March 28, 1967 L. L. SMITH ET AL 3,311,047

ROOF VENTILATORS

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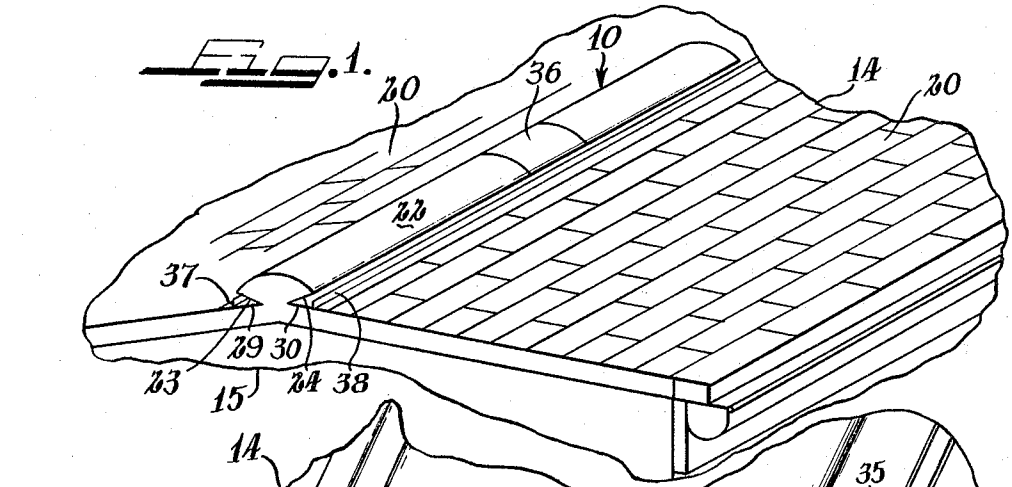
Fig. 1.



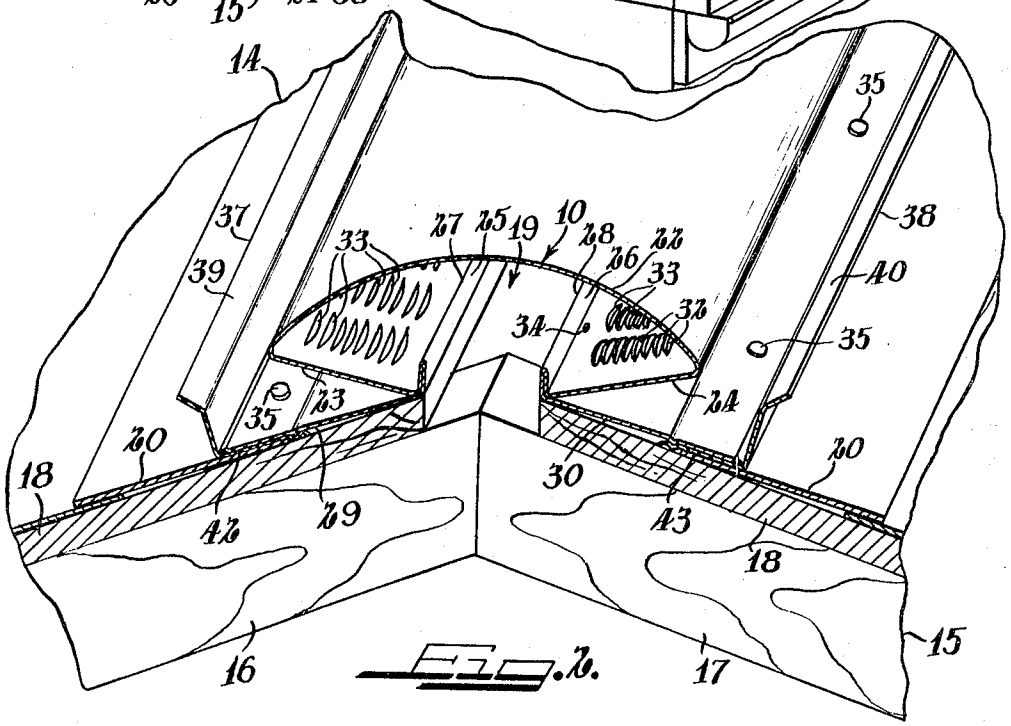


Fig. 2.

