

(No Model.)

W. E. EASTMAN.
REFRIGERATOR CAR.

No. 502,662.

Patented Aug. 1, 1893.

Fig. 1.

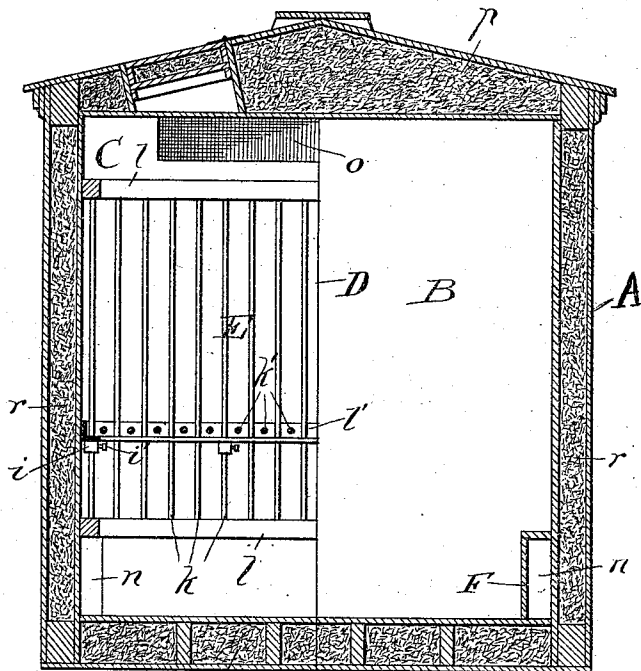


Fig. 2.

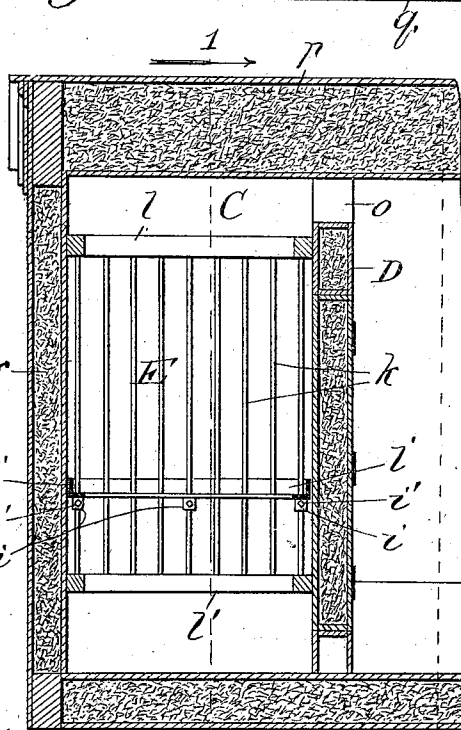
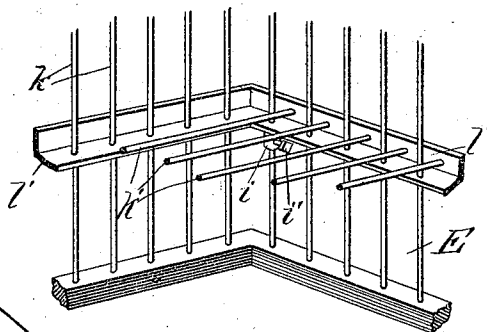


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM E. EASTMAN, OF BOSTON, MASSACHUSETTS.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 502,662, dated August 1, 1893.

Application filed August 22, 1892. Serial No. 443,764. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. EASTMAN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Refrigerator-Cars, of which the following is a specification.

My present invention is in the nature of an improvement in certain details of construction of a refrigerator-car constructed in accordance with the invention set forth in Letters Patent of the United States No. 469,296, granted to me on the 23d day of February, 1892, for an automatic refrigerator; and it relates particularly to the construction of the ice-rack in the ice storage-chamber.

