

W. W. CARPENTER.

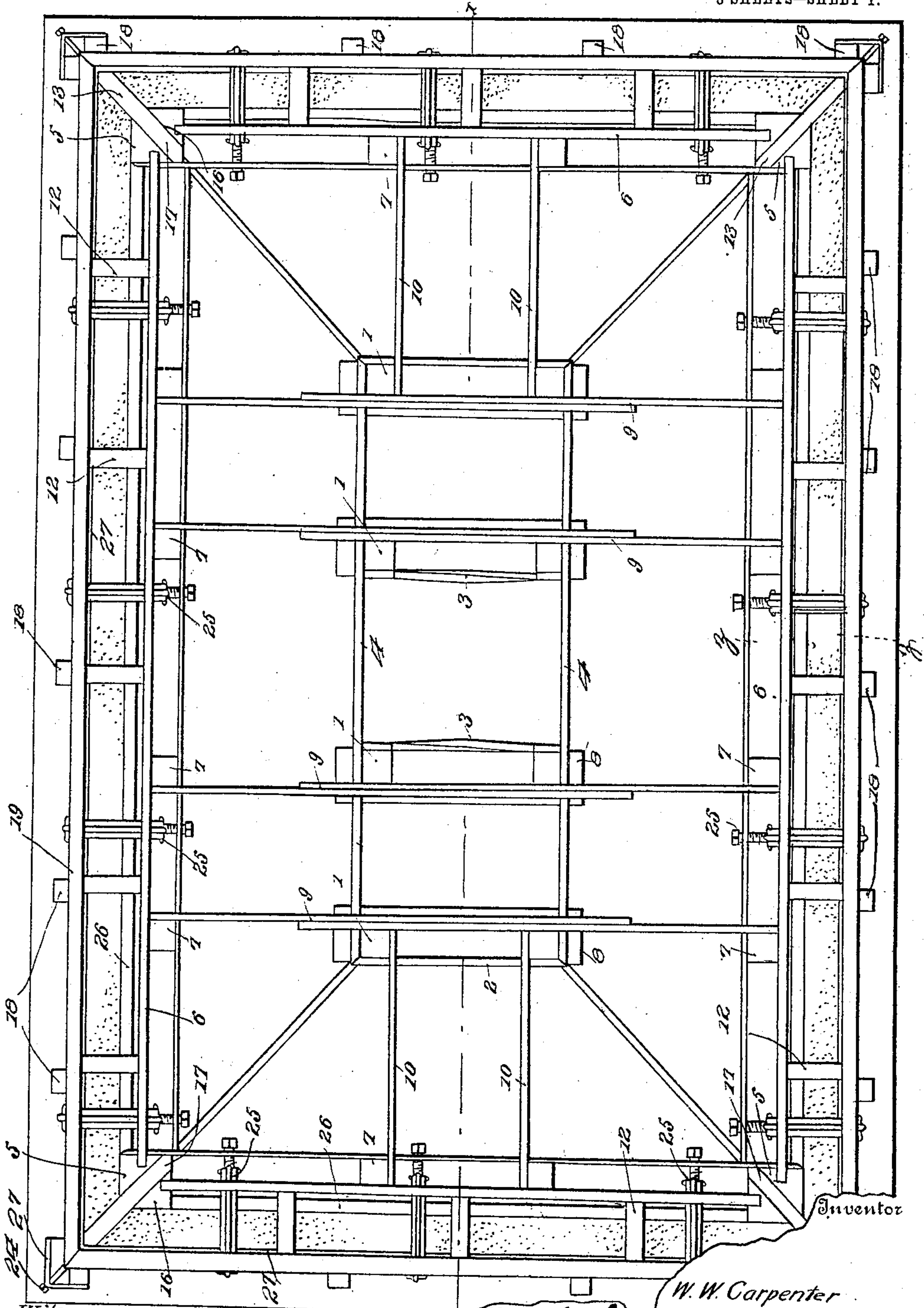
FRAMEWORK FOR THE CONSTRUCTION OF CONCRETE BUILDINGS.

