No. 732,290. PATENTED JUNE 30, 1903.

T. A. FRAME.

VENTILATOR.

APPLICATION FILED FEB. 12, 1901. RENEWED MAY 8, 1903.

NO MODEL.

Fig. 2.

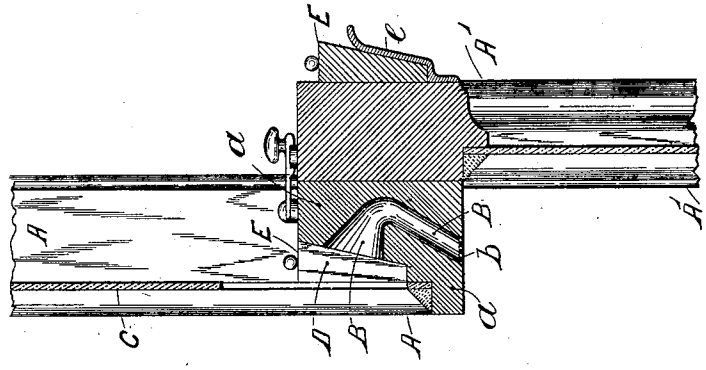
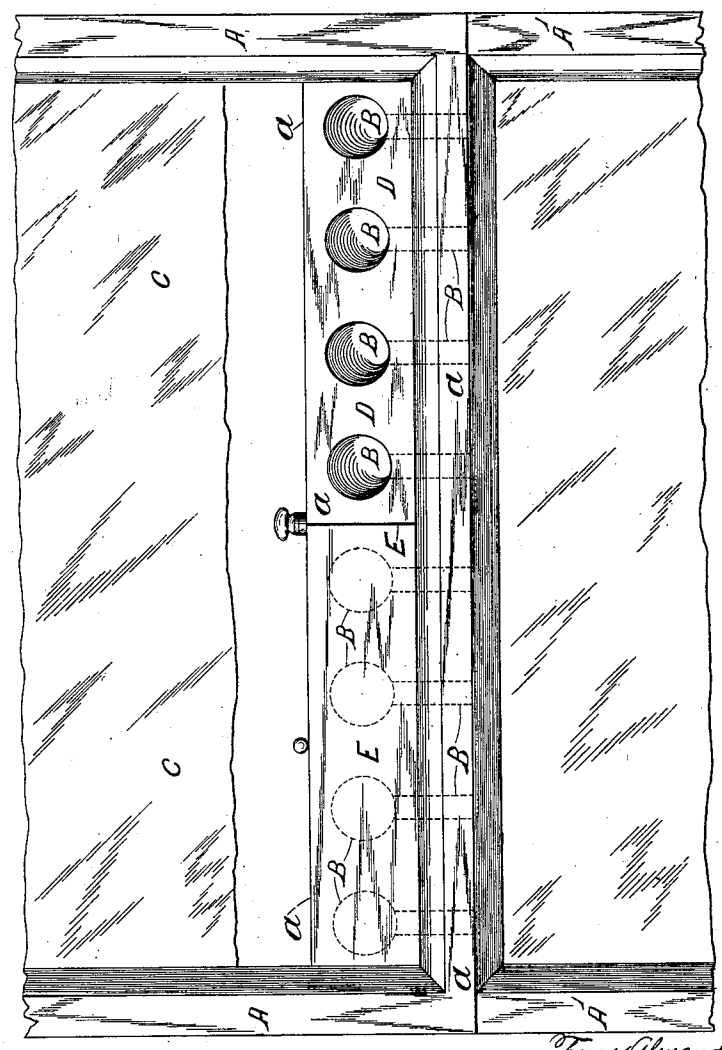


Fig. 1.



WITNESSES:
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No. 732,290. Patented June 30, 1903.

UNITED STATES PATENT OFFICE.

THOMAS ALEXANDER FRAME, OF CARLISLE, ENGLAND.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 732,290, dated June 30, 1903.

