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FLOOR RACK FOR REFRIGERATOR CARS

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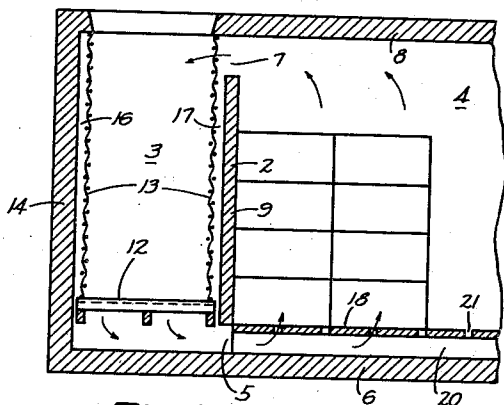


Fig. 1

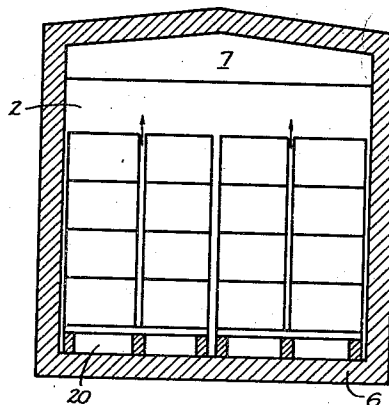


Fig. 2

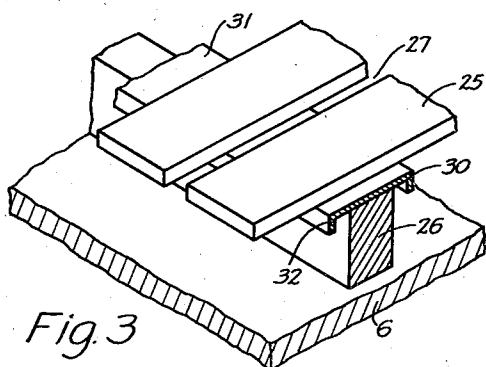


Fig. 3

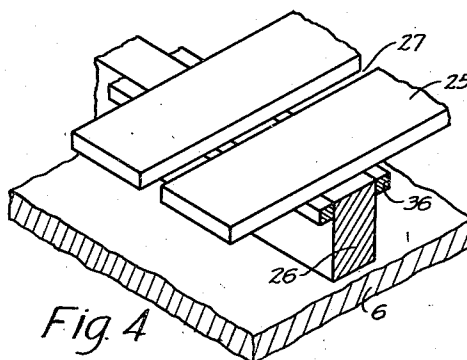


Fig. 4

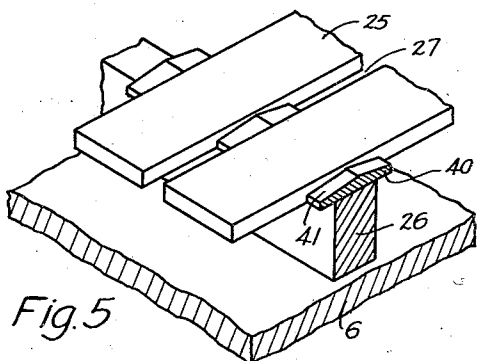


Fig. 5

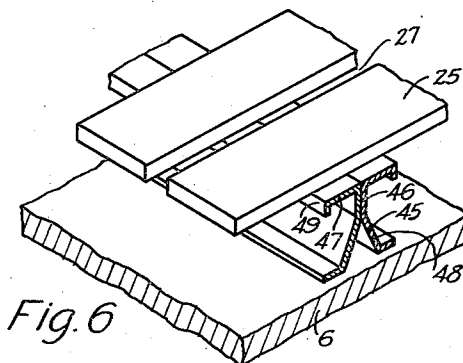


Fig. 6

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FLOOR RACK FOR REFRIGERATOR CARS

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167,771. Divided and this application August
17, 1938, Serial No. 225,275

5 Claims. (Cl. 105—375)

The invention relates to insulated railway refrigerator cars used to transport perishable commodities, such as vegetables, fruits, berries, meats, eggs, frozen fish, etc., and to maintain such commodities while in transit at a predetermined range of temperature, thus necessitating the use of a cooling means in the summer and a heating means in the winter. It has been found that perishable commodities which have not been allowed to get too cold (freeze) or too hot (bake) have a high market value because they have a longer storage life.