APPLICATION FILED DEC. 13, 1907.

912,070.

Patented Feb. 9, 1909.

3 SHEETS—SHEET 1.



Witnesses
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Fig. 1.

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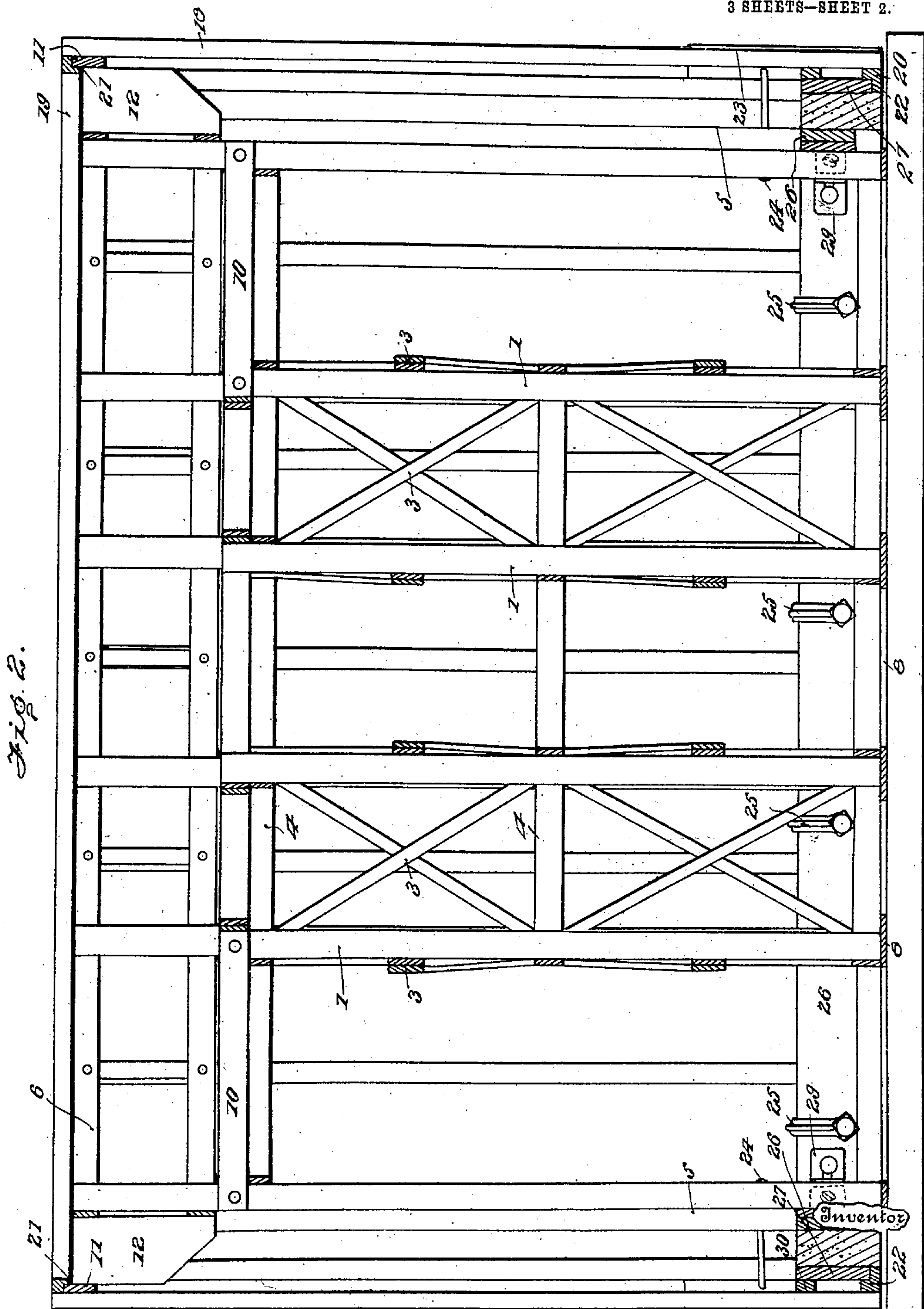


Fig. 2.

