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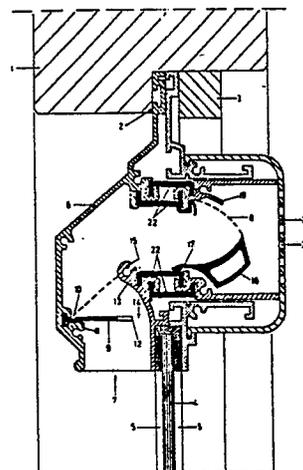
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54 **A ventilator.**

57 A ventilator, adapted to be mounted in a window or door, and comprising a housing provided with an air inlet window situated at the outer side of said housing, and, in particular, being shielded against rain, and with an air outflow window situated at the inner side of said housing. According to the invention the air inlet window comprises a downwardly directed passage (7) in the outer housing portion (6), in which passage a hinged vane (9) with a horizontal hinge axis (10) is arranged, said vane being adapted to move between a lower and substantially horizontal position and an upper inclined position, which positions are determined by stops (11, 15), the wall (13) of said passage co-operating with the edge (12) of said vane which is opposed to the hinge axis being curved in such a manner that said wall (13) is situated at a distance from said vane edge when the vane (9) is in its lower position, so as to maintain a

residual air passage (14), and when said vane (9) is moving towards the upper position, said passage (14) will be gradually reduced.



EP 0 327 186 A1

A ventilator.

The invention relates to a ventilator, adapted to be mounted in a window or door, and comprising a housing provided with an air inlet window situated at the outer side of said housing and, in particular, being shielded against rain, and with an air outflow window situated at the inner side of said housing, and, in particular, means can be provided in said housing near said outlet window for controlling and, in particular, closing the air passage.

Such ventilators are known in many embodiments.

There is a need for such ventilators which are adapted to pass, even at high wind intensities, a substantially constant airflow. It is an object of the invention to provide such a ventilator.

To that end the ventilator according to the invention is characterised in that the air inlet window comprises a downwardly directed passage in the outer housing portion, in which passage a hinged vane with a horizontal hinge axis is arranged, said vane being adapted to move between a lower and substantially horizontal position and an upper inclined position, which positions are determined by stops, the wall of said passage cooperating with the edge of said vane which is opposed to the hinge axis is curved in such a manner that said wall being situated at a distance from said vane edge when the vane is in its lower position, so as to maintain a residual air passage, and, when said vane is moving towards the upper position, said passage will be gradually reduced.

Under normal circumstances with little wind said vane is in its lower position, in which the air passage is sufficient for ventilation. When the wind increases, said vane is lifted, and the passage will be narrowed so that the air flow rate will not substantially change.

This vane is, preferably, provided with leak openings which, in the upper position, provide a given smallest airflow passage, so that fluttering of said vane will be reduced. Preferably said leak openings are formed by notches in the free edge of said vane.

A similar vane can also be provided at the outlet side, said vane then being adapted to be operated and locked from the exterior.

The invention will be elucidated below in more detail by reference to a drawing, showing a diagrammatic cross-section of a ventilator according to the invention.

The ventilator shown is intended to be fixed in a frame 1 having a rebate 2 by means of a glass lath 3, and bears, on the other side, on a glass pane 4 with an intermediate sealing rim 5. The invention is, however, not restricted to this embodi-

ment.

The ventilator according to the invention comprises a housing 6 having, at its outer side, an inlet window 7, and, at its inner side, an outlet window 8. The inlet window 7 is downwardly directed, so that raining in is prevented, and, moreover, a favourable flow in the case of wind gusts is obtained.

In the inlet portion of the housing 6 a vane 9 is provided, which is hingedly connected, at one side 10, with the housing 6, the lower position thereof being defined by an inner ledge 11 of the housing 6. In this lower position, in which the vane 9 is substantially horizontally directed, the free edge 12 of said vane is at some distance from a curved wall 13 of the housing 6, so that a flow passage 14 remains free.

In the upper position of the vane 9, which is, for instance, defined by a stop at the terminal edge 15 of the wall 13, said passage 14 is substantially closed. The curvature of the wall 13 deviates in such a manner from the path of the vane edge 12 that the passage 14, when said vane is moving, will gradually change.

The vane 9 is preferably provided with openings which, in the closed position, provide a given airflow passage, so as to counteract fluttering of said vane around the closed position. These openings can be made in the form of notches in the edge 12.

It has appeared that with such a vane, even in the case of wind gusts, a substantially uniform airflow through the ventilator can be obtained.

In order to close the air passage or to allow controlling the airflow therethrough, in the outlet window 8 a second hinged vane 16 with a horizontal hinge axis 17 is provided, which vane can be moved and fixed by means of an actuating handle not shown. The housing 6 possesses in front of the free edge 18 of said vane a curved wall portion 19, the curvature of which deviating from the path described by the edge 18 in such a manner that a gradual change of the airflow passage will be obtained.

In order to uniformly distribute the inflowing air, preferably a distribution hood 20 is provided over the outlet window 8, said hood being provided with holes or slots 21 by means of which a good mixing effect can be obtained.

In particular the second hinged vane 16 can be made of plastics, and form a unitary structure with the insulation bridges 22 between the front and the rear housing portions.

Claims

1. A ventilator, adapted to be mounted in a window or door, and comprising a housing provided with an air inlet window situated at the outer side of said housing, and, in particular, being shielded against rain, and with an air out-flow window situated at the inner side of said housing, **characterised** in that, the air inlet window comprises a downwardly directed passage (7) in the outer housing portion (6), in which passage a hinged vane (9) with a horizontal hinge axis (10) is arranged, said vane being adapted to move between a lower and substantially horizontal position and an upper inclined position, which positions are determined by stops (11, 15), the wall (13) of said passage co-operating with the edge (12) of said vane which is opposed to the hinge axis being curved in such a manner that said wall (13) is situated at a distance from said vane edge when the vane (9) is in its lower position, so as to maintain a residual air passage (14), and, when said vane (9) is moving towards the upper position, said passage (14) will be gradually reduced.

