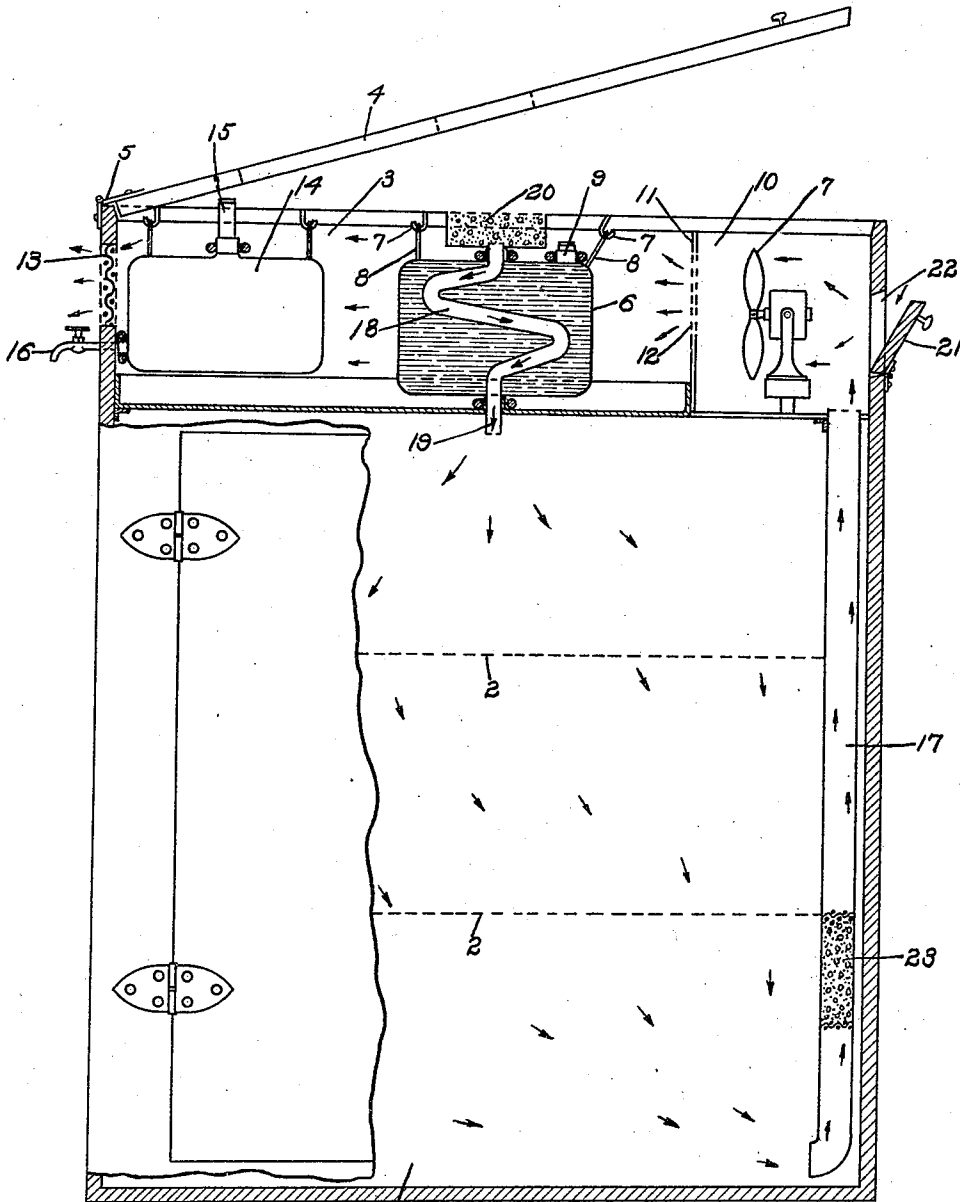


W. N. AMSBARY AND W. F. LARSON.
REFRIGERATOR.

APPLICATION FILED OCT. 12, 1920.

1,409,511.

Patented Mar. 14, 1922.



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REFRIGERATOR.

1,409,511.

Specification of Letters Patent.

Patented Mar. 14, 1922.

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To all whom it may concern:

Be it known that we, WILLIAM N. AMSBARY and WILLIAM F. LARSON, citizens of the United States, residing at New Castle, in the county of Garfield and State of Colorado, have invented certain new and useful Improvements in Refrigerators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to refrigerating apparatus and more particularly to such apparatus as employs evaporation of liquid for the production of the cooling effect.

One of the objects of our invention is to provide, in a refrigerator of the class described, improved means for maintaining fresh air in the food chamber.

A further object of the invention is to provide improved means for maintaining fresh and cool air in the food chamber.

A further object of the invention is to provide improved means for increasing evaporation on the cooling element under various atmospheric conditions.

A further object of the invention is to provide a simple, effective and economically constructed and operated refrigerator.

