Feb. 25, 1969 R. W. SIMON 3,429,251

SELF-DRIVEN ROTARY VENTILATOR

Filed April 20, 1967 Sheet 1 of 2

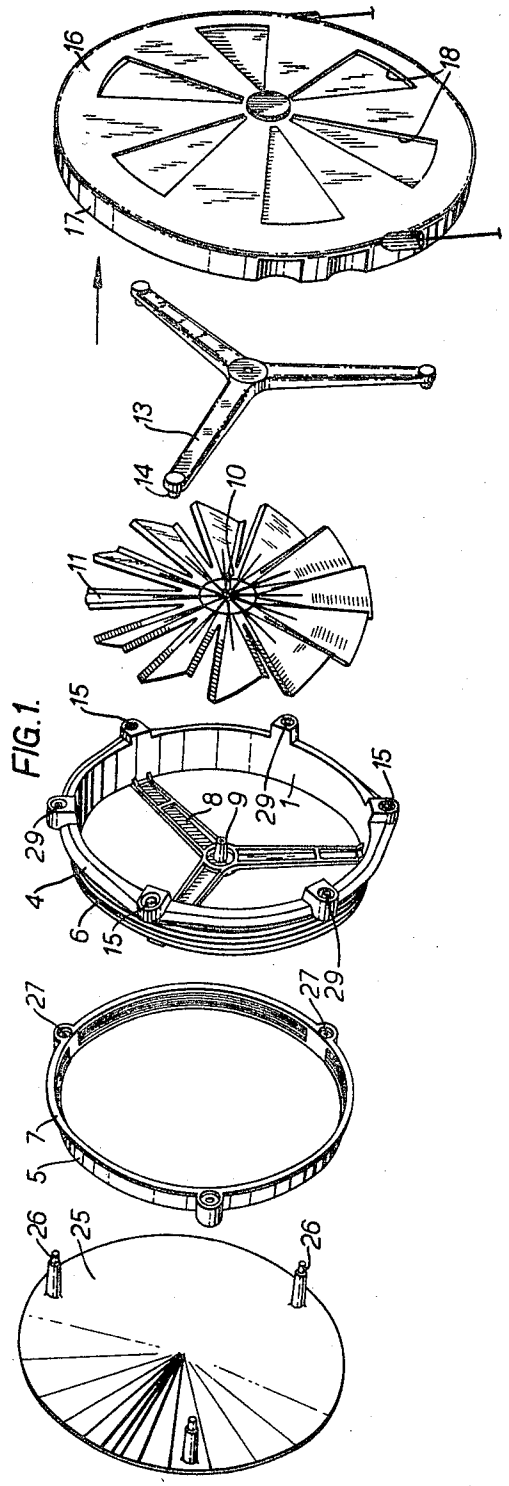


FIG. 1.