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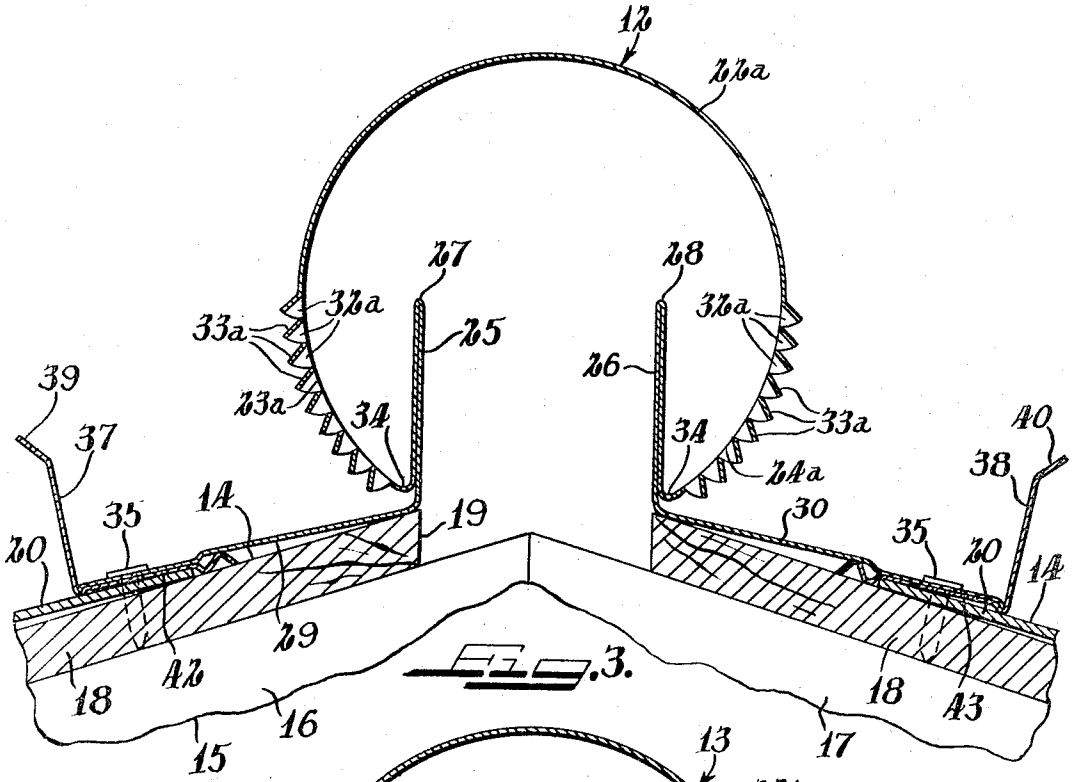

FIG. 3.

