

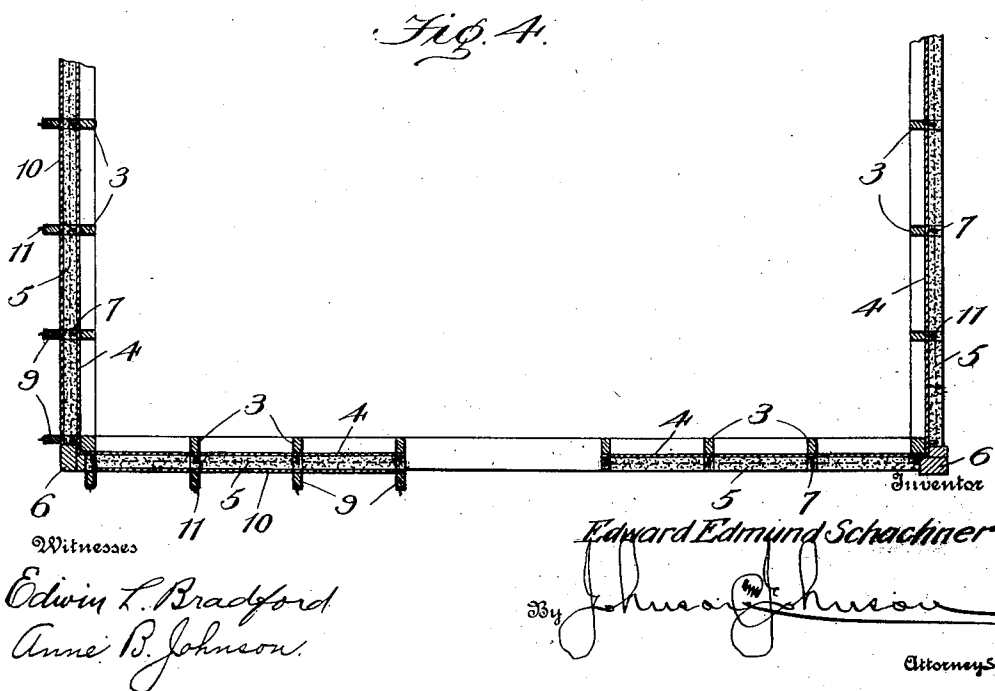
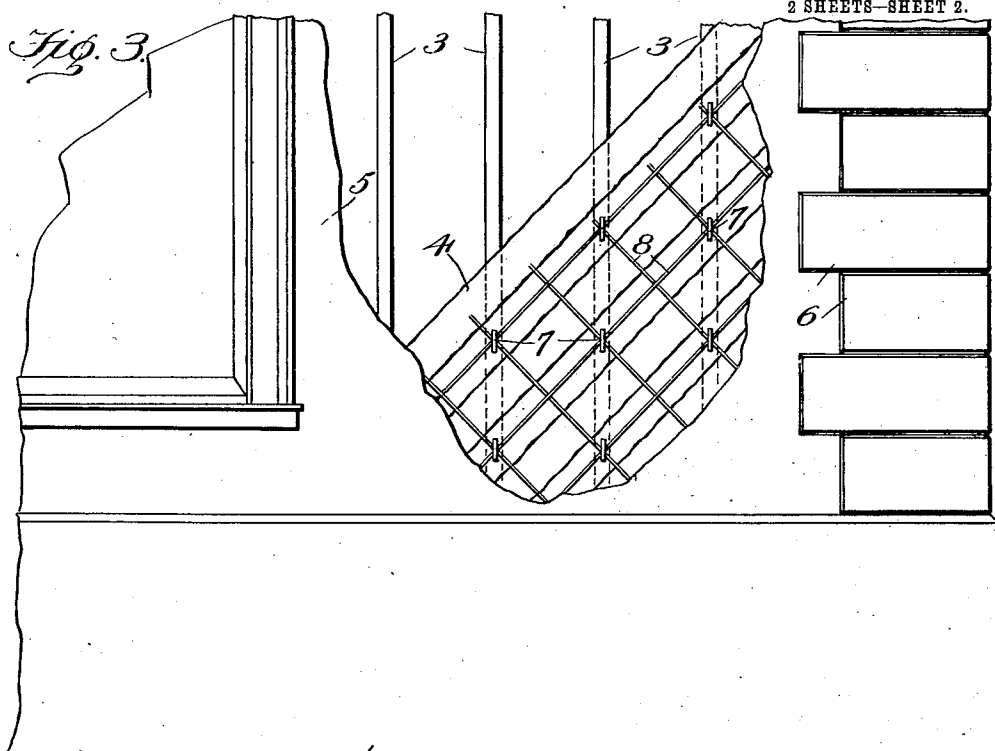
No. 824,823.

