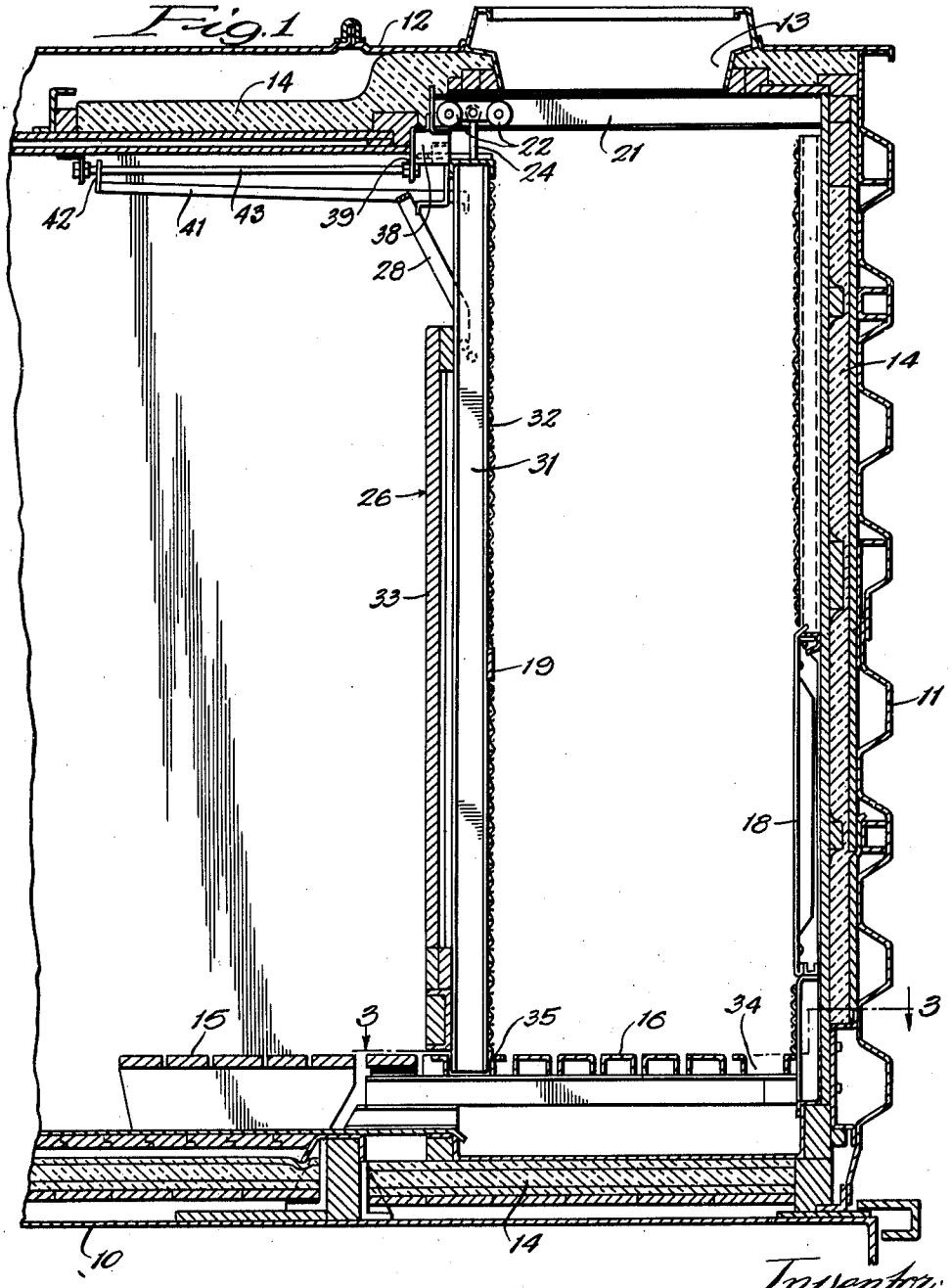
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CONVERTIBLE BULKHEAD