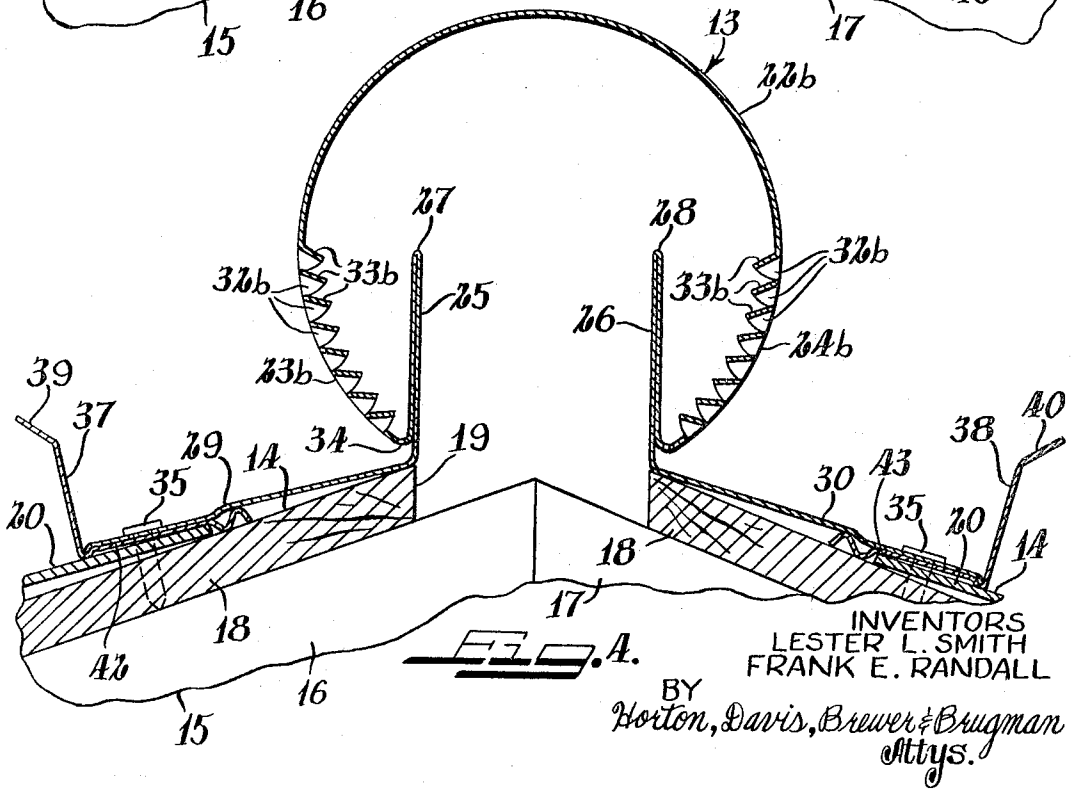

FIG. 4.

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ROOF VENTILATORS

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7 Claims. (Cl. 98—42)

This invention relates to roof ventilators, and more particularly to ventilators of the type adapted to be mounted on and to extend along the exterior surface of the ridge of a roof to provide for the flow of air to and from the space in a building immediately below the roof.

One of the objects is to provide a roof ventilator for ridge mounting which has louvered vent openings in opposed side wall portions and wherein internal baffles are utilized to improve weather protection without unduly restricting air flow through the ventilator.

As another object, this invention has within its purview the provision of a roof ventilator having an internal baffle in spaced and opposed relationship to vent openings in the ventilator, which baffle is integrally formed as a part of the ventilator structure.

Our invention further comprehends the provision of a roof ventilator structure wherein vent openings are provided in opposed downwardly and inwardly sloping side walls and baffles extend upwardly near the openings both internally and externally of the ventilator.

It is another object of this invention to provide a ventilator for mounting on a roof ridge and which has an internal baffle extending upwardly in spaced and opposed relationship to vent openings in a wall of the ventilator and wherein weep holes are provided between the said baffle and wall for the drainage of moisture from the interior of the ventilator.

This invention has for another object the provision of a ventilator adapted to be mounted on the ridge of a roof and wherein the ventilator walls, internal baffles and flashing elements are integrally formed from sheet material.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings in which similar characters of reference indicate similar parts throughout the several views:

FIG. 1 is a fragmentary perspective view showing the application of a preferred embodiment of our roof ventilator to the ridge of a building roof;

FIG. 2 is a fragmentary perspective end sectional view drawn to a larger scale than FIG. 1 and showing details of the structure of the ventilator depicted in FIG. 1; and

FIGS. 3 and 4 are fragmentary end sectional views illustrating the adaptation of modified forms of our roof ventilators to the roofs of buildings.

In the exemplary embodiments of our invention which are shown in the accompanying drawings for illustrative purposes, roof ventilators **10** (FIGS. 1 and 2), **12** (FIG. 3) and **13** (FIG. 4) are each shown as being mounted to extend along the ridge of a roof of a building **15**. As is typical in building structure, the roof **14** has rafters **16** and **17** in spaced relationship longitudinal of the roof and sloping upwardly on opposite sides of the roof ridge and abutted together along the ridge. The rafters have roofing boards **18** secured to the top surfaces thereof. When ventilators of the type illustrated herein are to be used on a roof, a slot **19** is left between the roofing boards at the roof ridge to provide for the flow of air through the ventilator and to and from the interior of the building immediately beneath the roof. Roofing, such as shingles **20** covers the roofing boards from a position near the slot **19**, so that the roof will shed water.

As shown in FIGS. 1 and 2, the ventilator **10** extends

along the roof ridge and covers the slot **19**. The ventilator disclosed is symmetrical in form and structure on opposite sides of a vertical longitudinal plane which passes through the roof ridge line. Although ventilators of the type disclosed herein may be made of various materials, the structures depicted are of a type suitable for manufacture from sheet metal, such as aluminum. It embodies a top cover part **22** which, in the present instance, is smoothly curved from side to side with the major portion of the mid-region thereof being generally arcuate. Side wall portions **23** and **24** are integral with the top cover part **22** and extend downwardly and inwardly from the opposite sides thereof, so that a generally acute angular relationship exists between the side wall portions and adjacent parts of the top cover portion. Baffles **25** and **26** are integrally formed along the inner edges of the side wall portions **23** and **24** by bending the sheet metal upwardly. The sheet material of the baffle, in the disclosed structure is return-bent along straight lines to provide top edges **27** and **28** on the baffles **25** and **26** at desired heights within the ventilator structure, and so that flashing portions **29** and **30** may be integrally formed with the rest of the ventilator parts to extend outwardly and downwardly from the bottoms of the baffles adjacent or near the inner edges of the side wall portions **23** and **24**. The flashing portions **29** and **30** may be flexed or bent at the time of installation to match the pitch of the roof upon which the ventilator is installed. The spacing of the baffles **27** and **28** from one another laterally of the ventilator desirably conforms to the width of the slot **19**, so that when the ventilator is mounted over the slot the baffles are in generally flush relationship to the edges of the roofing boards **18** which define the slot.

