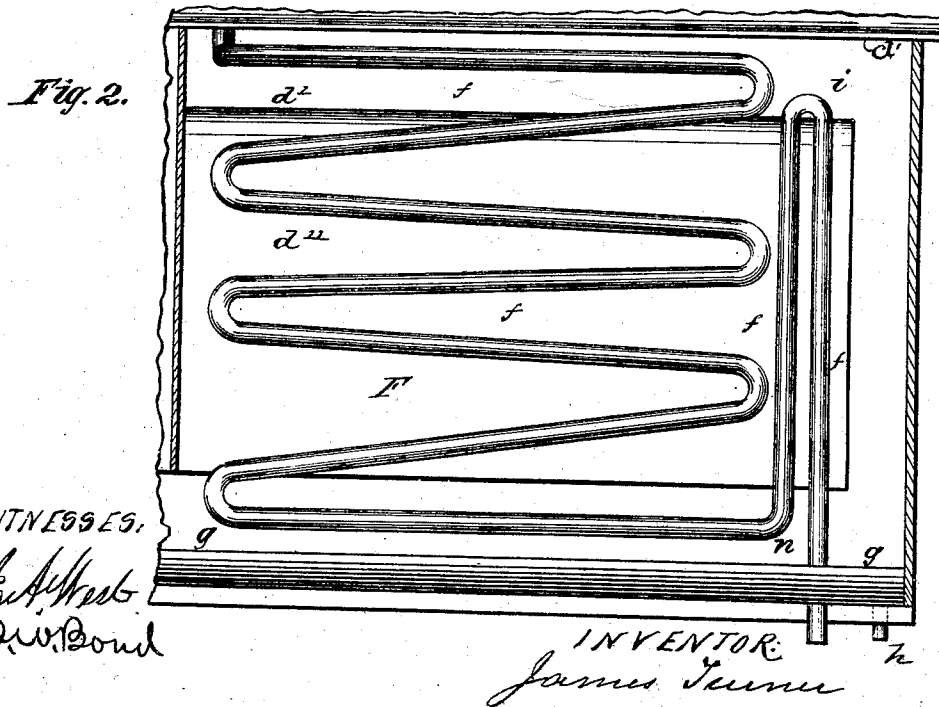
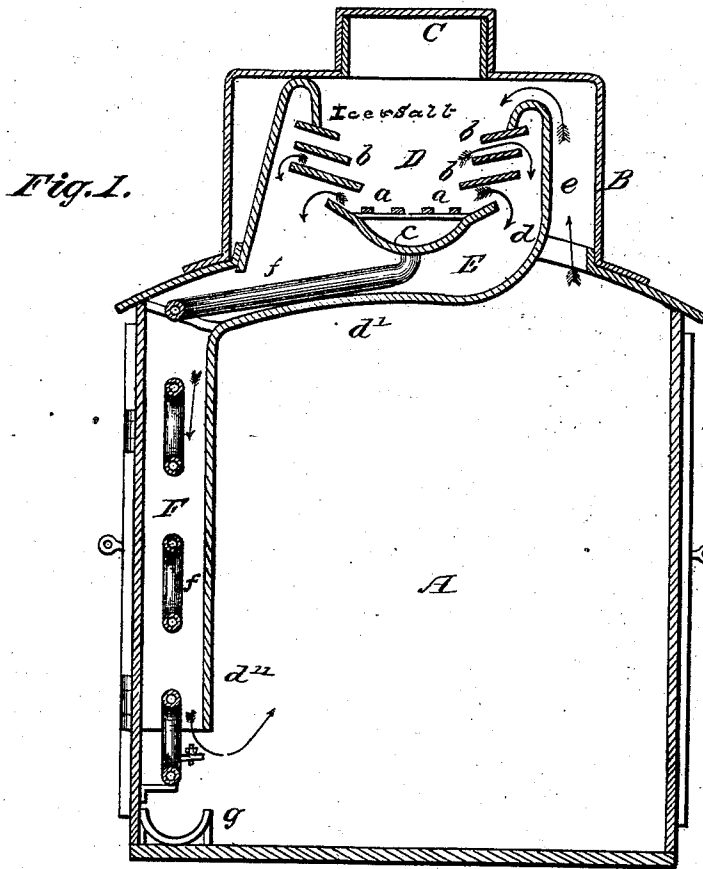


J. TURNER.
REFRIGERATOR CAR.

No. 171,491.

