Aug. 14, 1945. F. H. LESLIE 2,382,076

SLANT ROOF LOUVER

Filed April 8, 1942

Fig. 1

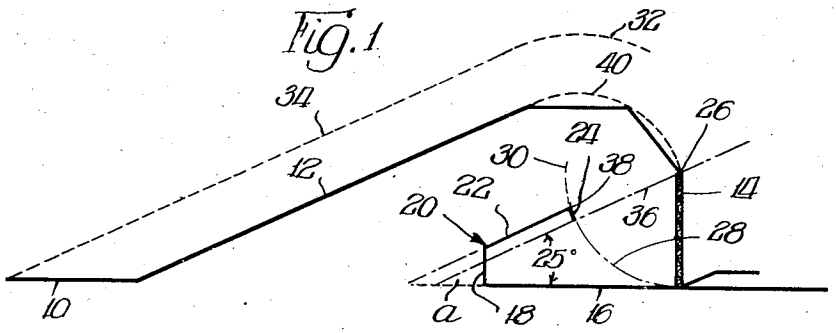


Fig. 2

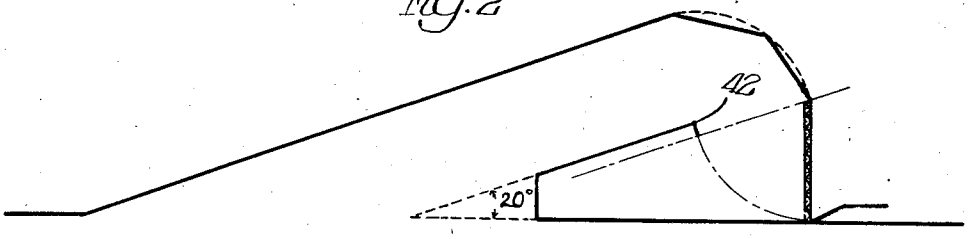


Fig. 3

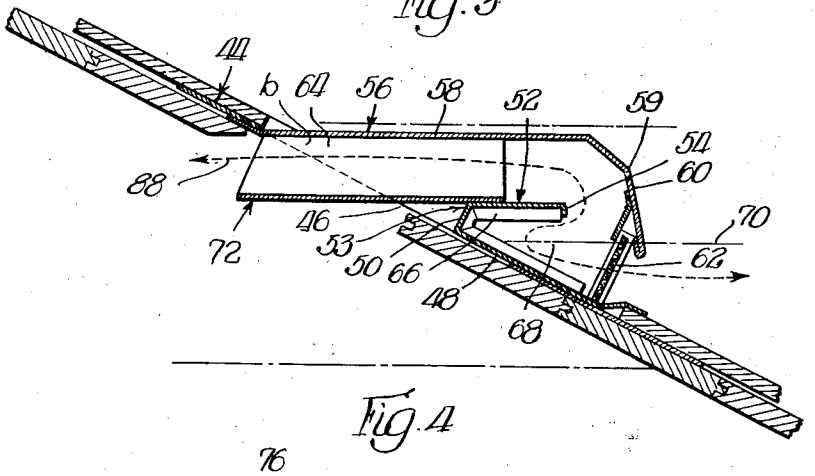
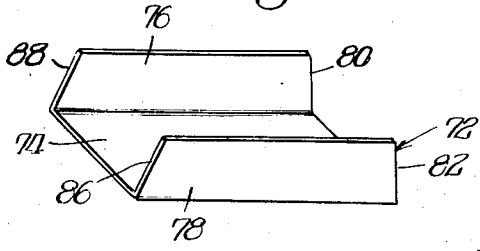


Fig. 4



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SLANT ROOF LOUVER

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Application April 8, 1942, Serial No. 438,064

3 Claims. (Cl. 98—42)

This invenion relates to slant roof louvers of the type shown in applicant's copending application No. 326,369. More particularly this invention relates to a slant roof louver for use on roofs having a pitch as low as one-quarter.