PATENTED JULY 3, 1906.

E. E. SCHACHNER.
CONCRETE WALL HOUSE CONSTRUCTION.

APPLICATION FILED JULY 13, 1905.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWARD EDMUND SCHACHNER, OF DENVER, COLORADO.

CONCRETE-WALL HOUSE CONSTRUCTION.

No. 824,823.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD EDMUND SCHACHNER, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Concrete-Wall House Construction; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to concrete-wall buildings in which the wall is anchored to a frame structure of wood studding and sheathing and in which special provision is made for effectively strengthening the wall, and in the claims appended hereto I will point out the features of such construction which constitute my invention, in connection with the accompanying drawings, in which—

Figure 1 represents so much of a concrete house-wall in vertical section as illustrates the method of erecting the wall embodying my improvements. Fig. 2 is an identical sectional view of a partially-completed wall embodying my improvements. Fig. 3 is a partial elevation of the same. Fig. 4 is a horizontal section showing portions of the finished and of the unfinished walls.

The object of my invention is to build a cheap, strong, and durable house with strongly-reinforced concrete walls on a frame structure of wood sheathing and studding and in which the wall is anchored to both, the sheathing being intermediate.

The foundation 1 of the concrete wall is laid to receive the floor-joists 2, the ends of which are embedded in the concrete wall, and upon the joists is erected studding 3, on the outside of which a sheathing 4 is nailed and with the studding forms a permanent wall or frame structure, upon which is erected and anchored a concrete exterior wall 5, preferably of less thickness than the foundation-wall. Brick corners 6 are erected with the walls to give finish to the house. The sheathing is of rough boards and nailed diagonally on the studding and with it forms a strong braced frame with openings and crevices between the rough boards through which the concrete will penetrate and serve to bind the wall and sheathing together. Through this sheathing and into the studding anchors or hooks 7 are driven at different points and project from the outer wall of the sheathing, their heads terminating in the space to be occu-

pied by the concrete wall and to form keys for holding it. As a reinforcing anchorage these headed anchors may be connected by wires 8, running from one to the other in different directions or crossing each other to form a continuous brace and tie for the anchors within and throughout the body of the wall. This sheathing-wall, being thus faced with hooks and the connected wires, forms a continuous fastening for the concrete wall, which is erected upon the sheathing in a way which I will now describe. The foundation-wall, as it is being erected, outside of it a suitable distance I erect a temporary housing or mold-frame formed by studding 9, planted about five feet apart in the ground with a space between them and the foundation-wall sufficient to receive boards 10, fitting closely between the studding and said foundation-wall and the sheathing to form a filling-space for the erection of the wall upon this foundation. For this purpose the boards are built up one upon the other from the ground against the inner sides of said temporary studding as the concrete is filled in upon the foundation-wall and the sheathing. This studding is the height of the wall and about five feet apart, and each stud is tied to the sheathing by wire loops 11, preferably passed around the permanent studding through the joints of the sheathing and around the temporary studding to stay and hold it as a housing for said filling-boards which sustain the pressure in filling and tamping the concrete. The wire stays may be reinforced by strips of wood 12, nailed to cleats 13, which are themselves nailed to the sheathing, the outer ends of said strips being nailed to the temporary studding. A plurality of these wooden stays may be used, and they are knocked off as the temporary filling-boards are put in place and the concrete filled in; but as the wall goes up and is tamped these temporary wooden stays prevent the bulging or spreading of the housing-studding and render the wall true. When the wall is thus completed and becomes hard and firm, the wire stays are cut and the temporary studding and filling-boards are removed from the wall. The ends of the wire stays are then cut close to the wall.

