Nov. 29, 1932. H. H. McKEE 1,889,686

REFRIGERATOR

Filed Sept. 29, 1930 2 Sheets-Sheet 1

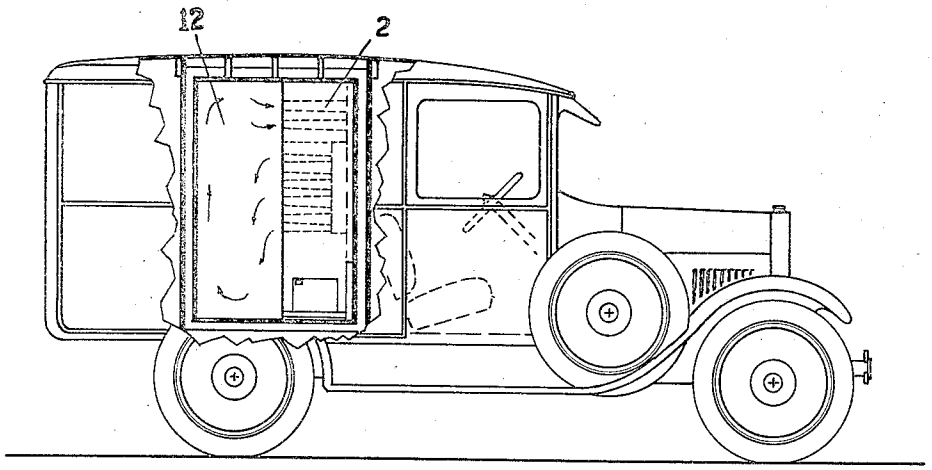


FIG-1

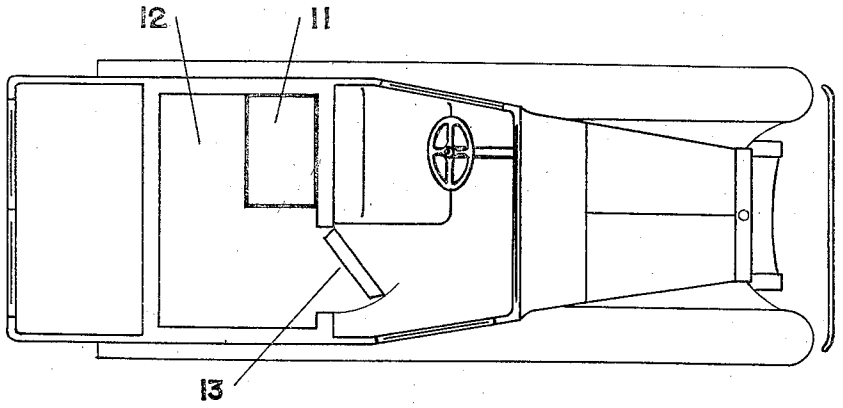


FIG-2

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REFRIGERATOR

Filed Sept. 29, 1930 2 Sheets-Sheet 2

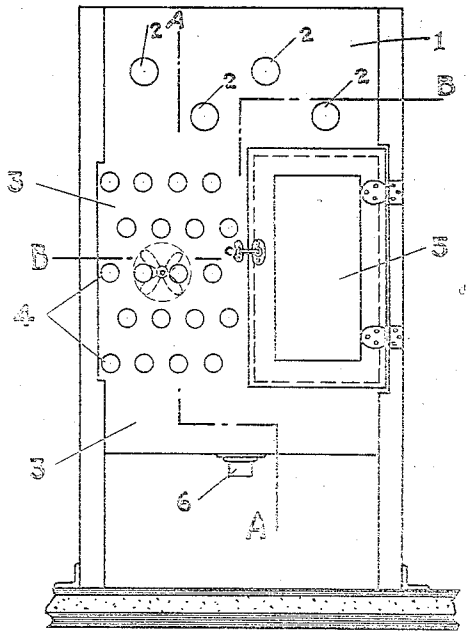


FIG-3

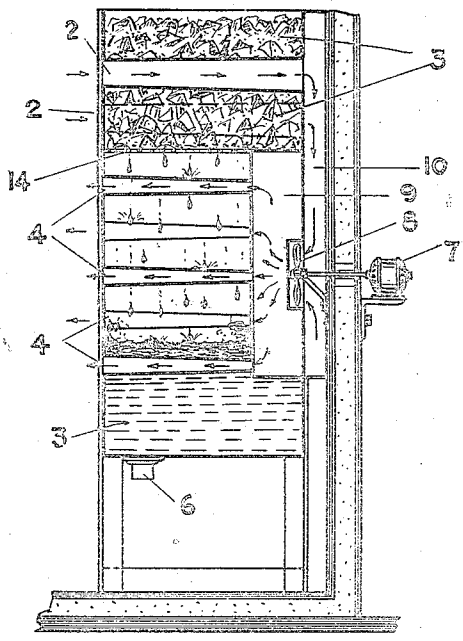


FIG-4

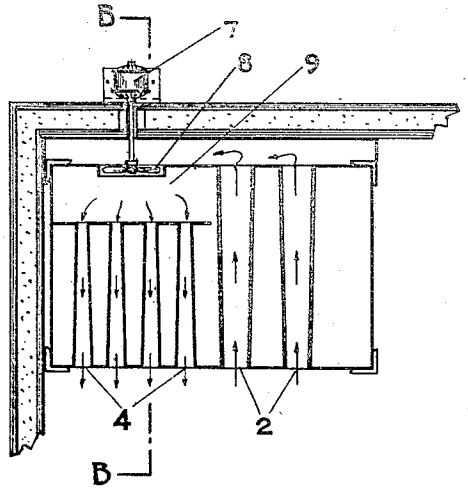


FIG-5

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BY Tony W. Johns

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Patented Nov. 29, 1932

1,889,686

UNITED STATES PATENT OFFICE

HARRY H. McKEE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INDUSTRIAL PATENTS CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE

REFRIGERATOR

Application filed September 29, 1930. Serial No. 485,029.

My invention relates to refrigerator units adapted for use in motor vehicles.

One of the objects of my invention is to provide an ambulatory refrigerator for the transportation of perishable food products.

Another object of my invention is to provide a refrigerator which will utilize natural water ice where it is desired to maintain temperatures below 45° F.

Another object of my invention is to provide a refrigerator unit for vehicles having a compartment of substantially lower temperatures than the remaining space within the refrigerator.

Referring now to the drawings, in which for convenience I indicate identical things in the several figures by similar reference numbers:

Figure 1 shows a conventional motor vehicle with a truck body partly cut away to show the unit in cross section.

Figure 2 is a plan view of the layout.

Figure 3 is a front elevation of the refrigerator unit as it appears from inside the refrigerator box.

Figure 4 is a section through A—A of Figure 3.

Figure 5 is a section through B—B of Figure 3.

Referring now to Figure 3: Ice and salt is placed in the compartment 1, through which pass the return air ducts 2. The melted brine passes down to the brine tank 3 through which pass a plurality of discharge air ducts, 4. Compartment 5 in close proximity to the brine tank, and the ice and salt compartment above, provides a storage chamber of lower temperature than the main storage chamber of the refrigerator. The brine tank is provided with a drain 6.

In Figure 4, it will be noted the motor 7, driving the fan 8, which forces the air in plenum chamber 9, through dicharge air ducts 4 in the direction of the arrows. It will be noted that these discharge air ducts are of greater diameter at the discharge end than in the plenum chamber. The air circulated by the fan 8 passes from the plenum chamber to tubes 4, into the outer compartment of the refrigerator and returns through tube 2 down chamber 10, to again enter plenum chamber 9 through the fan 8.

