

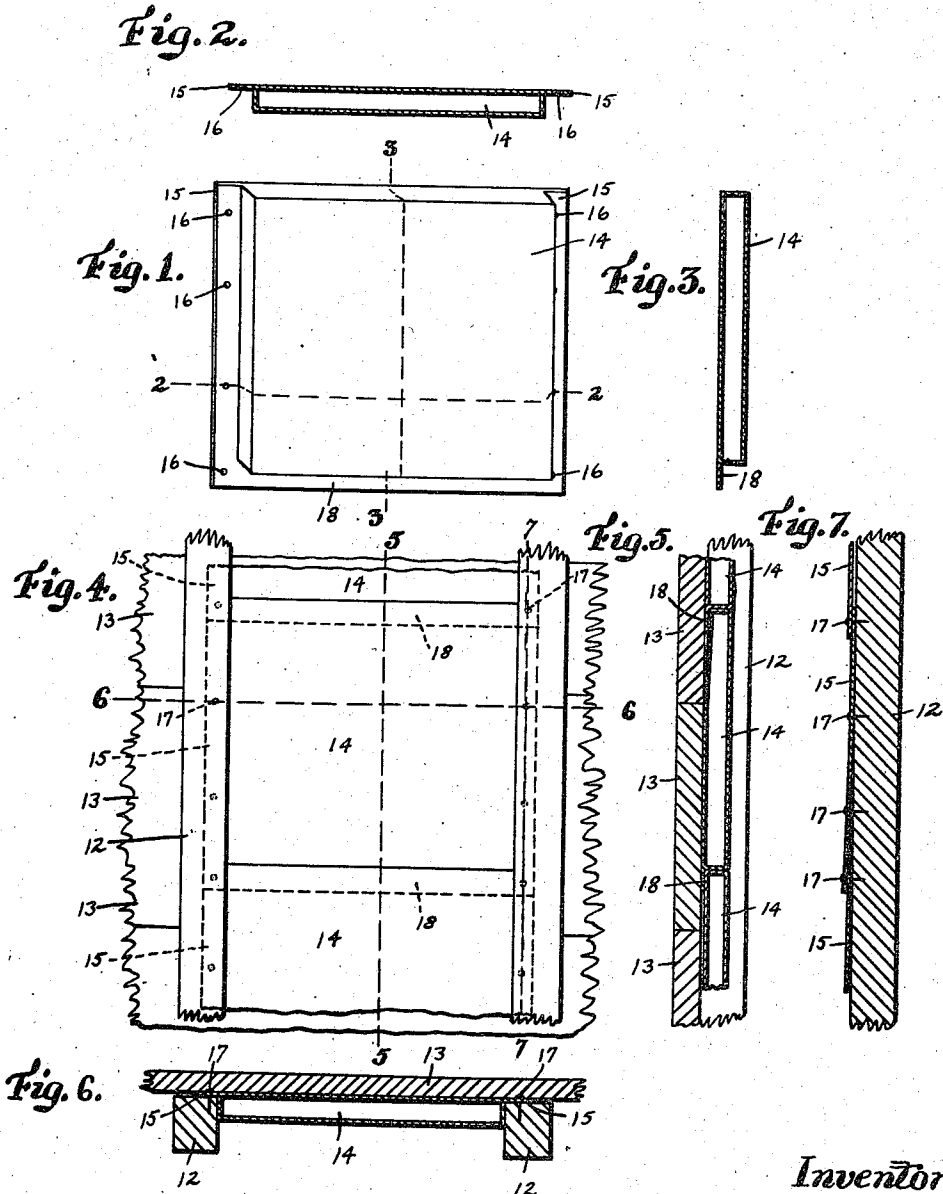
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HEAT INSULATING WALL LINING FOR BUILDINGS

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UNITED STATES PATENT OFFICE.

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HEAT-INSULATING WALL LINING FOR BUILDINGS.

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The invention relates to a building frame, the walls of which are composed of parallel stud members and sheathing members fixed thereto. The stud members may be vertical studs, horizontal floor beams, or inclined rafters, and the sheathing members may be wall sheathing attached to vertical studs, horizontal floor boards attached to floor beams, or roof boards attached to inclined rafters.

The building may be a refrigerating structure enclosed in an outer building.

