

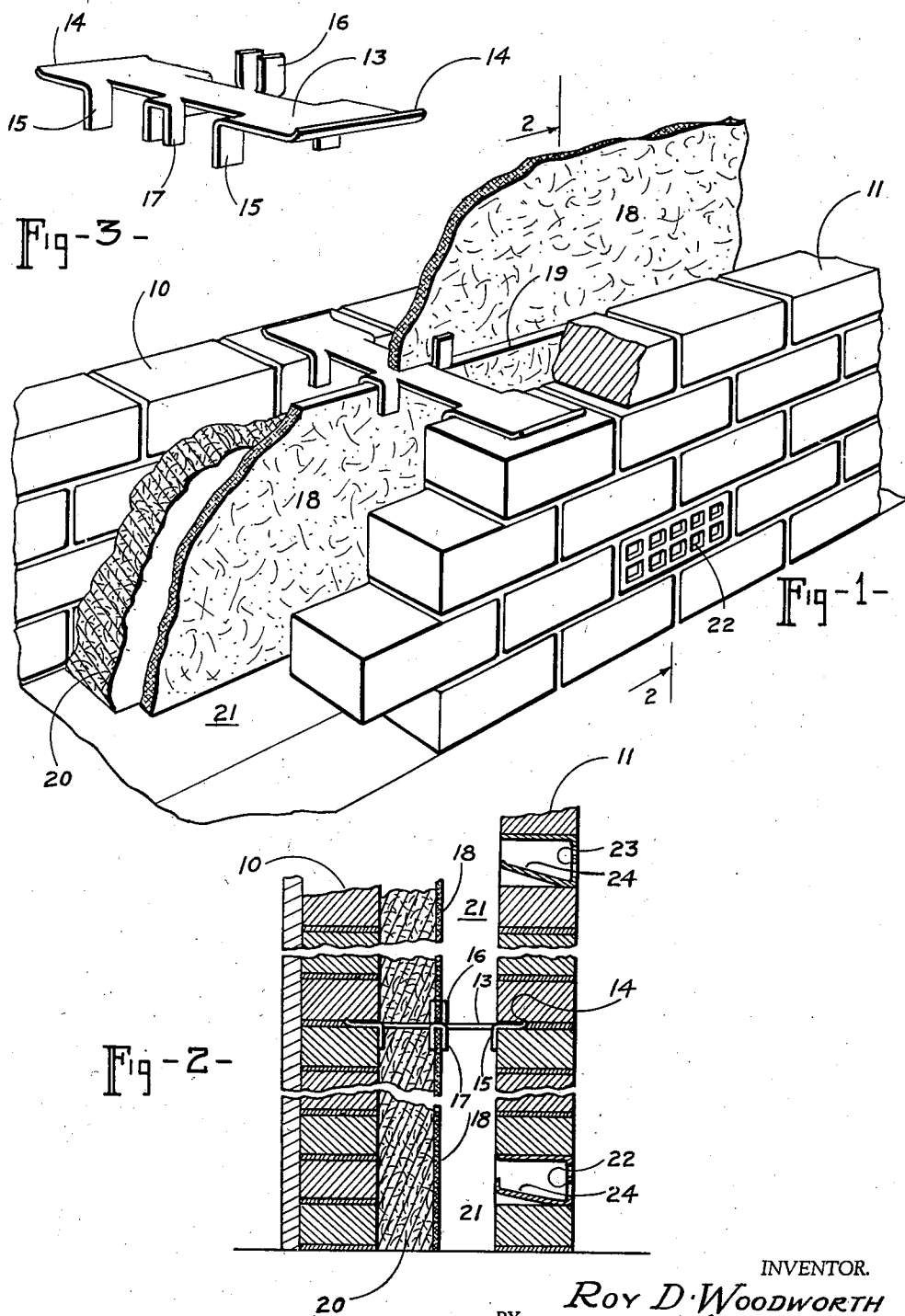
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WALL CONSTRUCTION

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WALL CONSTRUCTION

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This invention relates to the art of insulation, and has particular reference to the thermal insulation of buildings and other structures.

An objection inherent in the construction of walls for buildings is the tendency to fill the space between the walls with an insulating material of some type which in time absorbs the moisture that penetrates through the outer wall. When this occurs the insulating material loses its effectiveness and also transmits moisture to the inner wall of the building where a great deal of damage may result.

An object of this invention, therefore, is to provide an inner and outer wall of a building having a plurality of forms of insulation therebetween, for example, a mineral wool, a wall board and a circulating air chamber.

Another object of this invention is to provide a support for the partition and a brace for the inner and outer walls of the building.

Another object of the invention is to provide inlet and outlet openings in the walls for the circulation of air therebetween.

Other objects and advantages more or less ancillary of the foregoing and the manner in which all the various objects are realized will appear in the following description which, considered in connection with the accompanying drawing, sets forth the preferred embodiment of the invention.

Referring to the drawing wherein the preferred embodiment of the invention is illustrated:

Fig. 1 is a view in perspective of a fragmentary portion of the walls of a building embodying the present invention;

Fig. 2 is a transverse sectional view of a fragmentary portion of the improved building wall, the section being taken on a plane indicated by the line 2-2 of Fig. 1; and

Fig. 3 is a perspective view of the tie bar and supporting member for the partition.

Referring first to Fig. 1, the wall comprises an inner wall 10 and an outer wall 11, disposed in spaced parallel relation through the entire wall structure save only such portions thereof as are interrupted by windows, doors or similar passageways. As shown, metal supports or the bars 13 are imbedded in the masonry at spaced intervals throughout the wall to assure the rigidity of the structure.

