Feb. 26, 1952 R. C. MOYER ET AL 2,587,509

LOUVER

Filed July 2, 1949 2 SHEETS—SHEET 1

FIG. 1

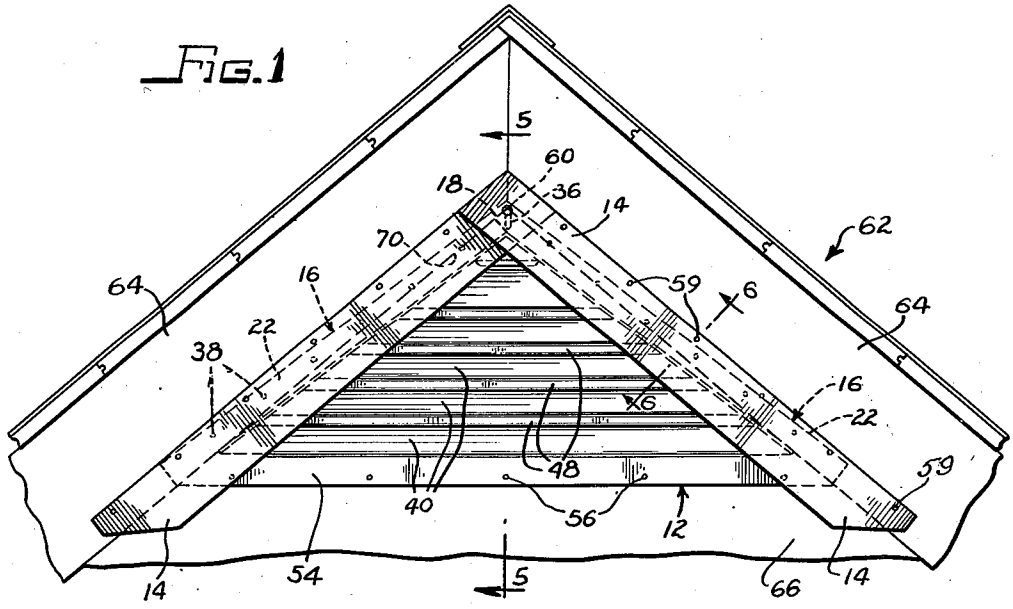
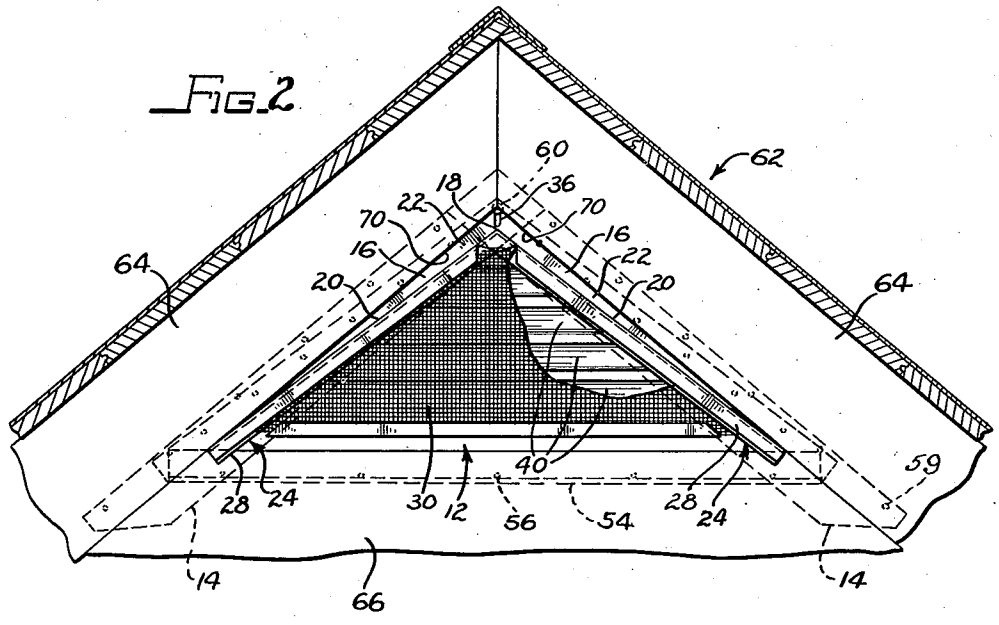


FIG. 2



Inventors
Richard C. Moyer
Norman J. Oliver
Max L. Rysdon

By Bair & Freeman Attys.

