Oct. 18, 1938. A. J. GUTHRIE 2,133,856

COMMODITY TRANSPORTING AND COOLING DEVICE

Filed April 4, 1938 2 Sheets-Sheet 1

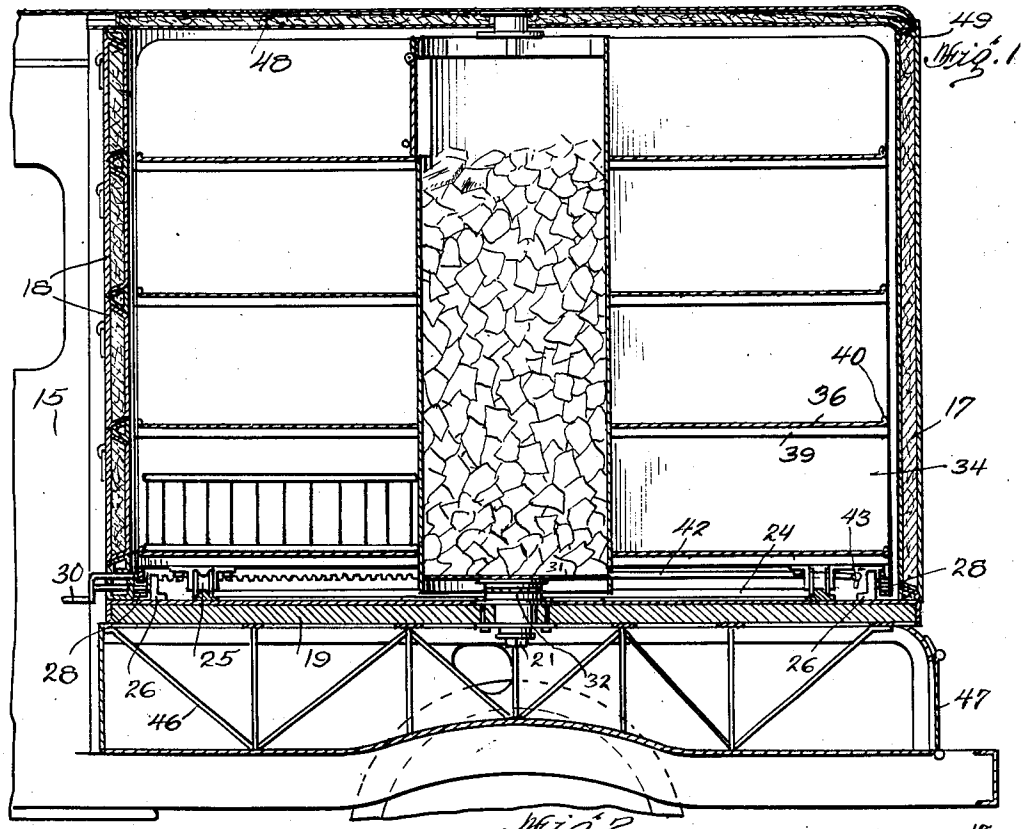


Fig. 2

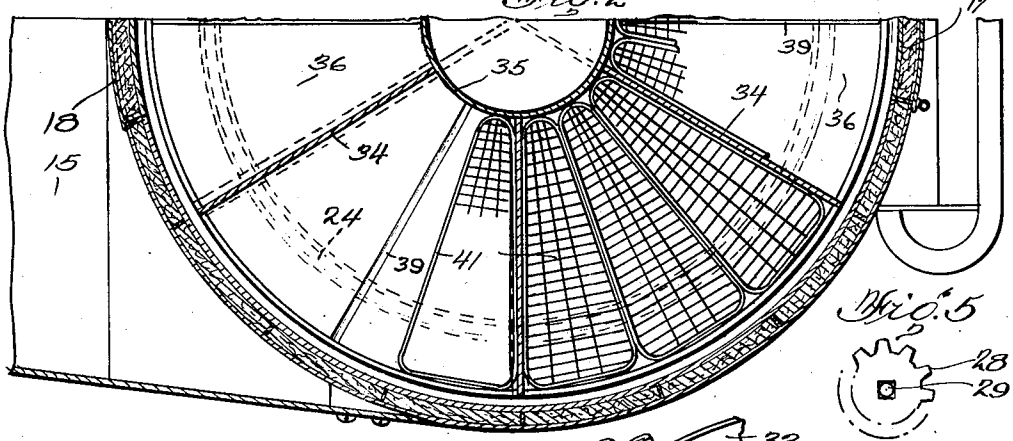


Fig. 5

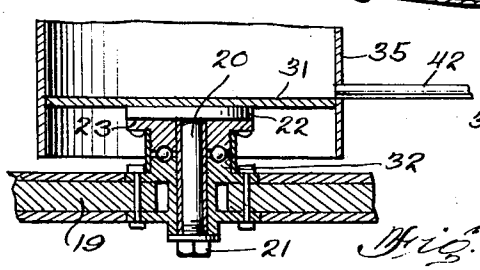


Fig. 3

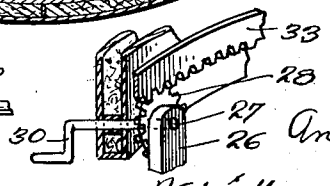


Fig. 4

Inventor,
Andrew J. Guthrie,
By Frank A. Appleman
Attorney

Oct. 18, 1938. A. J. GUTHRIE. 2,133,856

COMMODITY TRANSPORTING AND COOLING DEVICE

Filed April 4, 1938 2 Sheets-Sheet 2

Fig. 6

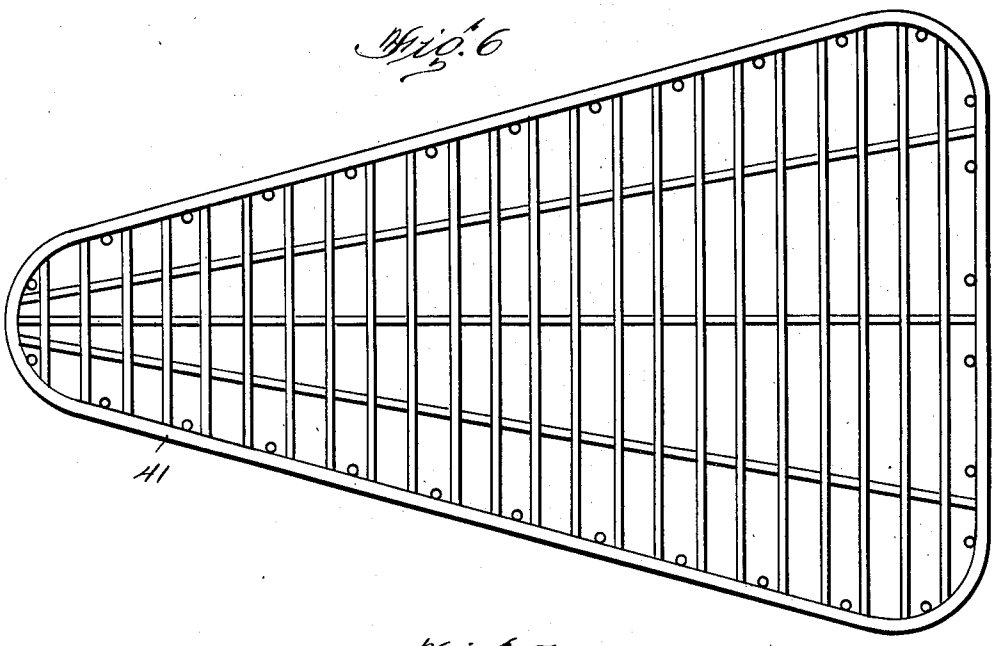


Fig. 7

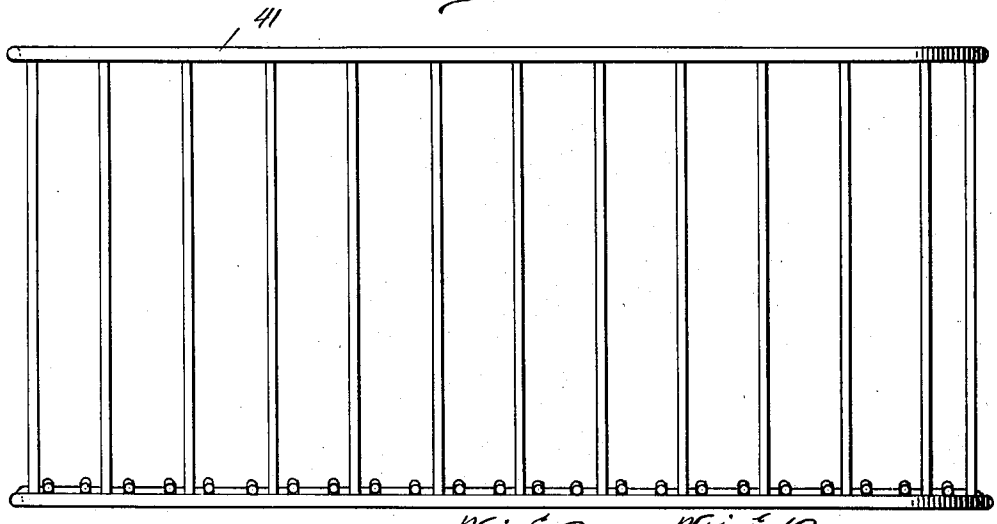


Fig. 8

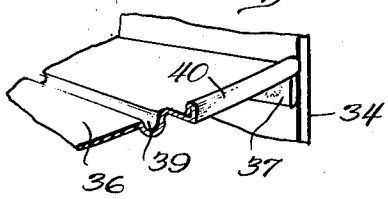


Fig. 9

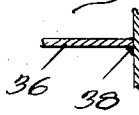
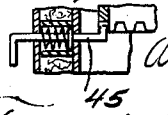


Fig. 10



Inventor,
Andrew J. Guthrie,
By Frank S. Appleman,
Attorney.

Patented Oct. 18, 1938

2,133,856

UNITED STATES PATENT OFFICE

2,133,856

COMMODITY TRANSPORTING AND COOLING DEVICE

Andrew Jackson Guthrie, St. Albans, W. Va., assignor of three-fourths to O. J. Bartlett and J. O. Bledsoe, St. Albans, W. Va.

Application April 4, 1938, Serial No. 200,018

8 Claims. (Cl. 62—13)

The present invention relates to a carrier-cooler for transporting preferably food products requiring a determined uniform or substantially uniform degree of frigidity in the progress of delivery of, for instance, dairy products, ice cream, meats and the like, on a route, to homes and stores in a day's duration.