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Fig. 3.

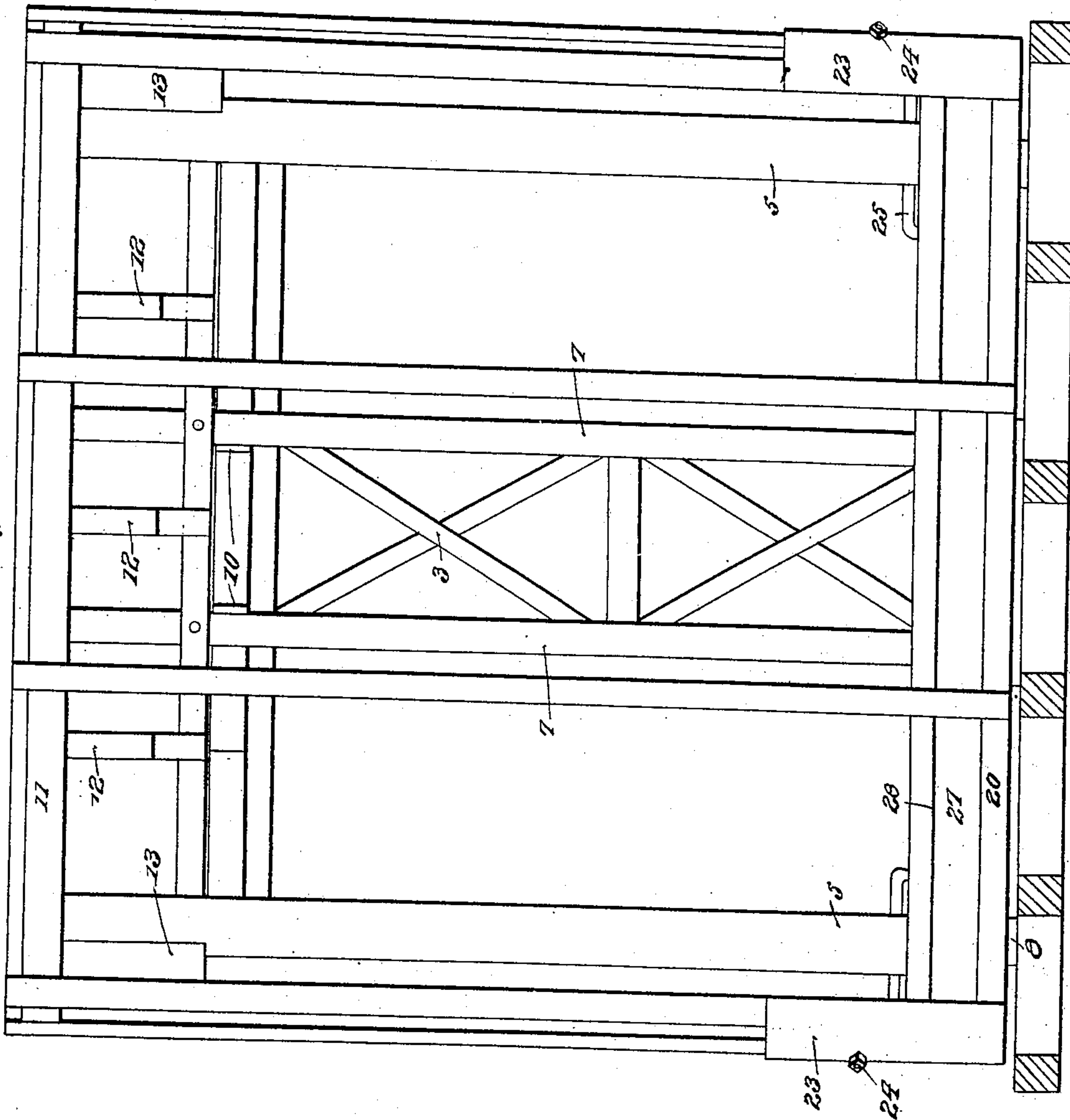
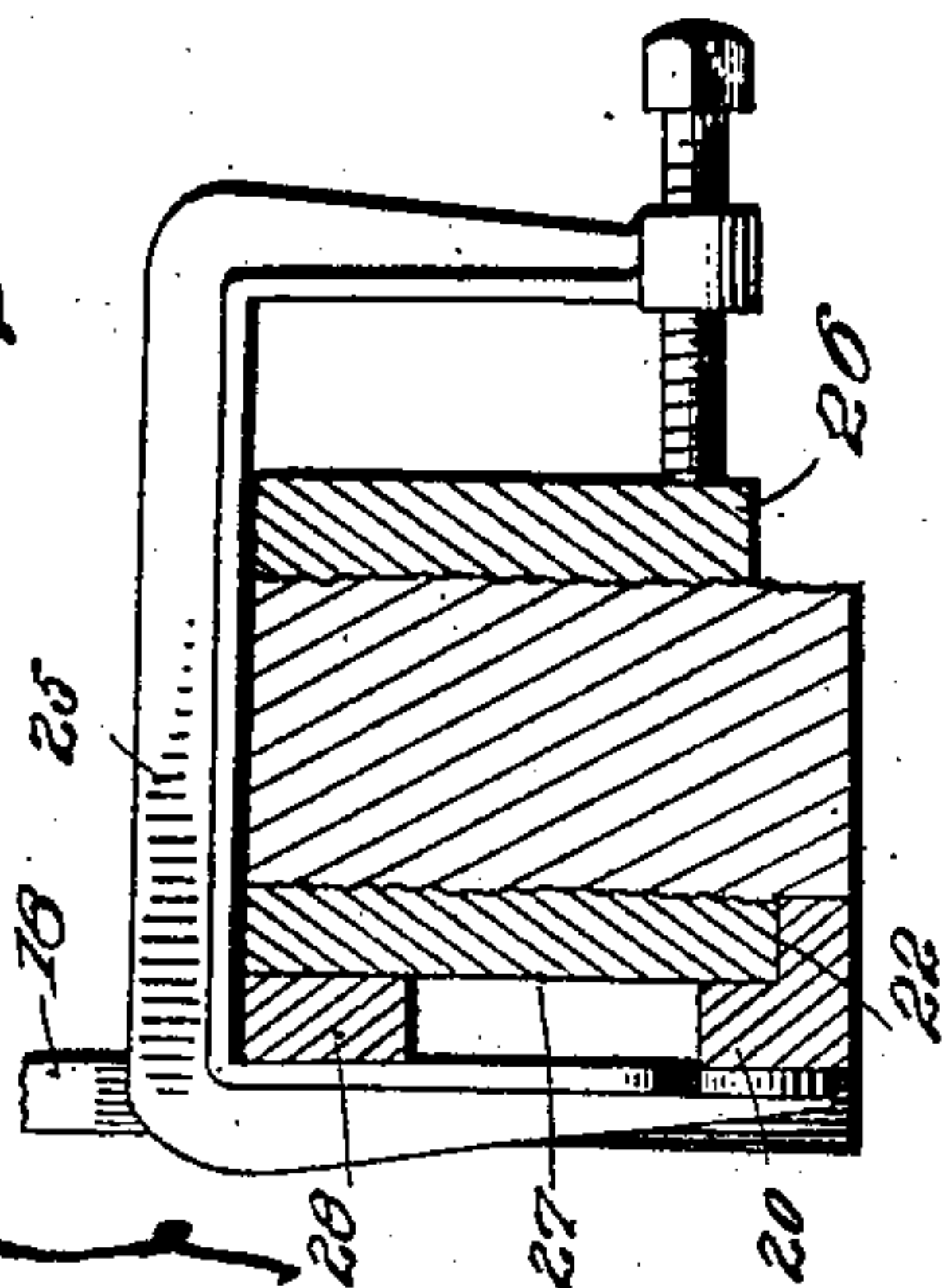