The side wall portions **23** and **24** have a multiplicity of vent holes **32** therein, which vent holes, in the disclosed structure, are each covered by a louver **33**. The louvers, in the ventilator depicted in FIG. 2, are each integrally formed with one of the side wall portions, and each projects upwardly from its side wall portion into the ventilator structure and outwardly from the mid-region of the structure. Also as disclosed herein, the vent openings and louvers are arranged in rows extending laterally of the ventilator structure, and the rows are repeated in spaced relationship longitudinally of the ventilator.

Interiorally of the ventilator, the spacing between the top edges **27** and **28** of the baffles **25** and **26** and the top cover portion **22** is sufficient to avoid restriction of air flow between the slot **19** and the vent openings **32**. For maximum and most effective weather protection, the baffles **25** and **26** extend to a height within the ventilator which is above the height of the uppermost vent openings. As a general rule, changes of the direction of air flow within the ventilator tend to reduce the moisture content of the air. This accounts for the disposition of the louvers **33** and the placement of the baffles within the ventilator structure illustrated in FIG. 2. The baffles **25** and **26** serve the purpose of preventing the flow of collected moisture within the ventilator to and through the slot **19**. Weep holes **34** are provided at spaced positions along the side wall portions **23** and **24** adjacent the baffles **25** and **26** for the flow of moisture to the outside of the ventilator.

The top courses of shingles **20** on opposite sides of the slot **19** are placed sufficiently close to the slot **19** to be overlapped by the flashing portions **29** and **30**. The ventilator is secured to the roof by fastening means, such as nails **35** driven through the outer margins of the flashing portions and passing through the shingles **20** into the roofing boards **18**.

If one cut length of the ventilator is not sufficient to

extend the full length of the roof to which it is applied, one or more additional lengths are butted together. Plugs (not shown) which fit snugly into the interior of the abutted ends and which are made of a relatively stiff flexible material are used to adjoin the ends. For additional protection sheet metal caps **36** which conform to the outer surface of the ventilator are placed over the ventilator to cover the abutted ends. Also, such plugs are utilized to close the ventilator at its opposite ends.

In the modified forms of the ventilator shown in FIGS. 3 and 4, the top cover portions **22***a* and **22***b* and the side wall portions **23***a* and **23***b*, **24***a* and **24***b* have sectional configurations such that together they have the general contour of a segment of a circular cylinder. As in the form illustrated in FIGS. 1 and 2, the ventilators of FIGS. 3 and 4 are symmetrical with respect to a central longitudinal plane extending along the roof ridge. The top cover portions **22***a* and **22***b* extend to positions at or below a horizontal longitudinal plane passing through the center of curvature, so that the side wall portions **23***a*, **23***b*, **24***a*, and **24***b* each extend downwardly and inwardly therefrom. Like the structure of the ventilator of FIGS. 1 and 2, the side walls each have a multiplicity of vent holes **32***a* and **32***b* therein, which vent holes are each covered by louvers **33***a* and **33***b*. The vent holes **32***a* and **32***b* and the louvers **33***a* and **33***b* may be disposed in rows and the rows repeated at spaced intervals longitudinally of the ventilator.

In the ventilator shown in FIG. 3, the louvers **33***a* extend outwardly and downwardly relative to the respective side walls **23***a* and **24***a* of the ventilator. In the form shown in FIG. 4, the louvers **33***b* extend inwardly and downwardly with respect to their respective side walls **23***b* and **24***b*. The baffles **25** and **26**, the flashing portions **29** and **30** and the weep holes **34** of the ventilators shown in FIGS. 3 and 4 are like those illustrated and described with respect to FIGS. 1 and 2 and have like relationships with other parts of the ventilators, so that it may be considered that parts bearing the same reference numerals are alike and perform similar functions in each of the ventilator forms disclosed.