With these and other objects in view the invention comprises the improved construction, arrangement and combination of parts and devices as will appear from the following description and claims, and from the drawing submitted herewith in which the one figure is a view partly in elevation and partly in section of a refrigerator constructed in accordance with our invention.

The refrigerator is similar in general design to refrigerators which are in common use, being provided with a food chamber 1 with suitable shelves therein as 2, above which is a cooling chamber 3 having a lid 4 suitably attached to the box as by hinge 5.

Within the cooling chamber is positioned a receptacle 6 for liquid, the receptacle being made of material which will permit a slight seepage of the liquid so that the outside thereof shall be kept moist in order to provide liquid for constant evaporation. An ordinary desert bag may be used, being

supported therein by any suitable means such as hooks 7 and loops 8. The bag is provided with any suitable filling aperture as 9.

The refrigerator is also provided with a compartment 10 in which is placed a fan or other suitable means for causing circulation of air. A partition 11 is provided between the compartments 3 and 10, this partition having a portion thereof as 12 broken away or screened as desired in order to admit a current of air from compartment 10 to compartment 3.

The wall of compartment 3 opposite partition 11 is partially cut away and screened as at 13 to permit the passage therethrough of the current of air.

There may be placed in the compartment 3 a liquid cooling receptacle as 14 for drinking water, the same having the usual filling aperture 15 and a suitable faucet 16. The liquid container 14 is preferably made of the same material as the container 6 and these containers are preferably so positioned in the compartment 3 that the current air passing from opening 12 to opening 13 will come in contact with the maximum amount of surface of each of the containers.

An air passage 17 is provided leading from the lower portion of the food chamber upward to the chamber 10 and by operation of the fan in said chamber the stale or impure air will be drawn from the food chamber 1 through passage 17 and forced through chamber 3 across the surfaces of containers 6 and 14 causing evaporation thereon.

In order to supply fresh air to the food chamber we provide a coiled air passage 18 within the liquid container 6, the lower end of the coil projecting down into the food chamber as at 19 and the upper end of the coil connecting with the atmosphere through a filter of charcoal or other suitable substance as 20 so that when the air is drawn from the food chamber through the passage 17, fresh air will be drawn through the filter 20 and passed through the coil 18 and thence into the food chamber. The filter 20 purifies the air and as the air passes through the coil 18 it will be cooled to the temperature of the liquid in the container 6 and as thus purified and cooled will be passed to the food cham-

ber, this operation resulting in keeping a constant supply of cool, pure air in the food chamber.

A suitable draft regulator as door 21 fitting in opening 22 may be provided. It will be apparent that the opening of the door 21 will admit air from the outside to the chamber 10 and this will decrease the suction through passage 17.

10 In order that the evaporation on the surface of the containers 6 and 14 may be kept up to the desired degree in localities where the atmosphere is moist, a filter 23 of any suitable material but preferably calcium chloride may be provided within the passage 17 for the absorption of moisture from the air passing through passage 17 so that when the air reaches chamber 10 it will be largely freed from the moisture so that it will be effective for causing evaporation when forced across the surface of the containers 6 and 14. This filter 23 may be constructed in any suitable manner so that it may be removed from and replaced in the passage 17 easily in order that it may be removed from the passage and dried from time to time as required.

The cooling effect on the contained liquid, or the evaporation on the surface of the liquid containers is well known and this principle is of course in common use.

It will be apparent that many changes may be made in the details of this construction without departing from the spirit of our invention.

We claim:

1. In a refrigerator, a food chamber, a liquid container, means for keeping moisture on the surface of said container, a passage for air leading from the atmosphere through said container to said food chamber, means for drawing air from the food chamber and forcing it over the surface of said container

to cause evaporation thereon for cooling the container and means whereby to decrease the suction of air from the food chamber.

2. In a refrigerator, a food chamber, a cooling chamber arranged above the food chamber, a liquid container within the cooling chamber, a compartment arranged adjacent the cooling chamber, ventilating means between the compartment and the cooling chamber and the cooling chamber and the atmosphere, a passage for air leading from the atmosphere through the container in the cooling chamber to the food chamber, an outlet passage forming communication between the food chamber and the compartment and a blower arranged within the compartment to create a suction from the food chamber and forcing the air through the cooling chamber causing evaporation on the container.

3. In a refrigerator, a food chamber, a cooling chamber arranged above the food chamber, a liquid container within the cooling chamber, a compartment arranged adjacent the cooling chamber, ventilating means between the compartment and the cooling chamber and the cooling chamber and the atmosphere, a passage for air leading from the atmosphere through the container in the cooling chamber to the food chamber, an outlet passage forming communication between the food chamber and the compartment, a blower arranged within the compartment to create a suction from the food chamber and forcing the air through the cooling chamber causing evaporation on the container, and means whereby to decrease the suction of air from the food chamber to be forced through the cooling chamber.

In testimony whereof we affix our signatures.

WILLIAM N. AMSBARY.
WILLIAM F. LARSON.