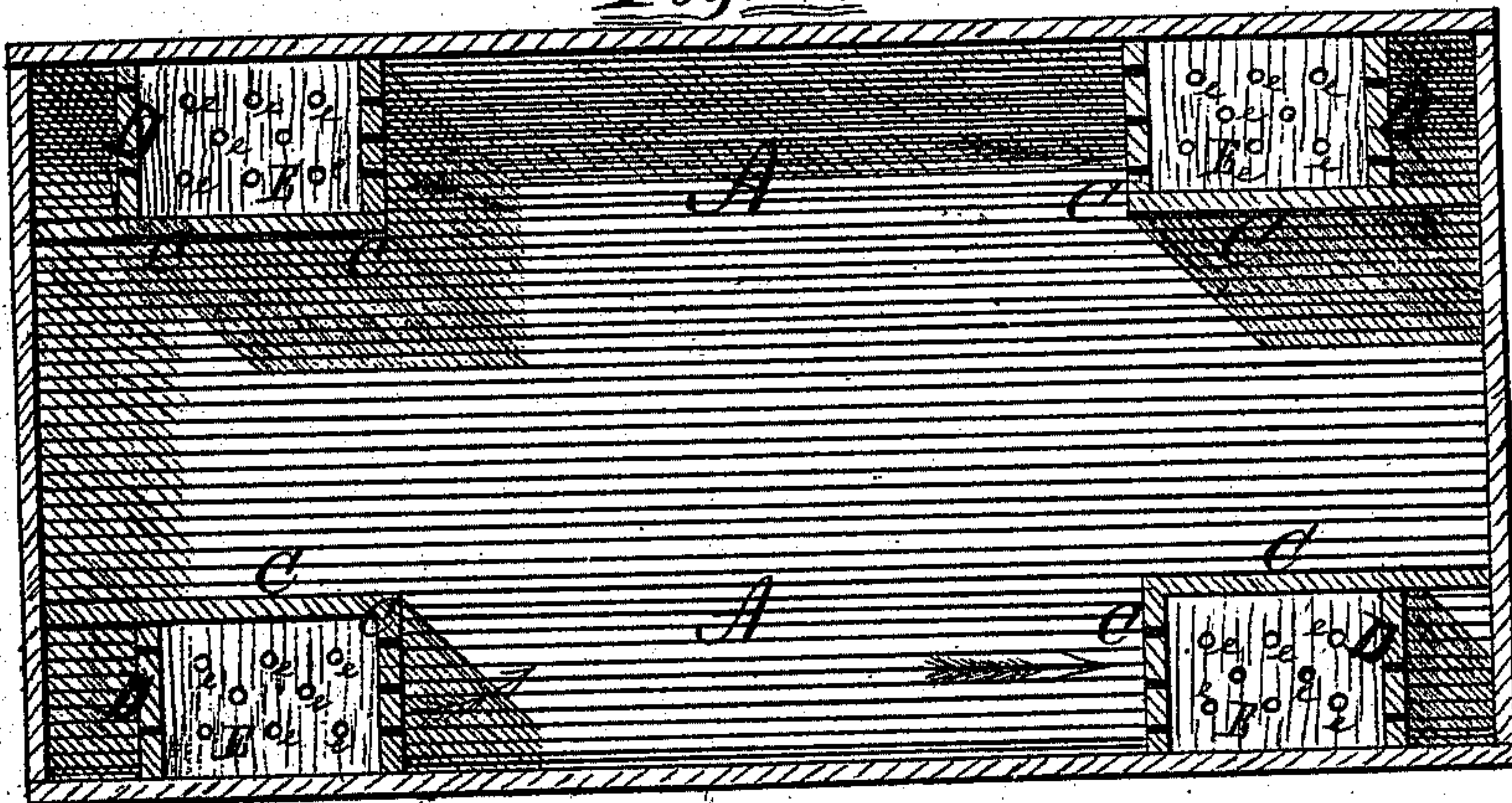


W. E. PHELPS.  
CAR VENTILATOR