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Fig. 1



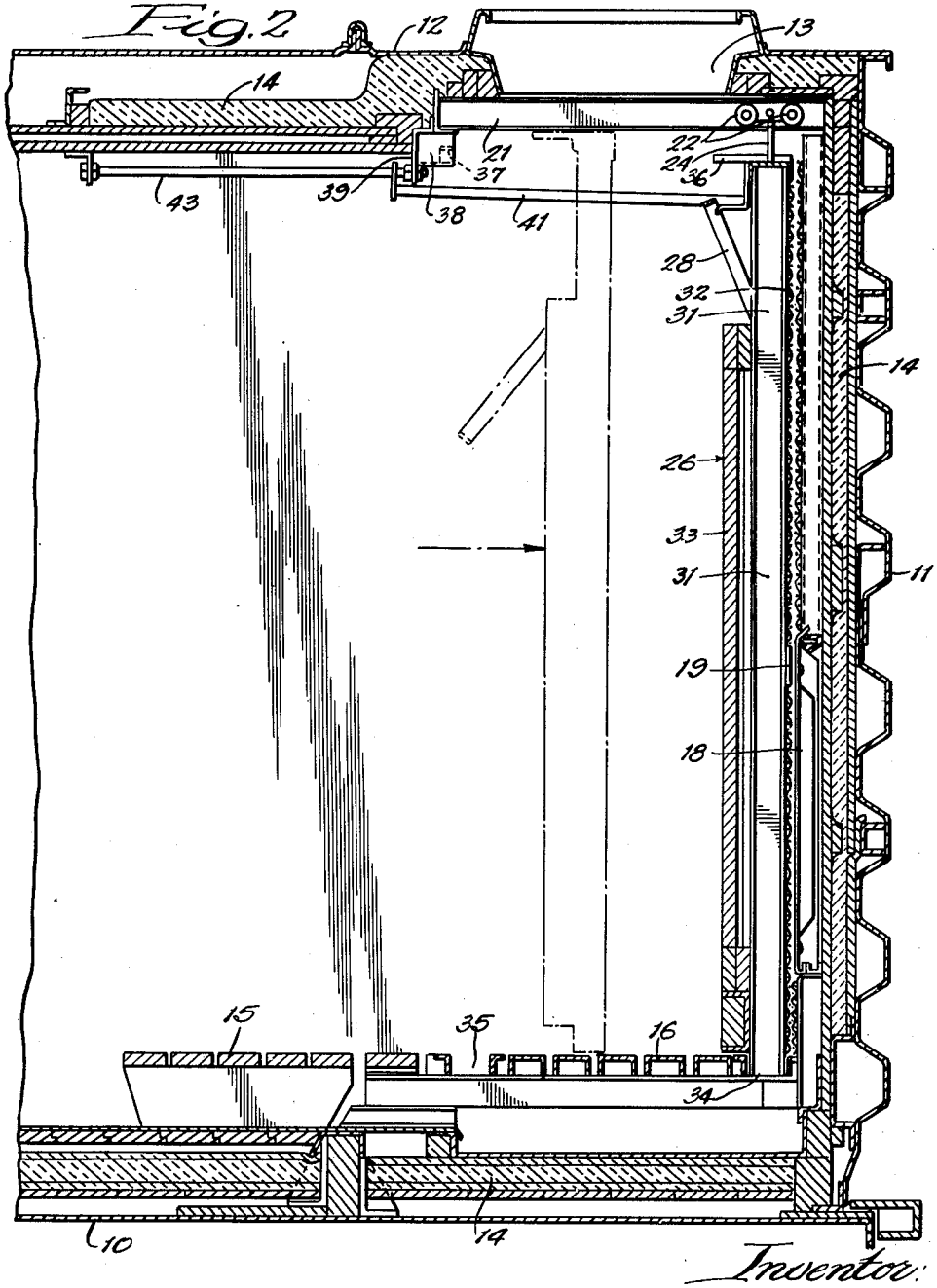
Inventor:
Charles S. Johnston
By Dawson, Orrs & Booth,
Attorneys.

Oct. 5, 1943. C. S. JOHNSTON 2,331,197

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Fig. 2



Inventor:
Charles S. Johnston,
By Dawson, Orrick & Booth,
Attorneys.

