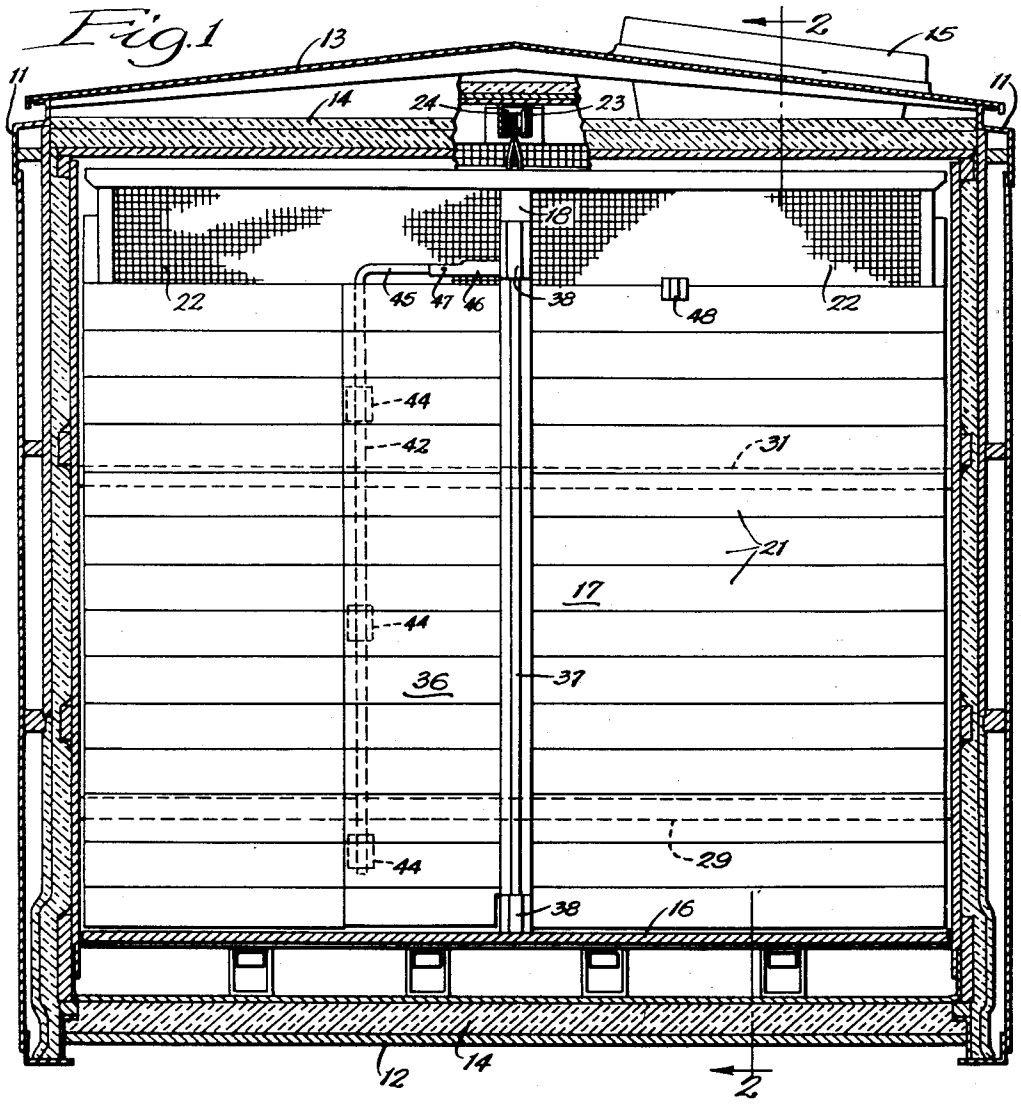
July 3, 1951 J. S. LUNDVALL 2,559,304

LATCH FOR REFRIGERATOR CAR DOORS

Filed April 1, 1944 4 Sheets-Sheet 1

Fig. 1



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July 3, 1951 J. S. LUNDVALL 2,559,304