Feb. 26, 1952 R. C. MOYER ET AL 2,587,509

LOUVER

Filed July 2, 1949 2 SHEETS—SHEET 2

FIG. 5

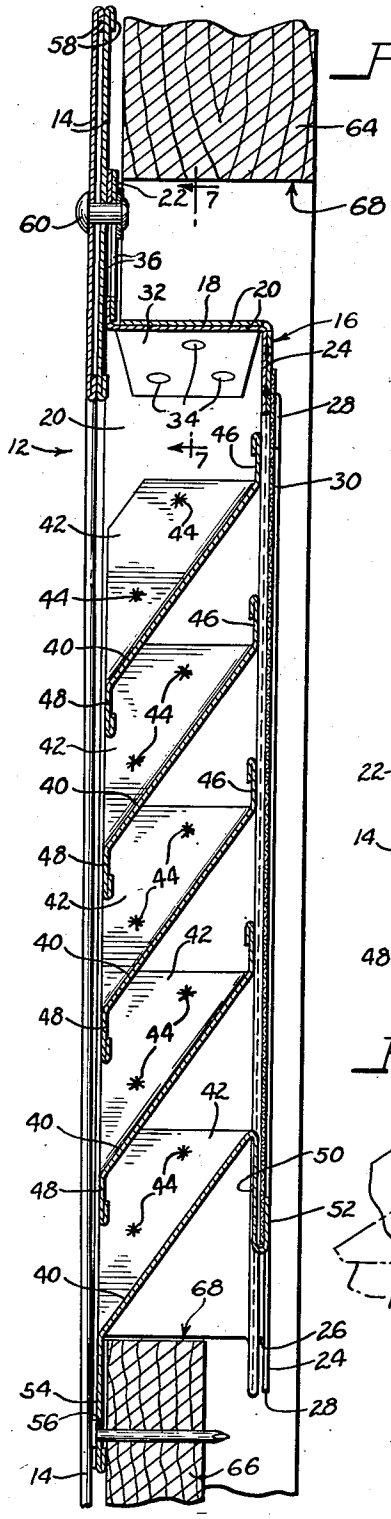


FIG. 3

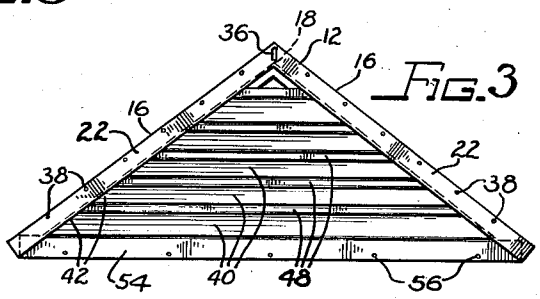


FIG. 4

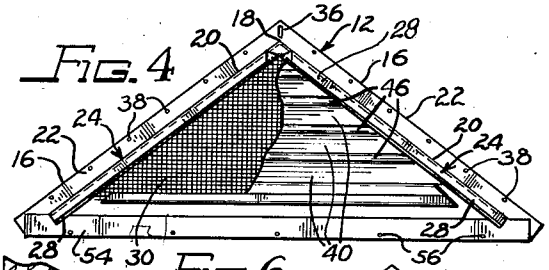


FIG. 6

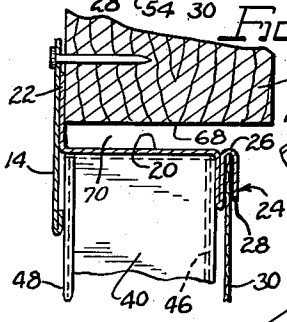


FIG. 7

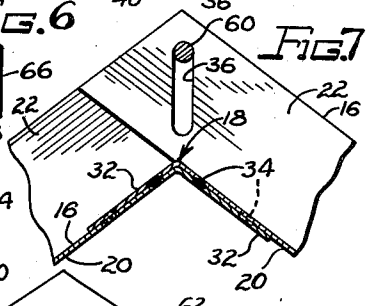
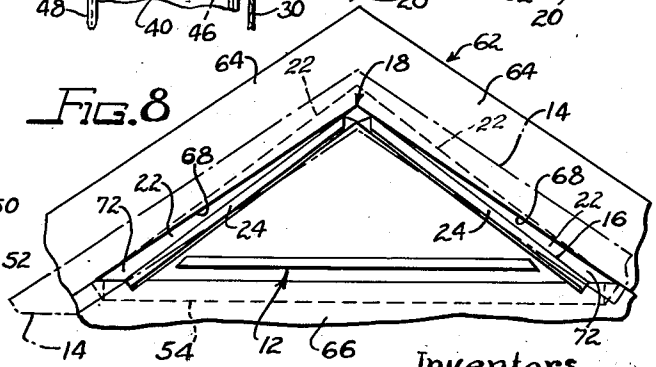


FIG. 8



Inventors
Richard C. Moyer
Norman J. Oliver
Max L. Rysdon

by Bair & Freeman
Attys.

Patented Feb. 26, 1952 2,587,509

UNITED STATES PATENT OFFICE

2,587,509

LOUVER

Richard C. Moyer, Norman J. Oliver, and Max L. Rysdon, Sioux Falls, S. Dak., assignors to Sioux Steel Company, Sioux Falls, S. Dak., a corporation of Delaware

Application July 2, 1949, Serial No. 102,748

9 Claims. (Cl. 98—121)

1

This invention relates to a ventilator, and particularly a louver ventilator for use in an attic.

As is well known, roofs of houses vary in pitch, forming gables of varying angles; however the great majority of roofs are within a limited range of pitches. The ventilator of the present invention is intended to be positioned at the apex of the gable.

An object of the present invention is the provision of a ventilator adapted for positioning in a wall at the apex of a gable, and which is adapted to be fitted to gables of various pitches.

Another object is the provision of a ventilator adapted to be fitted to a gable of any of various pitches, which includes a rigid ventilator element and adjustable molding elements for adapting the ventilator element to the gable.

Another object is the provision of a ventilator adaptable to a gable of any of various pitches, which by reason of its novel construction requires less material than ventilators heretofore known.

Still another object of the invention is the provision of a louver ventilator in which snow and rain are effectively prevented from working past the ends of the louver blades.

A further object is the provision of a ventilator which is in effect adjustable so as to be fitted to a roof gable of any of various pitches, and which presents a uniform appearance with relation to the rake boards of the roof.

