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J. H. WALZL.

MEANS FOR FROST PROOFING CONCRETE WALLS.

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Fig. 1.

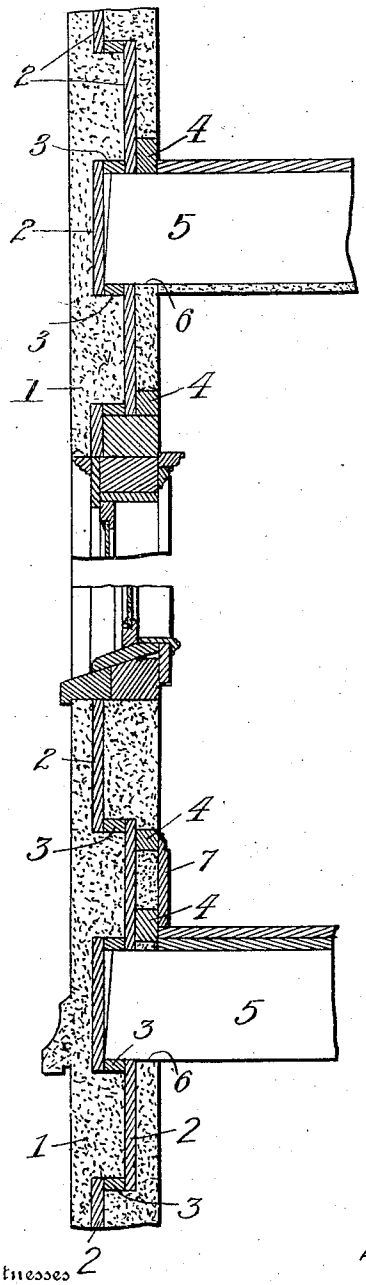


Fig. 2.

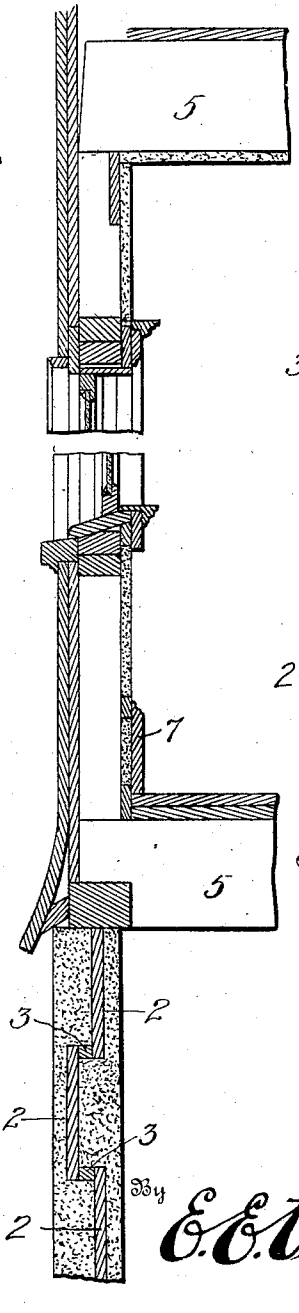
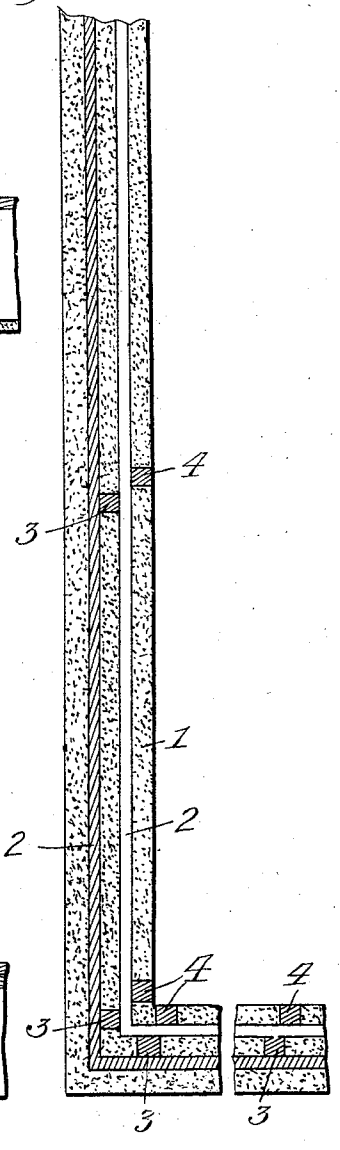


Fig. 3.