LATCH FOR REFRIGERATOR CAR DOORS

Filed April 1, 1944 4 Sheets-Sheet 2

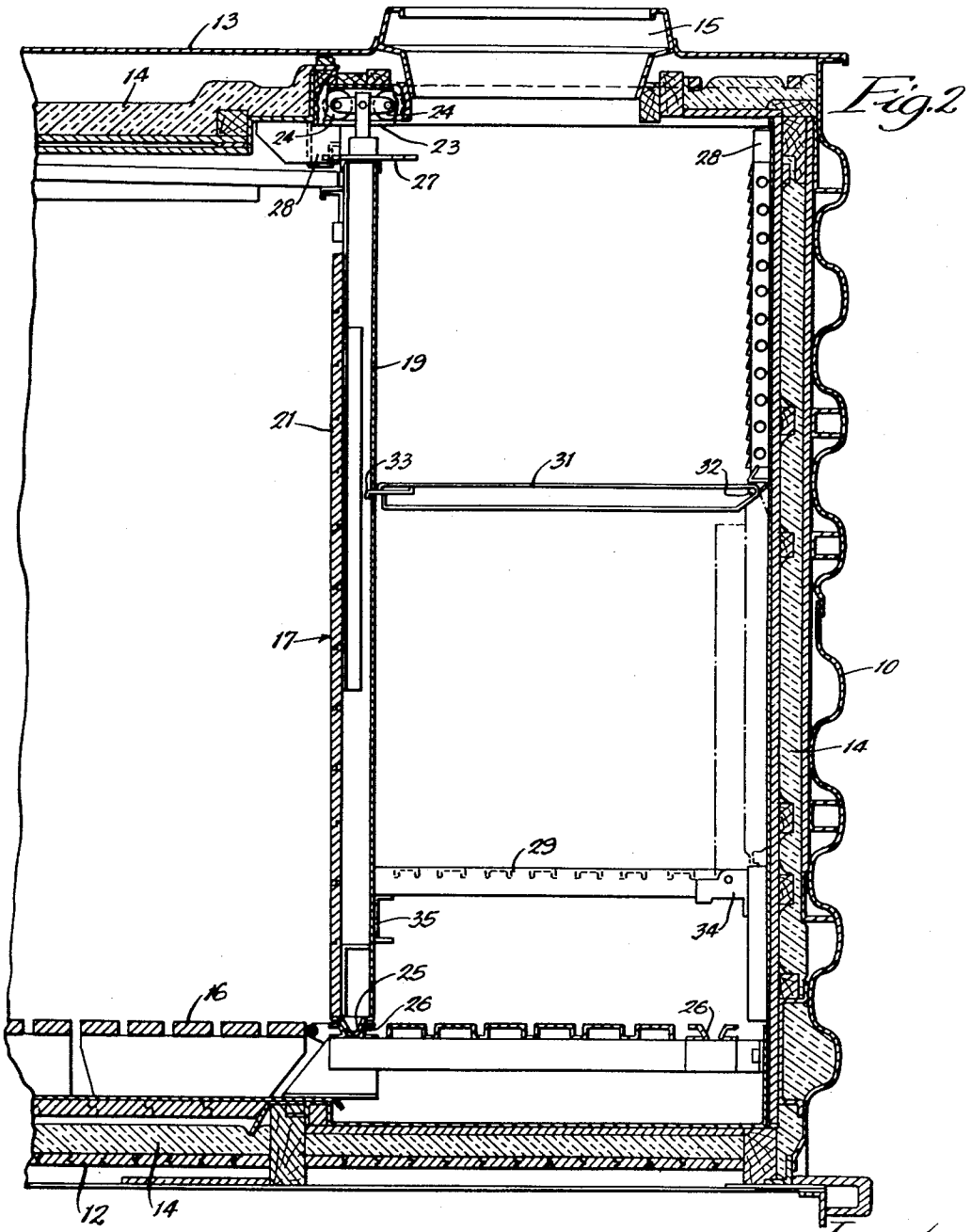


Fig. 2

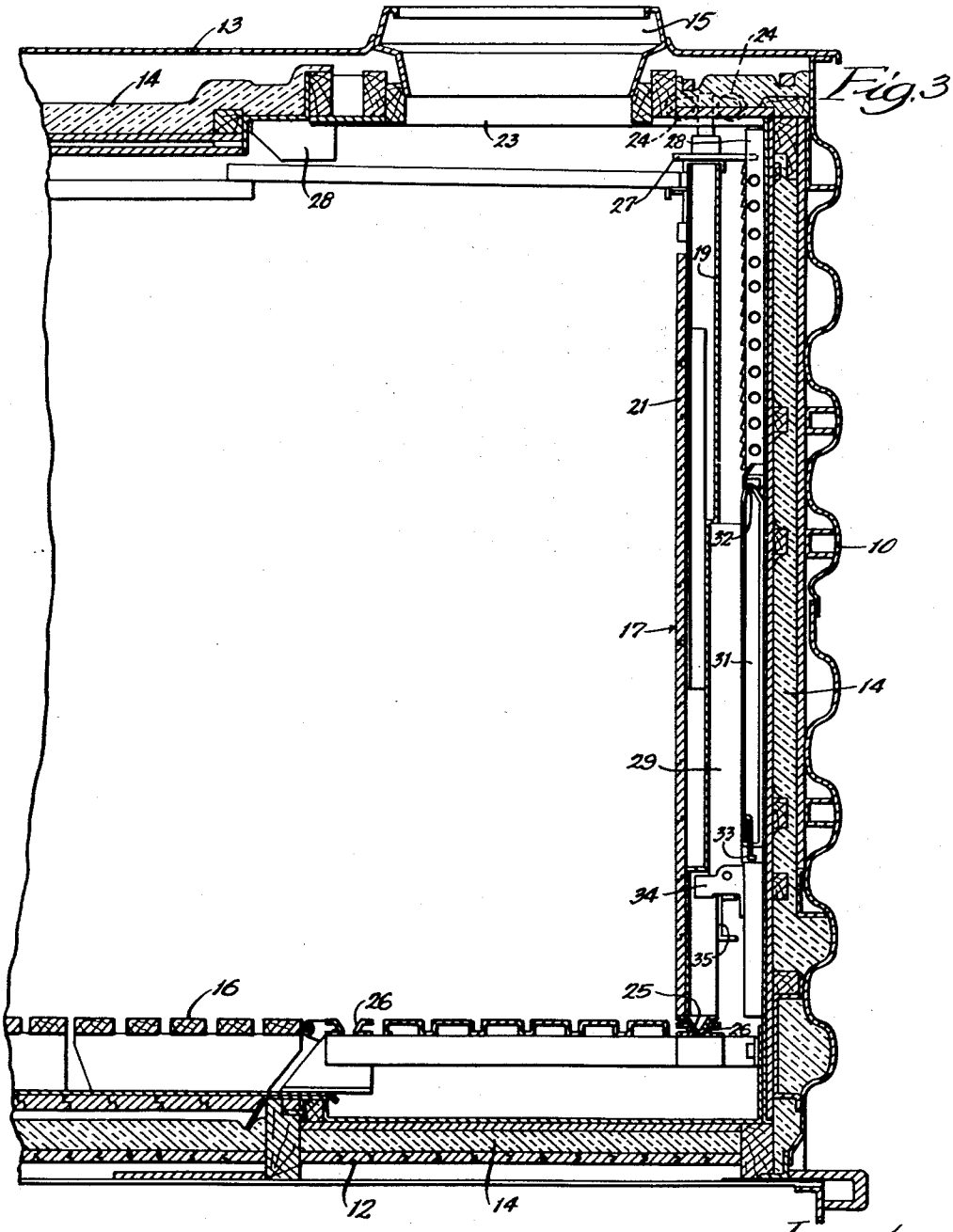
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LATCH FOR REFRIGERATOR CAR DOORS

Filed April 1, 1944 4 Sheets-Sheet 3

Fig. 3



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July 3, 1951 J. S. LUNDVALL 2,559,304

