March 4, 1924. 1,486,084

G. W. GEARHART

VENTILATOR

Filed March 9, 1922

Fig. 1.

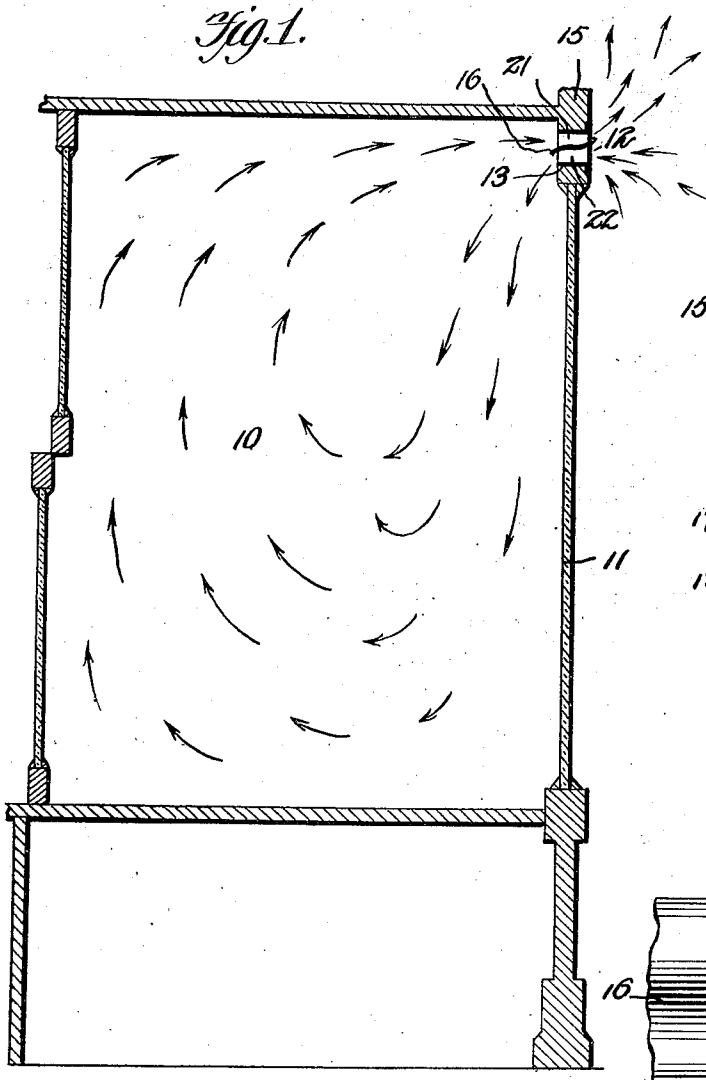


Fig. 2.

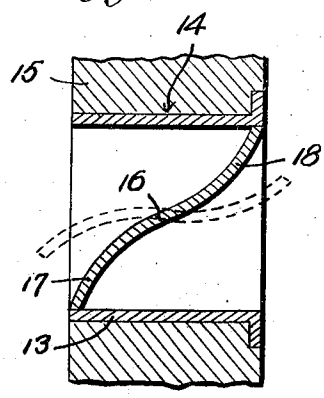


Fig. 3.

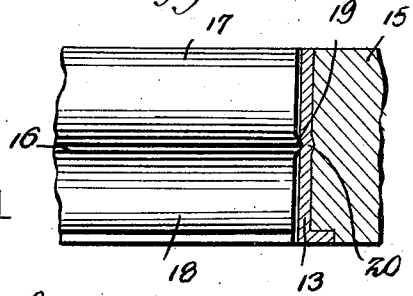
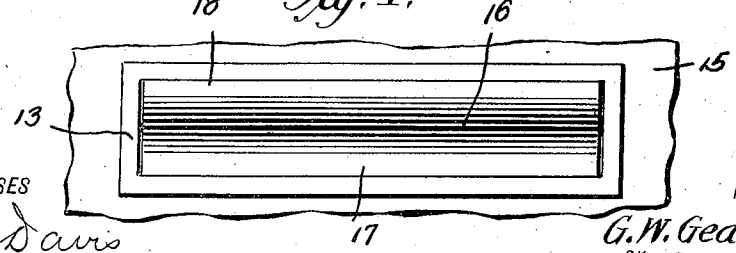


Fig. 4.



WITNESSES

A. H. Davis

Hugh H. Hall

INVENTOR

G. W. Gearhart,

BY Munn & Co

ATTORNEYS

Patented Mar. 4, 1924. 1,486,084

UNITED STATES PATENT OFFICE.

GEORGE W. GEARHART, OF ASHLAND, PENNSYLVANIA.

VENTILATOR.

Application filed March 9, 1922. Serial No. 542,415.

To all whom it may concern:

Be it known that I, GEORGE W. GEARHART, a citizen of the United States, and a resident of Ashland, in the county of Schuylkill and State of Pennsylvania, have invented a new and Improved Ventilator, of which the following is a full, clear, and exact description.

This invention has general relation to the class of ventilating devices, and has particular reference to an improved ventilator for show windows, show cases, rooms, or any other enclosure of this character.

In structures of this type where the air within the enclosure is separated by a glass or other transparent partition from outside air or atmosphere, and it is impractical to maintain the same at a similar temperature, a great source of annoyance occurs due to the collection of steam, frost, or other obscuring agencies on the partition.

