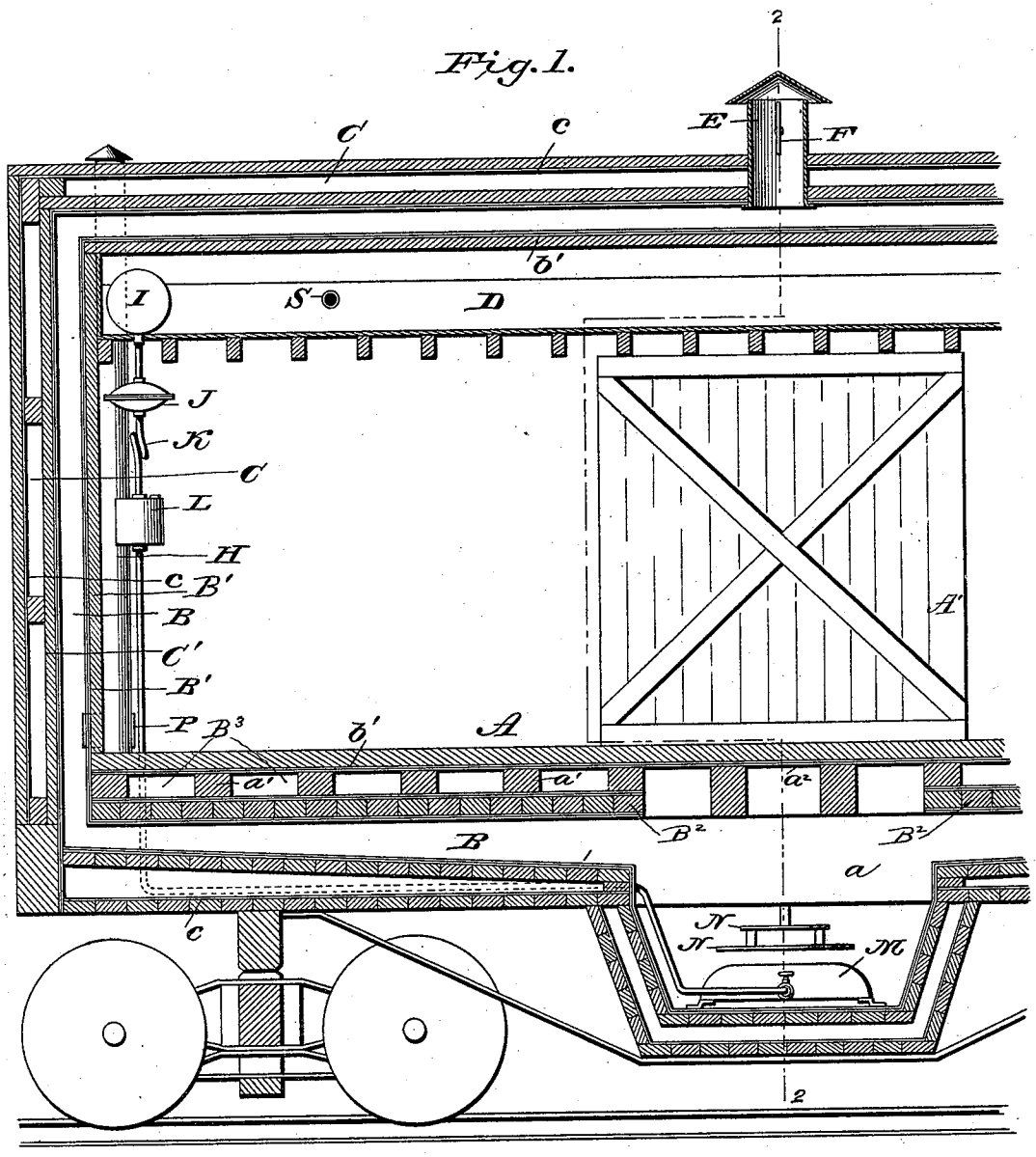
(No Model.) 2 Sheets—Sheet 1.

T. J. GILMARTIN.

REFRIGERATOR CAR.

No. 522,112. Patented June 26, 1894.

Fig. 1.