LATCH FOR REFRIGERATOR CAR DOORS

Filed April 1, 1944 4 Sheets-Sheet 4

Fig. 4

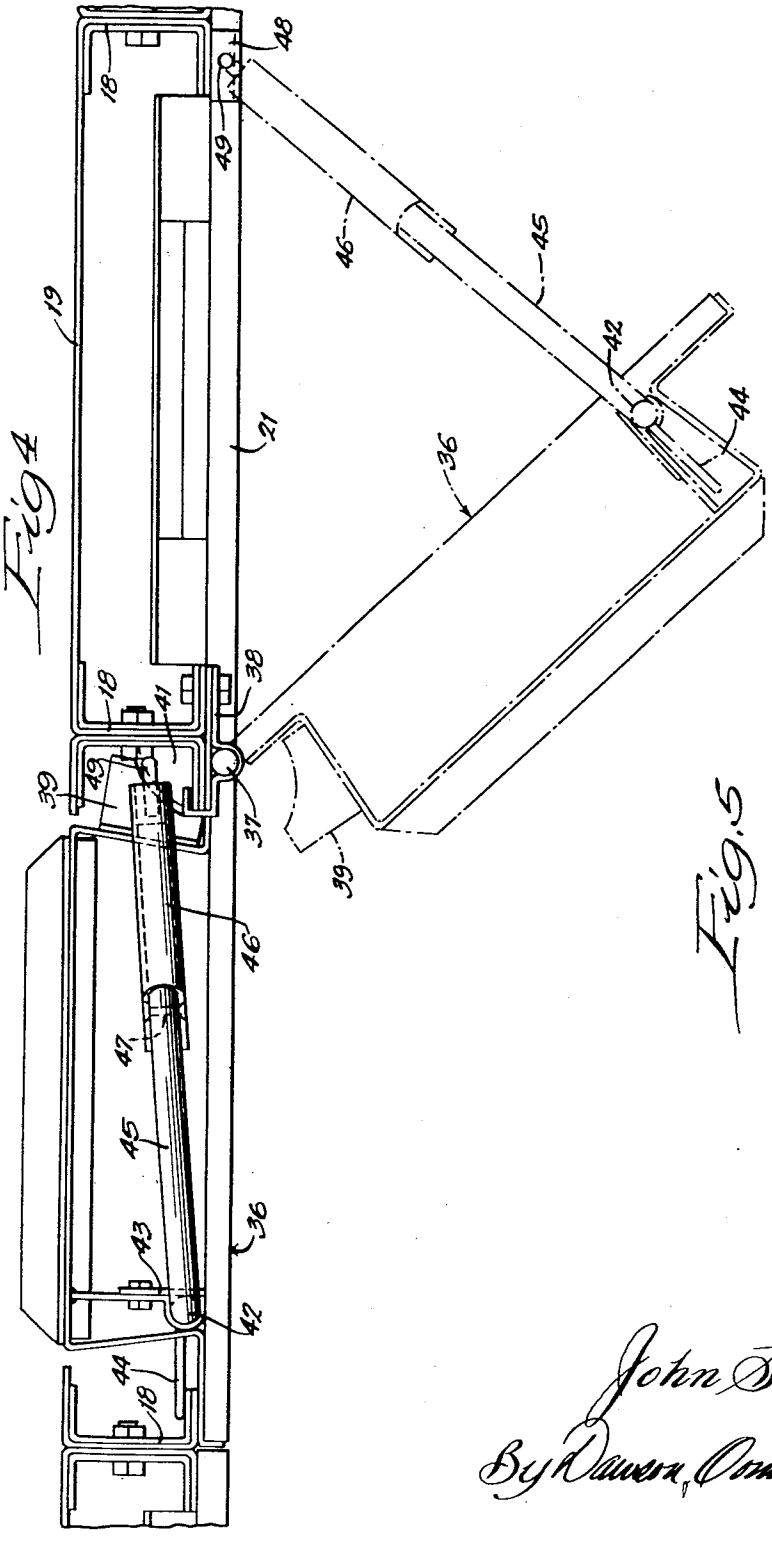
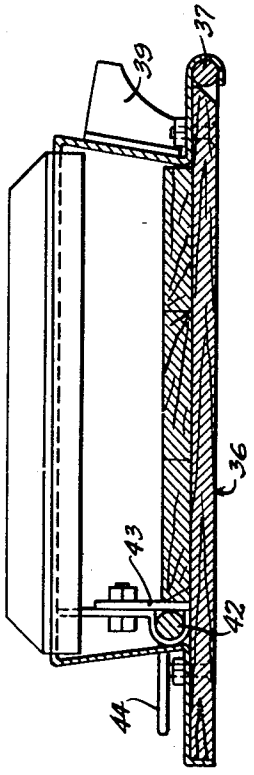


Fig. 5



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Patented July 3, 1951

2,559,304

UNITED STATES PATENT OFFICE

2,559,304

LATCH FOR REFRIGERATOR CAR DOORS

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Application April 1, 1944, Serial No. 529,134

2 Claims. (Cl. 20—21)

1

This invention relates to refrigerator cars and more particularly to a bulkhead construction for a refrigerator car.

In the normal use of refrigerator cars bulkheads are provided dividing the cars into lading and ice compartments. The ice compartments are provided with grates to carry ice for refrigerating the lading in the lading compartment of the car. For certain types of lading, as for example, lettuce, spinach or the like, the lading is body iced or top iced. In using the cars in this manner, ice is spread over the lading directly and the ice compartments in the ends of the car are not filled with ice. The cars are also frequently used as ventilated cars in which case no ice is placed in the ice compartments.