As an object therefore the invention contemplates a device which constitutes means for effecting a circulation or exchange of the air on the exterior and interior of the enclosure whereby the incoming air will be directed along the inner surface of the partition to insulate the same from the general temperature within the enclosure and maintain as close as possible the same relative degree of temperature on opposite sides of the partition to thus preclude the collection and formation of steam or frost thereon.

As a further object the invention contemplates in a ventilating device of the character described and for the purpose specified, a shutter or deflecting element capable of adjustment for regulating the inlet and outlet openings and whereby to effect a complete closure of the device when ventilation is unnecessary or undesirable.

With the above recited and other objects in view, the invention resides in the novel construction set forth in the following specification, particularly pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that the right is reserved to embodiments other than those actually illustrated herein to the full extent indicated by the general meaning of the terms in which the claims are expressed.

In the drawings—

Figure 1 is a diagrammatic sectional view through a show window equipped with a ventilating device constructed in accordance with the invention.

Figure 2 is an enlarged fragmentary detail vertical sectional view through the ventilator illustrating the shutter respectively in its closed and opened positions, in full and broken lines.

Figure 3 is a fragmentary horizontal sectional view thereof.

Figure 4 is a fragmentary front elevation of the same.

Referring to the drawings by characters of reference, 10 designates an enclosure here illustrated as a show window provided with a glass or other transparent partition 11 which serves as a means for separating the air interiorly of the enclosure from the air exteriorly thereof.

The ventilator constituting the invention is designated generally at 12 and the same consists of a rectangular frame 13 mounted in the aperture 14 in the window frame 15. A shutter or deflector blade 16 consisting of reversely curved integral sections 17 and 18 is mounted within the frame 13 by means of the trunnions 19 upstruck from the opposite central portion of the shutter or blade and received by the depressed sockets 20 in the end walls of the frame 13. The shutter is of an appropriate width whereby its opposite longitudinal edges snugly engage and coact with the upper and lower walls of the frame respectively at the outer and inner side edges thereof when said shutter or deflector is in closed position in order to completely close the opening defined by the frame 13. When opened the shutter or deflector 16 divides the space defined by the frame into an upper outlet passage 21 and a lower inlet passage 22, with the outer longitudinal edges of the reversely curved sections 17 and 18 disposed in a plane beyond the plane of the inner and outer surfaces of the window frame.

In operation, assuming the device to be employed under normal conditions, the air or atmosphere within the enclosure 10 being of a higher temperature than the outside air induces a circulation as indicated by the arrows, namely, an intake and downward deflection of a supply of air from the exterior which immediately descends in a lower and downward path parallel and adjacent to the inner side of the partition 11. The warmer air within the enclosure es-

capes through the upper passage 21 and it is thus obvious that a constant circulation in the path indicated by the arrows is set up. The incoming cooler air serves to insulate the inner surface of the partition from the warmer air whereby to maintain approximately the same degree of temperature on the opposite sides of the partition 11, thus preventing the collection and formation of steam, frost or any other similar obscuring medium on the partition. Under reverse conditions where the exterior atmosphere is of a higher temperature than the atmosphere within the enclosure it is of course understood that the ventilator will be disposed adjacent the lower and outer corner of the enclosure with the curvature of the blade or shutter reversed. In the present or under normal conditions the inner section of the blade is curved downwardly and the outer section of the blade upwardly, whereby the incoming supply of air is initially deflected in a downward direction. The frictional engagement of the trunnions 19 in the sockets 20 is sufficient to retain the shutter or blade at the proper relative angular disposition to obtain the best results.

From the foregoing it will be seen that a simple and inexpensive means has been devised which will positively prevent the formation or accumulation of steam, frost or other obscuring mediums on the transparent panels or partitions of show windows or cases or other similar enclosures.

I claim:

1. The combination with an enclosure having a transparent panel, of means for creating a circulation and exchange of air between the interior and exterior thereof, comprising an apertured portion in the upper part of the outer wall of the enclosure and a deflector element pivotally mounted in said apertured portion for creating a constant circulation of air between the interior and exterior of the enclosure and directing the intaken supply of air in a downwardly extending path parallel and adjacent to the inner side of the panel whereby to insulate said panel from the general temperature within the enclosure for maintaining the temperature on opposite sides of said panel at approximately the same degree, the inner and outer ends of said element, when in operative position, disposed in a plane beyond the plane of the inner and outer surfaces of said outer wall.

2. A ventilator of the character described embodying a rectangular frame having a horizontal partition constructed of reversely curved sections defining superposed intake and outlet passages having restricted outlet ends and enlarged intake ends, the partition being centrally pivoted in the frame and the upper and lower ends thereof engaging the upper and lower walls of said frame when in closed position, and when in open position, disposed in a plane beyond the plane of the outer and inner surfaces respectively of said frame.

3. A ventilator of the character described comprising a rectangular frame and a shutter adjustably mounted therein for horizontal swinging movement, said shutter comprising a reversely curved blade adapted when adjusted to one position to close the space formed by said frame, and adapted in its other adjusted positions to form superposed passages provided with restricted outlet ends and enlarged inlet ends.

GEORGE W. GEARHART.