The invention is embodied in a heat-insulating wall lining, composed of a plurality of vacuum-enclosing boxes, adapted to be arranged in a continuous row between two adjacent parallel frame members and to be attached thereto and fill the space therebetween, so that a vacuum, or to speak more accurately, a partial vacuum, is maintained between the adjacent stud members and beside the sheathing members of the wall.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a perspective view of a vacuum-enclosing box constituting a member or unit of my improved lining.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a fragmentary side view, looking toward the inner side of a wall provided with my improved lining.

Figure 5 is a section on line 5—5 of Figure 4.

Figure 6 is a section on line 6—6 of Figure 4.

Figure 7 is a section on line 7—7 of Figure 4.

The wall shown by the drawings includes parallel frame members 12, such as the upright studs of a vertical wall, and enclosing members such as the sheathing boards 13, attached to, and extending across the spaces between adjacent studs, the sheathing boards and studs forming elongated recesses receiving the lining in which my invention is embodied. Such lining is composed of a plurality of vacuum-enclosing boxes 14, from which air is exhausted, to produce a partial vacuum. Each box is composed of metal, such as tinned iron, an alloy, zinc or galvanized iron, and is of such form that a plurality of boxes may be arranged in a continuous row between the members 12, and

practically fill the width and length of the space or recess formed by said members 12 and 13. Any suitable means may be provided to prevent the boxes from collapsing under atmospheric pressure.

Each box has parallel oppositely projecting flanges 15, 15, adapted to overlap and be attached to the members 12, said flanges having holes 16, adapted to receive fasteners 17, driven into the members 12. Air-excluding joints are formed by the members 12 and the flanges 15, as indicated by Figure 6. Each box has an intermediate flange 18, projecting from one of its edges between the flanges 15, and adapted to be overlapped by an edge portion of an adjoining box, so that other air-excluding joints are formed by said intermediate flanges and overlapping edge portions, as indicated by Figure 5.

It will now be seen that the flanges 15 constitute elements of means for securing the boxes to frame members 12, and means packing the joints between the members 12 and 13, and that the intermediate flanges 18 constitute means for packing the joints between adjoining boxes.

The boxes are in all cases proportioned to meet the requirements of the building.

It will be seen that each box is composed of back and front walls of relatively large area, and narrow edge walls, and that the flanges 15 are formed on the back wall and bear on the inner sides of the stud members, so that the boxes are entirely contained in the recesses and bear on the members 13.

It will also be seen, particularly by reference to Figures 4 and 5, that the proximate edge walls of the several boxes are abutted together, while the intermediate edge walls, or those at right angles to the proximate edge walls, have close contact with the adjacent sides of the stud members 12, so that the row forms a practically continuous or uninterrupted heat-insulating filling, coextensive with the recess, both crosswise of the recess as shown by Figure 6, and lengthwise thereof as shown by Figure 5. The heat insulation afforded by the partial vacuum in the boxes is therefore interrupted only by the minute crevices at the joints formed by said abutted walls. This interruption is so inconsiderable, that the admission of air between adjacent boxes is not detrimental. Said interruption is reduced and rendered entirely negligible by the single intermediate flanges 18, one of which is provided on the back

wall of each box, the flange 18 of each box overlapping a portion of the back wall of the next box, and closing the crevice at the joint formed by the abutted proximate edge walls.

I claim:

1. In a heat-insulating wall, the combination of spaced parallel stud members, and a series of rectangular shaped partially exhausted air tight boxes extending lengthwise of the space between each pair of stud members, each box having relatively narrow edge walls, two of which contact throughout their length with the stud members, and back and front walls of relatively greater area, one of which projects beyond the body of the box forming flanges which overlap the stud members, the edge walls of adjoining boxes that extend across the space between two studs abutting throughout their length to provide a practically continuous or uninterrupted elongated heat-insulating filling co-

extensive in area with the space between two stud members.

2. In a heat-insulating wall, the combination of spaced parallel stud members, a series of rectangular shaped partially exhausted air tight boxes extending lengthwise of the space between each pair of stud members, each box having relatively narrow edge walls, two of which contact throughout their length with the stud members, and back and front walls of relatively greater area, one of which projects beyond the body of the box forming flanges which overlap the stud members, and an intermediate flange connecting said stud engaging flanges, the edge walls of adjoining boxes that extend across the space between two studs abutting throughout their length, and the joint between said abutting faces being overlapped by the aforesaid intermediate flange of the next box in the series.

In testimony whereof I affix my signature.

WILLIS ABRUM HUTTON.