Witnesses

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MEANS FOR FROST-PROOFING CONCRETE WALLS.

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To all whom it may concern:

Be it known that I, JOHN H. WALZL, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a certain new and useful Improvement in Means for Frost-Proofing Concrete Walls, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to means for frost-proofing walls, formed of plastic material, and has for its object the construction of a composite wall, which is provided with peculiarly-constructed means formed of non-conductive material, which means will prevent the passage or penetration of heat and moisture through the wall from one side to the opposite side thereof.

Another object of the invention is the construction of a wall, the body of which is, preferably, formed of plastic material, as for instance, cement, said body being provided with non-conductive and reinforcing means, embedded in the body in staggered relation to an imaginary, vertical line drawn, preferably, through the center of the wall.

With these and other objects in view, the invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a transverse, vertical, sectional view of a composite wall constructed in accordance with the present invention. Fig. 2 is a transverse, vertical, sectional view of a wall of a frame building, which is provided with a frost-proof plastic or cement foundation constructed in accordance with the present invention. Fig. 3 is a horizontal, sectional view of a composite wall constructed in accordance with the present invention.

Referring to the drawings by numerals, 1 designates the plastic body, preferably formed of cement. Embedded in the body 1 of the wall, are longitudinally-extending boards or members 2. These boards or members 2 are, preferably, secured in a vertical position, and are spaced apart by means of comparatively small blocks 3. The blocks 3 constitute spacing means, which not only holds the boards 2 properly spaced until the green plastic material hardens or "sets", but also acts as a conductor for conveying any moisture from one board to the other and thence to the outer atmosphere, as it will be seen that through the medium of the grounds 4, and the openings for the joist 5, each board 2 is directly or indirectly connected through a conductor, as for instance, grounds 4 or blocks 3, to the outer atmosphere, which will insure of the escape of any moisture in the boards, and thereby tend to facilitate the drying of the body of the wall, as well as the boards or members 2.

It is to be noted that the boards are alternately arranged in a staggered position relative to an imaginary, vertical line, drawn, preferably, through the center of the body 1 of the wall.

The blocks 3, preferably, only cover a small portion of the overlapping, sides of the boards, and thereby permit the cement, or other plastic material, to pass between the overlapping, spaced sides of the boards, and securely bond or fasten together the parts of the wall upon opposite sides of said boards.

As clearly seen in Fig. 1, the joists 5, not only rest upon a portion of the concrete body of the wall, as at 6, but also upon the upper, longitudinal edges of some of the boards 2 and upon the upper, horizontal edges of the spacing blocks 3, whereby, if it is desired, the joists may be fastened to the wooden part of the composite wall, by driving, preferably, the nail or nails through the joist into said boards or spacing blocks. It is to be noted that the base-board 7, Fig. 1, is, preferably, attached to the grounds 4 contiguous thereto, as the base-board engages several grounds arranged in the wall adjacent to the floor or joists of the building.

The foundation of a frame building, Fig. 2, is formed of a composite structure, substantially the same as the composite wall, illustrated in Fig. 1.

As the boards 2, spacing blocks 3, and grounds 4 are, preferably, formed of wood, and as it is a good non-conductor of heat and cold, the boards, blocks, and grounds, will be dry on the inside, irrespective of the climatic conditions on the outside of the wall. Furthermore, as the boards divide the wall at approximately its center into two parts, in cold or wet weather, the inner part is exposed to the heat or dry atmosphere in the room or rooms, and will normally be kept dry, which influences the condition of the boards, and, therefore, keeps them dry, consequently, preventing moisture from passing through the entire wall, or the wall from being chilled, further than the outer portions or faces of the boards.