INVENTOR
REGINALD WILLIAM SIMON
by Norris & Bateman
ATTORNEYS

Feb. 25, 1969 R. W. SIMON 3,429,251

SELF-DRIVEN ROTARY VENTILATOR

Filed April 20, 1967 Sheet 2 of 2

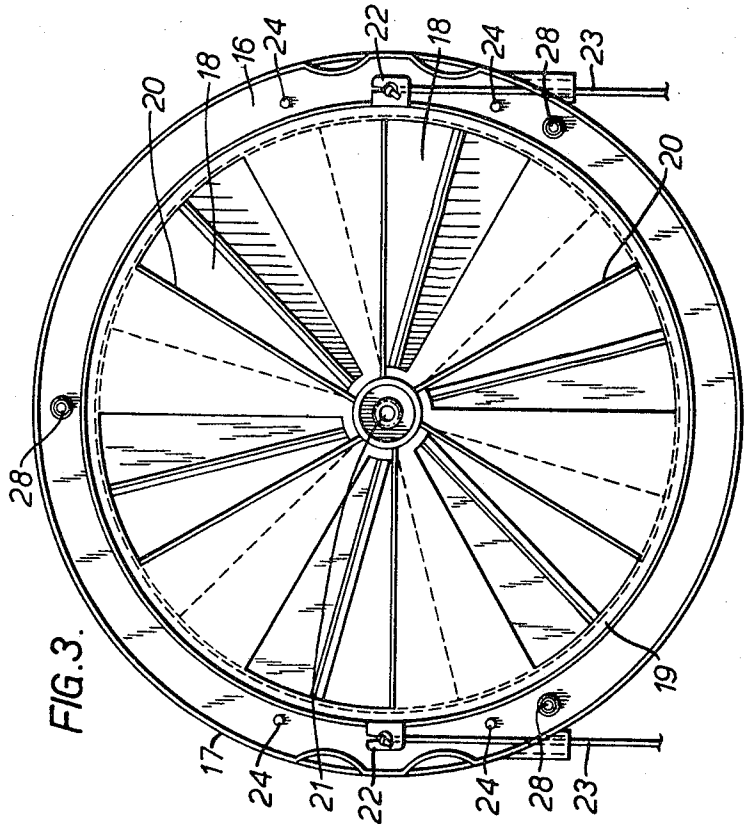


FIG. 3.

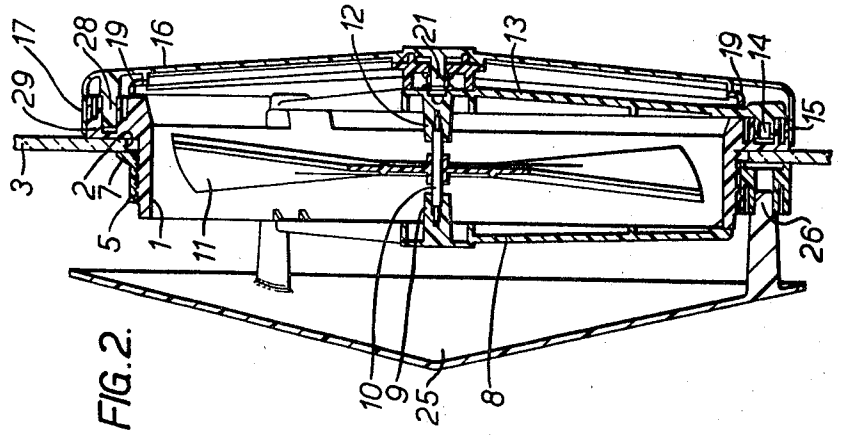


FIG. 2.

INVENTOR
REGINALD WILLIAM SIMON
by Norris & Bateman
ATTORNEYS

United States Patent Office

3,429,251

Patented Feb. 25, 1969

3,429,251

SELF-DRIVEN ROTARY VENTILATOR

Reginald W. Simon, 14 Wellington Road, St. John Wood, London NW. 8, England

Filed Apr. 20, 1967, Ser. No. 632,232

U.S. Cl. 98—94 10 Claims

Int. Cl. E06b 7/02

ABSTRACT OF THE DISCLOSURE

A ventilator of the self-driven rotary type comprises an annular casing mounted in an aperture in a window pane or the like by a cooperating radial flange and a threaded locking ring, a rotor is mounted in bearings in opposed spiders on the inner and outer ends of said casing, and a manually controlled air passage area varying unit is mounted on the inner end of said casing and a weather guard is mounted on the locking ring at the outer end of the casing.

This invention relates to ventilators of the self-rotary type for installation in window panes and has for its object the provision of such a ventilator which can be cleaned and parts thereof removed and replaced without necessarily removing the whole ventilator bodily from the window in which it is installed.

According to the invention there is provided a ventilator of the self-driven rotary type comprising an open-ended casing provided at one end with a first bearing member, means for detachably securing said casing within an aperture in a window pane, a second bearing member having means for detachably securing it to the other end of said casing, a vaned rotor having a shaft removably mounted in said bearings, a first apertured member detachably secured to said other end of the casing, a second apertured member rotatably mounted on said first member, and means secured to said second member for moving it angularly relative to said first member to vary the cross-section of the air passages formed by the portions of the apertures in one member which register with the apertures in the other member.

A preferred embodiment of the invention will be described with reference to the accompanying drawings in which:

FIGURE 1 is an exploded perspective view of a ventilator;

FIGURE 2 is a cross-sectional view of the ventilator of FIG. 1 after installation in a window-pane, and

FIGURE 3 is an elevation looking in the direction of the arrow in FIG. 1.