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INVENTOR

WITNESSES

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WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2

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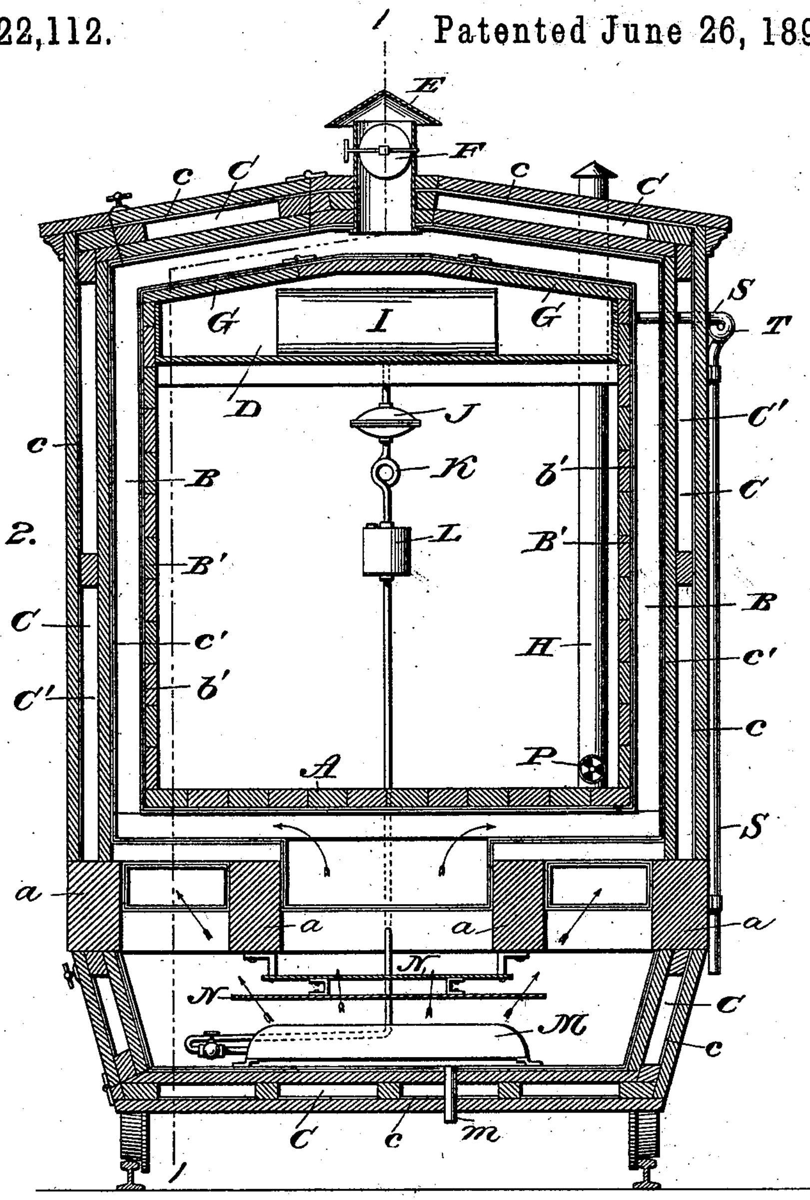
Fig. 2.



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THE NATIONAL LITHOGRAPHING COMPANY,
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UNITED STATES PATENT OFFICE.

THOMAS JOSEPH GILMARTIN, OF OGDEN, UTAH TERRITORY.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 522,112, dated June 26, 1894.

Application filed December 27, 1892. Serial No. 456,439. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JOSEPH GILMARTIN, a citizen of the United States, residing at Ogden, county of Weber, Territory of Utah, have invented a new and useful Railway-Car, of which the following is a specification, reference being had to the accompanying drawings, showing parts thereof.

The object of this invention is to provide a railway or refrigerator-car having a provision-chamber with means whereby an even temperature may be maintained within said provision-chamber, and with this end in view the invention consists in the construction and combination of the parts, as will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section showing a portion of a refrigerator-car with my improvements applied thereto, the line 1—1 on Fig. 2 indicating the section, and Fig. 2 is a vertical sectional view through the line 2—2 of Fig. 1.

A designates the provision chamber which is supported within the car upon transverse beams a' which rest upon the longitudinal beams a, and in the construction of the provision-chamber strips of sheet-metal are first placed upon the transverse beams a', then sheets of asbestus or other non-conducting material, b', after which the floor of the provision-chamber is laid and the side walls and ceiling built up. The outer side of the side walls and ceiling of the provision-chamber is covered with sheets of asbestus covered by sheet-metal, and wherever a flue is formed I employ this composite lining so as to present a sheet-metal surface to the flue.

Access is had to the provision-chamber by way of the door A′ which is of any suitable construction.

