May 24, 1938. C. M. KEEVILL 2,118,204

WINDOW CONSTRUCTION

Filed Oct. 9, 1936

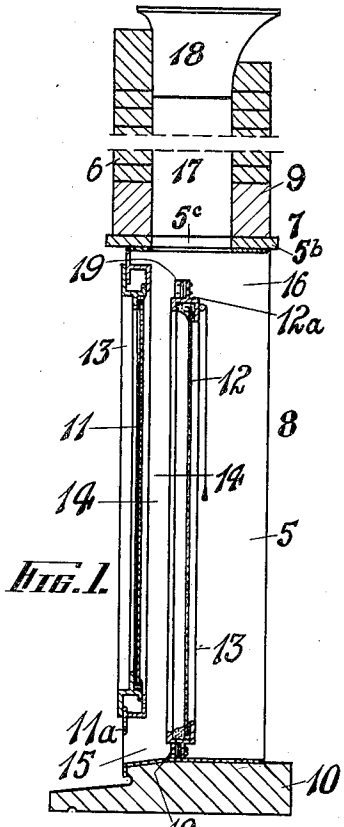


FIG. 1.

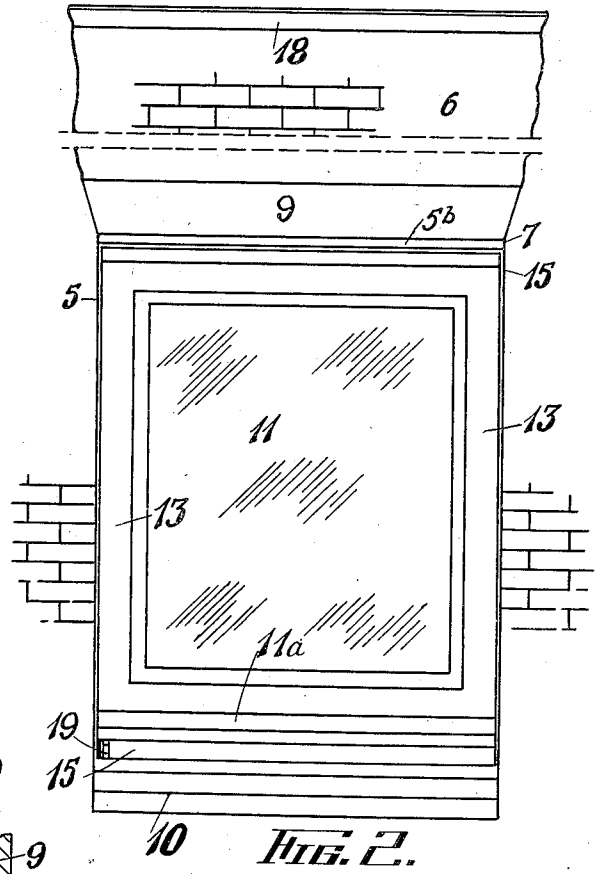


FIG. 2.

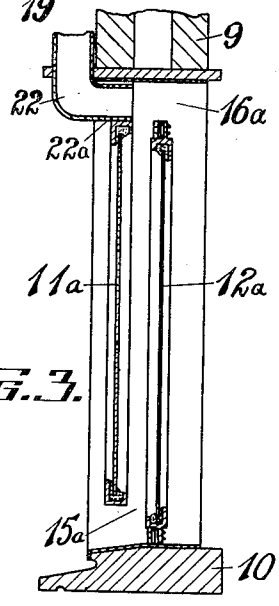


FIG. 3.

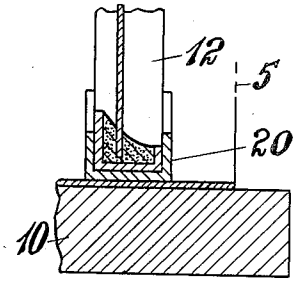


FIG. 4.

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WINDOW CONSTRUCTION

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In Australia October 9, 1935

4 Claims. (Cl. 98—88)

The present invention relates to windows and has been devised with the object of providing a construction which while capable of preventing the passage therethrough of rain and dust from the exterior to the interior of the room, area or enclosure covered by the window will operate to provide means for exhausting air from the latter, and thereby operate to set up ventilation of the air in the interior area mentioned. The window construction is also designed to render the room or enclosure substantially sound-proof.

According to this invention the objective above stated is achieved by constructing the window with external and internal glazed panels which are spaced from each other to provide a flat tubular space therebetween, the external panel having an air inlet aperture at the base thereof, while the internal panel has an exhaust aperture at or near the top thereof communicating with the room or enclosure to be ventilated, the relative positions of the apertures and panels being adapted to cause an up draught of air in the space between said panels to sweep past the exhaust aperture and thereby withdraw air from the area or enclosure covered by the window. The air withdrawn from the room is passed upwardly in the stream of air which may be discharged to exterior atmosphere either through the cavity in the wall of the enclosure or room or through a conduit in direct communication with the space between the glazed panels and the exhaust aperture above described.

