Jan. 10, 1933. W. T. SHERER 1,893,525

ANTIFOGGING DEVICE

Filed Dec. 27, 1927

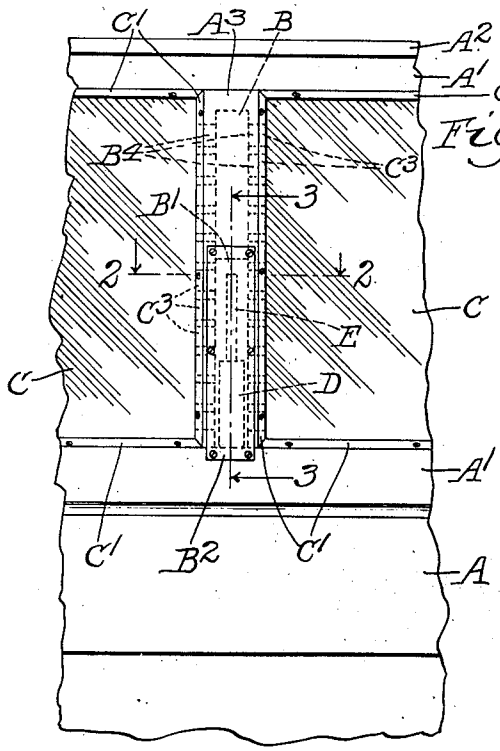


Fig. 1.

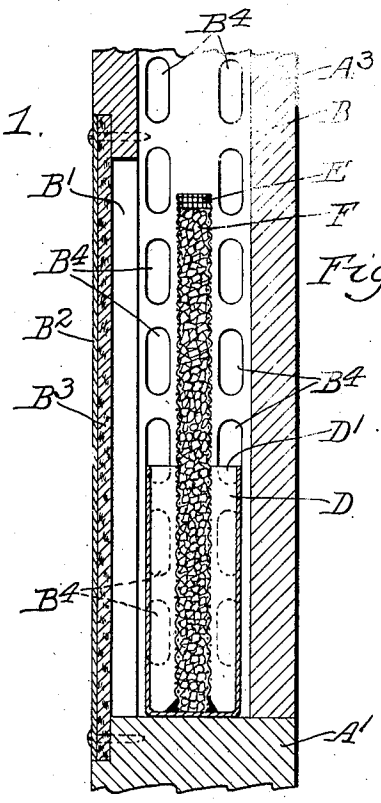


Fig. 3.

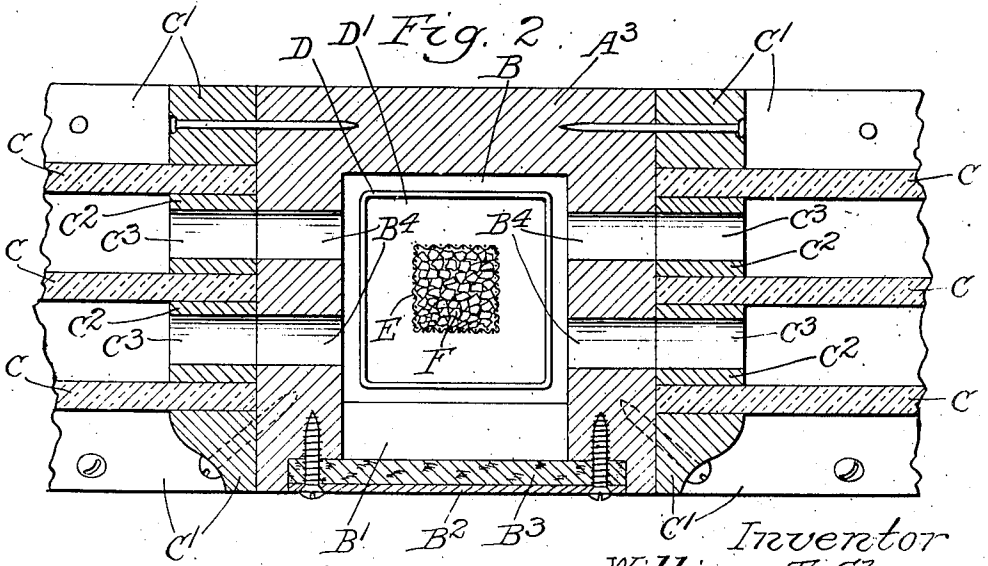


Fig. 2.