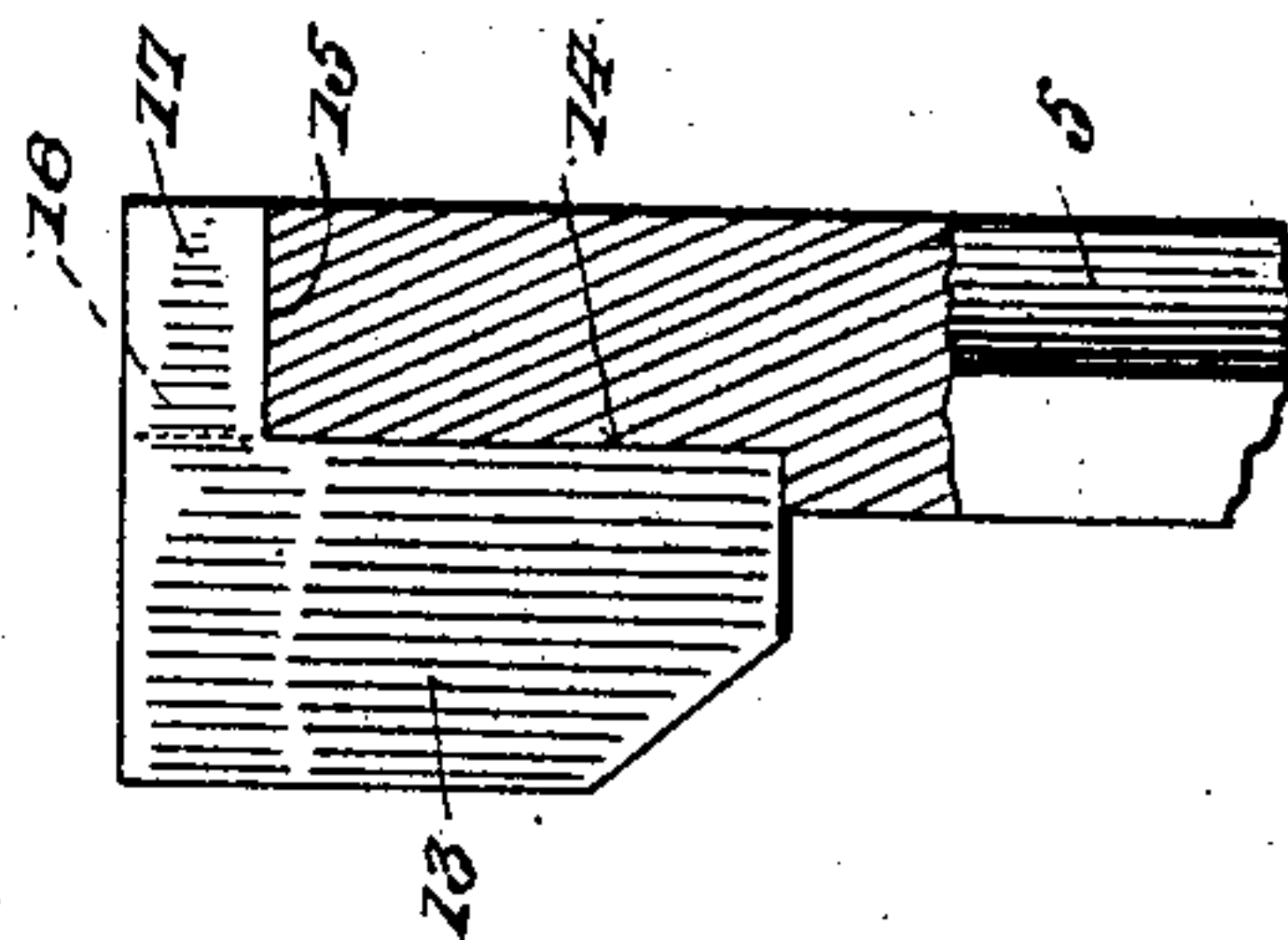
Fig. 4.