Applicant's louvers are characterized by a peripheral flange, or plate member having an opening comprising an air inlet. Over this opening is positioned a dormer having side and front walls and a flat roof. In the lower front wall is an opening, generally rectangular in shape and behind this opening, that is within the louver, there is a baffle having a top wall extending toward the outlet opening to form a recess or deep pocket facing the outlet opening. The air passageway between the inlet and outlet openings passes over the baffle. Applicant's louvers are designed along straight lines, the major thought being to carry from the outlet opening to the inlet opening an air passageway having approximately the same configuration and the same dimensions as the outlet opening.

In prior designs, the applicant had arbitrarily disposed the flat dormer roof at an angle of approximately 30 degrees to the peripheral flange. A louver having a roof making such an angle with the peripheral flange had prior to comparatively recent times always been satisfactory, that is to say the flat dormer roof always sloped downwardly when mounted on a slant roof. This was of course true only because the slant roofs on private homes were ordinarily of a one-half or one-third pitch wherein the slopes of the roof with respect to the horizontal are 45 and 36.9 degrees respectively. More recently the one-quarter pitch roof has become popular. The one-quarter pitch roof is one wherein the height of the peak above the eaves is one-quarter of the width spanned by the roof and in a one-quarter pitch roof the angle of the roof to the horizontal is 26.6 degrees.

In order to design a louver wherein the dormer roof of the louver is disposed at an angle of less than 26.6 degrees with the peripheral flange in accordance with principles heretofore practiced by the applicant, it would have been necessary to greatly lengthen the dormer roof and resultantly the peripheral flange to get the requisite low slope. This was objectionable not only because such construction increased the cost of the louver but also because the increased size rendered the louver more conspicuous when mounted on a roof.

The broad object of this invention is to design a slant roof louver having over all dimensions, an air passageway, and outlet and inlet openings comparable to the louver shown in the copending application 326, 369 while nevertheless lowering the peak of the roof sufficiently so that a dormer roof of approximately the same length as heretofore employed could be used and still make the requisite low angle with the peripheral flange.

The feature of this invention which accomplished this object is the positioning of the top of the interior baffle at a point closer to the peripheral flange than the top of the outlet opening but at a point above a plane passed through the top of the outlet opening parallel to the dormer roof. Previously in designing slant roof louvers, it was thought necessary to have the top of the baffle more distant from the peripheral flange than the top of the outlet opening. Such designing does not take into consideration the disposition of the louver on the roof. When one of opplicant's slant roof louvers is placed on a roof, the outlet opening is lower on the roof than is the baffle due to the slope of the roof. According to the present invention, the top of the baffle is positioned at a point slightly above a horizontal plane passed through the top of the outlet opening when the louver is mounted on a roof having such a slope that the flat dormer roof of the louver will slope outwardly and downwardly. The top of the interior baffle therefore bears a relationship not only to the top of the outlet opening but also to the slope of the flat dormer roof.

Another object of this invention relates to discharging precipitation which occurs inside the air passageway toward the outlet opening. In this respect, this application constitutes a continuation in part of the copending application No. 326,369. Generally speaking precipitation, which is either liquid in form or ice, occurs along the walls of the air passageway in these louvers. It is of course desirable to have water drain to points outside the louver onto the roof even though the precipitation occurs on the inside air passageway of the louver. This involves the employment of a drain which will slope toward the outlet opening. The second object of this invention is therefore to provide a draining surface within a louver which will slope toward the outlet opening provided a workman observes simple instructions in mounting the louver.

The feature of applicant's invention which attains this object is the provision of a top wall on the interior baffle which is disposed parallel to

the plane of the flat dormer roof. This top wall on the baffle terminates at a point distant from the top of the outlet opening by approximately the height of the outlet opening. If a workman places applicant's louver on a roof so that the dormer roof slopes downwardly, the interior top of the baffle member will likewise slope downwardly and any precipitation on the top of the baffle member will run off in liquid form over the drip edge of the baffle and out through the outlet opening.

