Sept. 26, 1961 S. J. WILDER 3,001,332

VENTILATING DEVICES FOR HOLLOW BUILDING WALLS

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Fig. 2.

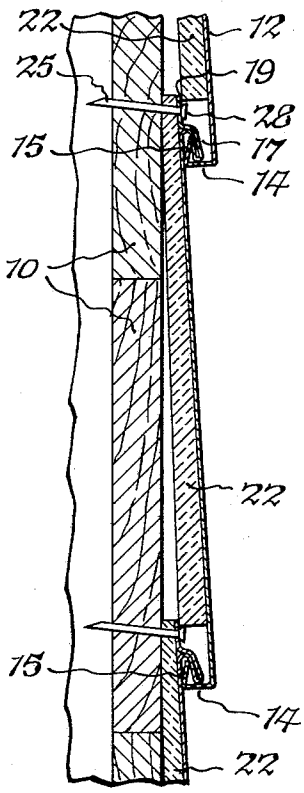


Fig. 1.

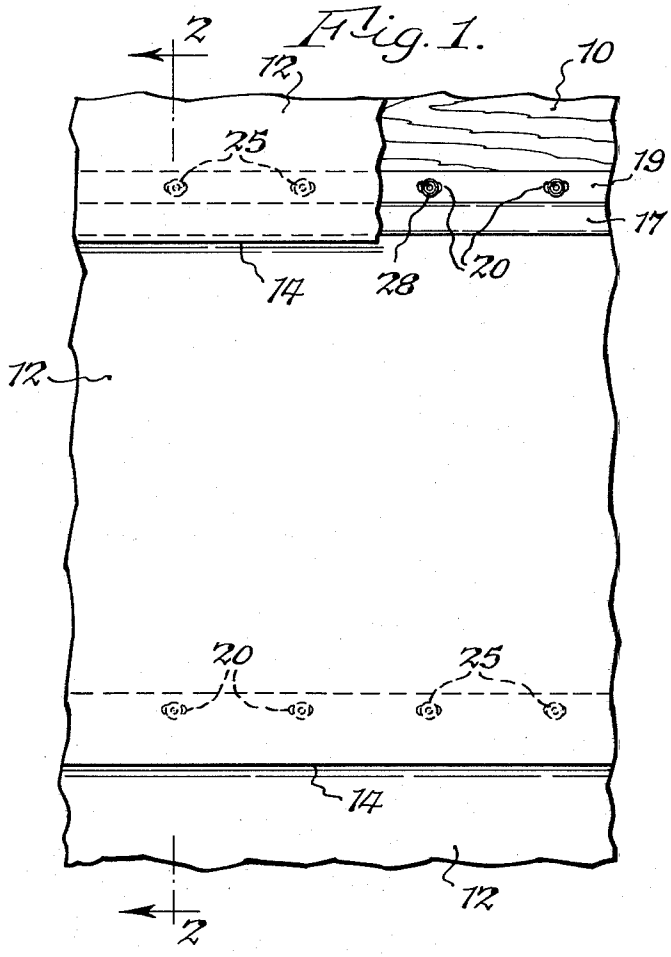


Fig. 3.

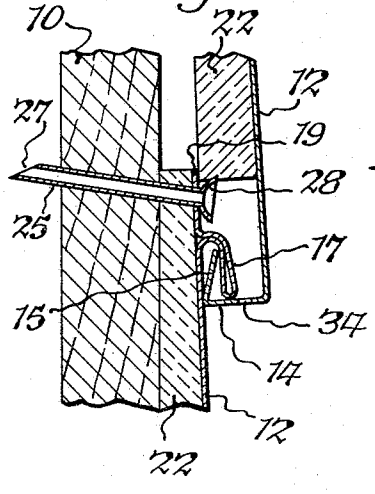
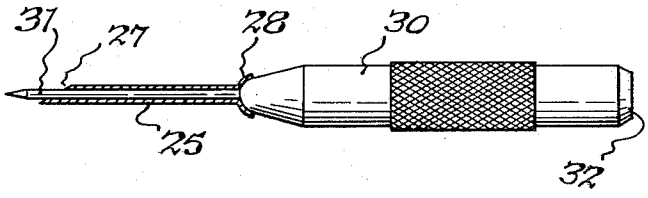


Fig. 4.



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Fig. 5.