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Fig. 3

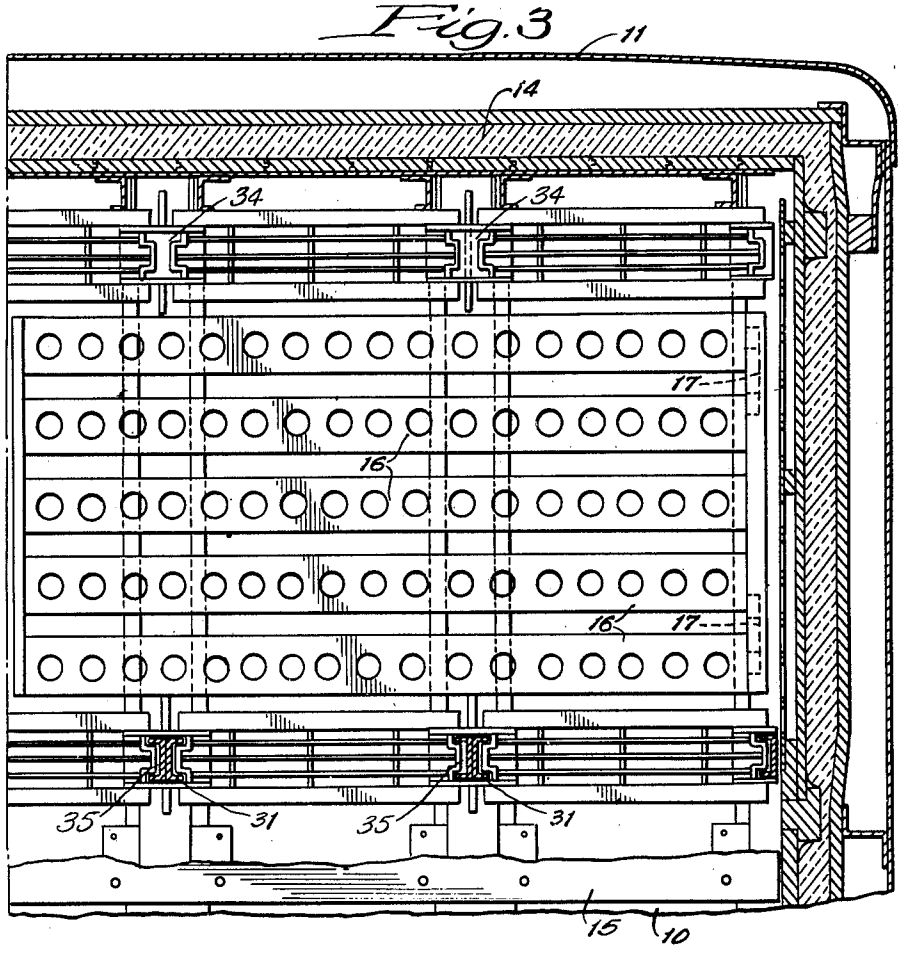
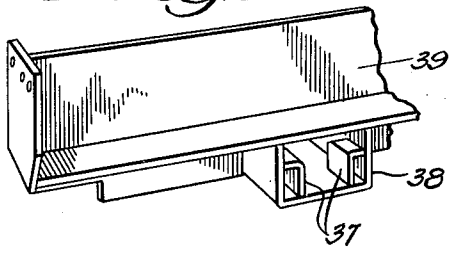


Fig. 4



Inventor:
Charles S. Johnston,
By Dawson, Coms & Booth,
Attorneys.

