

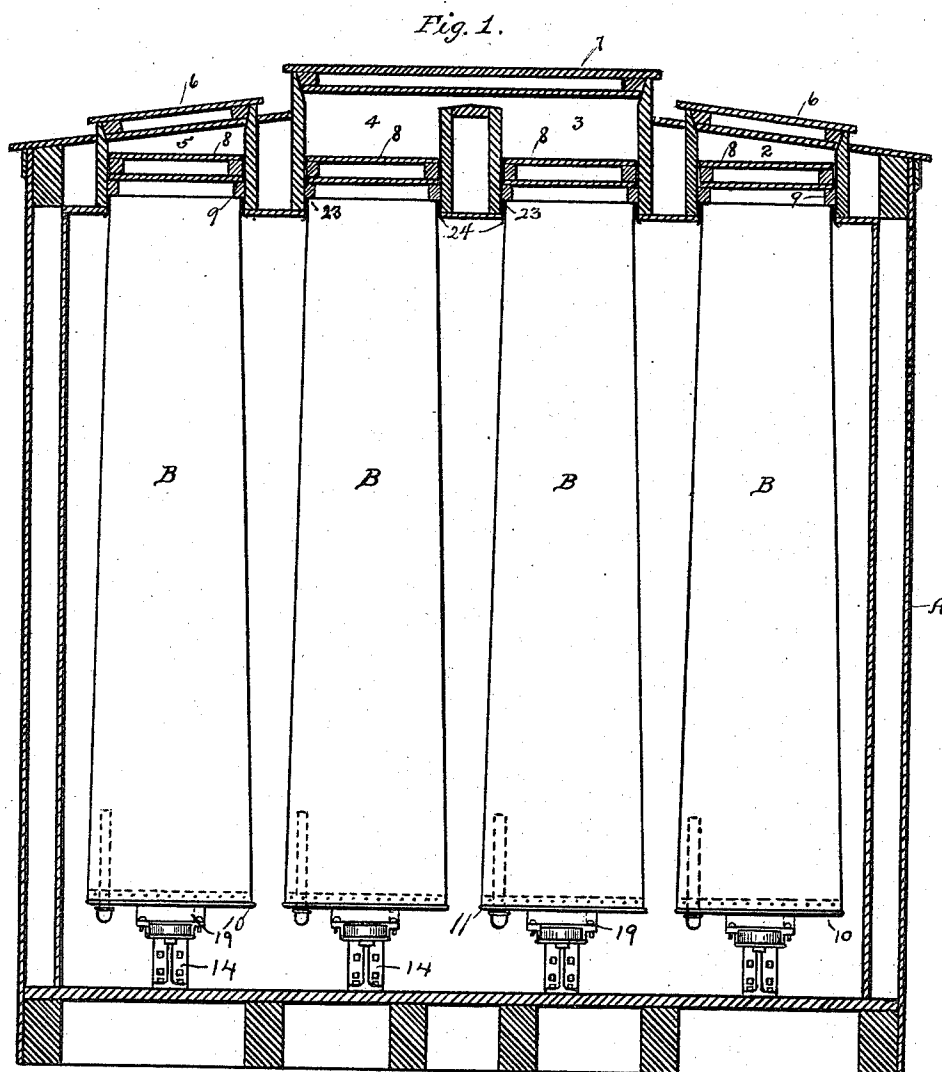
(No Model.)

2 Sheets—Sheet 1.

E. DENE GRE & J. P. ELMER.
REFRIGERATOR CAR.

No. 580,546.

Patented Apr. 13, 1897.



