Feb. 12, 1957 H. T. PEIRSON 2,780,978

VENTILATOR RAIN BAFFLE FOR ROOF EAVES

Filed Sept. 21, 1953 2 Sheets-Sheet 1

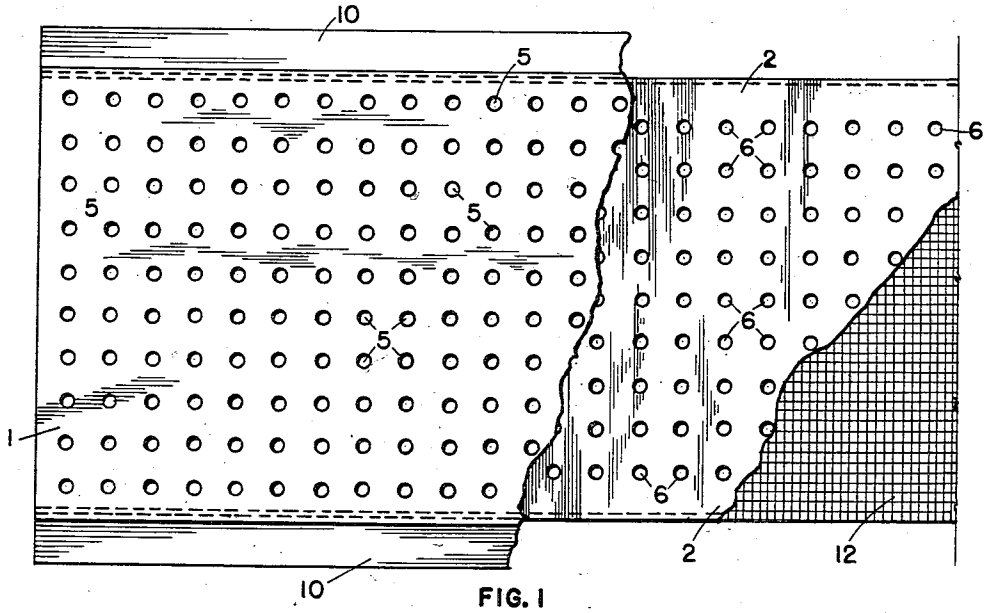


FIG. 1

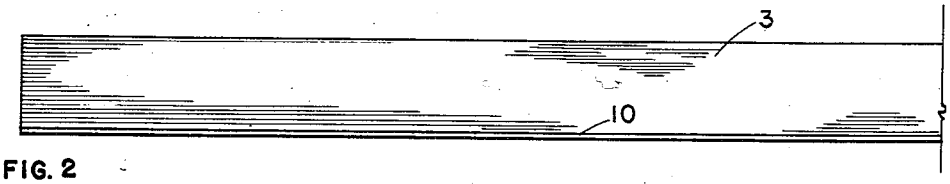


FIG. 2

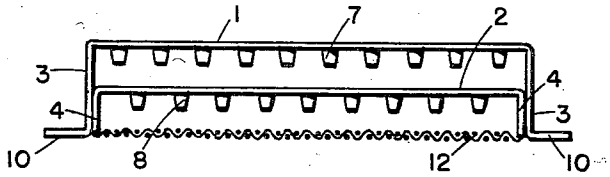
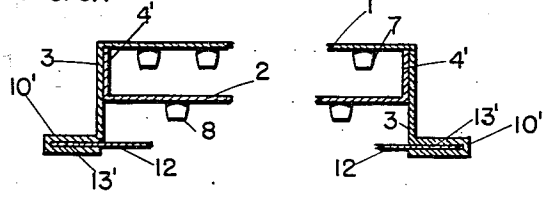


FIG. 3

FIG. 3A



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VENTILATOR RAIN BAFFLE FOR ROOF EAVES