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Fig. 6

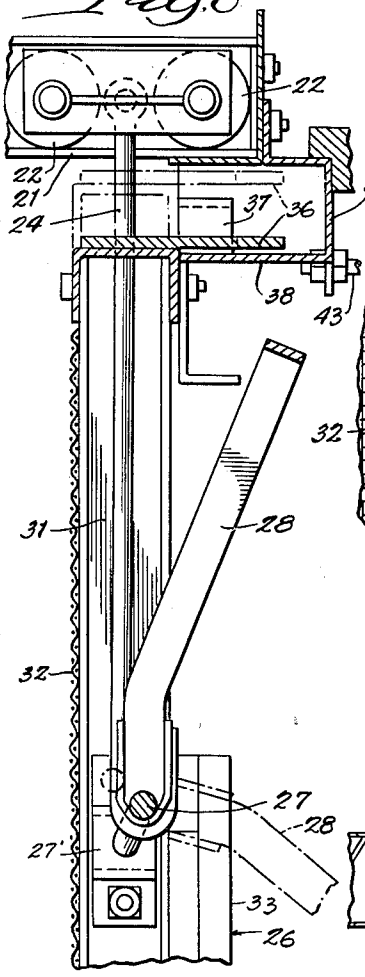


Fig. 5

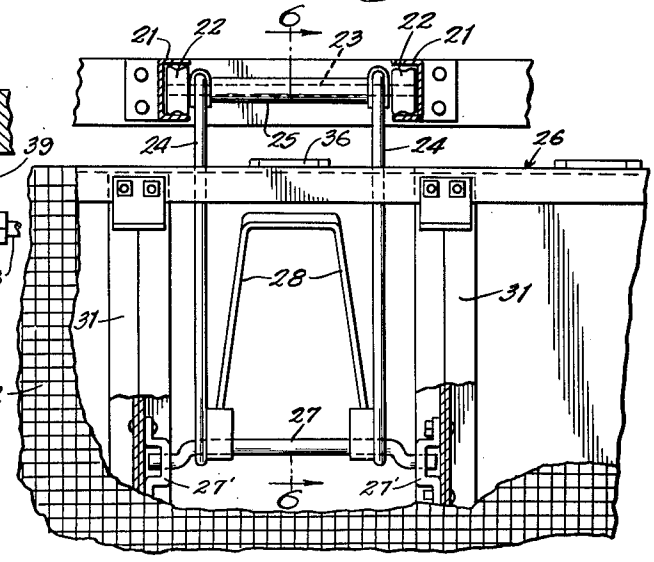


Fig. 8

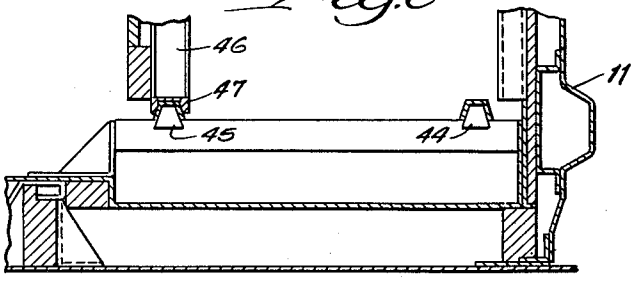
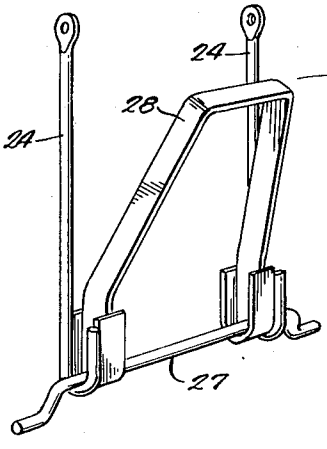


Fig. 7



Inventor:
Charles S. Johnston,
By Dawson, Owens & Booth.
Attorneys.

UNITED STATES PATENT OFFICE

2,331,197

CONVERTIBLE BULKHEAD

Charles S. Johnston, Glencoe, Ill., assignor to Transportation Specialties Co., Chicago, Ill., a corporation of Illinois

Application May 4, 1942, Serial No. 441,719

5 Claims. (Cl. 105—376)

This invention relates to convertible bulkheads and more particularly to bulkheads slidably supported in refrigerator or like cars to form ice bunkers therein or to collapse so that the bunker space forms a part of the lading compartment of the car.

One of the objects of the invention is to provide a relatively simple and inexpensive construction for supporting a bulkhead for easy movement from an extended to a retracted position.

Another object of the invention is to provide a convertible bulkhead which is securely locked and held in either its extended or retracted position.

Still another object of the invention is to provide a convertible bulkhead which may be raised for free movement in the car or which may be lowered to be held in position.

Another object of the invention is to provide a convertible bulkhead having connected thereto a hatch cover to close the hatch opening in the car when the bulkhead is retracted to prevent ingress to the car.

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

Figure 1 is a longitudinal section of one end of a refrigerator car with the bulkhead in its extended position;

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

Figure 3 is a partial horizontal section of the end of the car on the line 3—3 of Figure 1;

Figure 4 is a detail perspective view of the locking mechanism for the upper end of the bulkhead;

Figure 5 is a partial elevation of the bulkhead with parts in section to show the lifting mechanism;

Figure 6 is a partial enlarged section on the line 6—6 of Figure 5;

Figure 7 is a perspective view of a part of the lifting mechanism; and

Figure 8 is a partial longitudinal section illustrating an alternative construction for locking the bottom end of the bulkhead.