Witnesses

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Fig. 5.



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UNITED STATES PATENT OFFICE.

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FRAMEWORK FOR THE CONSTRUCTION OF CONCRETE BUILDINGS.

No. 912,070.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed December 13, 1907. Serial No. 406,372.

To all whom it may concern:

Be it known that I, WILLIAM WALLACE CARPENTER, a citizen of the United States, residing at Tampa, in the county of Hills-
5 boro and State of Florida, have invented certain new and useful Improvements in Framework for the Construction of Concrete Buildings, of which the following is a specification.

10 The present invention is designed to facilitate the construction of buildings whose walls are formed of concrete or like material tamped between confining members forming in effect a mold.

15 The invention provides a novel framework which may be quickly set up or taken apart either to be stored or to be shifted from one story to another, or from place to place, as may be required, said framework embodying
20 a supporting structure and a forming structure, the latter being held in place by the supporting structure and adapted to receive the concrete or other material employed in the formation of the walls.

25 For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and
30 accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a top plan view of a structure embodying the invention. Fig. 2 is a ver-
40 tical central longitudinal section of the structure on the line $x-x$ of Fig. 1. Fig. 3 is an end view of the structure. Fig. 4 is a sectional view of a portion of the structure on the line $z-z$ of Fig. 1, showing the parts on
45 a larger scale. Fig. 5 is a detail view of the upper end portion of one of the posts, showing the corner block in position.

Corresponding and like parts are referred to in the following description and indicated
50 in all the views of the drawings by the same reference characters.

The supporting structure contemplates one or more towers according to the dimensions of the building, and usually occupies a central position, and where more than one tower
55 is employed they are connected in series so as to mutually support and brace one another. In the illustration, two towers are shown, each consisting of vertical bars 1, ties 2 and braces 3. The longitudinal ties are of
60 such length as to connect the vertical bars 1 on the same side and thereby drawing the two towers. The longitudinal ties are indicated at 4 in order to distinguish them from the short transverse ties 2. The towers may
65 be of any height and dimensions according to the size of the structure to be erected.

The forming structure is braced and practically retained in place by the supporting structure and incloses the space correspond-
70 ing to the four walls of the building. The main supports of the forming structure consist of four corner posts 5. These posts are connected at their upper ends by means of tie beams 6 which have their ends let into
75 mortises formed in the sides thereof. Uprights 7 are set in from the plane of the outer sides of the corner posts and are connected at their upper ends by means of the tie beams 6. The corner posts 5, as also the
80 uprights 7, rest upon plates 8 which are supported upon the joists or foundation, according to the relative position of the framework. Beams 9 connect the upper portions of the forming structure with the support-
85 ing structure, said beams having connection with the supporting structure to admit of adapting the framework to buildings varying in size. The laterally arranged beams have their inner ends overlapped to admit
90 of their length being varied according as the side walls of the supporting structure are to be spaced a greater or less distance apart. Other tie beams 10 connect the uprights 7 and supplement the action of the tie beam 6.
95 Suspending beams 11 are spaced from the upper ends of the corner posts 5 and the upright 7 and are connected to blocks 12 and 13, the blocks 12 being attached to the tie beams 6, whereas the blocks 13 are secured
100 to the corners of the posts 5. The outer corners of the posts 5 are cut away at their up-

per ends, as shown at 14, to receive the inner vertical edges of the blocks 13 and to form shoulders 15 to receive and support said blocks. A groove 16 is formed diagonally in the upper end of each post 5 and extends from the outer to the inner corner thereof and receives an extension 17 of the blocks 13 so as to insure a substantial joint being formed between the corner blocks 13 and the posts.

