

W. C. BROUGHTON.
 KNOCKDOWN CONCRETE BUILDING.
 APPLICATION FILED APR. 23, 1913.

1,111,131.

Patented Sept. 22, 1914.

3 SHEETS—SHEET 1.

Fig. 1.

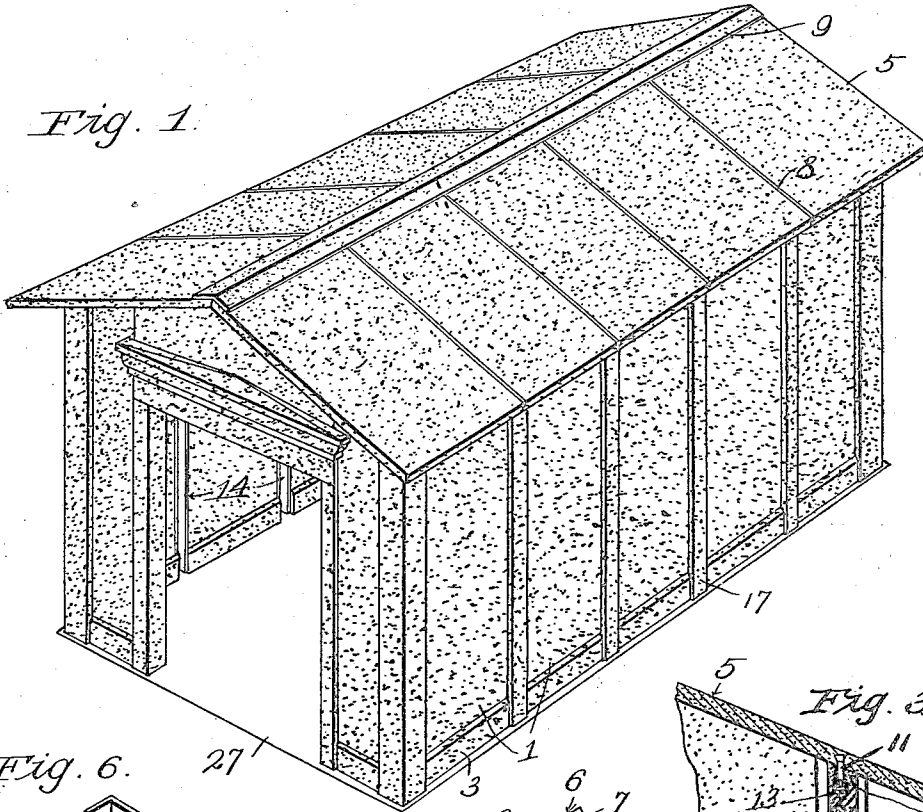


Fig. 6.

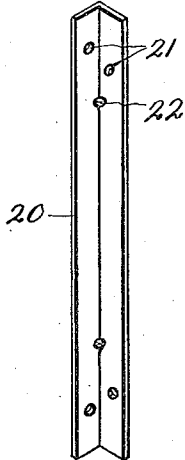


Fig. 5.

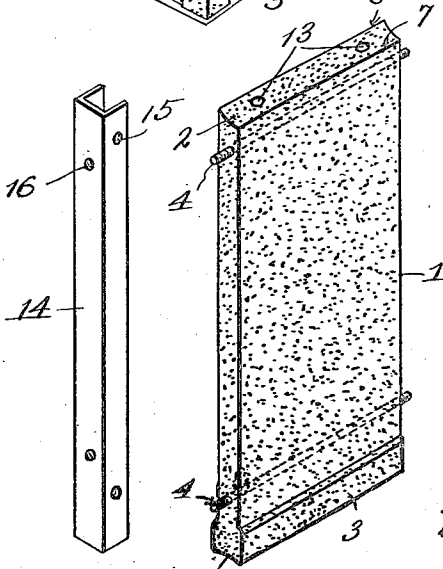
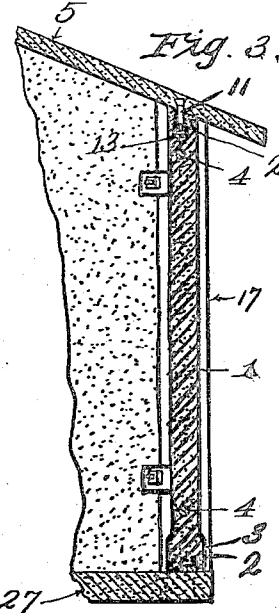


Fig. 3.