Patented Dec. 28, 1875.



UNITED STATES PATENT OFFICE.

JAMES TURNER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN REFRIGERATOR-CARS.

Specification forming part of Letters Patent No. **171,491**, dated December 28, 1875; application filed December 1, 1875.

To all whom it may concern:

Be it known that I, JAMES TURNER, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Refrigerator-Cars, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical cross-section of a car to which my improvement has been applied, the section being taken at *x* of Fig. 2. Fig. 2 is a side elevation of so much of the car as is shown in this figure, the side being removed to show the interior.

The chief object of my invention is to make improvements in refrigerator-cars, designed for the transportation of fresh meats, and other similar perishable articles; and it consists in the combination of parts, as hereinafter more fully described, and pointed out by the claim.

In the drawings, A represents a car, the body of which is constructed as usual. B is an extension at the top of the car. C is a man-hole, one or more of which may be used. D is an ice-chamber of the usual size. *a* are slats, upon which ice is to be placed. *b* are a series of shelves upon each side of the chamber D; they are inclined, as shown, are placed a little distance one above another, and are to be supported in any suitable manner. They are of different widths, as shown. Between them and behind them are spaces for the passage of air. *c* is a trough extending the whole length of the chamber D, to receive the water from the melting ice. *d d' d''* is a partition. The part *d* forms one side of the ice-chamber D. It extends the whole length or nearly the whole length of the car. *d'* also extends nearly the whole length of the car, and is located a little distance below the top of the body of the car, forming an air-chamber, E. *d''* extends down nearly to the bottom of the car, a little distance from one side, and upon one side of the door in the side of the car, forming an air-chamber, F, which is, in fact, a continuation of E. The only inlet to the chamber D, when the car is closed, is over the top of *d*, and *d* is so located that there is a passage, *e*, between it and wall of the extension B. F is a tube, to carry off the water from the trough *c*. It is carried back and forth through the

chamber or passage F, then up to a point, *i*, somewhat below the bottom of *c*, then down through the bottom of the car. *g* is a trough below the tubes *f*, which are in F, to catch any condensation, and has an outlet, *h*, through the bottom of the car.

In use the articles to be transported or preserved are to be placed in the car, and a quantity of ice, or ice and salt preferably, is to be placed in the chamber D. As the air in this chamber cools it will pass between and back of the shelves *b* into the chamber E, and down through the passage F into the body of the car, and among the articles there placed, at the same time air will pass up through the passage *e* over the top of *d* into the chamber D, and a constant circulation will be kept up. The water formed by the melting of the ice will pass into *c*, and thence into the tube *f*; and so much of this tube as is in the passage F and below the point *i* will be constantly filled with water, which, especially when salt is used with the ice, will be very cold, and will aid materially in keeping the air cold as it passes through F. Heretofore this cold water has been allowed to escape at once. By retaining it for a long time in the car I utilize that which has been wasted.

I do not limit myself to the quantity of tubing *f* shown, but, in fact, use a much larger quantity. The tubing in F might be in a perpendicular position, but it would be more difficult to draw off the water, if desired. I do this by means of a cock placed at *n*.

In the drawings in Fig. 2 I have shown only so much of a car as is on one side of the door usually found in the side.

In use I provide a second passage, corresponding with F upon the other side of this door, and provide a second tube corresponding with *f*, and passing through such second chamber or passage.

Passages similar to F could be located upon the opposite side of the car, but this is not necessary. Such passages could be located at each end of the car or through the middle thereof instead of upon the side. I prefer the location shown. The car should be provided with double walls, as usual; but such are not shown in the drawings.

Stationary refrigerators can be constructed,

so as to embody the same principles—that is to say, such refrigerators can be provided with an ice-chamber, with air-passages and a tube running through the same, substantially as above described.

What I claim as new, and desire to secure by Letters Patent, is as follows:

In a refrigerator, the ice-chamber D, and

air-passages E, F, and *e*, in combination with the trough *c* and tube *f*, bent upward nearly or quite to the ceiling, all constructed substantially as and for the purposes specified.

JAMES TURNER.

Witnesses:

E. A. WEST,
O. W. BOND.