The carrier or portable cooler may comprise a preferably metallic drum or cylinder mounted rigidly on a chassis or running gear, power driven or horse hauled, and provided with appropriate loading and delivery doors so that the operator shall have ready access to the contained products for ready removal at stations or stops along a route for expeditious service.

It is a further object of the invention to provide a carrier-cooler having a rotatable member within the drum or cylinder, preferably divided into compartments having a central refrigerant container and radiating shelves for holding commodities to be transported and dispensed, and preferably, the invention includes crates or trays, one or more of which may be applied to a shelf of the rotatable member so that when the member is rotated, the different compartments may be successively brought into position with relation to a door where the rotatable member is loaded, and to other doors from which the commodities may be removed.

It is furthermore an object of the invention to provide crates, preferably of wire or relatively heavy metal rods, which will fit in compartments of the rotary member and also, preferably these crates are divided into cells or pockets in which the commodity to be dispensed is lodged as, for instance, when they are used for holding bottles of milk which it is desired to refrigerate while being transported, and preferably the crates can be piled, one on the other, while containing the bottles of milk, although, in some instances, the crates may not be as high as the bottles, but that, however, is a matter of election or selection of the manufacturer or user.

It is a still further object of the invention to provide novel means for supporting the rotatable member so that it may turn in the drum or cylinder, and to accompany the same with mechanically operated means to impart rotary motion to the member and, to that end, a circular rack may be provided on the rotary member to be engaged by one or more pinions that are supported in bearings on the base of the drum, means being provided at the door openings for turning the pinions which are located at said door openings; it being understood that other pinions will be provided within the circumference of the base for engaging the rack to aid in supporting the rotatable member. The rotatable member may additionally be supported through the use of wheels on the rotatable member engaging a circular track.

