(No Model.)

W. C. TRUSSELL.

REFRIGERATOR.

No. 486,841. Patented Nov. 22, 1892.

FIG. 2.

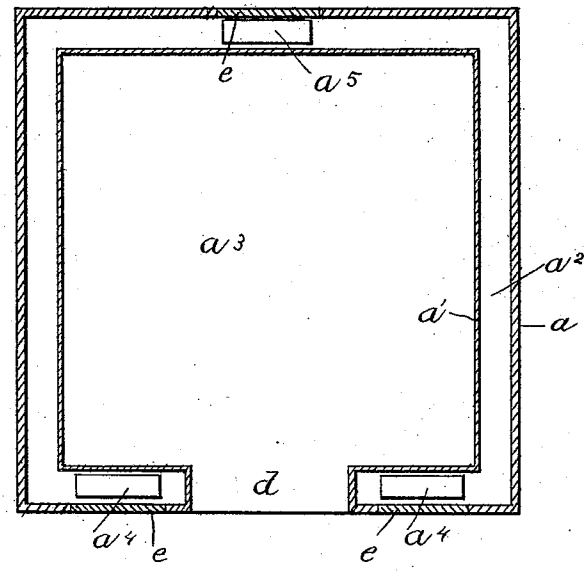
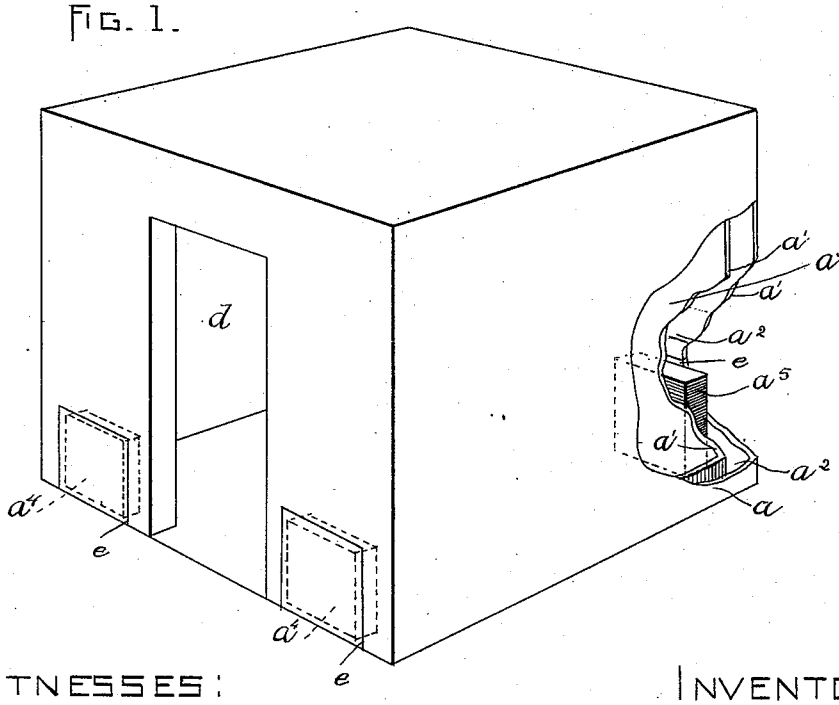


FIG. 1.



WITNESSES:
H. A. Hall.
A. D. Harrison.

INVENTOR:
W. C. Trussell
by Wright Brown Quinby & Atty's.

UNITED STATES PATENT OFFICE.

WILBURT C. TRUSSELL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE TRUSSELL AUTOMATIC FREEZER COMPANY, OF MAINE.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 486,841, dated November 22, 1892.

Application filed December 1, 1891. Serial No. 413,694. (No model.)

To all whom it may concern:

Be it known that I, WILBURT C. TRUSSELL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

This invention has for its object to provide a refrigerator or refrigerating structure comprising a storage-chamber and a surrounding air-space cooled by a chemical refrigerating composition.

The invention consists in the improved refrigerator, which I will now proceed to describe.

Of the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of a refrigerator embodying my invention, portions of the walls being broken away. Fig. 2 represents a horizontal section of the same.

The same letters of reference indicate the same parts in both the figures.

In carrying out my invention I provide a refrigerating structure or chamber having outer walls a and inner walls a', separated from the outer walls by an air-space a^2, which preferably entirely surrounds the storage-chamber a^3, which is bounded by the inner walls a'. In the air-space a^2 at one side of the structure I place one or more cans or receptacles a^4, containing a chemical refrigerating composition, and in the air-space at the opposite side I place one or more cans a^5, containing a similar refrigerating composition. Said composition is a highly-concentrated refrigerant and is adapted to be contained in small compass and to exercise a refrigerific effect upon the air in the space a^2 to such an extent as to reduce the temperature in the storage-chamber a^3 to any desired extent. I have succeeded in maintaining for several days a temperature below freezing in a chamber ten feet square and seven feet high by the use of three cans of the refrigerating material placed in a surrounding air-space not over four or five inches wide, the cans being of such size as to fill only a small portion of said air-space.

The refrigerating compound or composition which I have used with satisfactory results consists of muriate of ammonia, bicarbonate of soda, permanganate of potash, nitrate of potash and brine, in which is placed a suitable quantity of ice, the whole being placed in the cans a^4 a^5. I do not limit myself, however, to this particular composition, but may use any other suitable composition or mixture that will produce the desired effect.

I find that by placing cans containing a mixture such as that above described in a closed or sealed air-space surrounding a storage-chamber and dividing the cans into two groups or elements, so to speak—one located at one side of the storage-chamber and the other at the opposite side—I provide a very effective arrangement for reducing the temperature throughout the entire air-space to the desired point and effecting a similar reduction in the storage-chamber.

It will be seen that this improved refrigerator is extremely compact and simple, requiring no external apparatus, as in other chemical refrigerators, and no internal space necessarily devoted to the storage of ice, as in ordinary ice-refrigerators, the entire refrigerific effect being produced within the air-space surrounding the storage-chamber, and said air-space may be as narrow as may be desired for the sake of compactness.

I do not limit myself to the described arrangement of the cans a^4 a^5, but prefer that shown, because I have found that said arrangement is very effective and satisfactory. This principle may be applied to portable refrigerators, stationary refrigerators, cars, and, in fact, to any structures used for refrigerating purposes.

d represents the door through which access is had to the storage-chamber, and e represents doors in the outer walls a to afford access to the space between the inner and outer walls for the insertion and removal of the cans a^4.

There being no connection between the storage-chamber and the surrounding refrigerating air-space, no opportunity is afforded for any deleterious action upon the contents

of the storage-chamber by gases arising from the contents of the cans in the sealed air-space.

I claim—

1. A refrigerator or refrigerating structure having a storage-chamber, a closed air-space surrounding said chamber and having no connection therewith, and one or more portable refrigerating-cans located in said air-space, said cans being entirely independent or free from external connections, substantially as described

2. A refrigerator or refrigerating structure having a storage-chamber, a closed air-space surrounding said chamber and having no connection therewith, and groups of portable refrigerating-cans located in said air-space at opposite sides of the storage-chamber, said cans having no connection with each other nor with the exterior of the structure, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 24th day of November, A. D. 1891.

WILBURT C. TRUSSELL.

Witnesses:
C. F. BROWN,
A. D. HARRISON.