In a refrigerator car water ice is associated with certain elements of the car to establish a convection circulation of air between the refrigerant chamber and the lading compartment to cool the lading in the car (as hereinafter described). A foraminous floor supports the lading in spaced relation to the insulated floor of the car.

It is desirable to allow at least some of the melted ice to remain on the insulated floor of the car below the foraminous floor to produce further insulation between the outside of the car and the air flues below the foraminous floor and also to further cool the circulating air. The melted ice (water) has a temperature of about 32° Fahrenheit when no salt is used and as low as 14° Fahrenheit when 25% salt is mixed with the lump ice, therefore, it can effectively perform the two above mentioned functions. The service movements of the car, that is, the stopping and starting, as well as the swaying movement, cause the melted ice to be thrown against the foraminous floor supports, bulkhead supports, threshold and other projections and splash through the openings in the foraminous floor and against the lading. In package lading the containers would be soiled and in loose lading such dampness might cause the commodity to rot.

An object of the invention is to position the refrigerant ice so that the melted ice (water) will drain upon the insulated floor below the foraminous floor and to construct the foraminous floor so that the melted ice (water) will not splash through the foraminous floor.

Another object is to provide a foraminous floor comprising two series of parallel slats in spaced apart planes which are positioned relative to each other and formed to prevent lateral movement of the car from splashing the melted ice through the foraminous floor. A further object is to provide stringers for supporting the slats and to provide means at the intersections of the slats and stringers to prevent the longitudinal

movements of the car from splashing the melted ice against the stringers and through the foraminous floor.

Another object is to provide means between the slats in an upper plane and the slats in a lower plane to cause them to cooperate as compression and tension members respectively of beams, thus not only providing an anti-splash foraminous floor, but also providing a very strong foraminous floor to support the lading in transit and also the more concentrated load of a loaded truck or wheeled platform carrying the lading into or out of the car.

In the drawing:

Figs. 1 and 2 show the relation of my improved floor rack to the other elements of a refrigerator car to guide the circulating air from the refrigerant chamber to the lading compartment for cooling a lading as hereinafter described.

Figs. 3, 4, 5 and 6 show modifications of one form of my invention hereinafter described, wherein means are associated with the stringers to cover the spaces between adjacent slats adjacent the stringers to prevent splashing of melted ice through the foraminous floor.

In the form of my invention illustrated the refrigerator car is provided with a bulkhead 2 separating the refrigerant chamber 3 from the lading compartment 4. The bulkhead 2 is provided with an aperture 5 adjacent the floor 6 of the car and an aperture 7 adjacent the ceiling 8 of the car with a solid wall 9 therebetween.

A refrigerant is supported by the ice supporting means 12 in the refrigerant chamber 3 in spaced relation to the floor 6 of the car and the basket (or netting) 13 spaces the refrigerant from the end wall 14 and bulkhead 2 to provide the flues 16—17. The apertured floor rack, or foraminous floor, supports the lading so as to provide the space 20 which communicates with the flues 16—17. A refrigerant, such as ice in the refrigerant chamber, induces a convection circulation of air from the flues 16—17, through the flue space 20 and the apertures 21 in the floor rack, and as the air is warmed by the lading, it rises and passes through the bulkhead upper opening 7 and thence through the flues 16—17, and being cooled by the refrigerant, repeats the convection cycle.

When a stove or other heater is placed in the refrigerant chamber a convection circulation of air is induced in the opposite direction because the air warmed by the heater rises and falls when cooled by the lading.

In the form of my invention shown in Figs. 3

to 6 inclusive the foraminous floor 18 comprises a plurality of spaced apart slats 25 supported by stringers 26 upon the insulated floor 6 of the car, which stringers are preferably positioned parallel to the direction of movement of the circulating air and the spaced apart slats 25 extend normally to the stringers 26. The refrigerating circulating air passes through the spaces 27 between the slats. Screws, bolts, nails or any other securing means may be used.