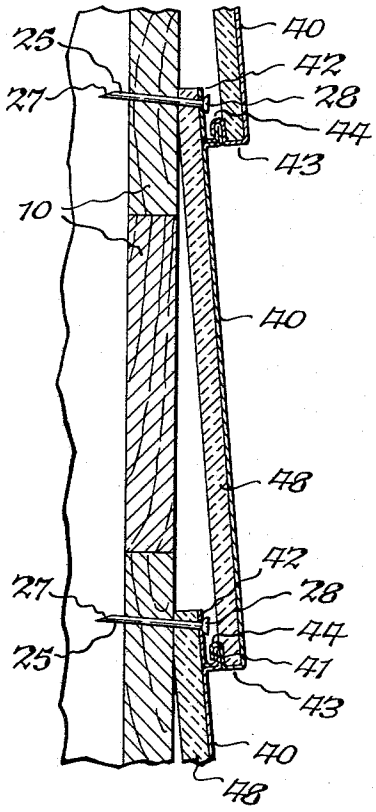


Fig. 7.

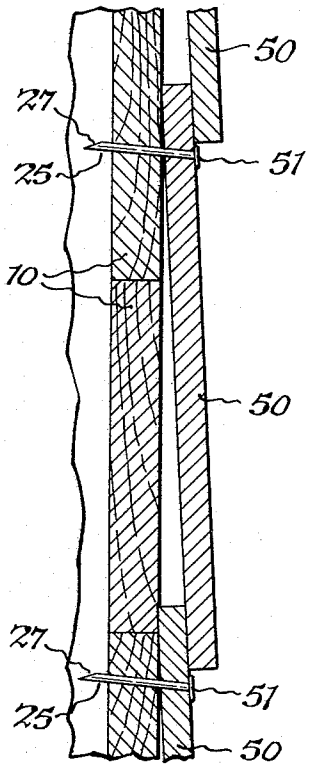


Fig. 6.

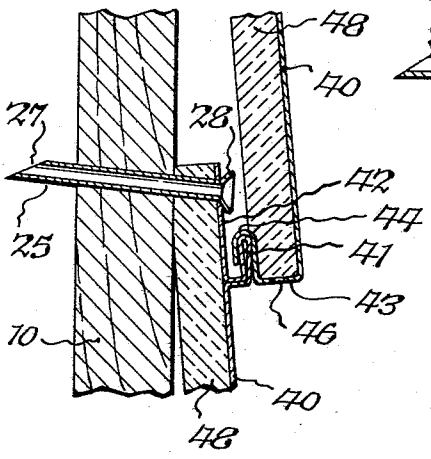
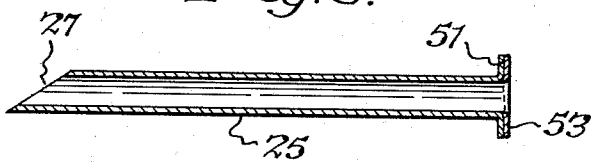


Fig. 8.



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3,001,332
VENTILATING DEVICES FOR HOLLOW BUILDING WALLS

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2 Claims. (Cl. 50—230)

This invention relates to improvements in ventilating the interiors of hollow building walls.

Moisture-laden air or vapor may enter the interior of building walls either from the inside or outside of a building and if the moisture content of the air or the vapor condenses, the water thus formed in the interior of the wall is very apt to cause decay or rotting of the wooden portions of the wall. It is therefore recognized that some means for venting the interiors of these walls is very desirable to prevent damage to the building.

In my Patent No. 2,840,867 of July 1, 1958, I have shown how the ventilation of the interiors of certain types of walls may be accomplished. There are however certain kinds of walls which cannot be ventilated by means of the ventilating members shown in that patent.

One of the objects of this invention is to provide hollow, tubular ventilating nails or members of improved construction which may be used in connection with securing metal siding to buildings.

It is also an object of this invention to provide an improved hollow fastening and ventilating member which serves the two-fold purpose of securing the siding to the wall of a building and also for providing ventilation of the interiors of the building walls.

A further object is to provide a ventilating fastening member of improved construction.

In the accompanying drawings:

FIG. 1 is a fragmentary face view of a side of a building having metal siding applied thereto and secured in place by combined ventilating and fastening members embodying this invention.

FIG. 2 is a fragmentary, sectional elevation thereof on line 2—2, FIG. 1.