WITNESSES

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By their Attorney

INVENTORS

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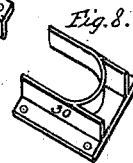
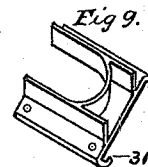
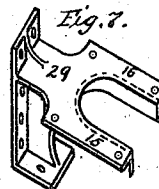
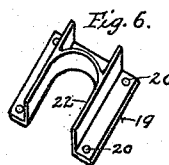
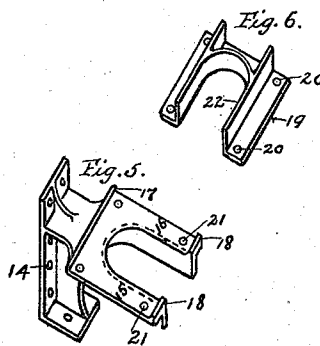
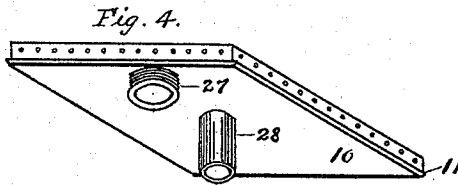
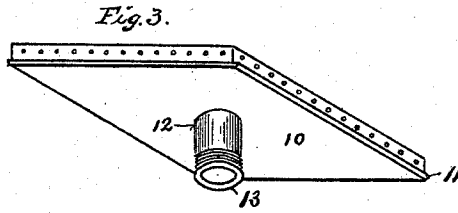
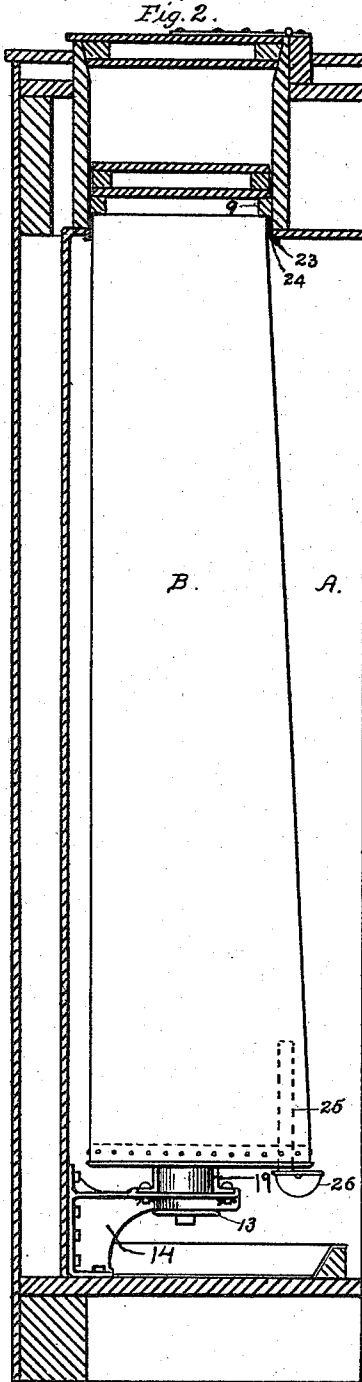
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2 Sheets—Sheet 2.

E. DENE GRE & J. P. ELMER.
REFRIGERATOR CAR.

No. 580,546.

Patented Apr. 13, 1897.



WITNESSES.

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UNITED STATES PATENT OFFICE.

EDWARD DENEGRÉ AND JAMES P. ELMER, OF ST. PAUL, MINNESOTA.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 580,546, dated April 13, 1897.

Application filed February 9, 1895. Serial No. 537,803. (No model.)

To all whom it may concern:

Be it known that we, EDWARD DENEGRÉ and JAMES P. ELMER, of St. Paul, Ramsey county, Minnesota, have invented certain Improvements in Refrigerator-Cars, of which the following is a specification.

Our invention relates to improvements in refrigerating apparatus for railway-cars and cold-storage purposes, its object being to provide an ice-tank of such form and means of attachment that it can be quickly and easily set in place in the room or car and as quickly unshipped and removed for the purpose of cleaning or repairs.

To this end our invention consists in providing an open-top tank of sheet metal of increasing dimensions toward the bottom, either rectangular or circular in cross-section, the bottom being preferably formed with a cast-metal bottom, onto which the side walls are fitted. This bottom is provided, preferably, with a central downwardly-projecting hollow lug or pipe to serve as a hand-hole for cleaning purposes and also as a means for securing the tank upon its support. This support consists of a bifurcated or yoke-shaped bracket, between the members of which the lug on the bottom of the tank closely fits. As means for securing the top of the tank firmly in position we provide a seat or recess formed by a flange surrounding the ice-opening in the top of the room or car, which recess is preferably cushioned with rubber or other elastic material and into which the top of the tank can be closely wedged, so as to make a practically air-tight joint around the same. In order to secure the tank upon the bracket and also to force its top into the retaining-recess, we provide a yoke-shaped or bifurcated shim-collar, which can be slipped between the bracket and the bottom of the tank to force it upward the required distance, the collar being then secured by bolts or any other suitable means to the bracket, thus furnishing a firm support and anchorage for the tank both at the top and bottom.

Our invention further consists in the specific construction and combination hereinafter more particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a sectional end elevation of a railway-car shown

fitted with a set or battery of our tanks, illustrating the means of securing the same in place. Fig. 2 is a side elevation of one of the tanks, the adjacent parts of the car being shown in section. Fig. 3 is a detail of the preferred form of bottom for the tank, showing the hand-hole lug. Fig. 4 is a detail of a modified form of bottom, in which the hand-hole is shown at one side. Fig. 5 is a detail of the tank-supporting bracket, and Fig. 6 is a detail of the shim plate or collar fitted thereto. Fig. 7 is a detail of a modified form of bracket; Fig. 8, its shim plate or collar; and Fig. 9 is a modified form of shim plate or collar adapted to be used upon the bracket shown in Fig. 7.