When the foundation is formed with a water-table 14 in the ground, the bottom filling-board rests upon it, and when it is desirable to have the wall of less thickness above the foundation the temporary studding is made to support the filling-boards to suit such

thickness. After removing the temporary filling or mold-wall the concrete wall is then troweled down with a light coating of cement to a smooth hard surface, and it may be blocked to represent stone blocks. The brick corners may be erected with the concrete wall, and some of the bricks may project into the concrete and form wall-bonds. The embedded anchors and the wires connecting them and the sheathing not only form a most effective stability and security for the wall, but brace it in every direction, and thus give the advantage of erecting a wall of about the thickness of the width of a brick above the foundation. These wall-strengthening wires will extend from the foundation-joists, to which they may be anchored by a hook 15, so that the wall where it commences to lessen in thickness will be anchored to the ends of the joists, which is very important, because at this point the lessening of the thickness of the wall renders it necessary to provide security, and anchoring it to the joists renders this security effective.

25 The anchoring of the wires to the ends of the foundation-joists gives the advantage of using separate and independent wires connecting widely-spaced anchors and crossing each other so that they can be carried up from the joists behind the heads of the anchors, and the force required to draw each wire taut will be resisted by their foundation connection.

Looking at Fig. 3 it will be seen that the headed anchors are widely spaced and that the wires are connected to them at their crossing, while in Fig. 2 one of these separate wires is seen as secured to the end of the foundation-joists, so that the separate wires run only from the foundation-joists in a straight line to the anchors and hold the wall firmly between the anchors, giving the wall stability and preventing cracking.

I claim—

45 1. In concrete house construction, a frame of studding and sheathing including the foundation-joists, a facing-wall of concrete, and means for strengthening and anchoring said wall to said frame and to said joists, consisting of headed anchors driven into said

frame and into the ends of the joists and their heads embedded in said wall, and a reinforcing anchorage of widely-spaced wires, each wire separately connected to the heads of the anchors and running from one to the other in different directions, each wire forming a brace within and throughout the body of the wall and connected to said foundation-joists.

2. In a concrete house construction, a frame of studding and sheathing, a facing-wall of concrete, and means for strengthening and anchoring said wall to said frame, consisting of headed anchors driven into said frame with their heads embedded in the wall and a reinforcing anchorage of widely-spaced wires, each wire separately connected to said heads in crossing relation, each wire forming a brace throughout the body of the wall whereby said headed anchors form the means for holding the wires and the latter the means for holding wall.

3. In concrete house construction, a facing-wall of concrete, and means for strengthening said wall consisting of headed anchors, and a reinforcing anchorage of separate and widely-spaced wires crossing at said anchors behind their heads and extending separately in straight lines from anchor to anchor, whereby the headed anchors and the wires brace each other and conjointly brace the wall, and a backing-frame for supporting the wall and the anchors.

4. The combination with a solid backing for a concrete wall, an anchored facing of wires projecting from said backing, and a removable filling-housing or mold-frame for said wall, consisting of boards forming the outer or front mold-wall, and studding anchored in the ground and secured to the solid backing whereby the molding front is supported against pressure tending to force it from the backing as the wall is being erected.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD EDMUND SCHACHNER.

Witnesses:

A. H. FALLOW, Jr.,
R. T. MCGREW.