FIG. 3 is a fragmentary, sectional view on an enlarged scale of a part of a building wall having metal siding applied thereto by means of my improved combined ventilating and fastening members.

FIG. 4 is a view of a driving implement having a combined ventilating and fastening member applied thereto for application to a building wall.

FIG. 5 is a sectional elevation similar to FIG. 2 showing metal siding of modified construction held in place by my improved ventilating and fastening members.

FIG. 6 is a fragmentary section thereof on an enlarged scale showing the manner in which my combined ventilating and fastening member is applied to metal siding of this type.

FIG. 7 is a fragmentary, vertical sectional elevation of a wall formed of non-metallic siding, such as clapboards formed of wood or other material and secured in place by means of my improved ventilating and fastening members.

FIG. 8 is a central, sectional elevation on an enlarged scale of a combined fastening and ventilating member embodying my invention.

In FIGS. 1–3 I have shown part of a hollow building wall which includes the usual sheathing 10 which may be of wood or similar material and which is arranged on the outer part of the hollow wall. This sheathing must of course be covered with suitable water and weather-proof material, and in the particular construction shown in these figures, metal siding is employed for this purpose. This siding may be made of sheet aluminum or other metal of any desired width and length. This metal siding,

for example, may be of the usual width in a vertical direction, as ordinary clapboards, or wider than clapboard and includes an outer metal layer or sheet 12 which is provided at its upper and lower edges with parts by means of which the metal portions of the siding may be secured to the sheathing of a building wall, and to interlock with metal siding units arranged above and below. In the construction shown, the lower edge of the siding is provided with an inwardly extending flange 14 which terminates in an upwardly extending lip 15, see particularly FIG. 3. The upper portion of each panel 12 of the siding is provided with a folded-over portion forming a lip 17 which extends outwardly to a slight extent beyond the face 12 of the siding and downwardly so that the upwardly extending lip 15 of the next higher siding may be slid under the downwardly extending folded part or lip 17 so as to form a joint between two upper and lower portions of siding units. Above the downwardly, folded-over part 17 of the upper edge of the siding there is an upward extension 19 which is provided with suitable apertures 20 for receiving nails or other fastenings which secure the siding of the sheathing.

The siding is generally provided with a layer of suitable insulating material 22 secured to the inner face thereof. The lower edge of the metal panel 12 extends below this insulating material so that the upper and lower panels of siding may be interlocked as described without being interfered with by the insulating material.

Heretofore the siding was fastened to the sheathing or other part of a building wall by means of nails passing through the holes or apertures 20 in the upper extension 19. In accordance with my invention, I have provided hollow, tubular combined fastenings and ventilating members, each of which includes a tubular body portion 25 which preferably has one end thereof cut at a bias or taper, as indicated at 27, and the other end provided with a head 28. These combinated ventilating and fastening members may be driven into the wall by means of a spike or pointed implement, that shown in FIG. 4 including a handle portion 30 having a pointed prong 31 secured thereto and having the end 32 formed to be struck by a hammer or other driving tool. When it is desired to drive one of my improved ventilating and fastening members into a wall, the point of the prong 31 is placed at the location where the ventilating and supporting member is desired and it is then driven through the sheathing or other wall part 10 until the head 28 of the ventilating and supporting member is in holding contact with the upwardly projecting part 19 of the metal siding, as clearly shown in FIGS. 2 and 3. The driving member may then be pulled backwardly to remove it from the ventilating and supporting member for use with another such member. Since the head of the member is too large to pass through the hole or aperture in the part 19 of the siding, the ventilating member will secure the siding to the building wall.

It will be noted that when the combined ventilating and supporting member is in place, air or vapor from the interior of the hollow building wall can pass through the hollow body of the ventilating and supporting member, and in the construction shown in FIGS. 1–3, such air or vapor passes into the space below the insulating material 22 from where it may pass to the atmosphere through holes 34 in the inwardly extending flange 14 of the metal panel 12 of the siding. The joint between the folded-down part or lip 17 and the upwardly extending lip 15 also is not air-tight, so that air may also pass through this joint in the event that the holes 34 are omitted or become plugged.

