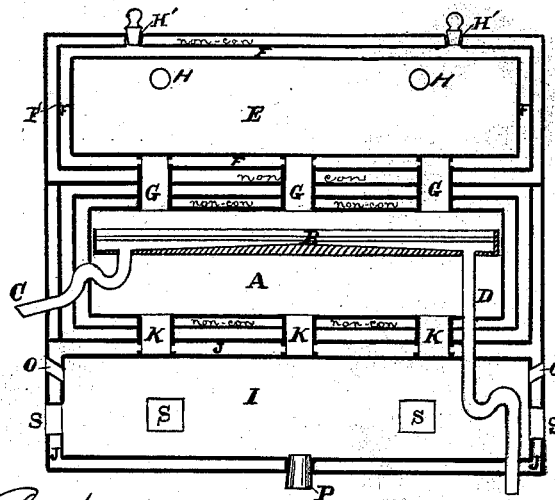
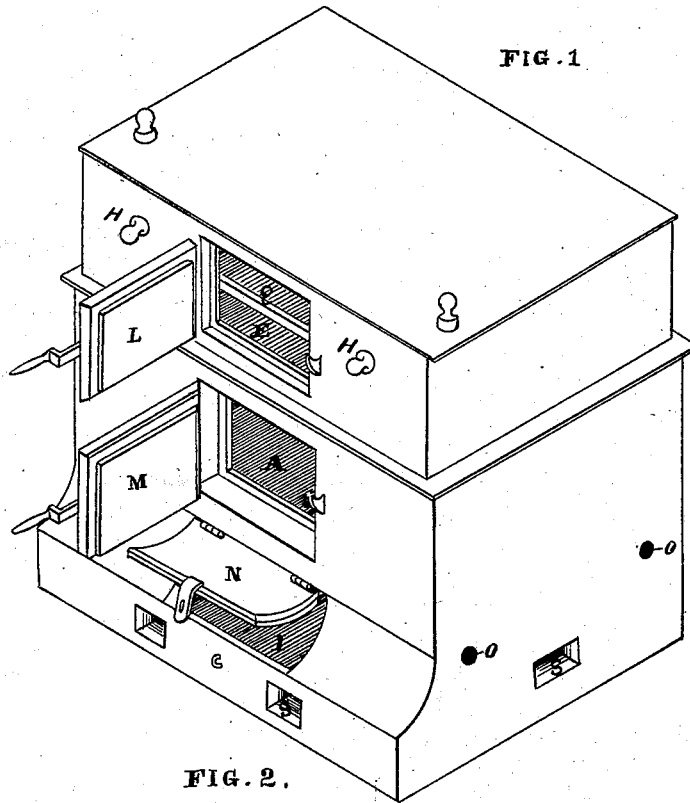


T. GUINEAU.
Refrigerator.

No. 219,154.

Patented Sept. 2, 1879



Witnesses

Frank A. Brooks
Geo. H. Strong.

Inventor

Thomas Guineau
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UNITED STATES PATENT OFFICE.

THOMAS GUINEAU, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **219,154**, dated September 2, 1879; application filed June 16, 1879.

To all whom it may concern:

Be it known that I, THOMAS GUINEAU, of the city and county of Sacramento, and State of California, have invented an Improved Hotel and Car Refrigerator; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in what are known as "refrigerators;" and it consists in a novel combination of chambers with surrounding air spaces or flues and connecting-pipes, by which a body of cool air from the ice-receptacle is caused to circulate around one or more containing-chambers, which are unconnected with the ice chamber or receptacle, so that a body of cool dry air is maintained in these chambers.

It also consists in the employment of ventilating devices, whereby this air may be changed at any time, and I thus produce the effect of a natural cool atmosphere.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of my apparatus. Fig. 2 is a vertical section.