It is furthermore an object of this invention to provide novel means for supporting the rotatable member centrally of the base and, to that end, an anti-friction bearing is interposed between the rotatable member and the base, and provision is furthermore made for draining the refrigerant compartment, as will presently appear.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this application, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a sectional view of a portion of the carrier-cooler embodying the invention;

Figure 2 illustrates a plan view of a portion thereof;

Figure 3 illustrates a detail sectional view of the support for the central section of the carrier;

Figure 4 illustrates a perspective view of the details for turning the rotatable member;

Figure 5 illustrates a detail view of one of the pinions;

Figure 6 illustrates a plan view of one of the crates;

Figure 7 illustrates a side elevation thereof;

Figure 8 illustrates a perspective view of a fragment of the shelf and partition associated therewith;

Figure 9 illustrates a sectional view of a modification of the means of attaching the shelf to the partition; and

Figure 10 illustrates a detail view of the latch for holding the rotatable member.

The vehicle body which is intended to be mounted preferably on the chassis of an automobile has the usual operator's cab 15, back of which the body is located, the said body being preferably insulated and having a rear door 17 for the purpose of loading the commodity to be hauled and dispensed, whereas the said body at the back of the cap has a plurality of doors 18, one above the other, which communicate with the interior

of the body and are intended to be used for removing the contents of the body.

The base or floor 19 of the body has means for supporting a rotatable shelf-like member having compartments for the reception of crates and commodities to be dispensed and, in the present embodiment of the invention, the floor has an aperture, through which a rod 20 projects, and the lower end of the rod is threaded and provided with a nut or other fastening 21 to retain the rod. A portion 22 of an anti-friction bearing is connected to the rod, and the said anti-friction bearing is held in place thereby, although the said portion of the bearing may have a flange 23 bolted or otherwise anchored to the rotatable member. The floor 19 may be provided with a circular track 24, on which wheels or rollers 25 on the rotatable member may travel. The floor is also provided with bearings 26 for pinion shafts 27, the pinions 28 of which are for a purpose to be presently explained. The bearings for the pinions may be distributed at suitable points around the edge of the floor, but preferably, one bearing is located at the front door opening at the bottom and another at the rear door opening. These latter pinions are intended to be operated by a crank which is inserted in either one of them as convenience requires, so that when it is turned it will effect a turning of the rotatable member, as will presently appear. The two pinions that are to be manually rotated may have sockets 29 therein, into which a crank 30 may fit, for the purpose of manipulation. The rotatable member is intended to carry the commodities or the containers for the commodities which are to be transported for delivery and, in the present embodiment of the invention, the said rotatable member comprises a base plate 31, to the under side of which the bearing 22 is attached, and this bearing 22 coacts with the bearing member 32 on the floor 19.

A circular rack 33 is attached to the rotatable member and rests on the pinions 28 so that when either of the pinions which are operated by the crank is turned, the rotatable member will be carried around to bring portions of it into position to be loaded from the rear door or unloaded from the front doors. The rotatable member, in the present embodiment of the invention, comprises a plurality of vertical partitions 34 which are in spaced relation to one another and extend from a central refrigerant reservoir or tube 35 to the periphery of the rotatable member. There are a number of segmental shelves 36 horizontally arranged between the several partitions and, in the present construction, these shelves, as well as the partitions, are made of relatively light gauge metal of sufficient strength to perform the functions of the device. However, the shelves may have depending flanges 37 which are welded or otherwise secured to the partitions and they are of such a nature that they will not interfere with the manipulation of carriers for containing commodities that are to be applied to and removed from the shelves. While I have shown the depending flanges, it is apparent that the shelves can be secured in place by spot welding, as at 38, their edges to the said partitions. These shelves are furthermore preferably provided with radial ribs 39 for the purpose of strengthening the same, so that a light gauge metal may be employed and furthermore, the outer edges of the shelves have upturned flanges 40 which serve to retain crates, such as 41, in place. The refrigerant reservoir or tube may be drained through a pipe 42 extending therefrom on the surface of the base 31 and its outer end may be provided with a drain cock 43, so that when the pipe is brought into a position opposite the rear door, the refrigerant reservoir may be drained.