As before stated, the entire body of the wall will be thoroughly bonded, as the tie occurs at the edges, that is, the top and bottom of every board, which is entirely embedded in the body of the wall. The construction of my improved wall is very simple, as no extra molds or frame need be employed, other than that ordinarily used, as the boards 2, spacing blocks 3 and grounds 4 will be placed in the frame or mold and the green material packed or otherwise forced around and against the vertical, staggered, non-conducting wooden structure. It is a fact that the peculiar structure of my composite wall produces an absolutely frost-proof wall, which is comparatively inexpensive to construct and is exceedingly simple in structure.

In Fig. 1, I have shown the wall provided with a joist-seat or socket; the joist-seat opening upon the inner face of the wall and having as its back one of the vertical boards or non-conducting members, and the

upper and lower face of the joist-seat is formed by the longitudinal edge of one of the boards, the horizontal face of one of the blocks and a portion of the plastic body. One end of a joist rests in a joist-seat or socket and engages a portion of the plastic body, the horizontal edge of one of the boards or members, and the upper face of a block.

In the foregoing specification, as well as in the claims, I refer to the wooden structure of my wall as a "non-conductor" of heat and cold, while the wooden structure will conduct or permit moisture to escape, whereby the wooden structure can dry; the wooden structure in its dry state will be a very good non-conductor against heat and cold, as stated.

What I claim is:

1. A composite wall comprising a vertical concrete body having embedded therein a plurality of longitudinally-extending boards arranged in a vertical plane with respect to their longitudinal edges, the boards staggered or alternately arranged at opposite sides of an imaginary vertical line drawn through the center of the wall, spacing blocks interposed between each two boards and engaging their contiguous faces, and grounds countersunk in the inner face of the wall and having their outer faces parallel with the vertical plane in which the inner face of the wall is formed and the inner faces of said grounds engaging the inner face or side of one of the boards.

2. A composite wall, comprising a plastic body, boards spaced apart and arranged alternately upon opposite sides of an imaginary vertical line drawn approximately through the center of the wall, each two contiguous boards having portions of their contiguous sides overlapping, and comparatively small spacing blocks interposed between and engaging the overlapping faces of said boards.

3. A composite wall, comprising a plastic body, vertical members formed of non-conducting material, countersunk in said walls and arranged in staggered relation and spaced apart, and blocks formed of non-conducting material, interposed between and engaging the contiguous faces of said members.

4. A frost-proof, concrete wall, comprising a plastic body, boards arranged in staggered relation and embedded in said wall, each two boards overlapping at their contiguous longitudinal edges, wooden blocks interposed between the overlapping sides of said boards and plastic material interposed between the remainder portion of the overlapping sides, and said plastic material between the overlapping sides of the boards forming a bond for the plastic material at the outer faces of the boards.

5. A frost-proof concrete wall, comprising a plastic body, non-conducting members arranged in staggered relation and embedded in said wall, each two non-conducting members overlapping, blocks formed of non-conducting material interposed between the overlapping portions of said non-conducting members, and plastic material interposed between the remaining portion of the overlapping portions, and said plastic material between the overlapping portions forming a bond for the plastic material at the outer faces or sides of the non-conducting-members.

6. A wall for buildings, comprising a plastic body, provided with alternately arranged or staggered reinforcing and non-conducting members positioned between the outer sides of the body, spacing means formed of non-conducting material interposed between and connecting each two of said members, and plastic material interposed between the members and integrally bonding the portions of the body upon opposite sides of the members together.

7. In a building, the combination of a composite wall formed of a plastic body, a series of boards, and blocks embedded therein, said wall provided with a joist-seat opening upon its inner face, said joist-seat having at its back one of said boards and at its top and bottom longitudinal edges of the other boards and horizontal edges of the blocks, said plastic body forming the upper and lower, outer edges of the seat, and a joist extending into said joist-seat and resting upon a portion of the plastic body, one of the longitudinal edges of a board, and upon the upper, horizontal face of a block.

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

JOHN H. WALZL.

Witnesses:
EDWARD T. PALMER, Jr.,
J. W. BOLLMAN.