In order to increase the lading space when using the cars for body iced or ventilated shipments, the bulkheads are frequently made movable so that they can be shifted to a retracted position adjacent the end of the car. After the car has been used with ice in the ice compartments, there is frequently a relatively large amount of ice left which must be removed before the bulkheads can be retracted to use the car for body iced or ventilated shipments. Heretofore this has been done either by melting the ice by the application of steam or by removing the ice through the usual hatch opening in the top of the car by hand. Both of these methods are expensive and slow. Also in cars having movable bulkheads it is necessary for a man to enter the ice compartment through the hatch opening to move the ice grate out of its operative position and to climb out of the ice compartment and enter the lading compartment through the usual lading doors before the bulkhead can be moved.

The present invention has for one of its principal objects the provision of a refrigerator car in which the ice can be removed and the bulkheads can be retracted easily and simply from the lading compartment of the car. According to one desirable construction the bulkhead is provided with a hinged door through which access can be had to the ice compartment from the lading compartment.

Another object of the invention is to provide a bulkhead construction having a door therein in which the door and bulkhead are rigidly connected throughout the length of the door when it is in a closed position to prevent bending of the door.

Still another object of the invention is to provide a bulkhead having a door therein in which

2

latch means are provided to hold the door tightly closed and also to hold the door open.

The above and other objects and advantages of the present invention will be more readily apparent from the following description when read in connection with the accompanying drawings, in which—

Figure 1 is a transverse section of a refrigerator car having a bulkhead embodying the invention;

Figure 2 is a partial section on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2 showing the bulkhead in a retracted position;

Figure 4 is a top plan view of the bulkhead; and

Figure 5 is a section through the door.

The car illustrated comprises the usual end wall 10, side walls 11, floor 12, and roof 13. The walls as well as the floor and roof are insulated as indicated at 14 and the roof is provided adjacent one end of the car with the usual hatch opening 15. The floor of the car carries a lading rack 16 extending from end to end of the car and which may be formed of spaced planks or the like as shown to permit circulation of air around the lading.

The car is divided into a central lading compartment to which access may be had through the usual side doors and an ice compartment by a vertical bulkhead 17. The bulkhead is formed by a series of vertical beams 18 formed of U-shaped channels with their webs connected back to back and their flanges extending parallel to the bulkhead at the opposite sides thereof. The edges of the beams are connected and covered by wall coverings comprising sheets 19 on the ice compartment side and planking 21 on the lading compartment side. As best seen in Figure 1, the wall sheets and planking terminate short of the top of the car to provide a space for air circulation and a screen 22 is supported above the wall sheets to close the space.

The bulkhead shown is of the movable or convertible type and is supported on a central longitudinally extending track 23 at the top of the car on rollers 24. The bulkhead may be connected to the rollers through a lever mechanism of the type illustrated in my Patent No. 2,328,820 to raise the bulkhead for moving it and to lower it for latching in either its extended or retracted position. As shown, the bulkhead is formed at its lower edge with a projection 25 adapted to be received in grooves 26 adjacent the end of the car and spaced therefrom to hold the lower

end of the bulkhead against movement longitudinally of the car when it is in its lowered position. At its upper end the bulkhead carries a latching bar 27 cooperating with the latching blocks 28 to hold the upper end of the bulkhead in either position.

Ice is adapted to be supported in the ice compartment on one or more grates which are spaced above the rack 16. As shown, a lower ice grate 29 and an upper ice grate 31 are provided, although one of these could be omitted if desired. The upper ice grate 31 is pivoted to the end wall of the car at 32 and at its free end carries a latch member 33 adapted for connection to the bulkhead when the bulkhead is in its extended position to support the grate. When the bulkhead is retracted as shown in Figure 3, the grate 31 may be swung to a vertical position adjacent the end wall of the car. The ice grate 29 is similarly pivoted to brackets 34 on the end wall of the car and when in use has its free end supported on a bar 35 connected to the bulkhead. When the ice grate 29 is not in use it may be swung up to the position shown in Figure 3 to permit retraction of the bulkhead.

According to the present invention the bulkhead is formed with an opening therethrough which is provided by interrupting the inner wall 19 and the planking 21 between two adjacent beams 18. The opening is adapted to be closed by a door indicated generally at 36 which is pivoted to one of the beams 18. The pivotal connection is formed by connecting an elongated hinge rod 37 to one edge of the door and pivotally supporting the rod from the adjacent beam by means of brackets 38 at the top and bottom of the door. With this construction the door can be swung about the pivot rod 37 to its open and closed positions as shown in Figure 4.