A still further object of the invention is the provision of a louver ventilator adapted to be fitted to a roof gable of any of various pitches which, by reason of novel construction, although being in effect adjustable, possesses the following advantageous features: there are no loose parts to rattle after installation; one-piece louver blades are provided resulting in better appearance; the louver blades, when made of metal, can be given the appearance of wood blades; the louver blades are of fixed spacing; the ventilator can be installed in a building in a minimum of time; and the ventilator entails a minimum of fabricating costs.

With these and other objects in view, this invention consists in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in our claims, and illustrated in the accompanying drawings, wherein:

Figure 1 is a view of the ventilator of the present invention installed in a building adjacent the roof gable as viewed from the outside of the building;

2

Figure 2 is a view of the ventilator from the inside of the building;

Figure 3 is a reduced scale view of the outer side of the ventilator with the molding strips removed;

Figure 4 is a view similar to Figure 3 but from the opposite side thereof;

Figure 5 is an enlarged sectional view taken on line 5—5 of Figure 1;

Figure 6 is an enlarged sectional view taken on line 6—6 of Figure 1;

Figure 7 is a sectional view taken on line 7—7 of Figure 5; and

Figure 8 is a semi-diagrammatic view similar to Figure 1 illustrating the ventilator installed in a roof gable of a different pitch.

Referring now in detail to the drawings, the ventilator comprises a rigid unit, or ventilator proper, which is shown as a whole in Figures 3 and 4, and molding strips applied thereto, the molding strips being shown in Figures 1 and 2. The molding strips are omitted from Figures 3 and 4 for purposes of clarity. The ventilator unit itself is indicated at 12 and the molding strips are referred to at 14. The unit 12 comprises a pair of frame members 16 disposed at an angle to each other, in the form of an inverted V, and rigidly joined together at the apex of the angle as indicated at 18.

