2 Sheets--Sheet 1.

E. B. SMITH.

Refrigerator.

No. 169,306. Patented Oct. 26, 1875.

Fig. 2

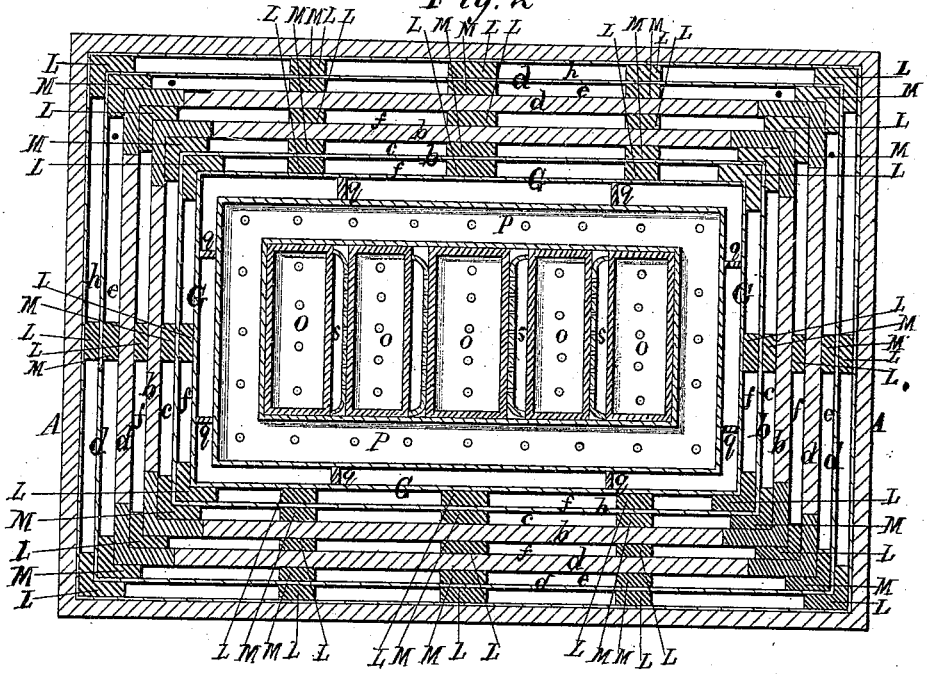
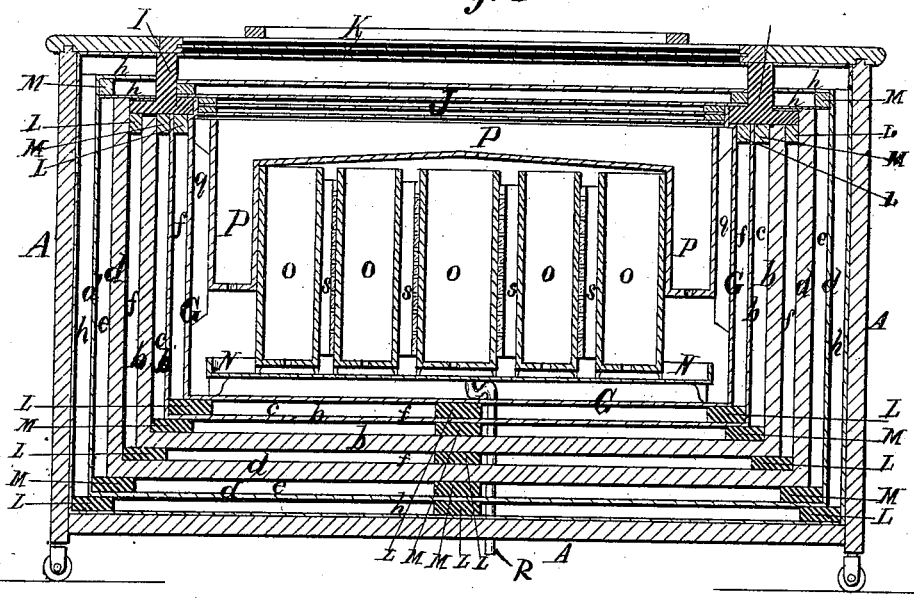


Fig. 1.



WITNESSES

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2 Sheets--Sheet 2.

