July 2, 1963 W. L. MORRISON 3,095,989

MEANS FOR MOVING SHIPPER CONTAINERS OFF OF AND ONTO A ROAD VEHICLE

Filed Jan. 30, 1961 3 Sheets-Sheet 1

Fig. 1.

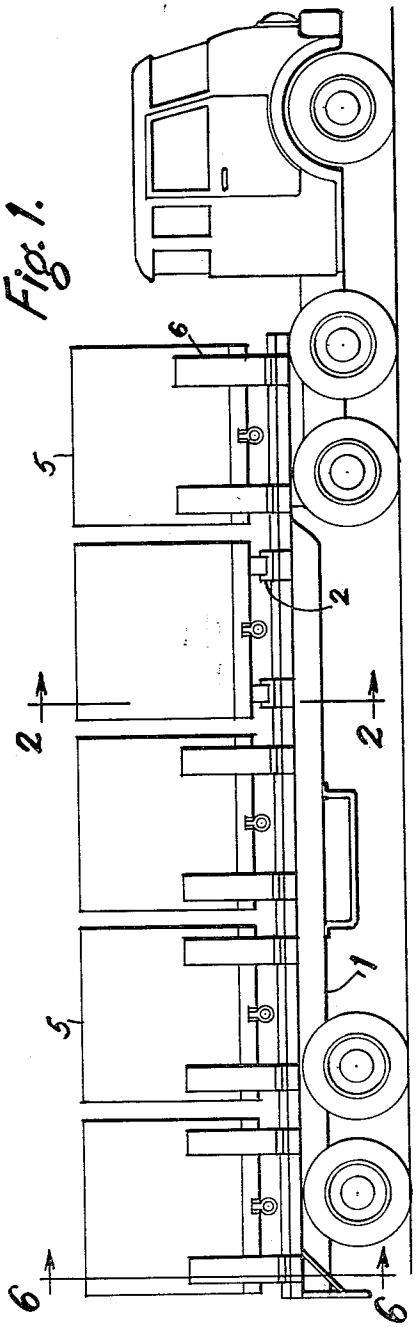
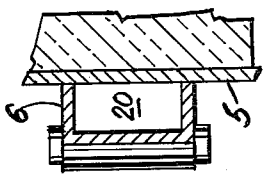
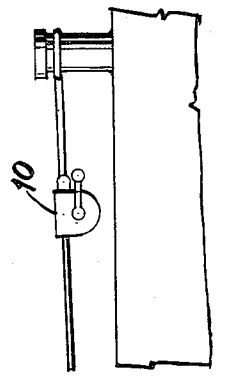
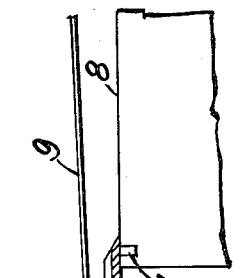