The whole ventilator is preferably fabricated from sheet metal, being, in the present instance, aluminum but it may of course be fabricated from other metal which is resistant to erosion from the elements.

Each frame member 16 includes a web portion 20 having a flange 22 extending substantially perpendicularly therefrom on one side, and a flange 24 extending substantially perpendicularly therefrom from the opposite edge and in the direction opposite the flange 22. The flange 24 has a doubled back portion 26, Figure 6, which includes a terminal flange 28 adapted to be crimped for securing a screen 30 which will be referred to later.

At the apex 18 of the angle the two frame members 16 are secured together rigidly by means of a joint illustrated in Figure 7. Each of the web portions 20 is provided with an extension 32, the extensions being overlapped on the opposite frame member, one being disposed on the outside and the other on the inside. The extensions 32 are then spot-welded as indicated at 34 to the web portion 20 of the opposite frame member. The flanges 22 on the frame members 16 are extended at the apex of the angle in overlapping relation to each other and rigidly secured to-

gether as by spot-welding. At the junction point between the flanges 22 is a slot 36 disposed vertically and therefore extending on a line which substantially bisects the angle formed by the frame members. The flanges 22 are also provided with a plurality of nail holes 38 for securing the device to the members of the building.

Secured to and between the frame members 16 are a plurality of louver blades 40. The ends of each louver blade are upturned as at 42, Figures 3 and 5. The ends 42 are disposed at such an angle as to lie substantially flat against the web portions 20 of the frame elements 16 as indicated particularly in Figure 5; the upturned ends 42 are then spotwelded as indicated at 44 to the frame members, and the louver blades are therefore rigidly secured to the frame members. All of the louver blades 40 are substantially alike except the lowermost which will be referred to later. Each of the upper louver blades is disposed to slope downwardly in a direction outwardly from the building and at its inner upper edge is provided with an upturned flange or rib 46 which engages the flanges 24 on the inner side of the latter, and at its lower and outer edge with a downturned flange or rib 48. The flanges 46 lie in a plane adjacent the inner surface of the ventilator unit 12, and the flanges 48 lie in a plane adjacent the outer surface of the unit.

The lowermost louver 40 at its inner upper edge is provided with a downturned flange 50 which is of greater vertical extent than the flanges or ribs 46 and the lower end of the flange 50 terminates in an upturned portion 52. The flange 50 and its upturned portion 52 lie in substantially the same plane as the doubled back portions 26 of the flanges 24. The other lower edge of the lower louver blade 40 is provided with a downwardly extending flange 54 which is of greater depth or vertical extent than the flanges or ribs 48 on the other louver blades. The flange 54 is provided with a plurality of nail holes 56.

The screen 30 is of triangular shape of such a size to cover the space defined by the frame members 16 and the lowermost louver 40; the tapered marginal edges of the screen are inserted between the flanges 28 and the flanges 24, and the bottom edge of the screen is inserted between the flanges 52 and 50, and the flanges 28 and 52 are crimped for securing the screen rigidly in place.

The ventilator unit shown as a whole in Figures 3 and 4 is thus a rigid unit and special attention is directed to this fact together with the explanation hereafter with reference to its applicability to roof gables of different pitches.

The molding strips 14 are relatively long sheet metal strips which are provided with reversely bent longitudinal edges 58 for purposes of eliminating rough edges and for reinforcement, and said strips being provided with spaced apart nail holes 59. The molding strips 14 overlap at the apex of the angle of the ventilator unit and together are provided with a rivet or pin 60 which is inserted through registering holes in the molding strips and through the slot 36 in the flanges 22. The rivet 60 is so arranged as to be slidable vertically in the slot 36 and also so that the molding strips 14 are free to swing about the rivet, so that the swinging ends may be positioned in such a manner that the molding strips overlie the frame members 16. It will be noted that the molding strips 14 are at least as long as the frame members 16 and actually extend slightly downwardly therebeyond for purposes of better appearance. It should also be noted that the molding strips 14 are of considerably greater width than the width of the flanges 22 on the frame members.