Referring to the drawings, a casing **1** is passed through a circular aperture **2** (FIG. 2) in a window pane **3** and is secured therein, with a flange **4** on its inner end engaging the inside surface of the window pane, by an internally threaded locking ring **5** screwed from outside onto an externally threaded portion **6** of the casing until a flange **7** on the inner end thereof engages the outer surface of the pane. Secured to the outer end of the casing **1** is a spider **8** the central portion of which carries a bearing **9** for the outer end of the shaft **10** of a vaned rotor **11** which is introduced axially into the casing from the inside. A second bearing **12** for the inner end of the shaft **10** is provided at the centre of a second spider **13** the radial arms of which are preferably provided at their outer ends with studs **14** which enter apertured lugs **15** on the flange **4** of the casing **1**, but may be secured to the flange by a bayonet joint or other suitable fitting (not shown). The inner end of the casing **1** is closed by a circular plate **16** apertured at **18** and formed with an inturned rim **17**, which is pushed over the flange **4** on the casing into engagement with the window pane **3**

and provided with studs **28** which enter apertured lugs **29** in the casing flange **4**. A disc **19** formed with apertures **20** is mounted on a hub **21** carried by the plate **16** and provided with lugs **22** to which are secured cords **23** passing through guides on the rim **17** for moving the disc angularly relative to the plate through a distance limited by stops **24** on the plate in the path of the lugs **22**, to vary the size of the passages formed in the plate and disc for the axial flow of air through the ventilator. The outer end of the ventilator may be provided with a circular weather guard **25** provided with studs **26** which are a force fit in apertured lugs **27** on the flange **7** of the locking ring **5**. The weather guard, if used, may, however, be secured to the ventilator in any other suitable manner, for instance by means of a bayonet joint.

Access to the interior of the ventilator is obtained by removing the end plate **16** and to remove the casing **1** from the window pane **3** it is merely necessary to unscrew the locking ring **5** which serves to effectively secure the casing in the aperture **2** in the window pane.

The ventilator described, the parts of which are preferably made of synthetic plastics material, is equally capable of installation in both panes of a double-glazed window. When the space between the panes of such a window is substantially increased to provide an added degree of sound insulation it is preferred to provide one or more spacing rings in order to securely clamp the casing **1** to both panes and provide a seal for the air travelling in both directions.

I claim:

1. A ventilator of the self-driven rotary type adapted to be directly mounted in an aperture in a window pane or the like comprising an annular casing adapted to pass through the window pane aperture and provided with a flange at its inner end for engaging the inner surface of the pane, said casing having an externally threaded section outside said pane, an internally threaded locking ring on said casing section in engagement with the outer surface of the pane, a first spider having arms secured to the outer end of said casing and a central hub forming a bearing, a second spider having arms detachably secured to the inner end of said casing and a central hub forming a bearing aligned axially with the bearing on said first spider, a vaned rotor having a shaft removably mounted at its ends in said bearings, an apertured fixed plate mounted on said casing and spaced from said second spider on the side remote from said rotor, said fixed plate having a central hub axially aligned with said bearings and a peripheral portion detachably and non-rotatably mounted on said hub, and means for rotating said rotatable member about its axis to vary the area of air passage formed by registration of the apertures in said fixed member and said rotatable member.

2. A ventilator according to claim **1**, wherein said fixed plate is detachably connected to said casing flange at the inner end of said casing.

3. A ventilator according to claim **1**, wherein a weather guard is mounted on said locking ring.

4. A ventilator according to claim **1**, wherein the arms of said second spider are provided at their outer ends with studs adapted to enter apertured lugs on said casing flange.

5. A ventilator according to claim **1**, wherein stops are provided on said fixed plate for limiting movement of said rotatable member relative to said fixed plate.

6. A ventilator according to claim **1**, wherein cooperating circular sets of apertures are provided in said rotatable member and said fixed plate.

7. A ventilator according to claim **3**, wherein said weather guard is provided with studs force fitted within apertured lugs on said locking ring.

8. A ventilator according to claim **1**, adapted for in-

sertion in both panes of a double-glazed window with the flange on the casing engaging the inner surface of the inner pane and the locking ring engaging the outer surface of the outer pane.

9. A ventilator according to claim **8**, provided with one or more spacing rings for adapting it to the space between the panes of the window.

10. A ventilator according to claim **1**, wherein the component parts are made of synthetic plastics material.

References Cited

UNITED STATES PATENTS

157,148	11/1874	Bracher	98—96 XR
397,122	2/1889	Goodell	98—96 XR
2,048,985	7/1936	Akester	98—96 XR
3,072,041	1/1963	Downing	98—94 XR
3,221,634	12/1965	Helle et al.	98—37 XR

FOREIGN PATENTS

236,076	10/1964	Austria.

ROBERT A. O'LEARY, *Primary Examiner.*

MANUEL A. ANTONAKAS, *Assistant Examiner.*

U.S. Cl. X.R.

98—96