The glazed panels are normally fixed in the operative position, but one or both of the panels may be displaceable or removable from the operative position for cleaning or other purposes.

The accompanying drawing depicts a practical embodiment of the improved window and therein—

Fig. 1 is a view in section of a window construction, and—

Fig. 2 is a front elevation thereof.

Fig. 3 is a view in section of a modified form of the window construction illustrated in Fig. 1.

Fig. 4 illustrates a modified method of mounting the adjustable panel.

In the window construction illustrated in Figs. 1 and 2, a hollow window frame **5** is mounted in the opening **7** of the wall **6** of the enclosure or room **8** between the lintel **9** and sill **10**, in accordance with the design of the window which is illustrated as being located in a cavity wall.

Disposed within the main frame **5** to practically cover the opening **7** in the wall are two spaced external and internal glazed panels **11** and **12** respectively which constitute panes of glass, translucent or transparent material mounted in sub-frames **13**. The sub-frames **13** may be constructed of wood or in metal of angle iron section as illustrated in Fig. 1.

The panels are uniformly spaced from each other as illustrated in Fig. 1 to form a flat tubular space **14** enclosed at the front and rear by said panels and at the sides by the adjacent walls of the main frame **5**.

The external panel **11** is preferably a fixture in the frame and is of predetermined length to leave a space between the lower peripheral edge **11***a* and the upper surface of the sill **10**, which space constitutes the air inlet aperture **15** of the window.

The inlet aperture **15** is in direct communication with the bottom of the space **14** between the panels **11** and **12**. The internal panel **12** is mounted on the sill **10** and does not completely fill the frame **5** whereby a space is provided between the top **12***a* of said panel and the upper member **5***b* of said frame, the space constituting the air exhaust aperture **16** as it communicates with the interior of the room or enclosure to be ventilated.

As illustrated in Fig. 1 the upper member **5***b* of the frame is formed with an opening **5***c* which registers with the cavity **17** of the wall **6** whereby the direct path for the air stream is provided from the inlet aperture **15** upwardly through the space **14** into said cavity **17**.

In one practical embodiment of the invention I have obtained efficient results in ventilating rooms composed of standard cavity walls in arranging the panels **11** and **12** relative to the cavity **17** with the transverse width of the space **14** therebetween approximately half the width of said cavity **17** which at the top is provided under the roof surface with a flared cowl **18**. The internal panel **12** is hinged as at **19** along the outer edge of the sub-frame **13** at one side thereof to permit the panel to be swung radially into the room to facilitate the cleaning of both panels **11** and **12**. The hinges **19** are of the standard spring loaded type to normally retain the panel **12** in the closed operative position.

It will be understood that the external panel **11** may also be hinged if required. In lieu of hinging the panel **12**, it may be removably mounted by positioning the same in a channelled runner **20** mounted on the upper surface of the sill **10** as illustrated in Fig. 4.

The operation of the window illustrated in Figs. 1 and 2 is as follows:—

The relative position of the inlet aperture 15, the tubular space 14 and the cavity 17 causes a constant updraft or stream of air to flow upwardly through said space. The stream of air during its passage into the cavity 17 sweeps past the exhaust aperture 16 and thereby exerts a force of suction to withdraw air from the room or enclosure. The air withdrawn through the exhaust aperture co-mingles with the upwardly moving stream of air and is discharged to atmosphere through the cowl 18.

Fig. 3 illustrates an alternative means of exhausting the air withdrawn from the room or enclosure consisting in a conduit 22 which is fitted into the frame of the window so that the lower end 22*a* of the conduit seats on the top of the external panel 11*a* directly opposite to the exhaust aperture 15*a*. The external panel 11*a* in this embodiment of the invention is of equivalent length to the internal panel 12*a* to permit the mounting of the conduit as previously described, the inlet aperture 15*a* being provided at the base of the external panel as illustrated. The operation of the window is similar to that described with reference to Figs. 1 and 2, with the exception that the air stream moving upwardly between the panels 11*a* and 12*a* flows past the exhaust aperture 16*a* into the conduit 22 which is preferably extended vertically to a height as far as is practicable.

I claim:—

1. An improved window construction consisting of an external glazed panel having an air inlet aperture along the base thereof, an internal glazed panel spaced from the former panel with an air exhaust aperture along the top thereof in communication with the room to be ventilated, and an upwardly projecting air discharge passage arranged relative to said panels and apertures to cause an up draught of air between said panels to flow past said exhaust aperture to withdraw air from the room.

2. An improved window construction according to claim 1, wherein the upwardly projecting air discharge passage is in direct communication with the space between said panels and said exhaust aperture respectively.

3. An improved window construction according to claim 1, wherein the air discharge passage comprises a cavity in the wall in which the window is located.

4. An improved window construction according to claim 1, wherein the air discharge passage comprises a conduit, the lower end of which communicates with the top of the space between said panels and said exhaust aperture respectively.

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