The ventilator, as explained above, is adapted to be applied to roofs of various pitches. Roofs on houses or at least by far the great majority of them are within a range of pitches known as 8'' pitch and 10'' pitch. These designations refer to the rise with respect to the horizontal dimension, i. e., the 8'' pitch roof rises eight inches per foot horizontal measure, and the 10'' pitch roof rises ten inches per foot horizontal measure. In order that the ventilator be adaptable to the greatest range of pitches it is of an angle representing a pitch of roof intermediate the 8'' and 10'' pitches referred to, or in other words, the particular illustration is of a ventilator comparable to a 9'' pitch roof.

Figure 1 illustrates a 10'' pitch roof which is indicated by the reference numeral 62. The construction of the roof is of course conventional and employs the usual rake boards 64. The numeral 66 represents the wall of the building which extends up to the gable of the roof and is provided with an opening 68 for the insertion of the ventilator. The opening is defined by the rake boards at the top, and its lower edge is at an appropriate level for accommodating the ventilator. The ventilator may be installed in the original construction of the building, or it may be installed later after the building is otherwise completed. In the illustration in Figures 1 and 2 the rake boards 64 form an angle which is more acute than the angle of the ventilator and as a consequence the lower ends of the frame members 16 engage the rake boards and the apex of the angle of the ventilator is spaced downwardly from the apex of the roof gable, leaving a space indicated at 70. The space 70 of course converges downwardly and when the ventilator is put in place, the frame members 16 and therefore the flanges 22 are disposed out of parallelism with the rake boards. The ventilator is put in position in such a manner that the flanges 22 on the frame members engage and lie flat against the rake boards 64. Since the flanges 22 are not parallel with the rake boards only the lower nail holes 38 in said flange will overlie the rake boards and in these particular holes nails are driven for securing the ventilator in position. The flange 54 on the lowermost louver blade 40 also engages and lies flat on the wall 66 and nails are likewise driven through the nail holes 56. The molding strips 14 are then adjusted so as to overlie the frame members 16 which is accomplished by adjusting the upper ends of the molding strips vertically within the limits of the slot 36 and swinging the lower ends to the proper position. When disposed in the desired position the molding strips 14 are parallel with the rake boards 64 and the molding strips are wide enough so that the flanges 22 on the frame members are entirely covered from top to bottom. Toward the top of the ventilator where the flanges 22 do not overlie the rake boards, the molding strips 14 do overlie the rake boards, and nails may be driven in the nail holes 59 in the molding strips for securing them to the rake boards. Thus, the upper end of the ventilator is rigidly secured to the building.

It will be noted that the molding strips overlie not only the flanges 22 but a portion of the rake boards and a portion of the ends of the louver blades.

In the case of an 8'' pitch roof the spaces be-

tween the various elements of the ventilator and the elements of the building are reversed. Attention is directed to Figure 8 illustrating the same ventilator applied to an 8'' pitch roof gable. In this case the apex of the ventilator engages the apex of the gable, and there are spaces **72** between the web members **20** and the rake boards. These spaces diverge downwardly having their greatest dimension at the lower ends of the frame members. In the latter case the molding strips **14** are again arranged parallel with the rake boards **64** but their relation with respect to the frame members **16** is reversed. In the present case the flanges **22** at their upper ends overlie the rake boards and at these points nails are driven through the nail holes **38** and since the lower ends of the flanges **22** do not overlie the rake boards nails are driven through the molding strips **14** at their lower ends for securing the molding strips and the lower end of the ventilator securely in place. In the case of the installation of Figure 8 nails are also driven through the nail holes **56** in the flange of the lowermost louver blade.

From the foregoing it will be seen that a ventilator of novel construction is adaptable to roofs of various pitches. The ventilator may be considered adjustable in effect, although the ventilator proper or the ventilator unit **12** is in itself not adjustable. The adjustability is effective by the provision of the molding strips **14**.

For purposes of convenience in interpreting the claims the front of the ventilator is disposed flush with the outer surface of the wall **66** when the ventilator is installed. The flanges **22**, as well as the molding strips **14**, may be considered flush with the surface of the wall.