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UNITED STATES PATENT OFFICE

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ANTIFOGGING DEVICE

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This invention relates to a show case and particularly to a means for preventing fogging of the glass. The invention is illustrated here in connection with a closed show case having a transparent front which embodies three thicknesses of glass. The invention is, however, applicable to any place where two or more thicknesses of glass are used, and has for its general object to prevent fogging between the glasses,—that is, to prevent fogging of the inside surfaces of the glasses. Another object of the invention is to provide means for absorbing from the space between the glasses any moisture which may have found its way into this space. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawing, wherein—

Figure 1 is a fragmentary front elevation of the show case;

Figure 2 is a transverse cross section on an enlarged scale, taken on line 2—2 of Figure 1;

Figure 3 is a vertical cross section on an enlarged scale, slightly smaller than that of Figure 2, taken on line 3—3 of Figure 1;

Like parts are indicated by like characters throughout the drawing and specification.

A represents the front of the show case. It is provided generally with frame members A^1, A^1, a top A^2 and a further frame member A^3.

The member A^3 is provided with a central cavity or opening B. In one side of the cavity B is an opening B^1 which may be closed by a removable cover B^2 which has on its inner surface cork or other insulation B^3. In opposite sides of the member A^3 are formed openings B^4. These openings may be of any suitable shape and may be formed in any number desired. Their purpose is to provide a ready means for the passage of air from the space between the glasses into the cavity B.

C, C are glass pieces fitted in the show case. As here shown, three sheets of glass are positioned in each section. They are held in place as a whole by members C^1, C^1 and are spaced from each other by spacing members C^2, C^2. Formed in the spacing members C^2 are openings C^3 which communicate with the openings B^4 and are preferably of the same size and shape as the latter openings, although they need not be essentially so formed.

Removably positioned within the cavity B is a vessel D. It may be formed to conform in shape to the shape of the cavity B, although it need not be so formed. It is preferably provided with an open top D^1 and is water tight.

Positioned within it and extending upwardly is a porous vessel E. As here shown, this vessel takes somewhat the form of a cage and is formed of a netting. Any other form or type of container might be used which would permit air within the cavity B readily to contact the material contained within the vessel E. This material F, may be any hygroscopic agent and may be arranged in the vessel in any manner which will permit ready contact of the air with it.

Where in the specification and claims the expression "multiple glass walls" is used, I mean to define a structure in which each individual wall includes two or more thicknesses or panes of glass.

The use and operation of my invention are as follows:

When show cases are assembled, normally every effort is made to exclude moist air and moisture of any sort from the space between the glass members. In practice it has been found, however, that it is almost impossible to exclude all moisture and further, as time goes on, leakage will occur even where originally no moisture was admitted, subsequently moisture will come through and moisture in the air finally finds its way into the space between the glass.

However it may get there, once moisture finds its way into the space between the glasses, sooner or later, as a result of atmospheric changes at some time condensation will take place. This will result in greater or less fogging of the glass.

In the form of my invention here shown, such moisture laden air as finds its way for

any reason into the space between the glass will sooner or later come into contact with hygroscopic material and the air will thus be dried as the hygroscopic material takes up the moisture from it. This moisture which collects on the hygroscopic material may run down along it into the water tight container and this container can be removed at necessary intervals and emptied. In this way the atmospheric changes between the glass will be kept sufficiently free from moisture to prevent fogging.

Although I have shown an operative device, it will be obvious that many changes might be made in the size, shape and arrangement of parts without departing materially from the spirit of my invention, and I wish my showing therefore to be taken as in a large sense diagrammatic.

I claim:

1. In a show case including a frame work and a multiple glass wall inclosing within itself a dead air space, means for removing moisture from such dead air space including a removable container mounted in communication therewith and an air pervious container filled with hygroscopic material, such last mentioned container being mounted within the former and the two adapted to be removed.