The tie bars 13 are formed with lips 14 on the outer ends thereof which diverge from the plane of the body of the bar to key the end portions thereof in the mortar between adjacent bricks in the wall structure. Depending lugs 15 are formed

on the bars 13 adjacent their ends for abutting engagement with the inner faces of the bricks in the parallel walls. The tie bars are further formed intermediate the ends. With clips or channeled flanges 16 and 17 extending from the opposed faces of the bars 13 for the retention of a wall board partition or frame work 18.

The partition 18 is erected during the construction of the masonry between the inner and outer walls of the building and is supported in place by the clips in metal tie bars 13 as shown in Figs. 1 and 2. This partition or wall may be formed of a pressed fiber or so called wall board or a cellular insulating material of any of the well known types. As shown herein, the partition 18 is formed of a plurality of panels or sections, the lower section being held in place by the clip 17 while the upper section is held by the support 16. Since a plurality of the tie bars 13 are placed in the same horizontal plane in the two walls the upper panel of the partition 18 will rest in the upper support 16 in spaced relation with the contiguous panel thus forming an opening or void 19 between the upper and lower panels of the partition.

An insulating material, 20 such as rock or mineral wool, or any of the commercially known comminuted or fibrous insulators is placed between the inner wall 10 and the partition 18. This insulating material may be either blown into the space between these two walls or may be packed therein in the manner customarily employed in handling such materials in such environs. The space between the outer wall 11 and the partition 18 constituting a chamber 21 is provided to serve as an additional insulating medium in the improved wall construction.

In the lower portion of the outer wall, preferably a few inches from the ground level, there are openings having casings therein which are formed with a grill 22 over the outer face thereof for the admission of air into the chamber 21. Rearward the grill work 22 in each of the casings there is a baffle plate 24 which is inclined to deflect the air current upwardly in the chamber 21. The baffle plate is formed with an upturned end portion which is provided to arrest or divert the entry of snow and rain into the chamber 21. A similar casing and grill 23 is provided in the upper portion of the outer wall to facilitate the egress of air from the chamber 21. The casing 23 in the upper opening may be formed without the baffle plate 24 or, as shown, without the upturned flange on the free end thereof so as to provide the more ready egress of the air from the chamber. As

the air flows through the grill 22 and upwardly through the chamber 21 it will absorb the moisture penetrating through the outer wall, and the condensate accumulated upon the face of the partition 18 or absorbed by the insulating material 20. Since the panels forming the partition 18 are arranged with openings between the contiguous sections the insulating material 20 supported thereby will be exposed to the circulatory air currents within the chamber and will be dehydrated before any deleterious effects of moisture may occur, or before the efficiency of the insulation material is impaired.

The openings in the base of the wall structure may be formed in the lower portion of the inner wall so that the circulatory air may be drawn from the interior of the building. Moreover, the outer wall may be constructed to expose the chamber 21 to atmosphere adjacent the top of the wall beneath the roof beams so as to afford an outlet for the circulatory air in the chamber 21 and thus eliminate the use of the casing 23.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

I claim:

1. A building wall structure comprising, an inner wall and an outer wall disposed in spaced relation with each other, a perforate partition intermediate said walls, an insulating material between one of said walls and said partition and supported thereby, the other of said walls having a plurality of air vents formed therein adjacent the bottom and top portions thereof and throughout the length of the wall for the circulation of air over the surface of said perforate partition.

2. A building wall structure comprising, inner wall and an outer permeable wall disposed in spaced relation, a perforate partition intermediate said walls, a foraminous insulating material completely filling the space between the inner wall and the partition and closing said space to atmospheric circulation, the outer wall being open to atmosphere adjacent the top thereof and having a plurality of vents in its base portion for the dehydration of said foraminous insulating material.

3. A building wall structure comprising, a wall of masonry and a second wall of masonry disposed in spaced parallel relation, tie bars connecting said walls, a partition intermediate said walls supported by said tie bars, said partition having voids therein, a fibrous insulating material be-

tween one of said walls and said partition and grills disposed in and adjacent the bottom and top of the other of said wall of masonry for the circulation of air through the chamber formed by said wall and said partition.

4. A wall construction comprising, an inside brick wall and an outside brick wall disposed in spaced, parallel relation, tie bars uniting said walls, a perforate wall between said brick walls supported by said tie rods, a fibrous filler between said inside brick wall and said perforate wall and grills in said outside wall communicating with atmosphere for the circulation of air over the surface of said perforate wall.

5. A wall construction for buildings comprising, a pair of spaced brick walls, tie members uniting said walls, an insulating board partition supported by said tie members and disposed between said walls, a fibrous insulating filler between said partition and one of said walls, the chamber formed by the partition and the other of said wall being open at the top and bottom for the circulation of air therethrough.

6. A wall construction for buildings comprising, an inside wall, a permeable outside wall and an intermediate perforate wall, each disposed in spaced parallel relation with the other, an absorbent insulating material in the space between the inside wall and the intermediate wall, conduits in said outside wall adjacent the top and bottom thereof and means therein to deflect the air admitted therethrough upwardly through the chamber defined by the outside wall and intermediate wall to expedite evaporation of the moisture absorbed by said insulating material.

7. A wall construction comprising a load sustaining inside and outside walls disposed in spaced relation, a perforate partition intermediate said walls, a foraminous insulating material in the chamber defined by one of said walls and the partition, the chamber defined by the other of said walls and the partition having openings in the top and bottom thereof for the circulation of air over and through said perforate wall and the insulating material retained thereby.

8. A wall structure embodying a pair of parallel spaced wall members, a perforate partition intermediate said wall members, tie bars uniting said wall members and constituting the support for said partition, a porous insulating material between one of said wall members and said partition, the other of said wall members having openings in the top and bottom thereof, the chamber defined by the last named wall member and said partition constituting in conjunction with said openings a flue to induce a draft of air over and through said partition and said porous insulating material.

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