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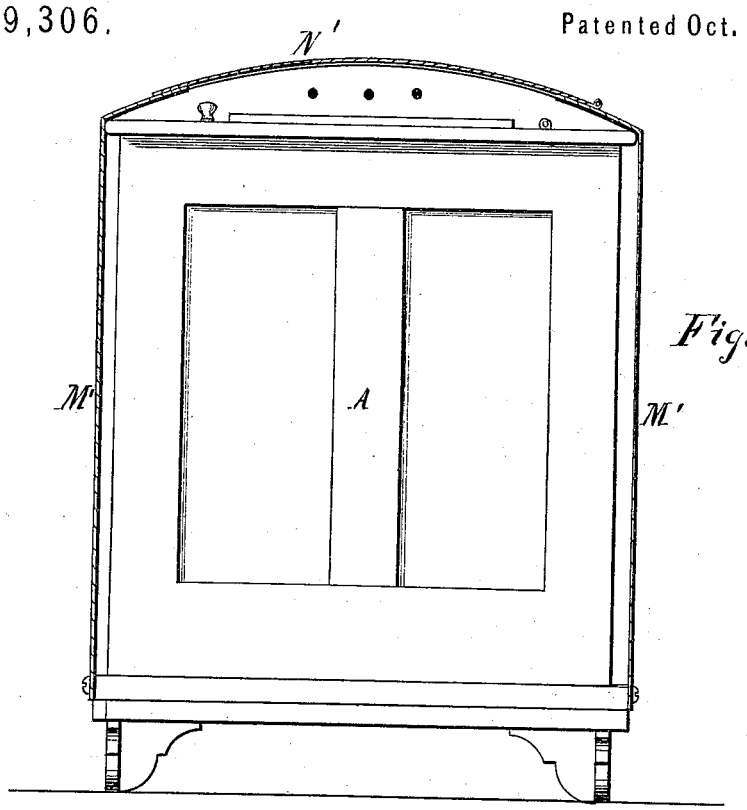

Fig. 4

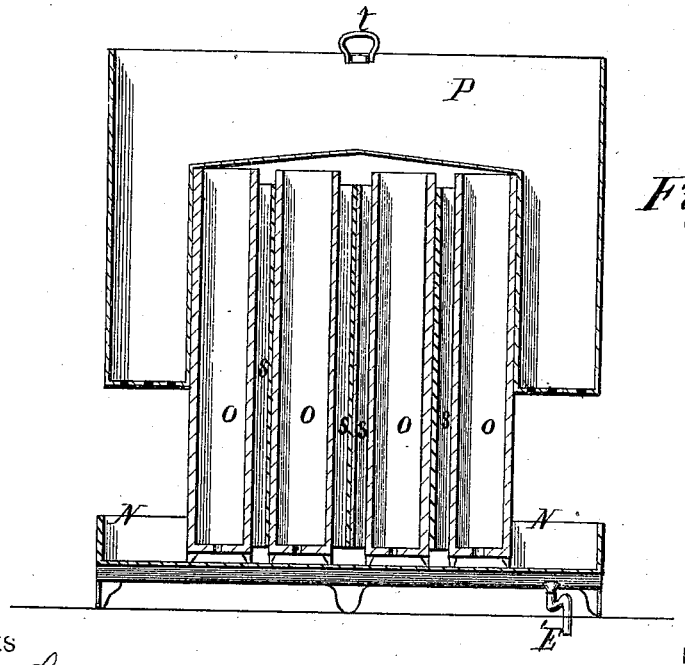

Fig. 3

WITNESSES

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UNITED STATES PATENT OFFICE.

EDGAR B. SMITH, OF ALBANY, NEW YORK.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **169,306**, dated October 26, 1875; application filed March 16, 1875.

CASE B.

To all whom it may concern:

Be it known that I, EDGAR B. SMITH, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Refrigerators; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1, Sheet 1, is a vertical longitudinal section of the refrigerator. Fig. 2, Sheet 1, is a horizontal section. Fig. 3, Sheet 2, is a vertical section of the drip-pan, provision-cases, and ice-tanks removed from the refrigerator-case; and Fig. 4, Sheet 2, is an end view of the refrigerator, showing in section the application of the metallic inclosing-case.

Similar letters of reference in the accompanying drawings denote the same parts.