In the drawings, A represents the car-body, through the roof of which are ice-openings 2, 3, 4, and 5. These are closed by the outer doors 6 and 7, preferably hinged to the top of the car, and the inner lids 8, the latter resting upon battens 9. The ice-tanks B, constructed, preferably, of galvanized sheet metal, flare outward toward the bottom and are of circular or rectangular form in cross-section, as preferred. The lower end is riveted onto the cast-metal bottom 10, the edges of the side walls abutting against the flange 11 of the bottom. The bottom is provided with a centrally-arranged hand-hole lug 12, through the opening in which the tank can be drained and cleaned, the opening being normally closed by means of a cap or plug 13 screw-threaded thereto. As means for support for the tank we provide a bracket 14, which is secured by means of lag-bolts, as shown, to the side and floor of the car, the projecting arm or shelf being bifurcated, and into the space between the members 15 and 16 of which the lug 12 closely fits. On the top of these members are arranged the transverse ribs 17 and 18, between which the shim-collar 19 accurately fits and is secured in place by bolts or other fastening means passed through the holes 20 and 21. This collar is provided with the upwardly-projecting flange 22, which closely embraces the lug 12 and bears against the bottom 10. The top of the tank is secured in place by closely fitting into the recess 23, formed by the side walls of the ice-opening and the batten 9. This recess is preferably lined with sheet-rubber or other

elastic cushioning material 24 to constitute an air-tight joint when the tank is forced into place, thus preventing admission of outside air around the tank. The tank is also provided with an overflow-pipe 25 in its bottom, the outer end of which is formed with a return-bend 26, which serves as a trap to prevent the inlet of air.

In the modified construction of head shown in Fig. 4 the hand-hole lug 27 is shown arranged near the front edge of the bottom, the central lug 28 being shown somewhat smaller, but of sufficient dimensions for required strength. In the modified construction of bracket 29 (shown in Fig. 7) the bracket is plane-surfaced, and the collar 30 is secured in place thereon merely by the screws or bolts. In the modified form of shim-collar shown in Fig. 9 the side edges are turned downward and bent inward to engage the projecting edges of the members 15 and 16 of the bracket, thus serving as guides for directing the collar into place and as an anchorage to assist the securing-bolts.

The operation of securing a tank in place is as follows: The bracket being first bolted in position, the tank is raised and its top inserted into the socket 23 and its bottom carried into place onto the bracket, the lug 12 fitting between its members 15 and 16. The tank is then raised vertically and the shim-collar slipped into place and secured by its bolts, thus holding the top of the tank wedged closely into the cushioned socket and the top and bottom firmly anchored against strains in all directions. By the opening of the door in the roof of the car and the removal of the inner cover the tank can be filled with ice in the ordinary manner, the water accumulating in the tank being drained off by the overflow-pipe, the trap in which keeps the same sealed from admission of air. When necessary, the tank can be drained and cleaned by removing the cap 13 from the hand-hole lug. Whenever it is desired to remove a tank, it can be quickly unshipped by simply unbolting the shim-collar, lifting the tank to remove it, and then carrying the tank itself out from its supports. When the tanks on any of them have

thus been removed from the car, the space formerly occupied can be utilized for other purposes and the ice-holes in the roof can also be used for the purpose of ventilation. It is obvious that while our invention is designed specially for railway-cars the apparatus can also be used efficiently for cold-storage purposes, the tanks being secured in place and removed and adjusted as above described.

We claim—

1. In combination with a car, having an opening through its top, and a fixed bifurcated bracket underneath said opening, a removable ice-tank having an open top fitted tightly to the opening in the top of the car, a neck or plug opening in its bottom adapted to slip between the members of said bracket when the tank is thrust upward in place, and the bifurcated shim-block adapted to be interposed between said tank and bracket transversely of the latter, and engage said neck, and means for securing said shim-block upon said bracket to lock said tank in place.

2. In combination with a car of the class described, an upwardly-tapering, open-top ice-tank, said car having an opening in its top, and an elastically cushioned or lined socket underneath said opening to receive the top of said tank, the bracket for supporting the bottom of said tank, and the means interposed between said bracket and tank for holding its top in said socket, and for interlocking with said tank and said bracket so as to anchor the tank in place.

3. The combination with a refrigerator, of the ice-tank therefor, the downwardly-projecting lug at the bottom of said tank, the bracket to receive said lug, and support said tank, the shim-collar adapted to be inserted between said tank and said bracket, and the elastically-cushioned recess in the top of said refrigerator, to receive the top of said tank.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD DENEGRÉ.
JAMES P. ELMER.

Witnesses:

T. D. MERWIN,
MINNIE THAUWALD.