10 The corner posts 5, uprights 7 and their tie beams constitute inner confining frames of the forming structure.

The outer confining frames, four in number, are of similar formation, each consisting of vertical timbers 18 and horizontal ties 19 and 20 connecting, respectively, the upper and lower ends of said vertical timbers. The upper ties 19 have their inner, lower portions rabbeted, as shown at 21, to receive the upper edge portions of the sustaining beams 11, which are confined between the vertical timbers 18 and the engaging portion of said ties 19 formed by the rabbets 21. The lower ties 20 have their upper, outer portions rabbeted, as at 22, for a purpose presently to be explained. The outer confining frames are secured at their lower ends to the corner posts 5 by means of angle plates 23, whose wings overlap the outer sides of the lower ends of the vertical timbers 18 adjacent to and bordering upon the respective corners. Bolts or fastenings 24 connect the angle plates 23 to the corner posts. Other fastening means, as clamps 25, connect the outer confining frames with the inner confining frames.

The forming elements consist, essentially, of inner plates 26 and outer plates 27. These plates may be either of metal or wood and are preferably strengthened by means of strips 28 which are applied to the outer sides of the respective plates. The inner plates 26 have positive connection with the corner posts 5 and with the upright 7 by means of angle plates 29. The inner wings of the angle plates 29 are slotted to receive the fastenings by means of which they are secured to the corner posts 5 at the uprights 7, thereby admitting of the plates 26 being moved in or out according to the thickness of the walls, which is determined by the space between the inner plates 26 and the outer plates 27. The extremities of the plates 26 or inner forming elements abut against the inner or opposing sides of the corner posts so that said plates may be moved between said posts towards and from the outer plates. Said plates 26 are also spaced from the upright 7, filling pieces 30 being interposed between the upright 7 and the plates 26. After a section of wall has been formed and set, the filling pieces 30 are removed and the fastenings connecting the

inner wings of the angle plates 29 are withdrawn, thereby permitting the inner plates 26 to be moved away from the wall so as to be elevated and again placed in position for the next course or section. The outer forming elements or plates 27 may be of any design according to the required finish of the outer surface of the wall so as to imitate stone work or to provide a finish of any design. The angle plates 29 positively connect the inner plates or forming elements 26 to the corner posts 5 and to the heavy uprights 7, thereby forming a substantial shaping section and by connecting the outer forming elements or plates 27 to said inner forming plates 26 by means of the fastenings or clamps 25 in the manner stated, the two forming elements 26 and 27 are adapted to sustain the pressure and weight of the material or concrete used in the formation of the walls. After one course or section has been formed and set sufficiently, the plates 26 and 27 are detached therefrom and moved upward for the next course or section, and after one story of the building has been constructed and the floor joists are in place, the structure as a whole is taken down and transferred to and erected upon the joists of the completed story and the process of construction continued until the required height of the building has been attained.

Having thus described the invention, what is claimed as new is:

1. In framework for constructing concrete buildings, the combination of posts, uprights located at intervals between the posts and set in from a plane touching the sides of the posts adjacent to the wall, tie beams connecting the upper ends of the posts and uprights, a suspension beam spaced from and having connection with the said tie beams, a confining frame suspended from said suspension beam, an inner forming plate, means adjustably connecting said inner forming plate with the posts and selected uprights, an outer forming plate, and connecting means between the inner and outer forming plates.

2. In framework for constructing concrete buildings, the combination of an inner confining frame and spaced therefrom, an outer with the upper portion of said inner confining frame, and spaced therefrom, an outer confining frame comprising vertical timbers and ties therefor, one of said ties having its inner lower portion rabbeted to receive the upper edge portion of said suspending beam, and securing means for the lower portion of said outer confining frame.

3. In framework for the construction of concrete buildings, the combination of corner posts having their upper outer corners cut away and diagonal grooves in their upper

ends, blocks fitted against the cut away corners of said posts and having upper extensions fitted in the diagonal grooves of said posts, an inner confining frame fitted between the posts, other blocks applied to the upper portion of said inner confining frame, a suspension beam attached to the intermediate and corner blocks, and an outer con-

fining frame hung from said suspension beam. 10

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

WILLIAM WALLACE CARPENTER. [L. s.]

Witnesses:

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