Numerous advantages will be realized from the present invention as brought out in the detail description set out above.

Comparison may be made with ventilators which are adjustable in such a way that all of the parts are movable so that the ventilator can be applied to roofs of various pitches. In the present case the whole ventilator is not adjustable in the sense that all of the elements are movable with respect to one another, and because of that fact there is less material required in the fabrication of the ventilator. Also there are no loose parts to rattle after the ventilator has been installed. The louver blades are of one piece and can be made to simulate boards or wood blades. This is in contrast with telescoping type of blades which are commonly used in most other types of adjustable ventilators.

Another advantageous feature of the present invention is that the spacing between the louver blades is always constant. It is well known that there is a certain spacing of louver blades which is the most effective. If the blades are spaced too far apart rain and snow will blow through the blades while on the other hand if they are placed too close together ventilation is impaired. In the present case the spacing always remains the same with the advantages of proper ventilation and eliminating the disadvantage of snow and rain entering the building.

Another advantageous feature of the present invention is that after the ventilator is installed a uniform appearance results namely, that the molding strips are parallel with the rake boards and there are no elements presented to the eye which are disposed out of symmetrical relation.

The ventilator of the present invention can be installed in the building in a minimum of time. Because of the fact the ventilator unit **12** is rigid it can be completely fabricated at the factory including the cutting and positioning of the screen **30**. There is no need for the screen to be cut and put in place after the ventilator is installed as is the case in certain types of ventilators heretofore known.

There is less cost of fabricating the ventilator of the present invention than in the case of former ventilators because the parts do not require precision manufacture, there are fewer parts to make and assemble, and there are fewer special dies required.

While we have herein shown and described a preferred embodiment of our invention, manifestly it is susceptible of modification and rearrangement of the parts without departing from the spirit and scope thereof. We do not therefore, wish to be understood as limiting our invention to the precise form herein disclosed, except as we may be so limited by the appended claims.

We claim as our invention:

1. In a ventilator, the combination comprising, an inverted generally V-shaped ventilator unit adapted to be installed in a generally triangular shaped opening in and adjacent the gable of a building wall and be fitted to members of the building defining the opening, said ventilator unit having a pair of tapering frame members adapted to be positioned adjacent said building members, a pair of molding strips, and means for adjustably securing said strips to said ventilator unit, said molding strips being at least as long as said frame members and being adjustable in directions transverse to the longitudinal dimensions of said frame members to positions wherein they cover a portion of said building members and a portion of said frame members.

2. In a ventilator, the combination comprising, an inverted generally V-shaped ventilator unit having a pair of tapering frame members, said ventilator being adapted for installation in a generally triangular shaped opening in and adjacent the gable of a building in which the members of the building defining the opening are incongruent with said frame members forming spaces therewith, a pair of molding strips, and means for adjustably securing said strips to said ventilator unit, said molding strips being at least as long as said frame members and of substantial width and being adjustable in directions transverse to the longitudinal dimensions of said frame members to positions wherein they cover said spaces in overlapping relation to said building members and said frame members.

3. In a device of the character disclosed, a ventilator unit having a pair of frame members disposed at an angle to each other meeting at a common junction point, and a molding strip individual to each frame member, and means for adjustably securing said strips to said ventilator unit adjacent said junction point, said molding strips being at least as long as said frame members and adjustable to positions overlying respective frame members, and being adjustable in directions transverse to the longitudinal dimensions of said respective frame members.

4. In a device of the character disclosed, a ventilator adapted to be installed in an opening in a building, said ventilator including a ventilator unit having a pair of frame members

disposed at an angle to each other and meeting at a common junction point, said frame members having flanges extending transverse thereto and adapted to at least partially overlie the building members defining said opening, a molding strip individual to each frame member, and means for adjustably securing said strips to said ventilator unit, said molding strips being at least as long as said frame members and of greater width than said flanges, said molding strips being movable to positions overlying said flanges and being adjustable in directions transverse to the longitudinal dimensions of said frame members.