WITNESSES:

R. Hamilton
L. J. Fischer Fig. 5. 2 Fig. 4.

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BY

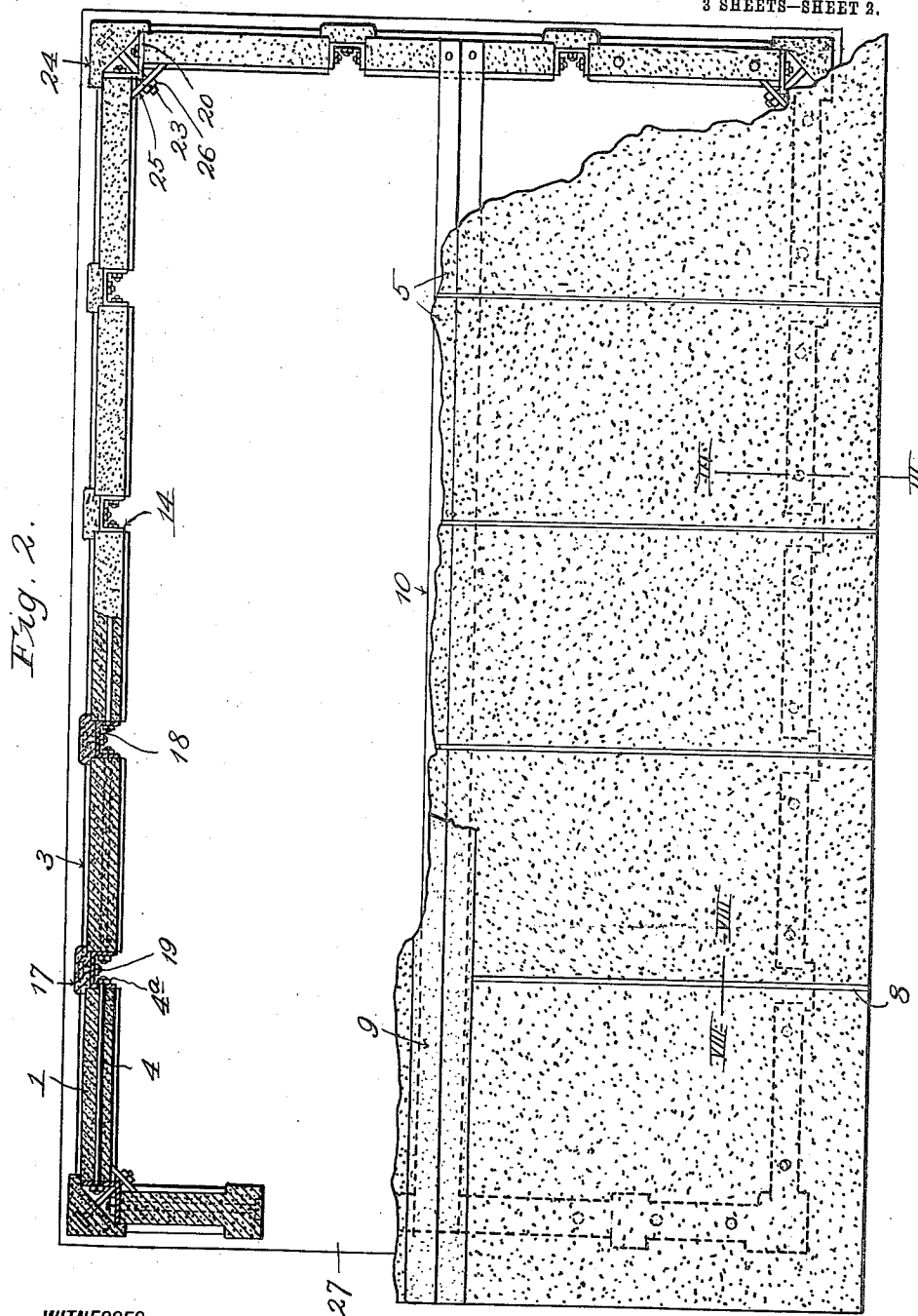
L. J. Fischer,
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3 SHEETS—SHEET 2.