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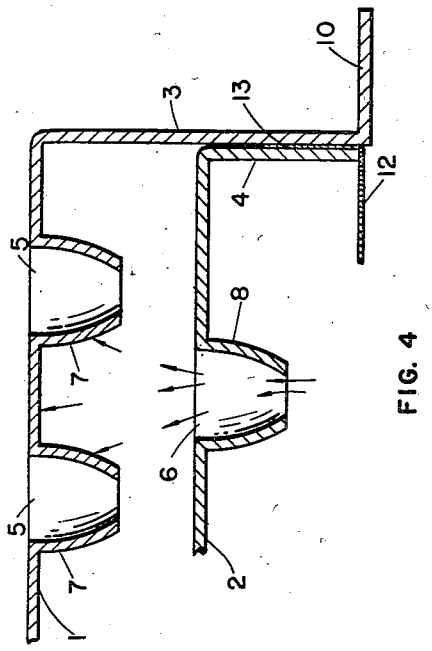


FIG. 4

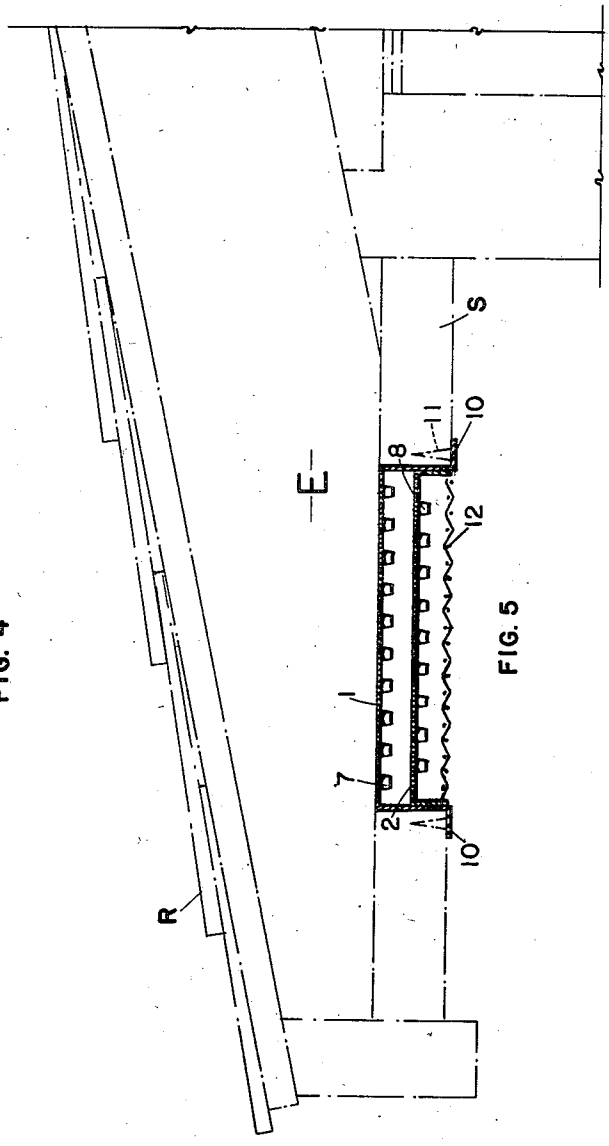


FIG. 5

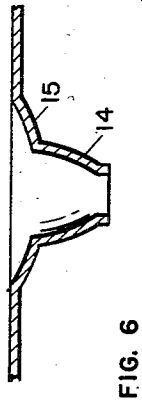


FIG. 6

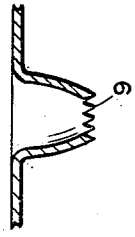


FIG. 7

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VENTILATOR RAIN BAFFLE FOR ROOF EAVES

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4 Claims. (Cl. 98—37)

This invention relates to a rain water baffle for roof eave ventilators.

Prior eave ventilators of which I am aware have hitherto consisted of longitudinal rectangular openings left in the soffit members of conventional roof overhanging eaves to permit the circulation of air through roof spaces. These openings are usually covered with screen or mesh fabric to exclude insects and vermin from overhead roof or attic structures.