While each of the ventilators disclosed herein is adapted to effective use without any exterior baffles, the efficiency and weatherproofing of each may be improved by additional exterior baffles **37** and **38** which extend upwardly from the outer edges of the flashing portions **29** and **30** at positions spaced laterally from the side extremities of the top cover portion and side wall portions of the ventilator. The upward extending and outwardly projecting upper marginal portions **39** and **40** on each of the baffles tends to deflect air upwardly and over the top of the ventilator, so that low pressure regions are formed on opposite sides of the ventilator adjacent the openings therein. The baffles **37** and **38** also have a tendency to reduce the amount of wind-driven rain or snow which is brought into direct contact with the louvers over the vent openings. While the baffles **37** and **38** which are disclosed herein may be made as an integral part of the flashing portions **29** and **30**, the baffles disclosed have bottom flange portions **42** and **43** respectively which underlie the outer margins of the flashing portions **29** and **30** and are secured in place by the nails **35** which secure the ventilator to the roof.

From the foregoing description and by reference to the accompanying drawings, it may be understood that the ventilators herein disclosed are not only adapted to be integrally formed from strips of sheet material, but are also constructed and arranged to provide efficient and effective ventilation with adequate weather protection. The relationship and placement of the internal baffles with respect to inwardly and downwardly sloping side portions is such that the baffles afford weather protection in addition to that provided by the louvers which extend over each vent opening. The internal baffles also function in directing the flow of moisture inside of the ventilator to the weep holes, through which such moisture passes to the exterior of the ventilator.

It is understood that the foregoing description is merely illustrative of the preferred embodiment of the invention and that the scope of the invention therefore is not to be limited thereto, but is to be determined by the appended claims.

We claim:

1. A roof ventilator adapted to integral production from strip stock as a roll formed section and to mounting over a slot of predetermined width extending along the ridge of a roof, said ventilator comprising, in combination, an imperforate top having a width greater than that of said slot and side portions extending outwardly and downwardly on opposite sides of a longitudinal central plane, side wall portions integrally adjoined to the outer lateral extremities of the top and extending downwardly and inwardly therefrom to positions spaced apart approximately the width of said slot, said side wall portions having integrally louvered vent openings therein, flashing portions extending outwardly at the lower ends of said side wall portions and adjoined thereto through double thickness baffles which extend upwardly and have adjacent planar parts in face-to-face relationship to one another and adjacent edge regions integrally adjoined respectively to said side wall portions and flashing portions, said baffles being disposed between the side walls in spaced and opposed relationship to one another and in spaced relationship to the louvered vent openings.

2. A roof ventilator as defined in claim **1**, and wherein said top is laterally curved and said side wall portions are generally planar, and said side wall portions are in acute angular relationship to opposite side regions of said top and also to the exposed exterior parts of said flashing portions.

3. A roof ventilator as defined in claim **1**, and wherein said baffles are return bends at the tops thereof and are disposed in relatively parallel planes.

4. A roof ventilator as defined in claim **1**, and wherein the space between said baffles defines a throat in the ventilator which communicates with said slot in the roof, and said side wall portions having weep holes therein adjacent the bottoms of the baffles through which moisture can pass from the interior to the exterior of the ventilator.

5. A roof ventilator as defined in claim **1**, and wherein said top and side wall portions together have the general sectional configuration of a segment of a circle having a bottom slot-type opening between laterally opposed halves and the width of which opening is generally the same as that of said slot in the roof over which the ventilator is adapted to be mounted, and wherein said top is substantially semicircular.

6. A roof ventilator adapted to integral production from strip stock to communicate with and cover a slot of predetermined width extending along the ridge of a roof and comprising, in combination, a top cover portion wider than the predetermined width of said slot and side wall portions integrally adjoined and symmetrically disposed with reference to a longitudinal central plane, said side wall portions extending downwardly and inwardly from opposite sides of the top cover portion to positions spaced apart laterally of the ventilator by an amount generally equal to said predetermined slot width, said side wall portions having vent openings therein, means extending outwardly from the lower edges of said side wall portions in gradually increasing spaced relationship to said side wall portions for securing the ventilator to the roof on opposite sides of said slot, and baffles having portions in face-to-face relationship and which are respectively integral with the side wall portions and said means extending outwardly from the lower edges of the side wall portions, which baffles extend upwardly between said side wall portions at the lower edges of the side wall portions.

7. A roof ventilator as defined in claim **6**, and wherein said side wall portions have weep holes therein adjacent

the outer surfaces of said baffles which provide for the escape of moisture from the interior of the ventilator.

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