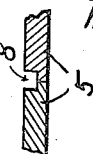


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Fig. 7.



Fig. 8.



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3 SHEETS—SHEET 3.

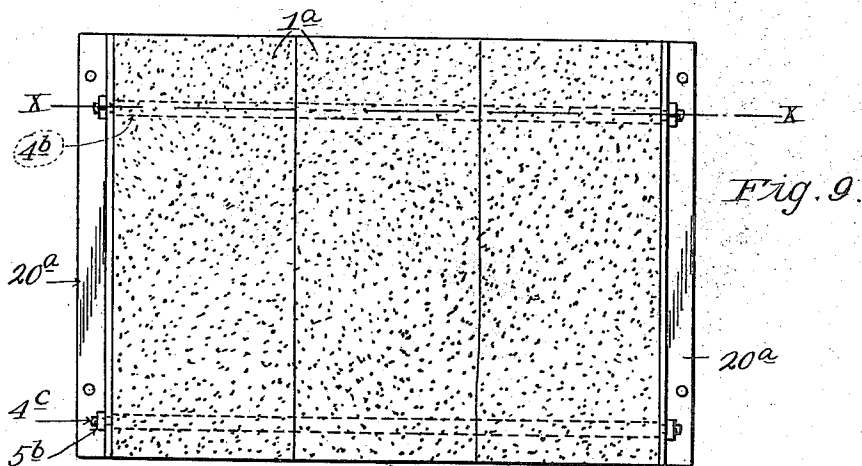


Fig. 9.

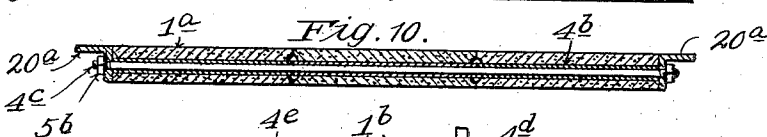


Fig. 10.

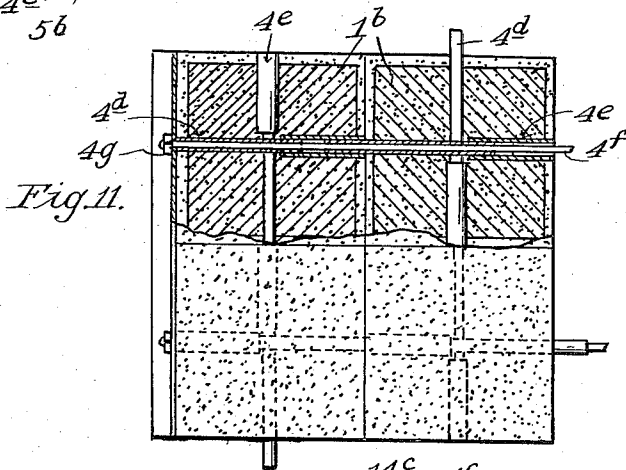


Fig. 11.

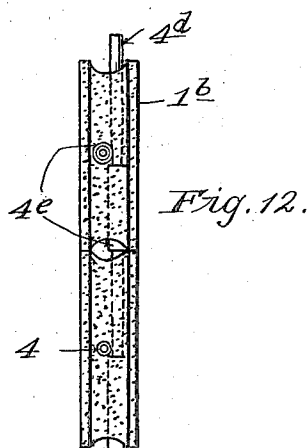


Fig. 12.

