcing material in position to receive plastic material;

Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary perspective view;

Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary cross sectional view, showing my system as applied to the corner of a building; and

Fig. 6 is a fragmentary perspective view of a modified form of metal lath holding bar.

In building monolithic structures, it is common to erect metal or wood forms, between which forms soft cement is placed, and after hardening, these forms are removed. This construction is very expensive in that it requires experienced men to build the forms, and the lumber employed is ruined to a very large extent for further use. I have, therefore, devised a method of building a structure of the monolithic type wherein form boards are eliminated.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, it will be noted that my method is very simple in that it is only necessary to erect along the inner wall line a plurality of uprights 5, which uprights serve a double purpose, as will be later seen. These uprights are spaced on centers in accordance with the desires of the builder and are held in alignment by a header and several spaced cross pieces. This simple arrangement forms the entire supporting frame to which all material is to be attached.

The first step is to attach to one of the uprights 5 a cardboard form sheet which is scored at 6, 7, 8, and 9, or otherwise bent at these points so as to form an inner flat wall portion A, outwardly diverging side wall portions B and C, and wing portions D and E. The wing portion D of one cardboard form sheet overlaps the wing portion E of the next adjacent cardboard form sheet. In this manner the form sheets may be continued in end to end relation so as to provide a backing form surface for the concrete, as will be apparent upon inspection of Fig. 5.

After the form sheets have been erected, parallel perchlike spacers are attached thereto, which spacers are arranged as shown at 11 and 12. These spacers each comprise a pair of parallel wires as shown at 13 and 14, to which U-shaped wires 16 are attached. These U-shaped wires 16 have their free ends so arranged as to be passed through the cardboard material and bent as shown at 17. To these spacers I attach reinforcing rods 18 parallel to the surface of the form sheets. These reinforcing rods in turn support any desired reinforcing material, such as square mesh wire, as illustrated in the drawings, but it is, of course, obvious that I may employ wide mesh expanded metal, chicken wire, and the like. When square mesh material is employed, as shown, certain of the vertical strands are cut, and the cut end 19 is bent around the reinforcing rod 18, thus serving as a means of connecting the reinforcing material, designated as a whole by the numeral 21, to the structure. Additional reinforcing rods may be placed between the spacers, as shown at 22, if desired.

In Fig. 5 I have shown a construction wherein my system is applied to the corner of a building, where it will be noted that the form sheet 22 serves the same purpose as the form sheets previously described, and that the reinforcing bars extend to a point adjacent the corner, as does also the reinforcing mesh. Vertical reinforcing bars may also be employed in a manner which is obvious.

In Figs. 2, 3 and 4, I have shown vertical reinforcing bars 23 which are held to the uprights 5 by nails 24 having their ends bent in hook formation around the bars.

In Fig. 2 I have shown in dotted lines additional means for holding the reinforcing bar 23 against the ends of the hook nails, and also, means for tying the said bar to the reinforcing material, as is required by some State laws.

When the form sheets have been erected and the reinforcing material attached thereto, con-

crete is blown or hand placed against the sheets until it builds up a mass sufficient to fill the remotely spaced substantially V-shaped in cross section recesses or concrete receiving pockets provided by the portions A, B and C, and the reinforcing material is all embedded, to provide the wall slabs and studs between the same, as illustrated in Fig. 5. Laths may now be attached to the uprights 5 and plaster may be applied thereover. This is illustrated in Fig. 4, wherein the numeral 26 designates the laths; and the numeral 27, plaster applied thereto. If metal laths are used, a channel member 28 having teeth struck therefrom, as shown in Fig. 6 is attached to the uprights 5 by the teeth, or the channel members may be secured directly to the portions A of the form sheets.

It will thus be seen that I have produced a structure by my method of construction which is strong, economical, and one which may be erected in a major percentage by unskilled labor.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A form for building a reinforced concrete structure, comprising a supporting frame, form sheets of cardboard disposed in end to end overlapped relation to provide a backing surface for the concrete and attached to the supporting frame, said sheets being shaped to provide concrete receiving pockets at remotely spaced intervals in the length of the connected sheets, reinforcing material for the concrete, means for supporting the reinforcing material in spaced parallel relation to the sheets and including perch-like spacer members connected to the sheets and reinforcing rods fixed to the spacer members and having the reinforcing material secured thereto.

2. A form for building a reinforced concrete structure, comprising a supporting frame, form sheets of cardboard disposed in end to end overlapped relation to provide a backing surface for the concrete and attached to the supporting frame, said sheets being shaped to provide concrete receiving pockets at remotely spaced intervals in the length of the connected sheets, reinforcing material for the concrete, means for supporting the reinforcing material in spaced parallel relation to the sheets and including perch-like spacer members connected to the sheets, reinforcing rods fixed to the spacer members and having the reinforcing material secured thereto, reinforcing bars mounted within the pockets and extending longitudinally thereof, hooked means secured to the supporting frame and having the hooked portions thereof engaged about the bars, and tying means for said bars for cooperation with the hooked means for holding the bars in position.

3. A form for building a reinforced concrete structure, comprising a supporting frame including uprights, form sheets of cardboard disposed in end to end overlapped relation and providing a concrete backing surface, said sheets being shaped to form substantially V-shaped in cross section concrete receiving pockets at remotely spaced intervals in the length of the connected sheets and having inner wall portions and side wall portions diverging outwardly from the inner wall portions, said sheets being attached to the uprights at the inner wall portions thereof, wire mesh reinforcing material for the concrete, means for supporting the reinforcing material in spaced parallel relation to the sheets and including perches made up of substantially U-shaped wires having their ends extending through the sheets and bent against the latter for securing the U-shaped wires thereto, parallel wires fixed to the arms of the U-shaped members and bridging the latter, reinforcing rods fixed to the bight portions of the U-shaped wires, and said wire mesh material having certain of the strands thereof cut and bent about the reinforcing rods for securing the wire mesh material to said rods.

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