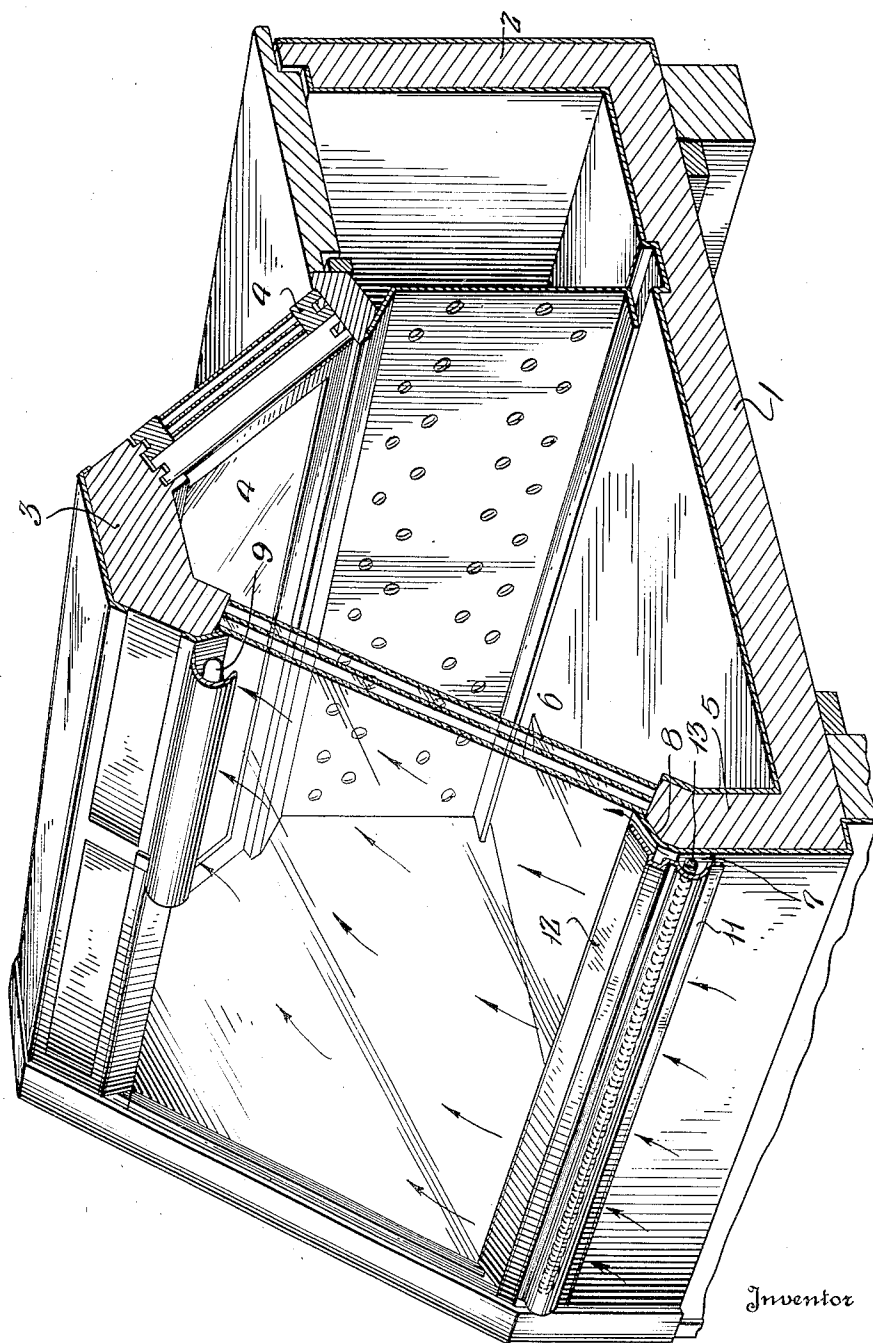


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MEANS FOR PREVENTING FROSTING OR CONDENSATION
OF MOISTURE ON GLASS OR OTHER SURFACES
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MEANS FOR PREVENTING FROSTING OR CONDENSATION OF MOISTURE ON GLASS OR
OTHER SURFACES

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This invention relates to means for preventing frosting or condensation of moisture on glass, or other surfaces, and particularly the glass surfaces of observation or show windows, show cases, especially those of the refrigerated type, display boxes, and the like.

The primary object of my invention is to provide means for automatically maintaining a proper temperature on the outer surface of a glass pane whereby the deposit of frost, or moisture, of condensation on such surface will be prevented.

A further object of my invention is to provide a simple, reliable and efficient means for maintaining a proper condition as to temperature, or humidity, or both, of the air coming in contact with the surface of a transparent walled chamber, or panel, whereby any temperature or other changes liable to cause frosting of the walls or panel or condensation of moisture thereon will be prevented.

A still further object of my invention is to provide means of substantially the character described which may be employed in connection with show cases, show windows of stores, or other receptacles having glass, or other transparent show panels, or observation windows exposed to varying temperatures or atmospheric changes, whereby the surface of the panel or windows will be kept free from frost or moisture at all times.

The drawing shows a sectional perspective view of a show case embodying my invention.

The reference numeral 1 designates the bottom wall of the case, 2 the rear wall thereof, and 3 the top frame of the case. Sliding doors 4 are mounted on the rear side of the case to permit of access to the interior of the case in placing goods in and moving goods from the case.