A disadvantage resulting from the foregoing vent construction is that wind-driven rains which impinge on the underside of the eaves are impelled through these openings into overhead roof spaces and cause damage to plaster ceilings, the fastenings imbedded therein, electric wiring and devices, non-conductor pipe covering, and house furnishings. In tropical storm areas, householders are known to board up these openings thereby increasing the hazards developing from vacuums resulting when air circulation through the roof openings becomes obstructed during high velocity wind and rainstorms without venting the roof spaces to atmosphere.

An object of the invention is to provide a baffle for eave ventilators capable of excluding rain water driven by high velocity winds, without obstructing air circulation through roof spaces.

A further object is to provide ventilator construction of the character described which may be easy to install, is efficient in operation, capable of ready and economical manufacture, and is simple in assembly.

Other advantages of the invention will be discernible from the detailed description thereof to be hereinafter set forth.

The invention is embodied in a baffle structure exemplified by the accompanying drawings in which the views are as follows, like reference numerals designating identical parts throughout the several views:

Fig. 1, a plan of the baffle assembly;

Figs. 2 and 3, side and end elevations thereof;

Fig. 3A, a fractional sectional elevation through a modified form of the device;

Fig. 4, a fractional sectional elevation through the nozzle passages;

Fig. 5, a sectional elevation through the baffle installed in an eave soffit; and

Figs. 6 and 7, modifications of nozzle forms employed with the baffle.

The rain baffle (Figs. 1 and 3), comprises a pair of horizontally-disposed plates or sheets spaced apart vertically to form a top inner sheet 1 and a bottom outer or weather sheet 2.

The inner sheet 1 may be bent along the side marginal edges thereof to provide a pair of opposed side walls 3. These side walls are adapted to embrace therebetween a complementary pair of side walls or flanges 4, formed by bending the outer sheet 2 along its side marginal edges, the flanges 4 abutting the inner faces of the side walls 3 in clamped engagement therewith whereby the sheets 1 and 2 may be held in substantially fixed superposed relation. These sheets may be formed out of any suitable

material conventional in the roofing art, such as sheet metal, painted over or galvanized, or out of any of the common industrial plastics possessing characteristics of rigidity and workability to permit the employment thereof for the purpose of ductility hereinafter more specifically described.

The sheets are each perforated to provide therein a plurality of orifices therethrough as at 5 in the inner sheet 1, and at 6 in the outer sheet 2 (Fig. 1), the orifices in one sheet being offset in staggered relation to those of the other sheet. These perforations may be effected in any suitable manner known in the art, as by punching, the punched out material being drawn or extended from the orifices defining the same to form corresponding downwardly-directed nozzles as at 7 in the inner sheet 1, and at 8 in the outer sheet 2 (Fig. 4).

The nozzles, which finish preferably conical in form, may be terminated at their extremities in serrated or jagged-edged peripheries, as at 9, Fig. 7. These serrations may be formed as the natural effect of the punching operation to perforate the baffle sheets, the walls of the nozzles breaking about their peripheral or circumferential extremities at the bottom thereof as a result of drawing out the metal or material by the punching tool.

Roof eaves framing of a conventional type is illustrated in Fig. 5, there being an eave space E defined by a roof covering R thereover and a soffit member S therebelow. The baffle is preferably constructed to sizes permitting its installation in the usual ventilator openings provided along the soffit members S, these openings being heretofore merely covered with a screen sheeting for the exclusion of insects and vermin from the roof spaces overhead. The side walls 3 may include a pair of out-turned retaining flanges 10 formed integrally therewith along the bottom edges thereof (Fig. 3), and the baffle may be secured in place in the soffit member (Fig. 5), by suitable fastenings 11 attaching the baffle assembly thereto. An insect screen member 12 is arranged along the bottom of the baffle, the side marginal edge portions 13 of this screen being held between adjacent side walls 3 and 4. It will, of course, be understood that the material from which the baffle is constructed should permit the bending thereof for the formation of the side walls, these walls coming together in substantial clamping relation to hold the baffle assembly and screen thereunder in structural assembly within the soffit ventilator openings. Other means will readily occur to those skilled in the art for securing the baffle sheets 1 and 2 and the screen held thereunder, without departing from the spirit of the invention.