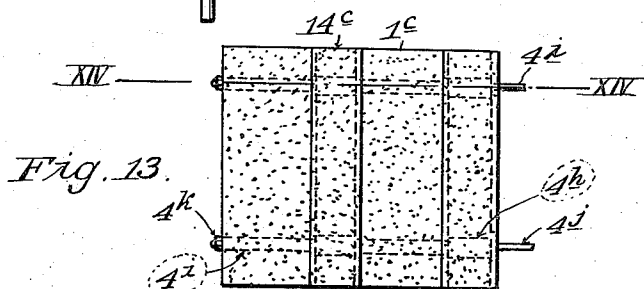


Fig. 13.

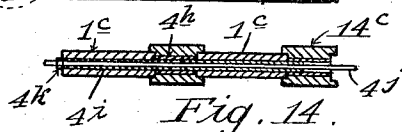


Fig. 14.

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UNITED STATES PATENT OFFICE.

WALTER C. BROUGHTON, OF KANSAS CITY, MISSOURI.

KNOCKDOWN CONCRETE BUILDING.

1,111,131.

Specification of Letters Patent.

Patented Sept. 22, 1914.

Application filed April 23, 1913. Serial No. 763,051.

To all whom it may concern:

Be it known that I, WALTER C. BROUGHTON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Knock-down Concrete Buildings, of which the following is a specification.

My invention relates to improvements in knock-down concrete buildings, and one object is to provide a building of this character which may be manufactured at a central plant and shipped to any point ready to be set up for use.

The invention is adaptable to private dwellings, hotels, and in fact buildings of all description, and in order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is a perspective view of the invention in the form of a garage. Fig. 2 is a broken plan view of the same, partly in section. Fig. 3 is a broken vertical section on line III—III of Fig. 2. Fig. 4 is a detail perspective of one of the wall slabs of the building. Figs. 5 and 6 are perspectives of metal pilasters employed in uniting the wall slabs. Fig. 7 is a detail of a dowel pin used in carrying out the invention. Fig. 8 is a broken cross section on line VIII—VIII of Fig. 2. Fig. 9 is a detail of a wall with modified means for uniting the several slabs thereof. Fig. 10 is a horizontal section on line X—X of Fig. 9. Fig. 11 is a side elevation partly in section of two wall slabs with another modified form of means for uniting said slabs. Fig. 12 is an end view of the structure disclosed by Fig. 11. Fig. 13 is a side elevation of two wall slabs with still another modified form of means for uniting said slabs. Fig. 14 is a horizontal section on line XIV—XIV of Fig. 13.

In carrying out my invention, I employ any suitable number of wall slabs 1, each having marginal grooves 2 at its upper and lower ends. Each slab 1, is enlarged at its lower portion 3, which presents a broad foundation for the slab to rest upon, and also aids in giving a panel effect to the completed wall, as shown on Fig. 1.

4 designates tie-rods extending through the upper and lower portions of each wall slab to reinforce the same and assist in uniting the wall slabs when setting up the building. The protruding ends of the tie-rods 4

are threaded to receive nuts 4^a. If the roof of the building is to slope as shown on Fig. 1, the upper margins of the wall slabs 1 are beveled as shown on Figs. 3 and 4, so that the weight of the roof slabs 5 will be equally distributed upon the front and rear corners 6 and 7 of said upper edges.

The roof slabs 5 have rabbeted longitudinal edges to form grooves 8 into which a filler is deposited to render the joints between said slabs rain-proof. The joint at the ridge of the roof is closed by a concrete slab 9 which slopes in opposite directions to conform to the pitch of the roof. The slabs 5 rest at their higher ends upon a metallic ridge-pole 10, which in turn rests upon the end walls as shown on Fig. 2. Those portions of the roof slabs which rest upon the side walls have depending dowel pins with heads 12 at their lower ends, which enter openings 13 in the upper ends of the wall slabs 1. Openings 13 are slightly larger at their lower than upper ends and are filled with plastic cement just preparatory to lowering the dowel pins 11 therein, which push the surplus cement out of said openings 13 and the remainder of the cement becoming embedded therein above the heads 12 firmly holds said dowel pins from upward movement. A similar arrangement may be employed to secure the upper ends of the roof slabs 5 to the ridge-pole 10, so that said roof slabs will be firmly anchored to the walls of the building, making the same cyclone proof.