2. In a show case including a frame work and a multiple glass wall inclosing within itself a dead air space, means for removing moisture from such dead air space including a removable water tight container and an air pervious container filled with hygroscopic material, such last mentioned container being mounted within the water tight container and the two being mounted in communication with such dead air space.

3. In a show case including a frame work and a multiple glass wall inclosing within itself a dead air space, means for removing moisture from such dead air space including a removable water tight container and an air pervious container filled with hygroscopic material, such last mentioned container being mounted within the water tight container and the two being mounted in an inclosed space in communication with such dead air space.

4. In a show case including a frame work and a glass inclosed dead air space, means for removing moisture from such dead air space including a removable water tight container and an air pervious container filled with hygroscopic material, such last mentioned container being mounted within the water tight container and the two being mounted in an inclosed space in communication with such dead air space and formed within one of the frame elements of such show case.

5. In a show case, a hollow frame member and a plurality of glass parts supported therefrom and cooperating to form a dead air space, such dead air space being in communication with the hollow frame member, and a means for removing moisture from the air within such dead air space, said means including a vessel removably mounted within such air space, and an air pervious vessel mounted within such first mentioned vessel and containing a hygroscopic material.

6. In a show case, a hollow frame member and a plurality of glass parts supported therefrom and cooperating to form a dead air space, such dead air space being in communication with the hollow frame member, and a means for removing moisture from the air within such dead air space, said means including a vessel removably mounted within such air space, and an air pervious vessel mounted within such first mentioned vessel and containing a hygroscopic material, in combination with means for permitting the removal and insertion of said containers.

7. In a show case, a hollow frame member and a plurality of glass parts supported therefrom and cooperating to form a dead air space, such dead air space being in communication with the hollow frame member, and a means for removing moisture from the air within such dead air space, said means including a water tight vessel removably mounted within such air space, and an air pervious vessel mounted within such water tight vessel and containing a hygroscopic material.

8. In a show case, a hollow frame member and a plurality of glass parts supported therefrom and cooperating to form a dead air space, such dead air space being in communication with the hollow frame member, and a means for removing moisture from the air within such dead air space, said means including a water tight vessel removably mounted within such air space, and an air pervious vessel mounted within such water tight vessel and containing a hygroscopic material, in combination with means for permitting the removal and insertion of said containers.

9. In a refrigerating case including a window frame, spaced panes mounted in said frame to provide spaces therebetween, a channel formed in the frame near an edge of the panes, and extending transversely on each side of a pane, a trough of dehydrating material disposed in the channel and normally sealed off from contact with the atmosphere, and means forming a communication between said trough and each of the spaces between said panes to permit circulation of air through said means for dehydrating the air entrapped between said panes.

10. In a refrigerating case, an observation window comprised of at least three spaced panes, means for mounting the panes in spaced relation in substantially air tight re-

lation to said case, means establishing communication between adjacent spaces to equalize the pressures therein, and means for drying the air flowing between the spaces.

11. In a refrigerating case having a plurality of panes with air spaces between the panes, means including a channel for equalizing the pressures between the spaces, a dehydrating element mounted in said channel to dehydrate the air passing therethrough.

12. In a refrigerating case including a window frame, spaced panes mounted in said frame, a recess formed in the frame near an edge of the panes and extending transversely of the panes and normally out of communication with outside air, the frame having slots extending substantially parallel to and between adjacent panes and comprising ports communicating with said recess to permit maintenance of substantially identical pressures in each of the spaces between said panes, regardless of temperature changes.

13. In a refrigerator show case, a frame, spaced glass panes in said frame, means sealing the spaced panes and frame against entrance of atmospheric air from either side of said frame, and a pressure stabilizing reservoir within the sealed frame and communicating with the space between the panes for maintaining the entrapped air between the panes normally substantially close to atmospheric pressure.

14. In a refrigerator show case, a sealed wall element comprising a frame and spaced panes sealed in the frame to provide an air compartment in said sealed wall, a reservoir sealed within said wall and communicating with said compartment for reducing changes of pressure due to changes of temperature in said compartment, and means for drying air entrapped within said sealed wall.