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2. The ventilator of claim 1, **characterised** in that said vane (9) is provided with leak openings providing, in the upper position, a given smaller airflow passage.

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3. The ventilator of claim 2, **characterised** in that the leak openings are formed by notches in the free edge (12) of said vane (9).

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4. The ventilator of claims 1..3, **characterised** in that, at the outlet side (8), a vane (16) is provided which can be operated and fixed from the outside.

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5. The ventilator of claim 4, **characterised** in that the free edge (18) of said vane (16) co-operates with a curved wall portion (19) of the housing.

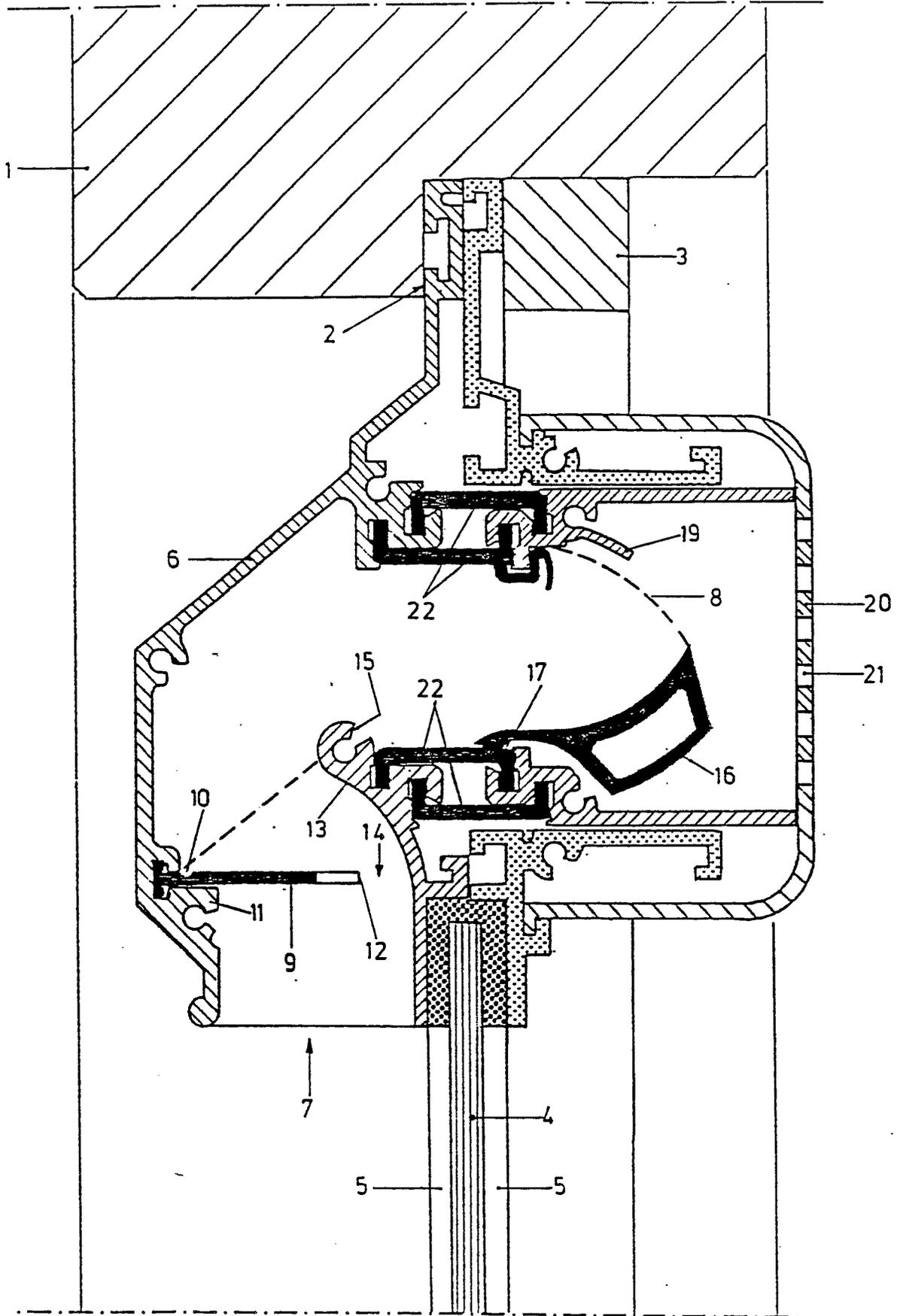
6. The ventilator of claim 4 or 5, **characterised** in that said vane (16) forms a unitary structure with a plastics insulating bridge (22).

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	FR-A-2 087 198 (ALDES ATELIERS LYONNAIS D'EMBOUITISSAGE SPECIAL) * Page 2, lines 7-33; figures 1-6 * ----	1	E 06 B 7/06 E 06 B 7/10
X	AU-A- 19 729 (J. CONNOLLY LTD)(1967) * Page 7, paragraphs 2-4; pages 8-10; figures 1-3 * ----	1	
A		5	
A	FR-A-2 517 354 (TITON HARDWARE LTD) * Page 12, lines 23-35; pages 13-17; figures 1-33 * -----	1,4,6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			E 06 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28-04-1989	Examiner VIJVERMAN W.C.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	