The invention will thus be seen to provide a baffle structure installable in roof eaves framing, capable of substantially preventing or minimizing the admission of wind-driven rain water through ventilator openings to overhead roof spaces. As best shown in Fig. 4, rain water impelled by the high velocity winds common in storm and hurricane localities, and entering the nozzles 8, indicated by arrows in the course of its movement, is deflected, by virtue of the staggered relation of nozzles 7 and 8, against wall surfaces of the nozzles 7 and the unperforated sheet surfaces therebetween, water then draining for example through orifices 6 and nozzles 8 without entering roof spaces overhead.

Again, when upwardly directed jets of rain water strike against the serrated, jagged-edged peripheral extremities 9, Fig. 7, these streams tend to fractionate into relatively smaller jets, impinging against non-perforate under surfaces of the upper sheet 1 and nozzle walls depending therefrom. The nozzles may take various shapes without departing from the spirit of my invention, a modification being illustrated in Fig. 6, in which the nozzle 14 is extended from a downwardly directed concavo-convex "blister" 15 formed in the upper sheet 1, for example.

Fig. 3A depicts a modified arrangement of the perforated sheets 1 and 2 wherein the wall flanges 4' of the bottom sheet are turned upwardly to space the sheets in superposed relation. In this form, the out-turned flanges 10' may be lapped under to provide a clincher groove receiving the marginal side portions 13' of the filamentary screen 12 whereby to permit a relatively compact assembly of the baffle unit.

The device is thus seen to be substantially free from maintenance demands and may be easily installed to the regular dimensions encountered in the architectural and building arts.

Air passages through the nozzle structure convey vacuum breaking air to insure the complete venting of roof spaces to atmosphere during tropical storms and hurricanes.

Of course, the invention is susceptible of various modifications and changes in design without departing from the scope thereof as hereinafter claimed.

Having thus described the invention and the mode of its practice, what I claim as new and desire to secure by Letters Patent, is:

I claim:

1. In a rain water baffle for an eave ventilator opening frame, the combination therewith of a pair of horizontally-disposed and vertically spaced superposed sheets each having a plurality of orifices formed therein, the orifices in one sheet being staggered in relation to those in the other sheet, a corresponding plurality of air nozzles formed integrally with said sheets and extending downwardly therefrom to define said orifices at the top of the nozzles, the bottom ends of said nozzles in the upper sheet terminating in spaced relation to the sheet therebelow and the downward extension of said nozzles being not less than the greatest diameter therethrough, and

means securing said sheets in vertically-spaced relation and in said ventilator opening frame.

2. The invention as defined in claim 1, and: a horizontal filamentary screen arranged below said lower sheet and spaced thereunder and means securing said screen in said frame.

3. The invention as defined in claim 1, and: said nozzles terminating at the bottom ends thereof in peripheral serrated edges, a filamentary screen associated with the baffle formed by said sheets in spaced relation thereto and therebelow, means securing said screen in assembly with said frame.

4. The invention as defined in claim 1, and: said sheets having side marginal wall flanges formed integrally therewith and the flanges of the upper sheet being adapted to embrace the flanges of the lower sheet, said nozzles terminating at their bottom ends in peripheral serrated edges, a filamentary screen associated with the baffle formed by said sheets in spaced relation thereto and therebelow, means securing said baffle to said opening frame.

References Cited in the file of this patent

UNITED STATES PATENTS

1,874,083	Clay	Aug. 30, 1932
2,408,665	Lovely	Oct. 1, 1946
2,529,462	Touchett	Nov. 7, 1950
2,676,554	Wenger	Apr. 27, 1954

FOREIGN PATENTS

498,203	Canada	Dec. 8, 1953
586,341	Great Britain	Mar. 14, 1947
599,418	Great Britain	Mar. 11, 1948