The case has a front wall 5 in the top edge of which the lower edges of the display panel formed of panes of glass 6 are suitably secured, while the upper edges of the panes of glass are suitably secured to the top frame structure 3. Usually show cases have a metal or other ornamental moulding 7 on the upper portion of the front wall which is bent in-

wardly at an upward angle toward the glass panel to form a water shedding ledge, at its upper edge, as at 8. Suitable lights 9 are provided upon a similar ledge overhanging the panel at the top of the case, to display the products in the case and these lights are covered with reflector shields 10, one edge of the reflectors being spaced from the glass.

My invention consists in forming a housing spaced from the upper portion of the front wall 7 and from the upper edge of the front wall and placing a heating element under said housing, whereby the heat from the element will cause a draft between the housing and front wall which will let the air flow upward between the housing and front wall, and become heated, and then expelled from under the housing against the outer surface of the glass pane over which surface it will travel, as indicated by the arrows. The heat from the lamp 9 induces an upward suction, or current of air which further induces an upward current of the warm air from the said housing.

The housing is designated by the reference numeral 11, and may be of any desired construction or material. The upper edge portion 12 of the housing is deflected toward the pane of glass, but terminates short of the glass, thus forming an exit port for the escape of the warm air and directing the air against the glass. Within the housing I provide a heating element 13, on any desired construction which is controlled by a suitable switch 14.

In one experiment with my invention I operated it on freezer cases in a room with 90 degrees temperature, and 84 humidity, with a zero temperature in the case. The front glass was so thickly covered with condensation that one could not see through it. The heating element 13 was turned on and in less than one hour the glass was clean and free from all condensation. Under ordinary conditions, with the temperature in the room at 80 degrees and humidity at 70 degrees it is possible, with my invention to clear the glass in fifteen minutes.

My improved device will only take the frost or moisture off the outside face of the front

glass, but this is an advantage where two or three panes of glass are used in the show case, because it does not warm up the air between the two front panes of glass. The heat travels up the outer face only of the outside glass.

I am aware that changes may be made without departing from the spirit of my invention, and the appended claims.

10 What I claim is:

1. The combination with a transparent panel disposed in an upright position and having its opposite faces respectively exposed to varying inside and outside atmospheric temperatures, of means arranged adjacent to the lower edge of the outer surface of said panel or heating air and directing a stream of the heated air against the outer face of the panel for travel upward over said face of the panel, and means arranged adjacent to the upper edge of the outer surface of the panel for exerting an upward suction pull on said air stream.

2. The combination with a transparent panel disposed in an upright position and having its opposite faces respectively exposed to varying inside and outside atmospheric temperatures, of means arranged adjacent to the lower edge of the outer surface of said panel for heating air and directing a stream of the heated air against the outer face of the panel for travel upward over said face of the panel, and means arranged adjacent to the upper edge of the outer surface of the panel for producing a heated current exerting an upward suction pull on said air stream.

3. The combination with a transparent panel disposed in an upright position and having its opposite faces respectively exposed to varying inside and outside atmospheric temperatures, of means arranged adjacent to the lower edge of the outer surface of said panel for heating air and directing a stream of the heated air against the outer face of the panel for travel upward over said face of the panel, a hood arranged adjacent to the upper edge of the panel and overhanging the same, and a heater in said hood for heating the air therein and producing a suction pull on said air stream.

4. The combination with a transparent panel, of supports at the top and bottom of the panel, the bottom support comprising a wall surface provided at its upper edge with a ledge sloping therefrom upwardly toward the panel, a housing carried by the bottom support and forming a heating chamber having a slot-like air inlet at its base and a slot-like air outlet at its top, the latter arranged to direct a stream of heated air therefrom against the outer face of the panel for travel upward over said face of the panel, a heater in said housing, and means arranged adjacent to the upper edge of the outer surface

of the panel for exerting an upward suction pull on said air stream.

5. The combination with a transparent panel, of supports at the top and bottom of the panel, the bottom support comprising a wall surface provided at its upper edge with a ledge sloping therefrom upwardly toward the panel, a housing carried by the bottom support and forming a heating chamber having a slot-like air inlet at its base and a slot-like air outlet at its top, the latter arranged to direct a stream of heated air therefrom against the outer face of the panel for travel upward over said face of the panel, a heater in said housing, a hood arranged adjacent to the upper edge of the panel and overhanging the same, and a heater in said hood for heating the air therein and producing a suction pull on said air stream.

6. The combination with a transparent panel, of supports at the top and bottom of the panel, the bottom support comprising a wall surface provided at its upper edge with a ledge sloping therefrom upwardly toward the panel, a housing carried by the bottom support and having a central portion forming a heating chamber, a depending portion spaced from the wall surface to form an air inlet slot, and an upwardly projecting portion overhanging the said ledge and spaced therefrom to provide an outlet slot for discharging a stream of heated air against the panel for upward travel over its outer surface, and means arranged adjacent to the upper edge of the outer surface of the panel for exerting an upward suction pull on said air stream.

7. The combination with a transparent panel disposed in an upright position and having its opposite faces respectively exposed to varying inside and outside atmospheric temperatures, of means arranged adjacent to the lower edge of the outer surface of said panel for directing a stream of warm air against the outer face of the panel for travel upward over said face of the panel, and means arranged adjacent to the upper edge of the outer surface of the panel for exerting an upward suction pull on said air stream.

8. The combination with a transparent panel disposed in an upright position and having its opposite faces respectively exposed to varying inside and outside atmospheric temperatures, of means arranged adjacent to the lower edge of the outer surface of said panel for directing a stream of warm air against the outer face of the panel for travel upward over said face of the panel, and means arranged adjacent to the upper edge of the outer surface of the panel for producing an air current exerting an upward suction pull on said air stream.

In testimony whereof I affix my signature.

FREDERICK J. STOLLSTEIMER.