

3,192,849

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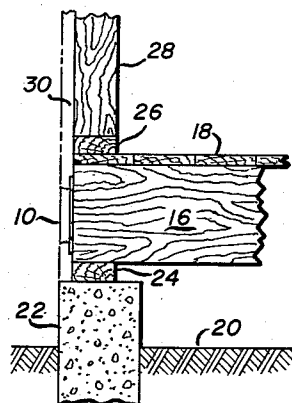


Fig-2

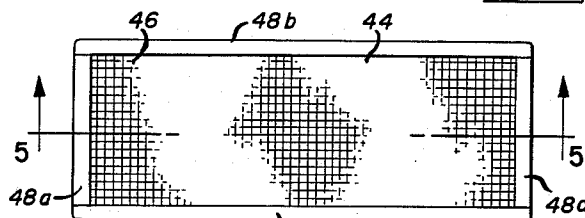


Fig-5

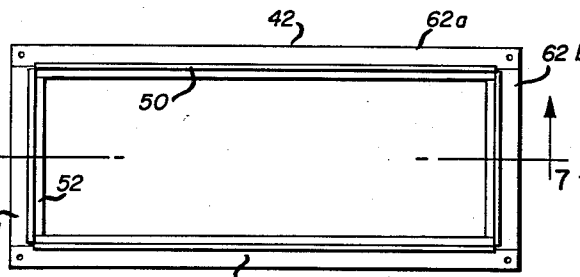


Fig - 6

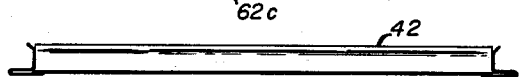


Fig-7

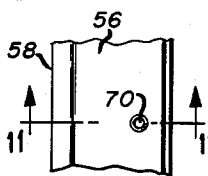


Fig-10

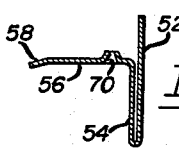


Fig. 11

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3,192,849

VENT CONSTRUCTION

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2 Claims. (Cl. 98—37)

This invention relates to a vent and, more particularly, to the construction of a vent having a removable screen.

Vents find application wherever there is a need to move air from one space to another. For example, in connection with the construction of buildings, and particularly wooden frame structures mounted on foundations, it has been found desirable, and in many cases it has been made mandatory by regional building codes, to provide for proper ventilation of the space created between the sub-floor and the ground. The requirement for providing adequate ventilation is satisfied by placing foundation vents in the form of framed wire mesh screens across adjacent butt ends of the floor joists at a plurality of selected positions.

Heretofore, such foundation vents were of unitary construction and included a frame member secured to the butt ends of adjacent floor joists, a screen of wire mesh permanently secured to the frame member, and an outwardly depending skirt secured around the periphery of the frame member which formed a guide for the material employed for forming the finished outer walls of the building. One of the problems which has been encountered with utilizing such prior art foundation vents is that they had to be secured in place after the framing operation and prior to placing and finishing the outer walls.

At this stage of construction, the unfinished building is usually unprotected from access by unauthorized persons and particularly children who, during their games have been found to kick in the fragile screen. Such damage heretofore required the complete replacement of the screen which was quite difficult when the finishing operation had proceeded to encompass that particular vent. The reason for the difficulty is, of course, the fact that the finished wall extends to the outward depending skirt or guide and obstructs access to the frame portion. In fact, in most instances of vent damage replacement has been found to be impossible without removal of the finished outer walls around the foundation vent. Even after the building is finished, there is often a lengthy period of time prior to the moving in of occupants during which time much damage from nuisance has been encountered.

It is therefore a primary object of this invention to provide a foundation vent which permits ready replacement of the screen portion.

It is another object of this invention to provide a vent in which the screen portion is separate and apart from the vent frame portion so that replacement of the screen portion can be easily made.

It is a further object of this invention to provide a vent in which the wire mesh is readily separated from the vent frame to facilitate replacement of the former.

It is still another object of this invention to provide a vent which has separate but mating frame portions and wire mesh portions so that the frame portion may be installed in a permanent manner and the wire mesh portion may be removably clipped into the frame portion by the simple method of pressing to snap the same into place.

It is still a further object of this invention to provide a vent which has a removable wire mesh portion to facilitate its replacement when necessary.

Other objects and a better understanding of the invention may be had by reference to the following description,

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taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a front elevational view of the foundation vent of this invention shown installed across the butt end of two adjacent floor joists of a building frame, the latter being shown as a fragmentary view;

FIG. 2 is a cross sectional fragmentary view taken along lines 2—2 of FIG. 1;

FIG. 3 is a cross sectional view of the vent construction of this invention;

FIGURE 4 is an elevational view of the removable wire mesh portion of the vent construction shown in FIG. 3;

FIG. 5 is a cross sectional view taken along line 5—5 of FIG. 4;

FIG. 6 is an elevational view of the frame portion of the vent construction shown in FIG. 3;

FIG. 7 is a cross sectional view taken along lines 7—7 of FIG. 6;

FIG. 8 is an enlarged fragmentary view of a section of the frame shown in FIG. 6 illustrating a wire mesh retaining means;

FIG. 9 is a cross sectional view taken along lines 9—9 of FIG. 8;

FIG. 10 is a view similar to that of FIG. 8 showing a different embodiment of the wire mesh retaining means; and

FIG. 11 is a cross sectional view taken along lines 11—11 of FIG. 10.