Application filed February 12, 1901. Renewed May 8, 1903. Serial No. 156,222. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ALEXANDER FRAME, a subject of the Queen of Great Britain and Ireland, residing at and whose post-office address is 5 Middleton Terrace, Carlisle, in the county of Cumberland, England, have invented certain new and useful Improvements in Ventilating Rooms and other Inclosed Spaces, (for which I have applied for a patent in Great Britain, under No. 12,935, dated July 18, 1900,) of which the following is a specification.

My invention relates to the ventilating of rooms and other inclosed spaces, and has for its object to obtain efficient ventilation in a simple manner and without risk of drafts.

The invention consists in constraining the air to follow a sinuous course in entering the compartment to be ventilated, this being effected by causing it to pass through an oblique passage or conduit or passages or conduits having the inlet or inlets outside the compartment and the outlet or outlets inside same and in proximity to a rigid surface, so that as the air flows from the passage or conduit or passages or conduits it impinges or "splashes" on the said surface, wherefrom it is reflected into the compartment and thoroughly and uniformly distributed.

As will be apparent, the invention is generally applicable; but by way of exemplifying how it may be carried into practice I will explain, with the aid of the accompanying drawings, its application to a window comprising two movable sashes and to a wall.

In the drawings, Figure 1 is a front elevation, and Fig. 2 a transverse section.

I will first refer to the application represented in Figs. 1 and 2. In this case in the meeting bar *a* of the upper sash A, I form a series of independent passages B B, which commence at the under side of the bar *a*, where they are open to the external air, and after inclining upwardly and away from the glass pane C curve or turn forwardly theretoward and finally terminate in or open into a hollow or groove D, formed in the upper part of the meeting bar *a* and next to the inside of the pane C or panes, if more than one is provided. Preferably, as shown, the passages B B gradually increase in area from the inlet or end at the bottom of the bar *a* to the outlet or end at the top of the bar *a*. Consequently the air which enters the passages B B is directed into the hollow or groove D, being slightly diffused, due to the gradually-increasing area of the passages, and impinges upon the pane C, or panes, from and by which it is reflected into the room and which, as will now be obvious, forms or form the rigid surface aforesaid. Thus it will be seen that effective ventilation always obtains without the necessity of opening the window, as is the most prevalent custom, and which at times is either impossible or inconvenient, owing to the weather being stormy or to dust or for fear of the evil effects of drafts.

In order to control the passages B B, a suitable cover or covers may be provided and adapted to slide within the hollow or groove D to open or close the passages or regulate their opening or be inserted and withdrawn therefrom for the same purposes. The former arrangement is the same as that of the well-known grid-ventilator, in which holes are made in the sliding component to coincide with or intervene between corresponding holes in the fixed component. Therefore I have not illustrated it, but I have illustrated the other form, showing two covers, which are designated E E, the right-hand one being out of use and the other being represented in the position closing the adjoining passages B B.

When one or both of the covers E E is or are removed, it or they is or are suitably disposed of until required. Conveniently, for instance, it or they can be supported in clips or brackets secured to the upper bar of the lower sash A′, as indicated at *e*, Fig. 2, where the out-of-use cover E is shown; also, gauze or the like may be fitted in the passages B B for preventing the ingress of dust, as shown at *b*, Fig. 2.

I am aware that it has been proposed to ventilate inclosed spaces by conveying the air from the exterior through a passage or passages such as set forth and to employ contrivances for deflecting the air; but in every instance the advantages of effectiveness, simplicity, and cheapness accruing to my invention have not obtained, and in consequence practical use has not resulted. Therefore I wish it understood that I do not claim the

method and means herein described, broadly, but that

What I do claim, and desire to secure by Letters Patent, is—

In ventilating rooms and other inclosed spaces the combination of a series of independent passages formed in the meeting bar of the upper sash of a window, commencing at the under side of the bar where they are open to the external air inclining upwardly and away from the glass pane or panes and then curving or turning forwardly theretoward, and a hollow or groove formed in the upper part of the meeting bar and next to the inside of the pane or panes, and into which the said passages open; the pane or panes forming a rigid surface on which air, flowing from the passages, impinges, and by and from which it is reflected into the compartment, substantially as set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

THOMAS ALEXANDER FRAME.

Witnesses:

ANDREW NELSON,

HENRY BROCKBANK.