The crates 41, in the present embodiment of the invention, are preferably approximately V-shape so that a plurality of them may be nested on a shelf between two partitions, as shown in the drawings, and preferably they are lodged back of the flanges of the shelves so that they are retained against displacement. The crates are preferably of wire construction of a suitable gauge to give rigidity and strength and they are intended to be of a capacity that will hold quart bottles of milk. Under some conditions, the crates may be of less height than the bottles, but if they are made slightly higher than the bottles, it will facilitate their being nested, one on top of the other, when containing bottles while they are being stored.

From what has been stated, it can be seen from an inspection of the drawings that an operator may load a plurality of crates into the several compartments between the partitions and that the contents hereof will be kept in a refrigerated state while the goods are being transported.

Under certain conditions, it may be desirable to retain the rotatable member at different positions of adjustment and for that purpose a spring-pressed rod 45 is projected through the wall of the body so that it may be inserted between teeth of the rack and operate to hold the rotatable member, as stated, whereas the said rod may be withdrawn to permit free turning of the rotatable member.

It is noted that the doors in the front of the body are in alinement with the compartments between the several shelves and therefore the contents of the rotatable body may be removed through the cab of the automobile.

There is provided under the floor of the truck a skeleton frame 46 with a rear door 47 in which empty crates or other containers may be stored and carried. It is shown in the drawings that the top 48 of the body has joints 49 where it is connected to the body and this top is removably secured in place in order that when it is removed, the interior can be reached to be disassembled or repaired.

While I have shown a refrigerant in the refrigerant reservoir, this refrigerant may be in the nature of "dri-ice" or frozen water and, under some circumstances, the conventional type of refrigerating coils may be employed for supplying refrigerant. Such coils are, of course, well known in the art and need not be shown or described in detail.

I claim:

1. In a refrigerating truck, an insulated body having a removable top, a rotatable member therein comprising a plurality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member, means for imparting motion to the said rotatable member, means for holding the rotatable member in different positions, and a draining means for the refrigerant reservoir.

2. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plu-

rality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member, comprising a central anti-friction bearing axially thereof, means for imparting motion to the said rotatable member, means for holding the rotatable member in different positions, and a draining means for the refrigerant reservoir.

3. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plurality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member, means for imparting motion to the said rotatable member, comprising rotatably mounted pinions on a stationary portion of the body and a toothed rack whose teeth are engaged by the pinions, means for rotating one or more of the pinions, means for holding the rotatable member in different positions, and a draining means for the refrigerant reservoir.

4. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plurality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, approximately V-shaped crates nested on the shelves between the partitions, means for rotatably supporting the rotatable member, means for imparting motion to the said rotatable member, means for holding the rotatable member in different positions, and a draining means for the refrigerant reservoir.

5. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plurality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member, means for imparting motion to the said rotatable member, means for holding the rotatable member in different positions, and a drain pipe connected to the refrigerant reservoir and extending radially through one of the compartments and terminating at the outer edge of said rotatable member for draining the refrigerant reservoir.

6. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plurality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, suitable doors in the side of the body, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member, means for imparting motion to the said rotatable member, means for holding the rotatable member in different positions, and a draining means for the refrigerant reservoir.

7. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plurality of vertically disposed radialy extending partitions, segmental shelves between the partitions suitably secured to said partitions, doors in the front of the body one above the other in registry with the segmental shelves through which the body is unloaded, and a rear door substantially the height of the body through which the segmental shelves are loaded, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member, means for imparting motion to the said rotatable member, means for holding the rotatable member in different positions, and a draining means for the refrigerant reservoir.

8. In a refrigerating truck, an insulated body, a rotatable member therein comprising a plurality of vertically disposed radially extending partitions, segmental shelves between the partitions suitably secured to said partitions, a central vertically disposed refrigerant reservoir at the inner edges of the partitions, means for rotatably supporting the rotatable member including a circular track on a stationary part of the body and wheels mounted on the rotatable member engaging the track, an axial central anti-friction bearing between a stationary part of the body and the rotatable member, means for imparting motion to the said rotatable member, means for holding rotatable member in different positions, and a draining means for the refrigerant reservoir.

ANDREW JACKSON GUTHRIE.