14 designates a metal pilaster arranged, preferably, in the form of a channel bar provided at its three sides with holes 15 and 16, through the former of which the projecting ends of tie-rods 4 are passed to receive the nuts 4^a which, together with said tie-rods bind the pilasters and wall slabs firmly together. After the pilasters 14 have been set up in position, the outer face of each is covered by a concrete slab 17, secured thereto by nuts 18 and bolts 19, which latter have their ends embedded in slab 17 and project through the holes 16 to receive the nuts 18. (See Fig. 2.)

The wall slabs 1 adjacent the corners of the building are secured to corner pilasters 20, each arranged, preferably, in the form of an angle-iron, having holes 22 to receive bolts 23. The ends of bolts 23 are embedded in triangular corner concrete slabs 24, while their threaded ends project through holes 22 and metal plates 25, which latter bear

against the two adjacent slabs 1. The threaded ends of bolts 23 are provided with nuts 26, the screwing up of which draws the corner slabs 24 firmly against the two adjacent wall slabs 1. The longitudinal edges of the slabs 17 and 24 overlap the edges of the adjacent wall slabs 1, to make the intervening joints air and water tight. The walls of the building as shown in the present instance, rest upon a concrete floor 27.

As the walls of the building are erected, the grooves 2 of the wall slabs 1, are filled with cement as shown on Fig. 3, to render the joints between said wall slabs, the roof slabs, and the floor air and water tight.

In the modified form shown on Figs. 9 and 10, each wall slab 1^a is provided with tubes 4^b instead of the tie-rods 4. Tubes 4^b are arranged in alinement with each other to receive a tie-rod 4^c which extends through all the sections of the wall or as many sections thereof as desired, and also through angle-irons 20^a, which are firmly drawn toward each other and clamp the wall slabs 1^a together when the nuts 5^b are screwed upon said tie-rods 4^c.

In the modified form disclosed by Figs. 11 and 12, each wall slab 1^b is provided with a plurality of tubes 4^d and 4^e, some being arranged horizontally and some vertically. The smaller tubes 4^d project from one side of their respective slabs as shown on Fig. 11 to enter the larger tubes 4^e of the abutting sleeves, after which the whole are tightened by tie rods 4^f and nuts 4^g.

In the modified form disclosed by Figs. 13 and 14, the wall slabs 1^c are separated by intervening pilasters 14^c, each having a plurality of tubes 4^h to receive the projecting ends of tubes 4ⁱ embedded in the wall slabs, the whole being drawn together by rods 4^j and nuts 4^k.

From the foregoing description it is ap-

parent that I have produced a knock-down building which can be readily set up for use and when once in position is practically non-destructible.

While I have shown my building in the form of a garage, it is obvious that it can as readily be made in the form of a dwelling having doors and windows at any point in the walls thereof.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a building of the character described, end walls and side walls, angle bars at the corners of said walls, said angle bars having holes therein, tie members extending through the walls and the holes in said angle bars, means to engage said tie members to lock the whole together, corner slabs abutting the angle-bars and overlapping the adjacent ends of the walls, plates abutting the inner corners of the walls, and bolts embedded in the corner slabs and secured to said plates, substantially as described.

2. In a building of the character described, a plurality of wall slabs, tie-members extending through said wall slabs and projecting therefrom, channel-bar pilasters interposed between the wall slabs and provided with holes to receive the projecting ends of the tie-members, said channel-bar pilasters being unobstructed at their rear sides and having their front sides set in from the front sides of the wall slabs, and concrete slabs removably-secured to the front sides of the channel-bars and overlapping the adjacent sides of the wall slabs.

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

WALTER C. BROUGHTON.

Witnesses:

F. G. FISCHER,

L. J. FISCHER.