The pointed ends 27 of the combined ventilating and supporting members serve the purpose of ensuring a free passage of air through the hollow ventilating and fasten-

ing member 25 even if there is insulation in the interior space of the wall. The extreme or pointed end of the tapered part 27 will engage such insulating material, which is generally of a fibrous nature, and force it inwardly, thus leaving a hollow or depression in the mass of insulating material through which air from the interior of the hollow wall can pass into the other part of the tapered end of the fastening device and to the interior of the body portion of the tubular ventilating and supporting member. The head 28 formed on the other end of this member will of course serve to support the metal part of the siding on the wall in the same manner as the head of a nail. This head may be cup-shaped as shown in FIGS. 1–4, or it may be flat, and is preferably formed by forcing the metal of a tubular ventilating and supporting member outwardly so that the head is formed integral with the tubular body part of the member.

In FIGS. 5 and 6 I have shown metal siding of modified construction. This siding includes a flat, panel-like part 40 provided at the upper portion thereof with an angle-shaped, folded-over and upwardly extending lip or part 41. Each siding unit or piece also has an upwardly extending web 42 which is provided with nail holes and which extends above the angle-shaped projection 41. The lower edge of each of these panels 40 has an inwardly extending flange 43 which terminates at its inner edge in an upwardly extending, substantially U-shaped part 44, see FIG. 6, which, when this siding piece is assembled to a similar piece below it, extends over and around to the back of the folded-over part 41, as clearly shown in FIG. 6.

My improved ventilating and fastening members may be passed through the holes in the upper extension or portion 42 of the siding piece, as shown in FIGS. 5 and 6, preferably being driven into this position by means of the driving tool 30, shown in FIG. 4.

The lower flange of each panel 40 also has ventilating holes or openings 46, those shown in the drawings being covered over by the layer 48 of heat insulating material. This material however is of fibrous and porous nature containing numerous interconnecting air cells through which air may pass to or from combined ventilating and supporting members 25.

In FIG. 7 I have shown my improved ventilating and fastening members 25 applied to a wall having the sheathing thereof covered by means of clapboards 50 which may be made of wood or other suitable non-metallic material. In this construction the clapboard or siding is not only held in place by means of the combined ventilating and supporting members 25, but also air from the interior of the wall can pass through these ventilating devices. In the construction shown, these members have flat, outer heads 51 which, after being driven into the wall, form flat, outer surfaces on the clapboard wall which are practically invisible. Furthermore, the flat heads of these fastening members may be dipped in a suitable paint or finishing material which forms a coating 53 on the outer ends of these flat heads, see FIG. 8, and this coating may be made of the same color or shade as applied to the siding members 50.

In the construction shown in FIG. 7, the combined ventilating and supporting members form a direct passage from the interiors of the walls to the exterior of the building, as well as serving to support the siding on the building.

In FIGS. 1–6, the outer ends of the ventilating members, by terminating betwen two siding units are fully protected against weather and the entry into the same of foreign objects and also being fully concealed, they do not detract from the appearance of the outer surface of the wall.

It will be understood that various changes in the details, materials and arrangements of parts which have been herein described and illustrated in order to explain the nature of the invention may be made by those skilled in the art within the principle and scope of the invention as expressed in the appended claims.

I claim:

1. A hollow building wall construction including an outer wall part having a sheathing layer, siding units applied to said sheathing, and hollow tubular fastening members driven through said siding units and through said sheathing and having their inner ends cut at an angle to their lengths and extending into the hollow interior of the wall and having their outer ends flanged outwardly and terminating at the outer face of a siding unit to provide an air pasage extending through said hollow members from the interior of a wall to the exterior thereof, said siding units being made of sheet metal having interlocking portions on their upper and lower edges to enable a unit to interlock with similar units arranged above and below the same, each unit having a part extending above the upper interlocking portion thereof and provided with apertures through which said fastening members pass to hold said units on said wall and to provide air passages extending from the interior of the wall to the exterior surfaces of said units.

2. A hollow building wall construction including an outer wall part having a sheathing layer, metal siding units on the exterior of said sheathing layer and each unit having its lower edge interlocked with the upper edge of a lower unit and its upper edge interlocked with the lower portion of an upper unit, each of said units having an upwardly extending edge portion arranged above the upper interlocking part of its unit and provided with apertures, and hollow tubular fastening members driven through said apertures and through said sheathing and having their inner ends extending into the hollow interior of the wall and having their outer ends flared over outwardly to form heads of larger size than said apertures for securing the siding units to the wall, said outer ends of said tubular members terminating in a space between an upper and a lower siding unit to permit air from the interior of said hollow wall to pass through said fastening members into a space between two siding units and then through the joint between said siding units to the exterior of the building.

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