In order to support the door between the hinge brackets 38 when the door is in its closed position, a plurality of bracket members 39 are connected to the edge of the door for cooperation with complementary blocks 41 attached to the adjacent edge of the beam. When the door is closed, the bracket members 39 fit against the blocks 41 to hold the door against outward movement on the bulkhead.

The door is adapted to be latched closed by a latch mechanism including an elongated latch rod 42 pivotally supported adjacent the opposite edge of the door by clamping brackets 43. The latch rod carries a plurality of latch plates 44 extending outwardly therefrom and vertically spaced along the edge of the door. With the latch rod in latching position as shown in full lines in Figure 4, the plates 44 underlie one of the flanges on the adjacent beam 18 to hold the door securely closed. It will be noted that the edge of the door overlies the same flange so that the door is held firmly against movement in either direction.

The latch rod is operated by an operating arm 45 rigidly secured to the upper end of the rod and extending at a right angle therefrom. As shown, the arm 45 is formed by bending over the upper end of the rod, although a separate arm could be employed if desired. The arm is adapted to be held in latching position by an extension 46 which is preferably formed of a channel shape strip pivoted at 47 to the arm. When the extension 46 is in its lowered position it extends beyond the end of the arm 45 sufficiently to lie behind the forward flange of

the beam 18 to which the door is hinged. Thus the arm is prevented from swinging out away from the door and the latch members 44 are held in latching position. To open the door the extension 46 may be swung up to clear the beam flange so that the latch members 44 can be swung away from the opposite beam.

The operating arm 45 is preferably so arranged that it can be utilized to hold the door in a partially opened position. For this purpose, a latch plate 48 is secured to the bulkhead spaced from the door and is formed in its upper end with an opening to rceceive a pin 49 carried by the end of the extension. When the door is opened the pin 49 can be placed in the opening in the plate 48 to hold the door in its open position as seen in Figure. 4

To remove ice from the ice compartment of a car the operator may enter the lading compartment of the car through the usual lading doors and may open the door 36 in the bulkhead. Any ice remaining on the grates 29 and 31 can then be shoveled therefrom into the lading compartment of the car through the bulkhead opening. Thereafter the operator may fold the grates 29 and 31 to their retracted position against the car end wall and may move the bulkhead to its retracted position as seen in Figure 3. With this construction, one man may therefore easily and quickly remove any remaining ice from the ice compartment and retract the bulkhead without the necessity of climbing in and out of the hatch opening and without leaving the car. In cases where heaters are used in the cars as during extremely cold weather, such heaters can easily be installed from the lading compartment of the car without danger of dropping or damaging them.

While one embodiment of the invention has been shown and described in detail herein, it is understood that this is illustrative only and not intended as a definition of the scope of the invention, reference being had for that purpose to the appended claims.

What is claimed is:

1. In a closure for an opening in a bulkhead or the like having spaced parallel beams adjacent to the opposite sides of the opening and formed with flanges at one face of the bulkhead parallel to the plane of the bulkhead, a relatively thick door having flat parallel inner and outer surfaces fitting into the opening to close, a vertical hinge pivotally connecting one edge of the door to one of the beams, an elongated latch rod rotatably carried by the other edge of the door between the planes of the door inner and outer surfaces, latch arms carried by the latch rod and projecting outward therefrom to engage one side of the flange on the adjacent beam, the door having an edge flange thereon to engage the opposite side of said flange, the latch rod projecting above the door and having an operating arm projecting at an angle from its upper end positioned to lie between the planes of the door inner and outer surfaces when the latch arms are in engagement with the flange on said beam and latch means to hold the operating arm in its latching position between the planes of the door inner and outer surfaces.

2. In a closure for an opening in a bulkhead or the like having spaced parallel beams adjacent to the opposite sides of the opening and formed with flanges at one face of the bulkhead parallel to the plane of the bulkhead, a rela-

tively thick door having flat parallel inner and outer surfaces fitting into the opening to close, a vertical hinge pivotally connecting one edge of the door to one of the beams, an elongated latch rod rotatably carried by the other edge of the door between the planes of the door inner and outer surfaces, latch arms carried by the latch rod and projecting outward therefrom to engage the opposite side of said flange, the latch rod projecting above the door and having an operating arm projecting at an angle from its upper end positioned to lie between the planes of the door inner and outer surfaces when the latch arms are in engagement with the flange on said beam, latch means to hold the operating arm in its latching position between the planes of the door inner and outer surfaces, and means on the bulkhead spaced from the opening to engage the end of the operating arm and hold the door open.

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