My refrigerator may be employed either for hotels, cars, or other uses, and I have shown it in the present case as comprised in three sections. The central section, A, is intended as an ice-receiver, and it contains a supporting-tray, B, upon which the ice is placed. This tray may be of lead or other material, with a grating, upon which the ice is placed, and having a slope from the center toward each end, so as to allow the water formed by the dissolving of the ice to flow to the ends. From one end of the tray B a pipe, C, trapped as shown, passes to the outside and conveys away the water. A pipe, D, similarly trapped, passes from the opposite end down into the lower compartment, and when the latter contains water serves to cool it. The chamber A is surrounded with layers of charcoal, sawdust, or any suitable non-conducting substance, as shown. Above this ice-receiver is a chamber, E, which may have its inner wall of any metal, as lead, zinc, Russia iron, or of any good conductor, and it has an outer double wall, F', filled with a non-conductor, which surrounds the inner one at such a distance as to leave a space, F, entirely surrounding the chamber.

From the chamber A openings G extend upward, and are connected with this air-space, so that the cold air from the chamber A may enter and circulate through this space and around the chamber E.

The thin conducting-wall of the chamber allows the air within to be readily cooled, so that any articles placed therein will be exposed to a cold atmosphere without dampness. From this chamber openings H lead to the outer air, and are controlled by suitable plugs, valves, or dampers, so that whenever desired a circulation of air may take place, and that within the chamber (which is loaded with vapors from the contained substance) may be replaced by fresh air from the outside, while at the same time no opening into or connection with the ice-receiver is made. This enables me to reduce the consumption of ice to a minimum, and to renew the air at any time without unduly raising its temperature or withdrawing air from the ice-receptacle.

Below the chamber A is another chamber, I, which is surrounded by an air-space, J, outside of which is a double wall filled with any non-conducting substance. Passages K lead downward from the ice-chamber A, and have their sides perforated, so as to connect with the air-spaces J, and the circulation of the cold air from the ice-chamber through this space reduces the temperature of the chamber I by the rapid conducting away of its heat through the metal walls of the chamber. This chamber may be filled with water and employed for the preservation or transportation of live fish. The waste-pipe D, passing through this chamber, as before described, assists in keeping it cool. Round, oval, or square shaped lights S may be set into the sides of this chamber to illuminate it, as shown, and ventilating-openings O connect its opposite sides with the open air, so that the air within may be readily renewed. A cock or plug, P, serves to draw off the water.

By having both the passages or spaces F J communicating with the ice-chamber through a series of openings, G K, and the passage F communicating with the outer air through openings H H, the air is caused to circulate through said passages or spaces and the ice-chamber.

Doors L, M, and N open, respectively, into

these chambers E, A, and I, and through them articles may be introduced into or removed from the chambers. For hotel use, large joints of meat, fish, fowl, and other articles in bulk may be kept in the chamber A, while the upper chamber, E, serves to hold articles of daily consumption, being provided with racks or shelves Q. By this construction a current of cold air surrounds the chambers and reduces the temperature of that contained within them by the conducting power of the metallic sides, while no air from direct contact with the ice is allowed to enter the chamber.

The ventilating-pipes enable me to change the air at any time without disturbing the body of cold air from the ice; and this is very important, because it prevents the wastage of the ice and reduces the consumption of ice to the lowest point. The ice-chamber, being rarely opened, will preserve its contents a long time.

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

1. The ice-chamber A, with its tray or receiver B, and the trapped water-escape pipes C D, in combination with the chamber E, with its surrounding air space or passage F, communicating with the ice-chamber by openings

G, substantially as and for the purpose herein shown and described.

2. The refrigerator consisting of the chamber E, with its surrounding air-space and the exterior non-conducting walls, as shown, in combination with the ice-receptacle A, having the passages G connecting it with the air-space, said chamber E having openings H, whereby the contained air may be renewed without disturbing that contained in the ice-chamber or air-space, substantially as herein described.

3. The refrigerator consisting of the ice-chamber A, with the chambers E and I, situated above and below said chamber A, and having surrounding air-spaces, and the ventilating-openings H and O, as shown, in combination with the passages G and K, leading from the chamber A to these air-spaces, whereby the air in the chambers may be kept cool by an exterior circulation, or renewed without connection with this exterior atmosphere, substantially as herein described.

In witness whereof I have hereunto set my hand.

THOS. GUINEAU.

Witnesses:

GEO. H. STRONG,
S. H. NOURSE.