Fig. 3







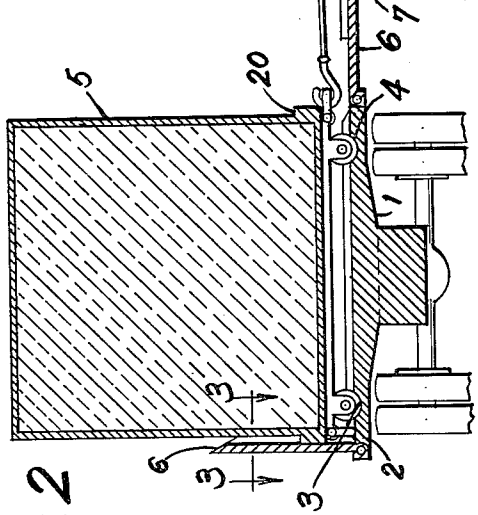


Fig. 2

INVENTOR.
WILLARD L. MORRISON
BY PARKER & CARTER
ATTORNEYS

July 2, 1963 W. L. MORRISON 3,095,989

MEANS FOR MOVING SHIPPER CONTAINERS OFF OF AND ONTO A ROAD VEHICLE

Filed Jan. 30, 1961 3 Sheets-Sheet 2

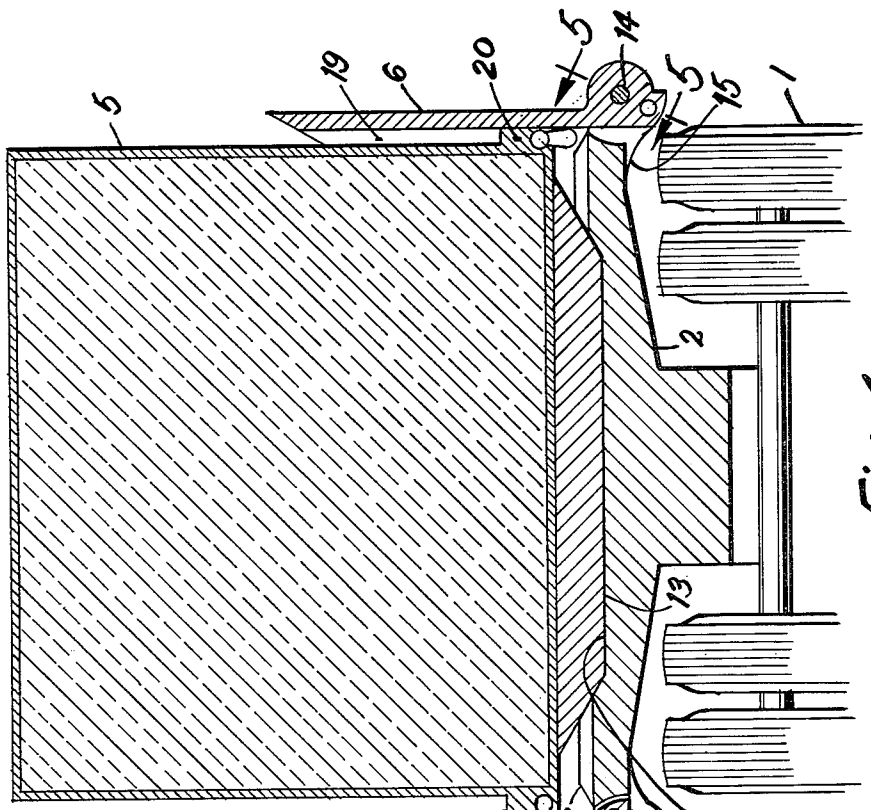


Fig. 4

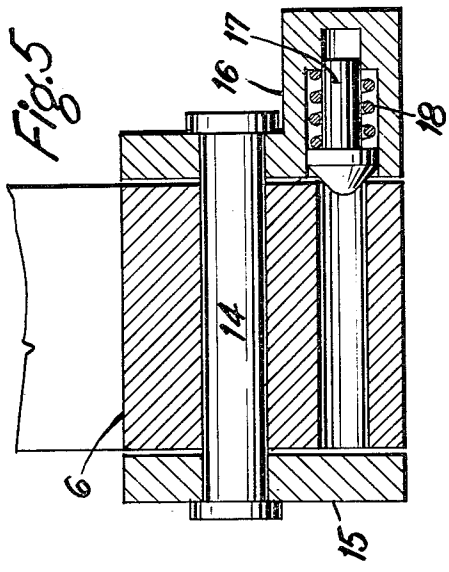


Fig. 5

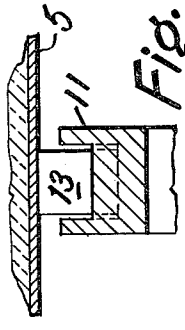


Fig. 8

INVENTOR.
WILLARD L. MORRISON
BY PARKER & CARTER
ATTORNEYS

July 2, 1963 W. L. MORRISON 3,095,989

MEANS FOR MOVING SHIPPER CONTAINERS OFF OF AND ONTO A ROAD VEHICLE

Filed Jan. 30, 1961 3 Sheets-Sheet 3

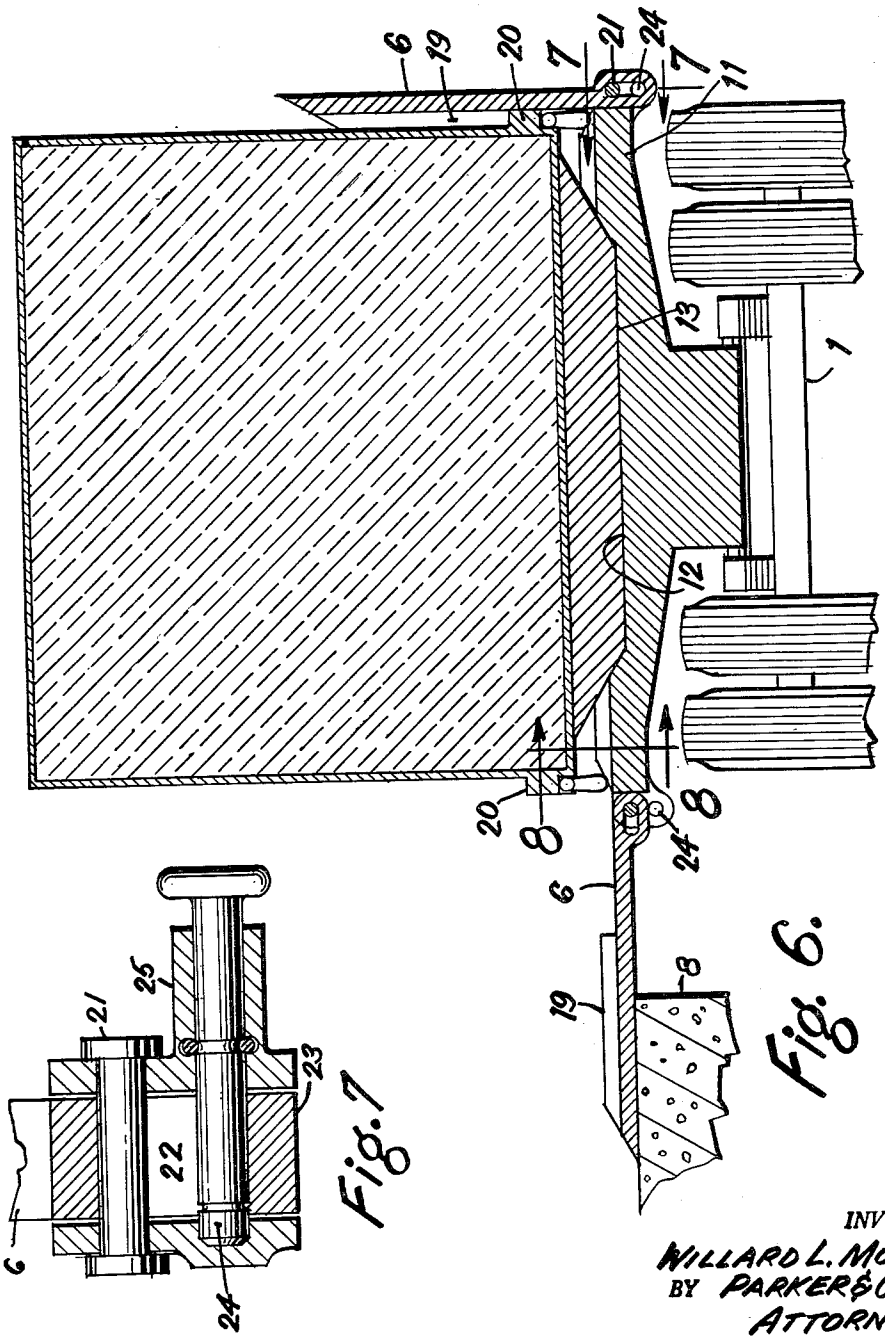


Fig. 6.

Fig. 7

INVENTOR.
WILLARD L. MORRISON
BY PARKER & CARTER
ATTORNEYS

United States Patent Office

3,095,989

Patented July 2, 1963

3,095,989

MEANS FOR MOVING SHIPPER CONTAINERS OFF OF AND ONTO A ROAD VEHICLE

Willard L. Morrison, Lake Forest, Ill., assignor to Liquefreeze Company, Inc., New York, N.Y., a corporation of New York

Filed Jan. 30, 1961, Ser. No. 85,673
1 Claim. (Cl. 214—85)

This invention relates to improvements in method and apparatus for handling and shipping frozen food and the like.

An object of this invention is to provide a means for removably mounting a shipping container in a stabilized position on a transport vehicle and it is a related object to provide means for releasably latching the shipping container in its stabilized position on the vehicle.

Other objects will appear from time to time in the course of the specification and claim.