The car shown in the drawings comprises a floor plate 10 supported on the usual beams or the like, and an end wall 11 and a top wall 12 formed with a hatch opening 13 through which ice or the like may be placed in the ice bunker. All of the walls of the car are insulated by suitable insulating material 14 and the bottom of the car is formed with a floor rack 15 to support the lading in the car. Adjacent one end of the car a pair of hinged floor racks 16 are provided to support lading in the car and hinged at the sides of the car at 17 so that they may be swung out of the way for cleaning the floor of the car. An ice grate as shown at 18 may be pivoted to the end of the car to be swung up into a horizontal position and supported from a cross bar 19 on the bulkhead when a load of ice is to be placed only in the upper part of the ice bunker.

In the upper portion of the car adjacent the top a pair of horizontal tracks 21 are provided spaced apart and extending longitudinally of the car. The tracks support rollers 22 which carry a cross axle 23 extending between the tracks. A pair of links 24 are supported by the axle and held spaced apart by a frame 25 around the axle.

The links are adapted to be connected to a bulkhead indicated generally at 26 to support the bulkhead for vertical movement by means of a crank 27 pivoted at its ends in brackets 27' secured to the bulkhead and having its intermediate portion connected to the links 24 as by means of hooking the ends of the links over the crank as shown in Figure 7. The crank is adapted to be operated by a yoke 28 rigidly secured thereto and which can be swung manually to turn the crank to raise or lower the bulkhead. As shown, when the crank is in its upper position the bulkhead will be lowered while when the crank is swung downwardly the bulkhead will be raised for free sliding movement on the tracks.

The bulkhead, as shown, is formed by a plurality of vertical beams 31 arranged side by side and covered on their inner surface by a screen 32. The outer surface of the beams may be covered by a wall 33 of wooden planks or the like which terminate short of the upper and lower ends of the beams as shown. With this construction air is permitted to circulate over the upper end of the wall, over ice in the bunker, and through the floor 16 to the lading compartment.

The floor of the car, as best seen in Fig. 3, is formed with a plurality of sockets 34 adjacent the end of the car and with a similar series of sockets 35 to register with the beams when the bulkhead is in its extended position. The ends of the beams are of such a length that when the bulkhead is raised by operating the yoke 28 they will clear the sockets, but when the bulkhead is lowered the ends of the beams will rest in the sockets to hold the bulkhead against movement.

The upper end of the bulkhead is adapted to be locked by means of T-shaped bars 36 rigidly secured thereto and projecting horizontally therefrom toward the central portion of the car. It will be understood that any desired number of bars may be provided in accordance with the size of the car. The bars 36 are adapted to cooperate with spaced abutments 37 carried by a U-shaped bracket 38 which is supported from a cross beam 39 secured to the upper part of the car. As will be seen in Figure 4, the abutments

37 terminate below the lower surface of the beam 39 so that the head of the T-bar 36 can enter the bracket 38 above the abutments when the bulkhead is in its raised position, as shown in Figure 6. When, however, the bulkhead is lowered, the head of the T-bar 36 will drop behind the abutments 37 to hold the upper end of the bulkhead against movement.

In order to close the hatch opening to prevent ingress to the lading compartment of the car when the bulkhead is retracted, a hatch guard and rain pan is provided operated in conjunction with the bulkhead. As shown, the hatch guard comprises a plate 41 connected at one end to the bulkhead and supported at its opposite end by a bracket 42 slidably surrounding a track bar 43 supported below the top of the car. When the bulkhead is extended, as shown in Figure 1, the plate 41 underlies the upper surface of the car so as not to interfere with the lading, and when the bulkhead is retracted, as shown in Figure 2, the plate 41 is pulled back into register with the hatch opening 13 to prevent ingress to the car.

In operating the bulkhead when the car is to be used as a refrigerator car the yoke 28 will be swung down to the dotted position shown in Figure 2 and the bulkhead will be pulled forwardly to its extended position. When the yoke 28 is then swung up the bulkhead will be lowered, dropping the ends of the beams 31 into the sockets 35 and latching the head of the T-bar 36 behind the abutments 37. The bulkhead is thus rigidly held in its extended position in the car so that ice may be placed in the bunker behind the bulkhead to refrigerate the lading in the car.

