

921,820.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE.

ALEXANDER FOSTER, OF PASADENA, AND EDWARD W. FOSTER, OF LOS ANGELES,
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METHOD OF CONSTRUCTING BUILDINGS AND APPARATUS THEREFOR.

No. 921,820.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed July 23, 1906. Serial No. 327,445.

To all whom it may concern:

Be it known that we, ALEXANDER FOSTER and EDWARD W. FOSTER, subjects of the King of the United Kingdom of Great Britain and Ireland, the said EDWARD W. FOSTER having formally declared his intention to become a citizen of the United States of America, the said ALEXANDER FOSTER residing at Pasadena and the said EDWARD W. FOSTER residing at Los Angeles, both in the county of Los Angeles and State of California, have invented a new and useful Method of Constructing a Building and the Apparatus Therefor, of which the following is a specification.

The object of our invention is to construct a building, and especially the walls thereof that they will be ventilated or provided with an opening from the bottom to the top, and that the joists will be connected therewith in a strong and substantial manner.

By constructing a wall in accordance with our invention it will have great heat insulating capacity, and can be formed by molding it from plastic material, as cement or concrete, whereby it can be quickly and cheaply formed and it will possess great strength with but a comparatively small amount of material.

The accompanying drawings illustrate the invention.

Figure 1 is a vertical transverse section of the wall, showing the manner of constructing the lower course of the wall. Fig. 2 is a similar section, showing the manner of constructing the second course. Fig. 3 is a horizontal section on the line x^2-x^3 in Fig. 1. Fig. 4 is a vertical section of a completed wall. Fig. 5 is a side elevation of a portion of a wall. Fig. 6 is a vertical section of a collapsible mold tube used in the construction. Fig. 7 is a transverse section on the line x^7 —in Fig. 6. Fig. 8 is a plan of a wall showing a different form of opening.

In building the wall a suitable foundation or base plate 1 is first constructed and mold boards 2 are placed on each side thereof and held by wires 3 and bracing means 4 to form a vertical trough or channel. A series or plurality of parallel tubes 5 are then placed in this space between the mold boards, the said tubes being of such size as to leave a space between each tube and the inner and outer mold boards at each side and also to leave a space between the successive tubes. The

said tubes are preferably collapsible, consisting for example of a split sheet metal tube provided with inwardly projecting lugs 6 at each side of the joint and a strip 7, vertically slidable in said tube, and provided with oblique slots 8 to engage said lugs, so that on downward movement of the strip the tube will be expanded, and on the upward movement of the strip the tube will be collapsed. When the tubes are placed in position between the mold boards 2, they are in expanded condition. A nipple or short section of pipe 9 is placed at the bottom of the wall space, extending between each tube 5 and the outer mold board. Cement mortar is then placed in the space between the mold boards and the tubes, forming a wall course with vertical passages 10 therein, communicating at their lower ends by lateral passages 11 with the outer air.

When the cement has become sufficiently set, the mold boards 2 are moved upwardly, the wires 3 having been cut and new wires substituted and are again braced in position as by bracing means 12. The molding tubes 5 are collapsed and drawn up to or near the top of the formed course and are then again expanded. It is preferred to only partially withdraw said mold tubes so that the portion remaining in the formed tubular passage serves as a guide and retainer for the projecting portion of the tube, as shown in Fig. 2. The cement mortar is then filled into the space intervening between the mold boards and the tubes to form the second course. In general two courses will carry the structure to the next floor above, the floor joists indicated at 13 in Fig. 4 being then placed on the wall and the operation proceeding as before until the roof is reached. The tops of the tubular passages 10 may be then closed by a wire gauze screen 14 to exclude vermin and the like and the roofing timbers 15 put in place, a space being left over the top of each tubular passage 10 so that an air draft or ventilating communication is formed from the ventilating opening 11 at the bottom up through the passage 10 and out of the top thereof into the attic or upper part of the house. The timbers of each floor are anchored to the wall by ties 18 fastened to metal beams 19 embedded in the cement at intervals. The beams are preferably located beyond the spaces so as to prevent the strain or pull upon them from the

joists having a tendency to split or crack the wall, or pull it apart on the line of the spaces.

The wall 16 constructed as above described comprises two portions, an outer portion and inner portion with intervening webs, these webs being of less cross section than the cross section of the intervening spaces, thereby not only economizing in amount of material required, but largely cutting off the passage of heat or cold through the wall. The vertically extending passages or air spaces being open at the bottom to the outer air and at the top to the interior of the house or attic, it follows that there will be in general a circulation of air therethrough with the result that the wall is kept dry, thus avoiding the clamminess or coldness and dampness generally found with cement walls. The fact that the vertical passages in the wall are round insures maximum strength of the construction for a given weight, each web portion flaring or expanding toward each outer wall portion so as to brace every part of such outer wall portion and obviate any extended thin portions which would be a source of weakness in the wall. The same result can be obtained by forming the wall with polygonal holes as indicated at 17 in Fig. 8.

It will be understood that the term cement mortar herein used includes any structural material suitable for application in the manner by molding, for example, magnesite, as well as ordinary cement.

What we claim is:—

The method of constructing a building, which consists in placing mold boards at each side of the space to be occupied by the respective walls of the building, then placing elongated members vertically between the boards at a distance from each other and from said boards, then placing a space forming member between the lower end of each vertical member and one of said boards, then filling a cement mortar in between said elongated members and boards, then, after the cement has hardened, removing said boards and members, then successively securing said boards to the upper edges of the portion of the wall already formed, and replacing said elongated members as before and again filling in said spaces with cement mortar until the wall has been completed, and at certain desired points in said wall and between the vertical members embedding beams and the ends of the joists in the cement and connecting them by means of ties, said beams being beyond said spaces, then covering the upper ends of the spaces formed by the vertical members with wire gauze, and, finally, placing the roof in position and finishing the building.

In testimony whereof, we have hereunto set our hands at Los Angeles California this 9th day of July 1906.

ALEXANDER FOSTER.
EDWARD W. FOSTER.

In presence of—

ARTHUR P. KNIGHT,
FRANK L. A. GRAHAM.