In the modification shown in Fig. 3 the channel shape member 30 is positioned between each stringer 26 and the slats 25 with the web 31 thereof resting upon the stringer 26 and the depending flanges 32 spaced from the stringer so that the water being splashed against the stringer will be caught by the depending flanges and not allowed to pass through the spaces 27 between the slats.

In the modification shown in Fig. 4 the members 36 are secured to each side of the stringer 26 which cover the spaces 27 between adjacent slats 25 to stop the splashing water.

In the modification shown in Fig. 5 short members 40 are secured to the string 26 in the spaces 27 between adjacent slats 25 which extend beyond both sides of the stringer to stop the splashing water. The upper surfaces 41 of these members are preferably sloped to provide a watershed.

In the modification shown in Fig. 6 the stringer 45 is preferably made of two metallic strips of metal secured together at 46 (preferably by welding) and formed to provide horizontally disposed portions 47 supporting the slats 25 and a substantially vertical portion 48 supporting the horizontal portions 47 upon the insulated floor 6 with the horizontal portions 47 having depending flanges 49 to stop splashing water. The arms of the vertical portion preferably diverge for stability.

The accompanying drawing illustrates the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof, within the scope of the claims, will occur to persons skilled in the art.

This is a division of my co-pending application Serial No. 167,771, filed October 7, 1937.

I claim:

1. In a refrigerator car having an insulated floor, a foraminous floor above the insulated floor, a space between said floors and ice associated with other elements of the car to induce an air current in said space upon melting thereof, said ice being positioned so that the melted ice will drain upon said insulated floor, said foraminous floor comprising a plurality of spaced apart slats and a stringer extending normally to and supporting said slats upon the insulated floor and an inverted channel-shaped member having the web thereof between the stringer and said slats and the depending flanges thereof spaced away from the stringer whereby said

member prevents the melted ice on splashing against the stringer from resplashing through the spaces between the slats.

2. In a refrigerator car having an insulated floor, a foraminous floor above the insulated floor, a space between said floors and ice associated with other elements of the car to induce an air current in said space upon melting thereof, said ice being positioned so that the melted ice will drain upon said insulated floor, said foraminous floor comprising a plurality of spaced apart parallel slats and a stringer extending normally to said slats, said stringer comprising a horizontally disposed portion supporting the slats and a vertical portion supporting the horizontal portion upon the insulated floor, said horizontal portion having depending flanges spaced apart from the vertical portion.

3. In a refrigerator car having an insulated floor, a foraminous floor above the insulated floor, a space between said floors and ice associated with other elements of the car to induce an air current in said space upon melting thereof, said ice being positioned so that the melted ice will drain upon said insulated floor, said foraminous floor comprising a plurality of spaced apart parallel slats, a stringer extending normally to and supporting said slats upon the insulated floor, and a member secured to each side of the stringer which cover the spaces between adjacent slats whereby said members prevent the melted ice on splashing against the stringer from resplashing through the spaces between the slats.

4. In a refrigerator car having an insulated floor, a foraminous floor above the insulated floor, a space between said floors and ice associated with other elements of the car to induce an air current in said space upon melting thereof, said ice being positioned so that the melted ice will drain upon said insulated floor, said foraminous floor comprising a plurality of spaced apart parallel slats, a stringer extending normally to and supporting said slats upon the insulated floor, and means associated with the stringer to cover the spaces between adjacent slats and adjacent said stringer whereby said means prevents the melted ice on splashing against said stringer from resplashing through said spaces.

5. In a refrigerator car having an insulated floor, supports supporting a secondary floor above the insulated floor, a space between said floors, ice associated with the other elements of the car to induce an air current in said space upon melting thereof, said ice being positioned so that the melted ice will drain upon said insulated floor, said secondary floor provided with apertures for movement of said air current there-through, and means associated with said supports to prevent the melted ice on splashing against said supports from resplashing through said apertures.

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