AND REFRIGERATOR.

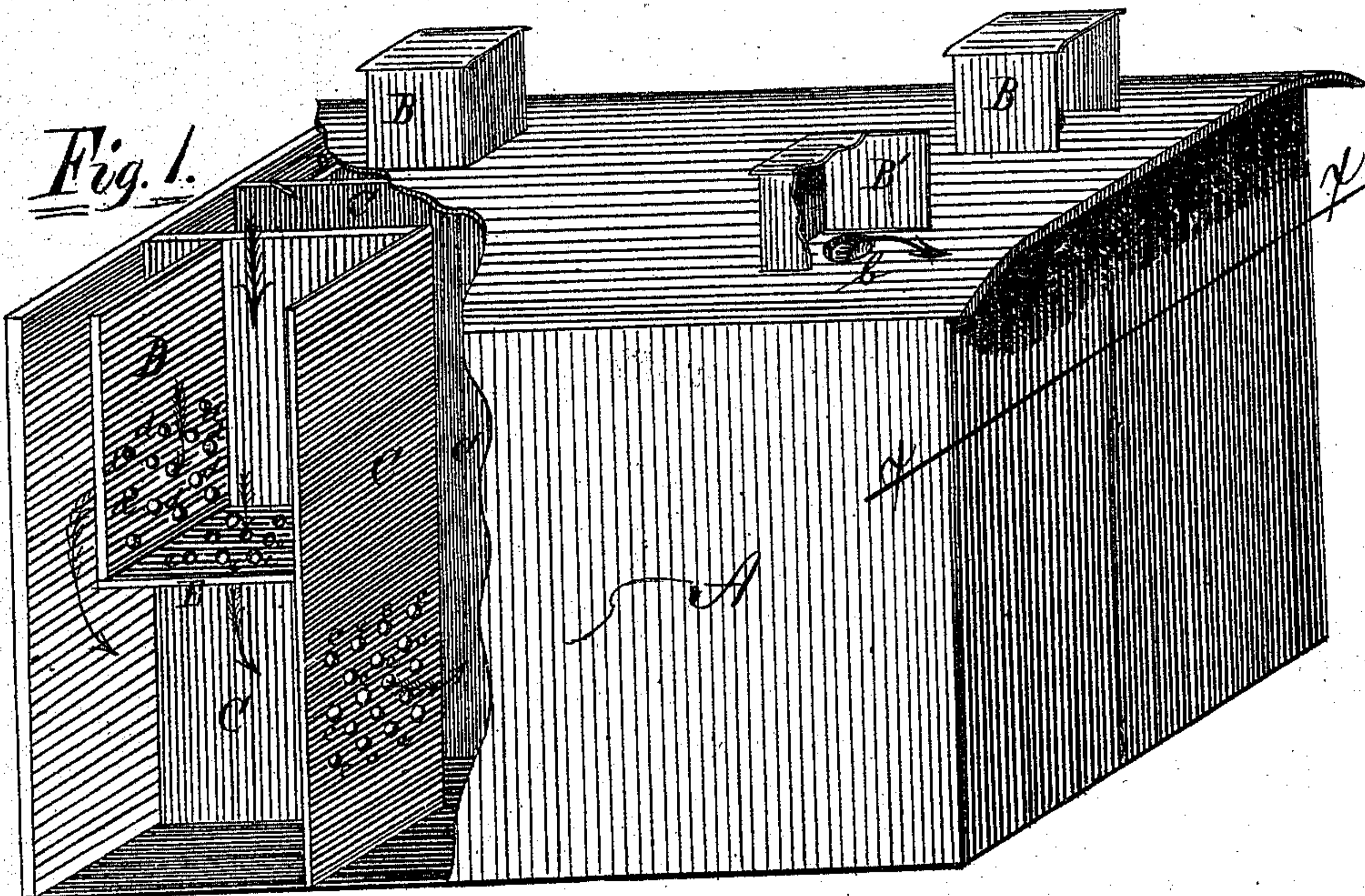
No. 107,716.