The invention is illustrated diagrammatically in the accompanying drawings, wherein—

FIGURE 1 is a side elevation of a road vehicle embodying the invention;

FIGURE 2 is a section along the line 2—2 of FIGURE 1 showing the vehicle alongside a dock for loading and unloading;

FIGURE 3 is a section along the line 3—3 of FIGURE 2;

FIGURE 4 is a section on an enlarged scale of a modified form similar to the section of FIGURE 2;

FIGURE 5 is a section along the line 5—5 of FIGURE 4;

FIGURE 6 is a section similar to FIGURE 4 of a modified form;

FIGURE 7 is a section along the line 7—7 of FIGURE 6;

FIGURE 8 is a section with parts omitted along the line 8—8 of FIGURE 6.

Like parts are indicated by like characters throughout the specification and drawings.

The trailer 1 carries transversely thereof a plurality of track channels 2 extending across the vehicle frame. The track channels have as shown at 3 at each end depressions or pockets which are penetrated by the rollers 4 on the shipper container box 5. Pivoted on the vehicle frame at both ends of the transverse track channels are bridge channels 6 which may interlock as at 7 with a dock or other vehicle 8. The cable 9 may be hooked to the container and drawn by a winch 10 or any other suitable source of power to cause the rollers 4 to lift out of the pockets 3 and travel along the track 2 and bridge 6 onto the dock or other vehicle when the bridge may be raised to the position shown in the left hand side of FIGURE 2 for the vehicle to move from its unloading point.