5. In a device of the character disclosed, a ventilator adapted to be installed in an opening in a building, said ventilator including a ventilator unit having a pair of frame members disposed at an angle to each other and meeting at a common junction point, a plurality of spaced apart louver elements connected at opposite ends to the frame members, said frame members having flanges extending transverse thereto and adapted to at least partially overlie the building members defining said opening, said flanges having a slot therein at said junction point extending on a line bisecting said angle, and a molding strip individual to each frame member, and means extending through said slot and connected to the upper end of each molding strip for securing the latter to the ventilator unit, said molding strips being adjustable in the direction of said slot, each molding strip being swingable about said end and movable to a position overlying the respective flange, said molding strips being wider than said flanges.

6. In combination, a pair of frame members disposed at an angle to each other and rigidly secured together at the apex of the angle, a plurality of louver blades rigidly secured to and between said frame members, said frame members and blades forming a ventilator unit, said unit being adapted to be installed in an opening in a building wall with one surface thereof substantially flush with one surface of the wall, a molding strip individual to and adapted to overlie each frame member, and means for adjustably securing said molding strips on said unit, said strips being adjustable in directions transverse to the longitudinal dimensions of the respective frame members and adapted to overlie a portion of the wall and said unit in abutting relation to the flush surfaces thereof.

7. In combination, a pair of frame members disposed at an angle to each other and rigidly secured together at the apex of the angle, a plurality of sheet metal louver blades, the ends of said louver blades being turned transverse to the main body of the blades, the extremities of said turned ends being rigidly secured to respective frame members, said frame members and blades forming a ventilator unit, said unit being adapted to be installed in an opening in a building wall with one surface thereof substantially flush with one surface of the wall, said frame members having flanges extending outwardly therefrom and lying in the plane of said one surface of the unit, said flanges being adapted to overlie a portion of said one surface of the wall in abutting relation thereto, a molding strip individual to and adapted to overlie each frame member, and means for adjustably securing said molding strips on said unit, said strips being adjustable in directions transverse to the longitudinal dimensions of the respective frame members, said molding strips being adapted to overlie a portion of the wall, said flanges, and the turned ends of said louver blades, in abutting relation to said flush surfaces of the wall and unit.

8. In a sheet metal ventilator unit, the combination comprising, a pair of frame members disposed at an angle to each other and rigidly connected together at a common junction point at the apex of the angle, a plurality of louver blades having ends turned transverse to the length of the blades, the extremities of said turned ends being secured to said frame members and the louver blades being thereby mounted in the unit, said frame members having inturned flanges on one surface of the unit, said inturned flanges having rebent portions, a screen overlying said one surface of the unit and having its marginal edges extending into said rebent portions and the rebent portions being crimped to secure the screen in position, and said frame members having out-turned flanges on the opposite surface of the unit, said out-turned flanges being adapted for overlying and securement to building members defining an opening in which the unit is installed.

9. In a sheet metal ventilator unit, the combination comprising, a pair of frame members disposed at an angle to each other and rigidly connected together at a common junction point at the apex of the angle, a plurality of louver blades having ends turned transverse to the length of the blades, the extremities of said turned ends being secured to said frame members and the louver blades being thereby mounted in the unit, said frame members having inturned flanges on one surface of the unit, said inturned flanges having rebent portions, a screen overlying said one surface of the unit and having its marginal edges extending into said rebent portions and the rebent portions being crimped to secure the screen in position, and said frame members having out-turned flanges on the opposite surface of the unit, said out-turned flanges being aadpted for overlying and securement to building members defining an opening in which the unit is installed, said out-turned flanges having a slot therein extending on a line intersecting said angle, and a molding strip individual to ad adapted to overlie each frame member, each molding strip having means at one end movably secured in said slot, and the other end of each molding strip being swingable, said molding strips being wider than said out-turned flanges and adapted to overlie a portion of the building members, said out-turned flanges, and the turned ends of said louver blades, in abutting relation thereto.

RICHARD C. MOYER.
NORMAN J. OLIVER.
MAX L. RYSDON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,855,532	Thomas	Apr. 26, 1932
2,340,570	Siebenlist	Feb. 1, 1944
2,458,134	Belden	Jan. 4, 1949

OTHER REFERENCES

Sweet's Catalog, pub. by F. W. Dodge Corp., 119 West 40th St., New York, N. Y., 1937, section 8, page 33.