The cage or crib in the ice-chamber in my said patent is permanent as to its dimensions and capacity, though in colder weather less ice is required than when the weather is warmer. Besides, in the colder weather, the ice-supply should occupy the higher position in the ice-chamber in order that the air cooled by contact with it may be subjected to the warmer, expanding temperature throughout a longer course on its way to the merchandise storage-chamber and thus reach the latter at a temperature sufficiently lower than that which it attains while in contact with the ice to have expanded to the volume requisite for decreasing proportionately the moisture, gathered from the ice, by the increased volume of the air adequate for my use of the latter as a refrigerant.

In the accompanying drawings, Figure 1 is a view in sectional elevation of a refrigerator car provided with my improvements, the section being taken at the lines 1 on Fig. 2 and viewed as indicated by arrows. Fig. 2 is a section taken at the line 2 on Fig. 1 and viewed in the direction of the arrow; and Fig. 3 is a broken perspective view, in the nature of a diagram, illustrating a construction of the ice-crib whereby it is rendered vertically extensible and contractible.

A is the car, which may involve the same construction except as to the details of my present improvement, as the car set forth in the aforesaid patent, thus being provided with walls *r*, a floor *q* and a roof *p*, all insulated, and divided inside into a merchandise storage-chamber B and ice storage-chambers C,

of which latter but one is herein shown, being sufficient for my purpose, though if two be employed they may be constructed alike. Other features are the opening *o* in the upper end of the insulating partition D separating the two chambers B and C, and which opening affords communication between them, and an ice-crib E in the chamber C from the base of which an air-flue F extends to the chamber B.

I extend flues F inside the car on the floor or floor-level (for the flue or flues may be in the car-walls as well as in the position illustrated) from openings *n* in the base of the partition-wall at opposite sides of the longitudinal center of the car, and extend the flues to or nearly to the transverse center of the car, there providing each with a grated side-opening *m*. Thus the air, which enters the chamber C through the opening *o* from the chamber B is cooled by contact with the ice supported in the ice-crib E in the ice-chamber, whence it passes to and through the flues F, expanding therein under the influence of the higher temperature in the flues, from which it emerges into the chamber B accordingly increased in volume with its load of moisture, gathered from the ice, proportionately decreased, being thereby rendered the better refrigerant.

The ice-crib E is represented as formed with the upper and lower rectangular frames *l* and *l'* of angle-iron and of dimensions adapting them to fit in the ice-chamber, the upper frame being supported stationarily in position. The sides of the rack are formed with bars *k* fastened at desired intervals apart in the frame *l* and passing loosely through the base-frame *l'*, which is adjustably supported on them, as by means of collars *i* on the rods fastened by set-screws *i'*. The top of the crib E may be open, but the bottom should be formed with rods *k'* supported at their ends in opposite sides of the frame *l'*.

By providing a vertically extensible and contractible crib whatever its form and construction may be, as by means of a vertically adjustable base, the capacity may be gaged according to requirement. Thus the base may be readily raised to reduce the capacity of the crib and lowered to increase its capac-

ity, according to the requirement in the ice-supply, as in the matter of a colder or warmer season of the year.

To render the ice-chamber accessible for
5 adjustment of the rack, a door D' may be provided in the partition D.

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

1. In a refrigerator-car, the combination
10 with the ice-storage chamber C of a vertically adjustable ice-crib in said chamber, substantially as and for the purpose set forth.

2. In a refrigerator-car, the combination

with the ice-storage chamber C, of an ice-crib in said chamber having an adjustable base, 15 substantially as and for the purpose set forth.

3. In a refrigerator-car, the combination with the ice-storage chamber C, of an ice-crib E in said chamber formed with frames l and l' and bars k and k', the frame l' being supported and vertically adjustable on the bars k, 20 substantially as and for the purpose set forth.

WILLIAM E. EASTMAN.

In presence of—

J. W. DYRENFORTH,

M. E. WINN.