In the modified form shown in FIGURE 4 instead of the two grooves and the rollers, I provide for the track 11 a depression or pocket 12 to be engaged by the skid 13 on the underside of the vehicle so that both in the form shown in FIGURE 2 and that shown in FIGURE 4 movement of the container along the track cannot take place unless the skid or the rollers move upwardly to clear the pocket 3 or 12.

The bridge members 6 and 2 function, one to serve as a bridge as shown in FIGURE 2 and the other to serve as a lock to hold the container down to prevent separation of the roller 4 and pocket 3 or skid 13 and pocket 12. When so held down, it is impossible for the container to move laterally across the truck off the track.

Referring especially to FIGURE 4, it will be noted that the bridge 6 is pivoted at 14 on a track 15. The track 15 contains a pocket 16 in which is a spring detent 17 pressed by spring 18 into engagement with the bridge 6 as indicated in FIGURE 5. The flange 19 on bridge 6 overlies the lug 20 on the container, when the bridge is in the vertical position. The bridge is held in a vertical position by the detent 17. There is no load on the bridge tending to rotate it as a result of pressure from the container because the container cannot move laterally along the track without rising and any tendency for it to rise from the track is resisted by the locking effect of flange 19 and lug 20.

In the modification illustrated in FIGS. 6, 7 and 8, the bridge 6 is provided with an elongate slot 22 in which the supporting pivot pin 21, fixed to the track 11, is slidably received to be disposed in the inner end of the slot when the bridge is in lowered position, as illustrated to the left in FIG. 6, and in the upper end when the bridge is in raised position, as illustrated to the right in FIG. 6. When in raised position, the lower end of the slot 22 is in lengthwise alignment with a locking pin 24 which is shiftable into and out of the aligned slot to lock the bridge in raised position when inserted in the slot and to free the bridge for rocking movement to and from lowered position when withdrawn from the slot. A ring and groove is provided in the bridge to hold the pin in retracted position.

I have illustrated a simple winch for the purpose of moving the container off the vehicle. Any suitable type of winch or power source—cable, push bar or the like—may be used to move the container off of or onto the vehicle. Such means form no part of the present invention and are not further illustrated. The essential element in this invention is that a relatively light and small shipper container may be moved onto and off a vehicle which carries it along fixed bridge elements which serve at one time as part of the locking means to hold the container on the vehicle and at another time serve as they interlock with the dock or other vehicle to form a positive positioning connection between the vehicle and the dock so that movement across the space between them can be easy and and safe.

The bridge member consists in holding the container in position on the vehicle by positively preventing vertical movement of the container with respect to the track on which it is supported. Since the vehicle interlocks with the track and cannot move longitudinally thereof without first rising above the track, a positive double action locking effect is obtained by the use of the interlocking of the channel and track on one hand and the interlocking of the container and bridge member on the other hand.

I claim:

In the combination of a transport vehicle and insulated shipping containers of substantial dimension and weight, means for removably mounting said shipping containers in a stabilized position of use on said transport vehicle, including means for the displacement of said containers into and out of said stabilized position onto and off of said transport vehicle, comprising longitudinally spaced apart tracks which extend laterally across a substantially flat horizontally disposed top surface of the transport vehicle, depressions in corresponding portions of said tracks spaced inwardly from the lateral edges thereof, portions spaced from the lateral edges of the containers extending downwardly from the bottom side of said containers for receipt in said depressions in said tracks when the containers are in position of use on said transport vehicle thereby releasably to hold the containers in position of use on the transport vehicle, bridge members laterally aligned with the tracks and pivotally mounted on each side thereof for rocking movement between a raised position extending vertically upwardly from the lateral edges of the tracks to a lowered position extending laterally horizontally as a continuation of said tracks with the upper surface of

said lowered bridge member substantially flush with the surface of said tracks to form an extension thereof, and means for releasably latching said bridge member in raised position to block movement of the containers laterally relative to the supporting tracks comprising an elongate slot in the inner end portion of the bridge member, a pin fixed to the track and extending through the slot pivotally to support the track for rocking movement between raised and lowered positions, and another pin spaced below the first pin and longitudinally aligned with the slot when the bridge is in raised position, said other pin being mounted for shifting movement into and out

of the slot whereby the pivot pin and the other pin retain the bridge in raised position when the latter as inserted in the slot and whereby the bridge is free for rocking movement about the pivot pin when the other pin is withdrawn from the slot, and means for releasably holding the other pin in retracted position.

References Cited in the file of this patent

UNITED STATES PATENTS

1,486,046	Smith	Mar. 4, 1924
1,860,747	McLaughlin	May 31, 1932
1,921,605	Canfield	Aug. 8, 1933