To the under side of the transverse beams a' are attached boards B^2 forming partitions which extend from the ends of the provision-chamber to near the center of the car, and these partitions with the floor of the provision-chamber provide transverse flues B^3 which communicate with the flues B formed between the side walls of the provision-chamber and car. The side and end walls of the car are suitably constructed to provide a dead-air space C which may be lined with sheets of non-conducting material, or asbestus, *c*. The bottom or floor of the car is also provided with a dead-air space which is similarly lined, and centrally the floor is provided with an opening, beneath which is supported a box or receptacle which is adapted to contain the heating means. The upper part of the floor of the car inclines upwardly from the suspended receptacle to the ends of the car so as to provide longitudinal flues which have a greater area adjacent to the source of heat than at their points of connection with the vertical flues which surround the ends and sides of the provision-chamber. There is a space left between the top of the provision-chamber and top of the car which provides a flue leading to an exit opening or pipe having a damper or cut-off. The flues which entirely surround the provision-chamber are lined with asbestus and sheet-metal, and these flues are provided so as to heat the air therein and thus maintain within the provision-chamber the proper temperature without admitting the heated air directly to the contents of the chamber. One of the objects in providing the flues B with a metallic lining is to provide a material which will quickly assume approximately the same temperature as the air in the flue and will not be affected by the moisture which may accumulate on the lining by the condensation of the air, and should the condensation be excessive the drippings would be led to the box containing the heating means located beneath the floor of the car.

The heating apparatus, M, rests upon the bottom of the suspended receptacle and above the same are arranged deflecting-plates N N.

The heating apparatus is supplied with fuel by means of a pipe which leads to a tank I suitably supported within the provision-chamber, and between the tank and heating-apparatus the pipe is provided with an ordinary regulator J, safety device L and coil K which forms a trap.

The heating-apparatus may be adapted to burn gas which can be stored in the tank I under pressure, or it may be an oil-burner.

H designates a vertical flue or pipe which extends from the floor of the provision-chamber through the top of the car, and communicates with the provision-chamber and flue B

through openings which are provided with dampers. The flue H is used especially when the cold air is circulated in the flues B, and when the heating means is discontinued, the damper F then being closed, the cold air which is circulated in the flues B can find an escape through the connecting pipe having the dampers or cut-offs P P. When the car is in motion an updraft in the flue H will be induced which will draw air from either the provision chamber or the flue B.

The part of the car so far described is adapted for heating the flue B so that the temperature of the provision-chamber will not be affected by the temperature of the outside atmosphere.

D designates a receptacle which is supported at the upper part of the provision-chamber by means of suitable transverse pieces, and this receptacle is adapted to receive ice or other refrigerating medium, which is placed therein through doors in the top of the car and top of the provision-chamber. The receptacle D is preferably constructed of metal and has an overflow pipe S with a coil or cut-off T forming a water-seal. When it is desired to lower the temperature of the provision chamber the doors G G are raised and suitably supported in such position so that the cold air will pass out of the receptacle D into the flues B and descend, following an opposite course from that which the heated air takes.

The receptacle suspended beneath the floor of the car has an opening or pipe *m* which leads through the bottom and serves as an exit for the cold air and an inlet to supply the heating medium.

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

1. In a railway car, the combination, of the outer walls having dead-air spaces, a provision chamber supported within the car so as to provide a flue which surrounds said provision chamber, the part of the flue below the floor of the provision chamber increasing in size from the ends of the car toward the center thereof, substantially as shown.

2. In a railway car for the purpose set forth, the combination, of a provision chamber surrounded by flues for the circulation of air, the provision chamber having a receptacle for the reception of a cooling medium, means for connecting said receptacle with the flues surrounding the provision chamber, and a heating means carried by the car and communicating with the flues, whereby the temperature in the car can be either raised or lowered, for the purpose set forth.

3. In a car having a provision chamber which is surrounded by flues substantially as shown, means for connecting the upper flues with a cooling means to cause a down-draft in the flues, and a heating means also carried by the car for causing an up-draft of heated air through the lower flues and upwardly in the side flues, for the purpose set forth.

4. In a railway car, the combination, of the air-ducts B, means for cutting off communication between said air-ducts and an ice-chamber and means for connecting the air-ducts with the outer atmosphere, together with heating means carried by and located below the floor of the car, said heating means communicating with the air-ducts by longitudinal flues which have a greater area adjacent to the source of heat than at their point of connection with the air-ducts, substantially as shown.

5. In a railway car for the purpose set forth, the combination, of a provision chamber surrounded by air flues or ducts, an ice-chamber supported in the upper part of the provision chamber, and hinged doors adapted to close the ice-chamber and when opened establish communication between the ice-chamber and said flues or ducts, for the purpose set forth.

6. In a railway car having a provision chamber which is surrounded by an air-duct connecting with means for raising or lowering the temperature therein, of a vertical flue H leading to the exterior of the car and communicating near its lower end by means of valved-openings with the provision chamber and with the surrounding air-duct or flue, substantially as shown and for the purpose set forth.

THOMAS JOSEPH GILMARTIN.

Witnesses:
VALENTINE GIDEAN,
JOHN E. BAGLEY.