In Figures 1 and 2 it will be noted that the refrigerator unit 11, is placed at the one corner of the refrigerator chamber, the outer chamber 12 being used for storage of perishable products. Entrance is gained by 12 through door 13. The refrigerator unit 11 is located directly in rear of the operator's seat of the automobile, which has the said seat located at one side of its front portion and is provided at the opposite side of its front portion with an open space at which is located the door 13 which affords access to the storage chamber 12.

In operation the fan is driven by the motor supplied with power from the engine of the motor truck. The air that passes through the duct 2 loses heat and is taken up in the melting of the ice in the ice and salt compartment 3. The air is still further cooled as it passes through the ducts 4, which are kept at low temperatures by the brine passing down from compartment 3, in which the ice and salt is retained by perforated plate 14. Direct contact of the walls of compartment 5 with the brine in compartment 3 results in low temperature in compartment 5.

In practice, using a 1½ ton standard truck, I have maintained an average temperature of 42° to 43° F. in the chamber 12, and an average temperature of 36° in compartment 5, using only 55# of ice in 24 hours.

It is understood that changes may be made in the details and construction of my refrigerator without departing from the spirit of my invention as defined in the following claim.

I claim:

In combination with a vehicle provided at one side with an operator's seat and having an open space at the other side, a refrigerator including a storage compartment extending across the said vehicle, an upright refrigerating unit located at one corner of the storage compartment at the front thereof directly in rear of the operator's seat, said storage compartment being provided at the other front corner with a door located at the said

open space of the vehicle, said refrigerating unit comprising an upper ice tank from which water from the tank drips, air inlet ducts extending from the storage compartment and traversing the said tank, air discharge ducts traversing the drip from the said tank and discharging into the storage compartment, and means connected with the said ducts for producing a circulation of air through the same.

Signed at Chicago, Illinois, this 23rd day of September, A. D. 1930.

HARRY H. McKEE.