Patented Sept. 27, 1870.

*Fig. 2.*



*Fig. 1.*



Witnesses:  
J. R. Richards  
H. B. Bergen.

Inventor  
W. E. Phelps,  
by W. B. Richards,  
his atty.



# UNITED STATES PATENT OFFICE.

WILLIAM E. PHELPS, OF ELMWOOD, ILLINOIS.

## IMPROVEMENT IN CAR VENTILATORS AND REFRIGERATORS.

Specification forming part of Letters Patent No. 107,716, dated September 27, 1870.

I, WILLIAM E. PHELPS, of Elmwood, in the county of Peoria and State of Illinois, have invented certain Improvements in Combined Car Ventilator and Refrigerator, of which the following is a specification:

### *Nature and Objects of the Invention.*

The nature of my invention relates to improvements in ventilating and refrigerating railway freight-cars; and the invention consists in the arrangement of tanks in the ends of the cars, having apartments for containing ice or other refrigerating material, the bottoms and sides of which are pierced for the passage of the cold water or drippings from the ice, which drippings are received and retained to some extent in the bottom of the tank. A cap or bonnet is placed over each tank on the outside of the car, with the open ends toward that end of the car to which they are nearest, and having openings leading to the interior of the tank, so that the movement of the car in either direction, forward or back, will force a current of air through the caps on the forward end of the car, and over the ice and cold drippings in the tanks, where its temperature will be reduced, and whence it passes through and among the meats or vegetables suspended or otherwise loosely arranged in the car, and finds exit by way of the tanks and caps at the rear end of the car, or by way of other ventilators, as desired, all as hereinafter fully described.

### *Description of the Accompanying Drawing.*

Figure 1 is a perspective view of a railway freight-car box, partly broken away to show the interior arrangement and my invention. Fig. 2 is a horizontal sectional view of Fig. 1 on the line *x x*.

### *General Description.*

A is the car-box. B B B B' are caps or bonnets, open on their sides toward that end of the car which they are nearest. C C are the sides of the tanks, one of which is placed in each corner of the car, extending from the roof to the floor. D D D D are partitions in the tanks C, extending from the roof downward about one-half the vertical length of the tanks,

and there connecting with bottom boards, E E E, and forming an elevated receptacle for the refrigerating material in the tanks C.

The partitions D and floors E are pierced with holes *d d d d* and *e e e e* as shown. The sides of the tanks C are also pierced with holes below the bottom boards, E E E E.

One of the caps, B', is shown broken away to show the hole *b* in its interior, which is pierced through the roof of the car, and communicates with the ice-chamber in the tank C immediately beneath it.

The operation of my invention is as follows: The ice or other refrigerating material is placed on the bottom boards, E E E E, and should the car be moving toward the left-hand side of the paper, the air will be forced in through the openings *b* in the direction shown by the arrows at Fig. 1, and, passing over and among the ice, will be carried through the holes *d d d d* and *e e e e*, where it will come in contact with the cold drippings, and whence it will pass through the holes *c c c c* in the sides of the tanks C C C C, and thence passing into the interior of the car, it will, in its passage backward, come in contact with all parts of meat or vegetables suspended therein, and finally be expelled through the same openings in the other end of the car. Should the car be moving in the opposite direction, or to the right hand, then the air will enter by the other end and find egress by its opposite end.

By this method meats and vegetables may be shipped in warm weather, and be kept cool and fresh by the continual passage of cold air in contact with their surfaces.

### *Claim.*

What I claim as my invention is—

The tanks C, when constructed, as described, with partitions D, bottoms E, and perforations *d* and *e*, and combined with the car-box A, provided with bonnets or caps B and B', and holes *b*, as herein described, for the purpose specified.

WILLIAM E. PHELPS.

Witnesses:

F. M. VAUGHAN,  
T. H. TRACY.