15. In a refrigerating case, a framework, a plurality of panes mounted in said framework and forming a plurality of spaces, means substantially sealed off from atmospheric pressure on either side of said spaces for equalizing the pressures in a plurality of said spaces as they each, respectively, tend to vary in response to thermal changes.

16. In a refrigerating case, an observation window comprised of at least three spaced panes, means for mounting the panes in spaced relation in substantially air tight relation to said case, and means substantially sealed off from atmospheric pressure on either side of said frame and establishing communication between adjacent spaces to equalize the pressures therein.

17. In a refrigerating show-case, a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber comprising a plurality of transparent panels, a plurality of substantially sealed air spaces interposed between said transparent panels, a dehydrating chamber located in the wall of said casing, having a port leading therefrom to each of said air spaces, and an entrance from one face of the casing wall, a body of dehydrating material located in said dehydrating chamber, and a lid detachably attached to the face of said casing to close the entrance to said dehydrating chamber, the ports leading from said dehydrating chamber to said respective air spaces serving to maintain a circulation of air to and fro from one of said air spaces through said dehydrating chamber to the other of said air spaces.

18. In a refrigerating show-case, a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber comprising a plurality of transparent panels, a plurality of substantially sealed air spaces interposed between said transparent panels, a dehydrating chamber located in the wall of said casing, having a plurality of ports leading therefrom to each of said air spaces and an entrance from one face of the casing wall, a body of dehydrating material located in said dehydrating chamber, and a lid detachably attached to the face of said casing to close the entrance to said dehydrating chamber, the ports leading from said dehydrating chamber to said respective air spaces serving to maintain a circulation of air to and fro from one of said air spaces through said dehydrating chamber to the other of said air spaces.

19. In a refrigerating show-case, a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber comprising a plurality of transparent panels and an interposed substantially sealed air space, a dehydrating chamber having a port leading therefrom to said substantially sealed air space, dehydrating means located in said dehydrating chamber, the port leading from said air space to said dehydrating chamber being of sufficient capacity to maintain a circulation of air to and fro, from said air space to said dehydrating chamber.

20. In a refrigerating show-case, a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber, comprising a plurality of transparent panels and an interposed substantially sealed air space, a dehydrating chamber having a door giving access thereto and a port leading thereto from said substantially sealed air space, dehydrating means located in said dehydrating chamber, the port leading from said air space to said dehydrating chamber being of sufficient capacity to maintain a circulation of air to and fro, from said air space to said dehydrating chamber.

21. As a means for removing moisture from air which is confined within a multiple pane glass wall, a hygroscopic material containing vessel removably mounted within a

confined space within said wall in communication with such confined air, in combination with a second vessel mounted about such first vessel adapted to receive and contain moisture, said former vessel air pervious throughout substantially its entire length.

22. As a means for removing moisture from air which is confined within a multiple pane glass wall, a water tight vessel and a hygroscopic material containing vessel, said latter vessel air pervious throughout substantially its entire length, the latter being mounted within the former and the two being mounted together in such confined space within said wall.

23. As a means for removing moisture from air which is confined within multiple pane glass walls, a water tight vessel and a hygroscopic material containing vessel, said latter vessel air pervious throughout substantially its entire length, the latter being mounted within the former and the two being mounted together in such confined space, within said walls.

24. In a refrigerating show-case, a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber comprising a plurality of transparent panels and a plurality of interposed substantially sealed air spaces, a dehydrating chamber located in the wall of said casing having a plurality of ports leading therefrom to said substantially sealed spaces, and an entrance from one face of the casing wall, a body of dehydrating material located in said dehydrating chamber, and a lid detachably attached to the face of said casing to close the entrance to said dehydrating chamber, the ports leading from said air spaces to said dehydrating chamber being respectively utilized to maintain a circulation of air to and fro, from said air spaces to said dehydrating chamber.

Signed at Chicago, county of Cook and State of Illinois, this 15th day of December 1927.

WILLIAM T. SHERER.