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R. J. COUGHLIN

REFRIGERATOR

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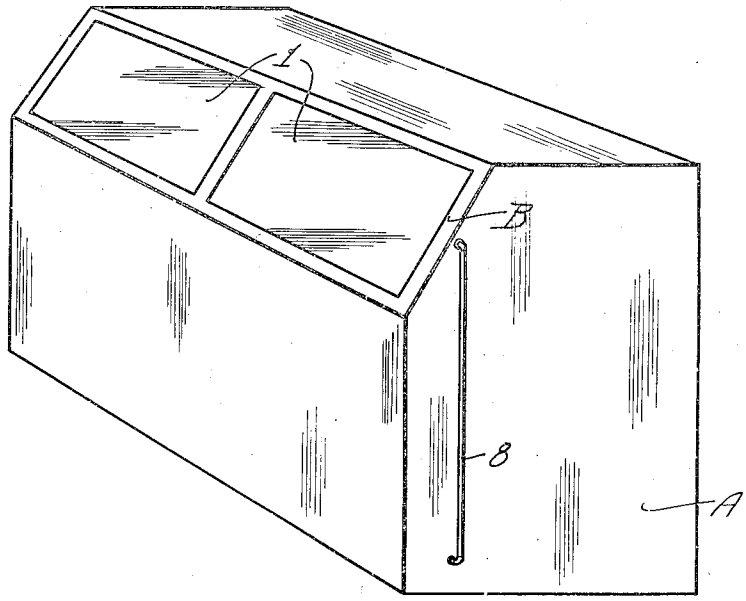


Fig. 1.

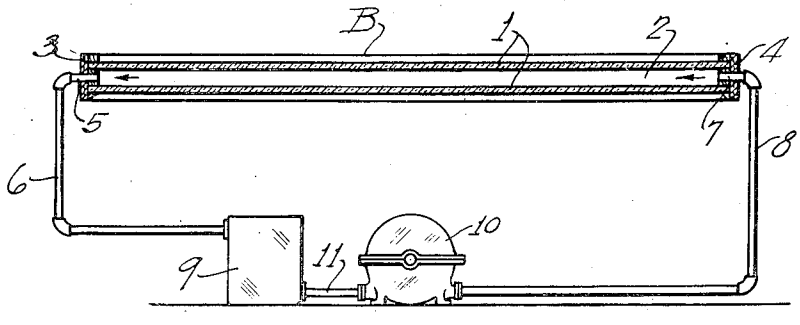


Fig. 2.

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REFRIGERATOR.

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This invention relates generally to refrigerators, and, more particularly, to a certain new and useful improvement in refrigerators of the so-called contents-displaying type.

Refrigerators of the type stated usually comprise in their construction two or more sheets or panes of glass disposed in spaced parallel relation, which not only provide an air-space for insulating purposes, but also form a window through which the contents of the refrigerator may be viewed. The air in the space between the glass-sheets normally usually contains moisture to such an extent that, as the temperature within the refrigerator is lowered, the moisture-laden air is cooled below the saturation point, when condensation of the contained moisture occurs, with the result that the product of condensation objectionably collects on the glass and impairs and obscures the transparency of the window.

My present invention has hence for its chief object the provision of means in connection with the refrigerator for obviating such condensation with the objectionable result thereof by effecting in a simple, inexpensive, and efficient manner the removal of sufficient of the moisture-content of the air within the refrigerator-window.

And with such object in view, my invention resides in the novel features of form, construction, arrangement, and combination, of parts hereinafter described and pointed out in the claims.

In the accompanying drawing,—

Figure 1 illustrates in perspective a refrigerator of so-called content-displaying type equipped with window-air treating apparatus of my invention; and

Figure 2 illustrates the refrigerator window in section, with the air-treating apparatus of my invention in side elevation.

Referring now more in detail and by reference characters to the drawing, which illustrates a preferred embodiment of and manner of practicing my invention, A designates a refrigerator of any standard so-called contents-displaying type having a window B constructed of sheets or panes of glass 1, 1, disposed in parallel relation with an air-space, as at 2, therebetween.

Normally the air within the space 2 is more or less moisture-laden, with the result that, as the temperature within the body of the refrigerator A is lowered, the air in the space 2 is cooled below the saturation point, when condensation occurs and vision through the window B is obscured by settling of the product of condensation upon the glass sheets 1. To obviate this objectionable result and maintain the transparency of the refrigerator-window B at a high state of efficiency, the opposite walls 3, 4 of the refrigerator B at the space 2 are provided with suitable openings, and disposed tightly in the opening of wall 3, is the inlet-end 5 of a pipe or conduit 6 and in the opening in wall 4 is the outlet or discharge-end 7 of a second pipe or conduit 8. The one pipe 6 communicates at its other or discharge-end with the inlet-opening of a moisture-removing or treating apparatus or receptacle 9, while the pipe 8 communicates at its inlet-end with the outlet or discharge end of a suitable air or suction-pump on exhauster 10, the inlet of the pump 10 having communication with the discharge-opening of the receptacle 9 by means of a connecting-pipe 11.

The receptacle or apparatus 9 may be of a type to chill moisture-laden air to a low temperature and effect removal of the contained moisture by condensation. Preferably, however, the apparatus or receptable 9 is of a construction to effect chemically the treatment of the air drawn or sucked therethrough and, to such end, is suitably provided with a replaceable or renewable chemical, such, for instance, as calcium chloride, having an affinity for moisture. The several pipes 6, 8, and 11, and the interposed apparatus or receptacle 9 and the pump 10 thus form a continuous system by which the moisture-laden air contained within the space 2 may be drawn therefrom and replaced as comparatively dry, the moisture content of the air being, as the air is drawn through the apparatus 9, extracted substantially wholly or reduced to such a point that the moisture contained in the replaced air is below the saturation point corresponding to the normal temperature of the air between the glass sheets 1 of the window B when the refrigerator is in service. Thus, in a relatively simple, but most efficient and expeditious manner, I accomplish the object stated.

Preferably my new air-treating apparatus is built directly in and forms an integral part of the refrigerator, for intermittent use, as may be required or necessary. It will be understood, however, that the pipe-ends 5 and 7 may be separated from, and from

time to time connected as conditions may require with, the refrigerator, the pipe-openings in the refrigerator-walls 3 and 4 being in the meantime closed, and that changes in the form, construction, arrangement, and combination of the several parts of the refrigerator and its window air-treating apparatus may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In combination with a refrigerator having a window comprising spaced transparent sections, the air in said space having normally a moisture-content, of means for effecting reduction of the normal moisture-content of the air in said space to obviate condensation thereof and the obscuring thereby of vision through said window on the temperature of the refrigerator being lowered, said means including a pump, a conduit system leading to and from the pump and having its inlet and discharge ends in communication with said space, and a moisture-removing apparatus interposed in said system.

2. In combination with a refrigerator having a window comprising spaced transparent sections, the air in said space having normally a moisture-content, of means for effecting mechanically and chemically a reduction of the normal moisture-content of the air in said space to obviate condensation thereof and the obscuring thereby of vision through said window on the temperature of the refrigerator being lowered, said means including a pump, a conduit system leading to and from the pump and having its inlet and discharge ends in communication with said space, and a receptacle containing an air-treating chemical interposed in the conduit system.

In testimony whereof, I have signed my name to this specification.

ROBERT J. COUGHLIN.