The object of this invention is to provide an improved refrigerator for the preservation of provisions during transportation from one part of the country to another; and it consists, first, in a series of upright metallic provision-cases placed under and within a metallic ice-tank, and arranged in a portable refrigerator, having its walls composed of a nest of paper boxes inclosed by a wooden cabinet, and provided with dead-air spaces between them; secondly, in providing the refrigerator with a metal inclosing-case to protect it when exposed to the weather, such case having a suitable cover, by which access is had to the top of the refrigerator without removing the case therefrom, as I will presently describe.

In the accompanying drawings, A is the outside cabinet of wood, lined with a thick water-proof paper, and containing two paper boxes fitted snugly one within the other. The inner box is formed of one thick and one thin plate or sheet, *b*, of water-proof paper, with dead-air spaces *c* between them, and the outer box is formed of similar sheets, *d d*, with a dead-air space, *e*, between them. A dead-air space, *f*, is also formed between the two boxes, and between the inner box and the metal tank or case G, placed therein. A similar space, *h*, is formed between the cabinet and outer box, and also above the two cases around the rectangular paper frame I. This frame rests upon the top of the inner box, and is flanged to support the cover J of the tank G, which cover is composed of paper sheets stretched over rectangular paper-frames, so as to leave dead-air spaces between them, the under side being lined or formed of sheet metal to form the top of the tank. The door of the cabinet is also composed of paper, or paper and wood, arranged to form dead-air spaces, as shown. The various strips L, which separate the boxes from each other, and from the cabinet and tank G, are made of thick paper-stock, as are, also, the strips M, which form the spacing-strips between the walls of the boxes themselves, and to which such walls are secured.

The construction of the refrigerator thus far described forms the subject of a separate application for Letters Patent filed by me, and I do not, therefore, claim it herein.

The present invention consists in adapting such refrigerator for the preservation of food during transportation in the following manner: N is a drip pan, supported upon the bottom of the tank G, so as to nearly fill the area thereof, and O O are receptacles for the provisions placed in an upright position beside each other upon the drip-pan. Their upper ends are held together by being let into the raised bottom of a metal ice-chest, P, of such size as to nearly fill the area of the tank G. Strips *q*, secured to the sides of the ice-chest, bear against the walls of the tank G, to hold the chest in place, and prevent the provision-receptacles from tipping or becoming displaced. The portion of the ice-chest not raised for the admission of the receptacles O extends around the sides of the latter, and is perforated for the escape of water into the dripping-pan beneath. A pipe, R, formed with a trap or goose-neck, extends from the drip-pan down through the bottom of the refrigerator for the discharge of the water. The provision-receptacles are unprovided with covers, save that formed by the raised bottom of the ice-chest; but one side of each carries a plate, *s*, removed therefrom a short distance, so as to form an air-space, and made perforate or imperforate, as preferred.

When the receptacles are in position, and contain the articles to be preserved, these air-

spaces lie between them, and permit the free circulation of cold air upon all sides. The receptacles are, therefore, more completely exposed for the refrigeration of their contents than if they were closely packed together without the intermediate air-spaces. The ice-tank is provided with suitable lifting-handles, *t*, and is made of sufficient height to fill the space under the cover J, which may rest down upon its upper edge, as shown in Fig. 1.

After the refrigerator has been packed it is inclosed by a sheet-metal case, M′, (shown in Fig. 4,) to protect it against the action of the weather, and the case is provided with a hinged cover, N′, through which access is had, when desired, to the cover of the refrigerator.

The inclosing-case enables the refrigerator to be transported upon open platform-cars, or to be placed in any locality exposed to the weather, without injury to its interior parts or to its contents. The paper walls, built up with dead-air spaces between them, constitute excellent non-conductors of heat and cold, and therefore effectually protect the contents of the provision-receptacles during the transportation in all seasons of the year.

Having thus described my invention, what I claim is—

1. In combination with the paper-walled refrigerator, the upright provision-receptacles O O and the ice-chest P, placed over and upon them, substantially as described, for the purpose specified.

2. The ice-chest P, constructed with a raised bottom, to inclose the tops of the upright provision-receptacles O O, and form a cover for the same, substantially as described.

3. The combination of the drip-pan and the superposed group of food-boxes, provided with means for keeping them apart, as and for the purpose specified.

4. The removable sheet-metal inclosing-case M′, provided with the cover N′, and fitted over the refrigerator for its protection, substantially as described, for the purpose specified.

EDGAR B. SMITH.

Witnesses:
E. S. KARNER,
M. CHURCH.