When the bulkhead is to be retracted the yoke 28 may again be pulled down to raise the bulkhead, releasing the lower ends of the beams 31 from the sockets 35 and raising the head of the T-bar out of register with the abutments 37. The bulkhead may then be pushed toward the end of the car on the tracks 21 until it is in its extreme retracted position, as shown in full lines in Figure 2. The yoke 28 may be released allowing the bulkhead to move to its lower position so that the lower ends of the beams 31 will drop into the sockets 34 to hold the bulkhead retracted. If desired, locking mechanism for the top of the bulkhead similar to that shown at 36 and 37 may be provided to hold the top end of the bulkhead in its retracted position.

Figure 8 illustrates an alternative construction for locking the lower end of the bulkhead in which the floor of the car is provided adjacent the end with a raised projecting ridge 44 and a similar projecting ridge 45 in a position to underlie the bulkhead in its extended position. The bulkhead indicated at 46 is formed in its lower surface with a grooved plate 47 adapted to interfit with the projecting ridges 44 and 45 when the bulkhead is lowered to hold the lower end of the bulkhead against movement. When the bulkhead is raised the grooved plate will move away from the ridges to free the bulkhead for sliding movement.

While two embodiments of the invention have been shown and described in detail, it will be understood that these are illustrative only and are not intended to define the scope of the invention, reference being had for this purpose to the appended claims.

What is claimed is:

1. In a car having track means extending horizontally and longitudinally of the car, a movable bulkhead, rollers supported on the track means, means connecting the bulkhead to the rollers and adjustable to raise the bulkhead above the floor of the car or to lower it to rest on the floor of the car, and cooperating means on the upper and lower ends of the bulkhead and adjacent the top and floor of the car and separate from the track means to interengage when the bulkhead is lowered to hold it rigidly in the car and to disengage when the bulkhead is raised whereby it can be moved along the track.

2. In a car having track means extending horizontally and longitudinally of the car, a movable bulkhead, rollers supported on the track means, means connecting the bulkhead to the rollers and adjustable to raise the bulkhead above the floor of the car or to lower it to rest on the floor of the car, and cooperating means on the upper and lower ends of the bulkhead and adjacent the top and floor of the car and separate from the track means to interengage when the bulkhead is lowered to hold it rigidly in the car and to disengage when the bulkhead is raised whereby it can be moved along the track, one of said cooperating means comprising a socket part and a projecting part adapted to extend into the socket when the bulkhead is lowered.

3. In a car having track means extending horizontally and longitudinally of the car, a movable bulkhead, rollers supported on the track means, means connecting the bulkhead to the rollers and adjustable to raise the bulkhead above the floor of the car or to lower it to rest on the floor of the car, and cooperating means on the upper and lower ends of the bulkhead and adjacent the top and floor of the car to interengage when the bulkhead is lowered to hold it rigidly in the car and to disengage when the bulkhead is raised whereby it can be moved along the track, one of said cooperating means comprising spaced abutments and a T-shaped locking member adapted to pass over the abutments when the bulkhead is raised and to engage therewith when the bulkhead is lowered.

4. In a car having a hatch opening in its top adjacent the end, and a track adjacent the top of the car substantially coextensive lengthwise of the car with the hatch, a movable bulkhead construction comprising a vertical bulkhead extending across the car, means supporting the bulkhead from the track for movement from a retracted position adjacent said end of the car to an extended position at the opposite side of the hatch opening, a hatch closure member in the car adjacent the top thereof connected at one end to the bulkhead and extending therefrom toward the center portion of the car, a second track adjacent the top of the car, and means slidably supporting the other end of the hatch closure member from the second track.

5. In a car, having a horizontal track adjacent the top of the car, a vertical bulkhead, means slidably supporting the bulkhead on the track for movement along the track longitudinally of the car and adjustable to raise and lower the bulkhead, a beam extending transversely of the car adjacent one end of the track, horizontally spaced locking abutments carried by the beam and spaced therebelow, and a T-shaped arm carried by the bulkhead and extending horizontally therefrom to pass above the abutments when the bulkhead is raised and to engage behind the abutments when the bulkhead is lowered to hold the bulkhead against movement.

CHARLES S. JOHNSTON.