Referring now to the drawings, there is shown in FIGS. 1 and 2, by way of illustration, an important application of a vent 10 constructed in accordance with this invention. As there shown, vent 10 is utilized as one of the foundation vents for a building including a plurality of parallel floor joists 16 each having an end face or butt end 16. Vent 10 is secured to adjacent butt ends 16 by means of nails, screws or the like indicated as 12.

The construction shown in FIGS. 1 and 2 comprises the lower frame portion of a building erected above the ground 20. It includes a foundation 22, which may be of cement or the like, and a mudsill 24 on foundation 22 for supporting floor joists 16. Carried by floor joists 16 is subflooring 18, which, in turn, supports bottom plate 26 on which are erected framing studs 28 in the conventional manner. The side wall of the framed building is faced or finished by outer wall 30 which may be stucco, wood, concrete, or the like.

Referring now to FIGS. 3 to 9, there is shown vent 10 which comprises an outer frame 42 and a bordered wire mesh 44. Wire mesh 44 comprises a wire mesh screen 46, having its edges crimped into a border member 48, which is substantially of U-shaped cross section. As a practical matter, border member 48 may comprise four flat, long strips of galvanized sheet metal, bent over along their length to effectively form the fourth side of wire mesh 44. These are illustrated as 48a, 48b, 48c and 48d.

Vent frame 42 comprises a substantially rectangular frame having a rectangular opening 50 which is dimensioned to receive bordered wire mesh 44. Frame 42, as best seen in FIG. 3, is made up of a backplate section or member 52 which extends well into opening 50 and which functions as a stop or seat against which wire mesh 44 may be firmly seated. Frame 42 also includes a front-plate portion or member 54 which is parallel to backplate portion 52 and integral therewith the connection being in the form of a U-bend at the outer periphery of frame 42. The inner extremity of front plate portion 54 is bent outwardly to form a sill or shelf portion (also referred to as side walls) 56, the inner surface of which defines opening 50. The outer extremity of shelf portion 56 is slightly bent in an outwardly direction, as shown at 58, which assures flat or flush contact with the finished wall 30. In fact,

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shelf portion 54 forms the surface against which the outer wall is finished.

To assure that bordered wire mesh 44 is held securely in place against backplate portion 52, an ear or lobe 60 is formed in shelf portion 56 to restrict opening 50 in a selected number of places. As wire mesh 44 is pressed into opening 50, it will elastically push lobe 60 outwardly to pass the same on its way to be seated against backplate portion 52. This process may be described as being snapped into place.

As a practical matter, frame 42 may be formed of four strips of galvanized sheet metal strips each forming one of the sides 62a, 62b, 62c and 62d. The ends of the individual strips may be connected into frame 42 by means of rivets or solder in the customary manner. There may also be provided a number of small openings such as 64 through which fastening means may be passed to secure frame 42 in place as shown in FIG. 1.

Referring now to FIGS. 10 and 11, there is shown, by way of example, an alternate means of retaining wire mesh 44 in frame 42. Instead of utilizing an ear or lobe such as 60, shelf 56 may be locally deformed by means of a punch or the like which forces sufficient material inwardly to form an elastic obstruction for passing and retaining mesh 44.

There has been described hereinabove a vent construction comprising a frame member which may be permanently installed and a removable wire mesh member may be clipped or snapped into place into the frame member. Even though this vent construction has been explained in connection with its use as a foundation vent, it is within the contemplation of this invention to utilize this vent in other applications. In fact, the vent construction of this invention may be advantageously employed wherever venting is desired. For example, in case of kitchen vents, whether installed in the ceiling or in the stove, a readily removable mesh portion has been found to facilitate cleaning.

The vent construction hereinabove described is also eminently suitable for such application which involves filtering and in which the filter is made of wire screen or is affixed to a wire screen. Such snap out form permits easy replacement thereof.

What is claimed is:

1. A vent construction comprising four elongated members joined together to form a rectangular frame having a rectangular opening, each member formed of flat strips bent in the form of a U-shaped frame member, one of the legs of the U-member having its free edges extending toward the center of the opening and forming a peripheral flange or seat, the other leg of said U-shaped member being

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bent at right angles to form an outwardly extending mounting flange, said mounting flange being spaced away from the opening and the free edge of the first leg of the U-shaped member; a wire mesh member including a mesh screen and a peripheral frame of substantially U-shaped cross section, said screen being crimped in said peripheral frame and said peripheral frame being dimensioned for sliding reception into said rectangular opening and adapted to seat against said peripheral flange and a plurality of elastic, inwardly extending retaining means in said mounting flange, the inner edge of said retaining means being placed to yieldably engage one side of said edge member while the other side is seated against said peripheral flange whereby to releasably hold said wire mesh member in place.

2. A vent construction comprising four elongated members joined together to form a rectangular frame with a rectangular opening, each elongated member comprises flat strips bent in the form of a U-shaped frame member having one leg with a free edge extending toward the center of the opening and the other leg of said U-shaped frame member being bent at right angles to form an outwardly extending mounting flange, said mounting flange being spaced away from said free edge; a wire mesh element comprising a mesh screen and a peripheral frame of substantially U-shaped cross section, said screen being crimped in said peripheral frame and said peripheral frame being dimensioned for sliding reception into said rectangular opening and adapted to seat against said peripheral flange and the distance the free edge of said elongated member extends into said rectangular opening being less than the distance said peripheral frame extends into said opening whereby removal of said frame is facilitated, and a plurality of substantially elastic, inwardly extending retaining means in said mounting flange, the inner edge of said retaining means being placed to yieldably engage one side of said edge member while the other side is seated against said peripheral flange whereby to releasably hold said wire mesh member in place.

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