

(No Model.)

J. G. LAMB.
EVAPORATIVE REFRIGERATOR.

No. 568,259.

Patented Sept. 22, 1896.

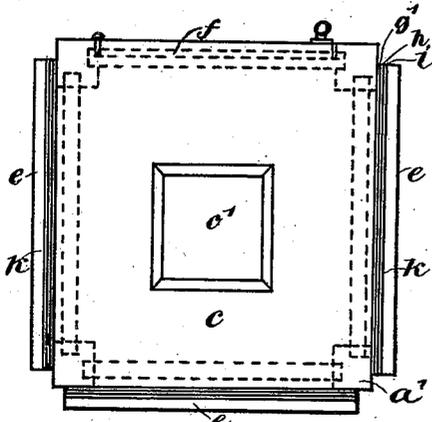


Fig. 2.

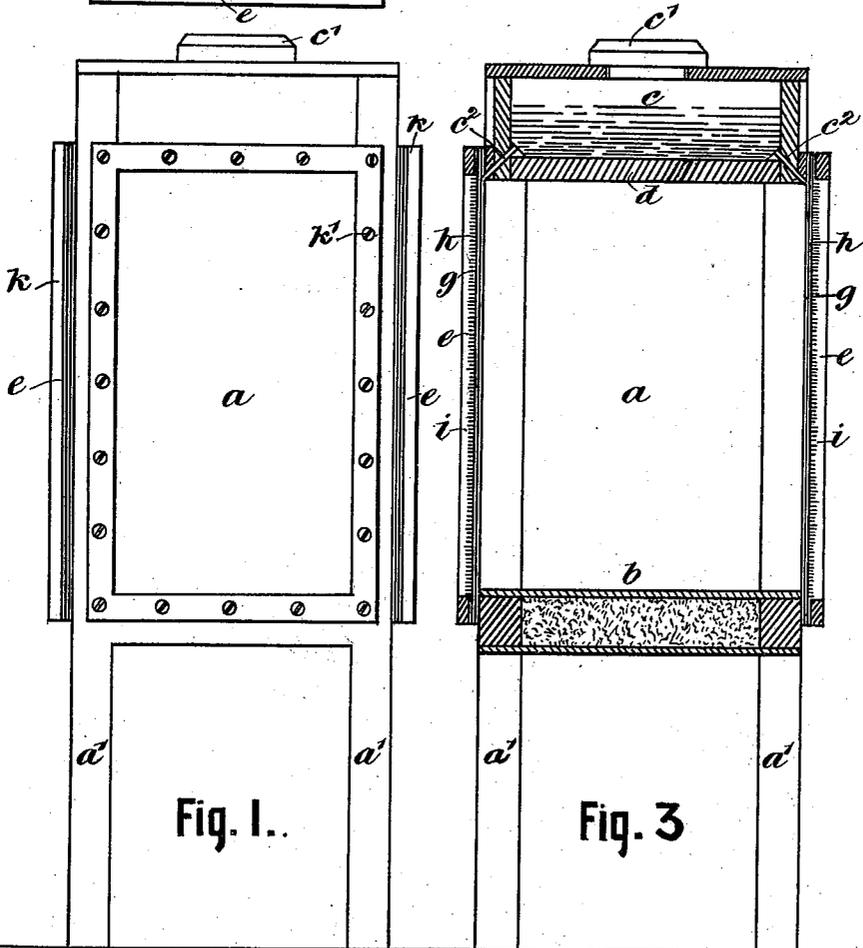


Fig. 1..

Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES GODDARD LAMB, OF WELLINGTON, NEW ZEALAND.

EVAPORATIVE REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 568,259, dated September 22, 1896.

Application filed December 27, 1895. Serial No. 573,529. (No model.)

To all whom it may concern:

Be it known that I, JAMES GODDARD LAMB, warehouseman, a British subject, and a resident of the city of Wellington, in the Colony of New Zealand, have invented certain new and useful Improvements in Cool Safes and Cool Storage, of which the following is a specification.

My invention relates to improvements in safes for cool storage, and has for its object to provide a cheap and simple apparatus to be kept at a comparatively low temperature by the well-known process of reduction of temperature by evaporation.

My invention consists of the novel apparatus hereinafter described and claimed.

Reference is had herein to the accompanying drawings, wherein the same parts are indicated by the same letters.

Figure 1 represents a side elevation of a safe constructed for household use and embodying my invention. Fig. 2 represents a top plan view of the safe shown in Fig. 1, and Fig. 3 represents a vertical section taken through the safe as shown in Fig. 1.

a represents the storage-chamber, having four corner-uprights *a'*, which are elongated to form legs or supports for the body of the safe. The chamber *a* is provided with a double bottom *b*, the space between the two sections of which is packed with a layer of non-conducting material.

Three of the sides *eee* of the storage-chamber are arranged to form cooling-surfaces, while the remaining side is provided with the door or slide *f*.

The sides *e* are each built up of, first, an inner plate *g*, of zinc, copper, or other good conducting material. Over this plate *g* a layer or sheet *h* of stout canvas is stretched, and over this sheet of canvas *h* I finally stretch a sheet or layer *i* of woven material, having a projecting fiber, such as Turkey toweling, with the pile-surface turned outward, as shown in Fig. 3. These various sheets or layers *g*, *h*, and *i* are held in place by means of frames *k*, secured to the uprights and cross-pieces of the safe by screws *k'*.

Above the storage-chamber *a* I provide a tank *c* for holding water. This tank has an opening in its top for filling, and is provided

with a cover *c'* for closing this opening. The bottom *d* of the tank also forms the upper wall of the storage-chamber. Outlet-tubes *c²* lead from the bottom of the tank to the sheets of canvas *eee*, and the water or other liquid used flowing to the canvas sheets keeps the said sheets constantly saturated. The size of the tubes *c²* should be great enough to allow sufficient liquid to flow through to keep the canvas sheets saturated, but should not be great enough to allow any more liquid to flow through than the said canvas sheets will absorb.

When in use, the zinc or copper sheets *g* will conduct the heat from the storage-chamber to the saturated canvas sheets, which will absorb this heat. The sheets of pile fabric which are stretched upon the outside of the canvas sheets absorb the moisture from the canvas sheet and throw this moisture off by evaporation, the outer pile-surface forming a very large evaporating area.

As long as the tank *c* contains water the canvas sheets and the outer pile-fabric sheets will be kept moist, and the process of evaporation will be going on. This constant evaporation robs the inner sheets *g* of zinc or copper of their heat, and thus the interior of the safe is cooled.

I do not limit myself to the precise details of construction of my apparatus, as many changes in the arrangement of the details could be made without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

In a safe for cool storage, the combination with a cool-storage chamber having a double bottom packed with non-conducting material, an opening at one side, and a door for closing the same; and the remaining sides provided with evaporation-walls, said walls each composed of an inner sheet of metal of high conductivity, a middle sheet of heavy canvas stretched upon said sheet of metal, and an outer sheet of woven fabric having a pile-surface, stretched upon said canvas sheet with its pile-surface outward, said sheets being secured along their edge to the frame of the safe, and the outer sheet exposed to the

air to form an evaporating-surface; of a liquid tank mounted upon the said cool-storage chamber and having inlet-tubes leading to said inner canvas sheets upon the sides of the storage-chamber, whereby the said canvas sheets are kept constantly moist, substantially as and for the purposes described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JAMES GODDARD LAMB.

Witnesses:

C. LEWIS FREETTO,
A. S. PATERSON.