In conjunction with this object, applicant has the incidental purpose of providing an auxiliary drain trough to be used in conjunction with the flat top of the baffle member for catching precipitation deposited on those walls of the air passageway which are interior to and not above the top of the baffle. This trough drainboard employed by applicant may be removable or may be permanently assembled with the louver. These and such other objects as may hereinafter appear are obtained in the embodiment of the invention shown in the accompanying drawing wherein:

Figure 1 is a diagrammatic view of a louver for use on a one-quarter pitch roof;

Figure 2 is a diagrammatic view of a louver for use on a one-fifth pitch roof;

Figure 3 is a side view in section of a louver to be used on a one-quarter pitch roof; and

Figure 4 is a perspective view of an auxiliary drain trough.

Continuing to refer to the drawing, Figure 1 illustrates the means by which the first object of this invention has been obtained. In this figure, the numeral **10** indicates a peripheral flange, **12**, a dormer roof and **14** an outlet opening. The numeral **16** is an interior drainboard while **18** indicates the upwardly directed wall of a baffle generally indicated by the numeral **20** which has a forwardly directed top wall **22** and a depending flange **24**, the lower edge of the flange **24** constituting a drip edge.

Because applicant's air passageway is substantially rectangular in cross section, and because it must be carried over the baffle **20** and drainboard **16**, applicant, using the top **26** of the outlet opening **14** as a center, swings an arc **28**. In previous designs, he then selected some point such as **30** which is more distant from the peripheral flange **10** than is the top **26** of the outlet opening **14**, and using this point **30** as a center with the same radius swung an arc such as **32**. Having the arc **32**, he then extended a roof as a tangent to the arc **32** making whatever angle with the peripheral flange that he desired. If the applicant desired an angle of 25 degrees, which is slightly less than the 26.6 degree angularity of a one-quarter pitch slant roof to the horizontal, applicant would therefore have obtained a slant roof for the dormer such as **34**. The smaller the angle between the dormer roof and the peripheral flange, the greater the length the dormer had to be.

By this new invention, applicant first passes a line through the point **26** to make the same angle with the peripheral flange as he wishes the dormer roof to make with the peripheral flange. This line is indicated by the numeral **36** and the angle by the letter *a*, which in Figure 1 is 25 degrees. Where the line **36** intersects the arc **28**, the applicant commences the flange **24** and at a suitable point above the line **36** carries back the baffle top **22** parallel to the line **36**. Thus applicant has passed a plane through the top of the outlet opening to intersect the plane of the peripheral flange **10** at that angle which he wishes the dormer roof to make with the peripheral flange. Using the point **38** as a center applicant next swings the arc **40** and as a tangent to the arc **40** the dormer roof **12** is laid out parallel to the line **36**.

It is thus seen that applicant's structure is characterized by having a baffle, the dripping edge of which, that is the bottom of the flange **24**, is closer to the peripheral flange **10** than is the top of the outlet opening **26** but which is on the far side (with respect to the peripheral flange) of a plane passed through the top **26** of the outlet opening and intersecting the peripheral flange **10** at a selected angle.

In Figure 2 the same principles have been followed and it will be observed that the more acute the angle between the dormer roof and the peripheral flange, the more nearly will the driping edge **42** of the baffle approach a point as far from the peripheral flange as the top of the outlet opening.

Referring now to Figure 3, a physical embodiment of applicant's invention is there shown. A peripheral flange generally identified by the nueral **44** has a rectangular opening **46** therein. The numeral **48** identifies a drainboard lying substantially in the plane of the peripheral flange **44** while the numerals **50** and **52** indicate the end and top walls of a baffle member **53** having a flanged draining edge **54**. Over the opening **46**, the drainboard **48** and the baffle **53** is positioned a dormer generally identified by the numeral **56** and consisting of a roof **58**, a visor **59**, a front wall **60** and an outlet opening **62** covered by a screen, and side walls such as **64**. The actual construction is identical to that shown in the copending application heretofore mentioned and need not be discussed other than to say that the baffle **53** is held in assembled relationship by flanges **66** appropriately fastened to the side walls **64**.

The physical embodiment shown in Figure 3 was designed specifically for use on a one-quarter pitch roof. The angle *b* is a 25 degree angle and it is therefore apparent that if the louver were mounted on a slant roof having a slightly more gentle slope, the dormer roof **58** would slope back toward the roof and not outwardly and downwardly. Moreover, in this embodiment only the draining edge **54** of the flange is closer to the peripheral flange than the top of the outlet opening **62**. The top **52** of the baffle in fact is disposed at a distance from the peripheral flange about equal to the distance of the top of the outlet opening from the peripheral flange. Applicant has employed his principles governing the positioning of the drip edge of the baffle only to a limited extent in this embodiment for the reason that the more that the top wall of the baffle is dropped toward the peripheral flange, the smaller is the air pocket or deep recess **68** formed by the baffle. This deep recess is largely responsible for clearing the air of water in a driving rain. The dotted line **70** is passed through the top of the outlet opening so as to make an angle with the peripheral flange identical to the angle *b*. It is apparent that the dripping edge **54** or the top of the baffle itself, if a dripping edge is omitted, may be dropped to the line **70** before the dripping edge **54** will be lower than the top of the air outlet when the louver is mounted on a slant roof.

Referring now to Figure 4, there is shown a

trough or auxiliary drain board 72 consisting of a floor 74 and side walls 76 and 78. The inner ends of the side walls indicated by the numerals 80 and 82 are at right angles to the length of the side walls while the other ends 88 and 86 are tapered outwardly. Referring to Figure 3, the side walls of the drainboard 72 are of such dimensions that they may be forced in, that is by a squeeze fit, between the top 52 of the baffle and the bottom of the dormer roof 58. The entire air passageway which follows the dotted line 88 inside the louver itself has suspended beneath it a drainboard of some kind which will cause water to run forwardly over the dripping edge 54 down over the drainboard 48 and thence out the outlet opening 62. This is an important feature of applicant's invention because in winter time this precipitation forms as ice and in considerable volume.

Attention is invited to the fact that the top 52 of the baffle member is parallel to the dormer roof 58 and it follows that any workman by placing the dormer roof on a roof so that it will slope downwardly will automatically place the louver so that all draining precipitation in the air passageway will flow out the outlet 62.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A slant roof louver comprising a peripheral flat member disposed substantially in a single plane, an opening constituting an air inlet therein, a baffle wall having a drip edge disposed adjacently one end of said air inlet, over said air inlet and baffle a dormer comprising side, top and front walls, and an air outlet disposed in the lower portion of the dormer front wall, the drip edge of said baffle being less distant from the plane of the peripheral flat member than is the top of the outlet therefrom and being disposed approximately in the plane which passes through the top of the outlet opening and intersects the peripheral flat member at an angle of approximately 25 to 28 degrees.

2. A slant roof louver comprising a peripheral flat member disposed substantially in a single plane, an opening constituting an air inlet therein, a baffle wall having a drip edge disposed adjacently one end of said air inlet, over said air inlet and baffle a dormer comprising side, top and front walls, and an air outlet disposed in the lower portion of the dormer front wall, the drip edge of said baffle being less distant from the peripheral flat member than is the top of the outlet therefrom and being disposed approximately in the plane which passes through the top of the outlet opening and intersects the peripheral flat member at an angle of approximately 25 to 28 degrees, said walls of the dormer and the baffle being so related as to provide an air passageway through the louver of substantially constant cross sectional configuration and of the same configuration and dimensions as the outlet opening.

3. In combination with a slant roof louver comprising a flat member having an air inlet opening therein with a dormer having a flat roof over said opening and an air outlet in a front wall of said dormer and having a combination drainboard and baffle member disposed within the dormer in draining relationship to said outlet and having a top wall lying in a plane substantially parallel to the dormer roof to define an air passageway from the air inlet to the air outlet having a constant cross sectional configuration similar to that of the outlet opening, a drainboard trough having a flat bottom portion and means capable of holding said trough in assembled relationship to the air passageway between the top wall of the baffle member and the dormer roof, said trough having a length sufficient to extend inwardly beyond the dormer roof whereby to catch all precipitation within said portion of the air passageway and cause the same to be delivered forwardly over the baffle and thence on to the drainboard.

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