

Feb. 7, 1928.

1,658,569

R. C. MUNRO

CAR END DOOR

Filed June 22, 1923

3 Sheets-Sheet 1

Fig. 3

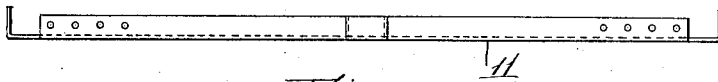


Fig. 2

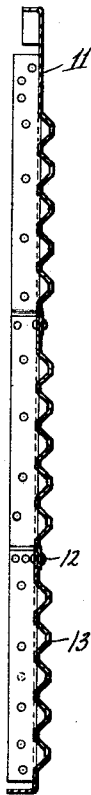


Fig. 1

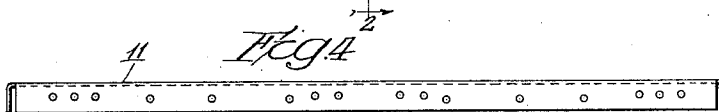
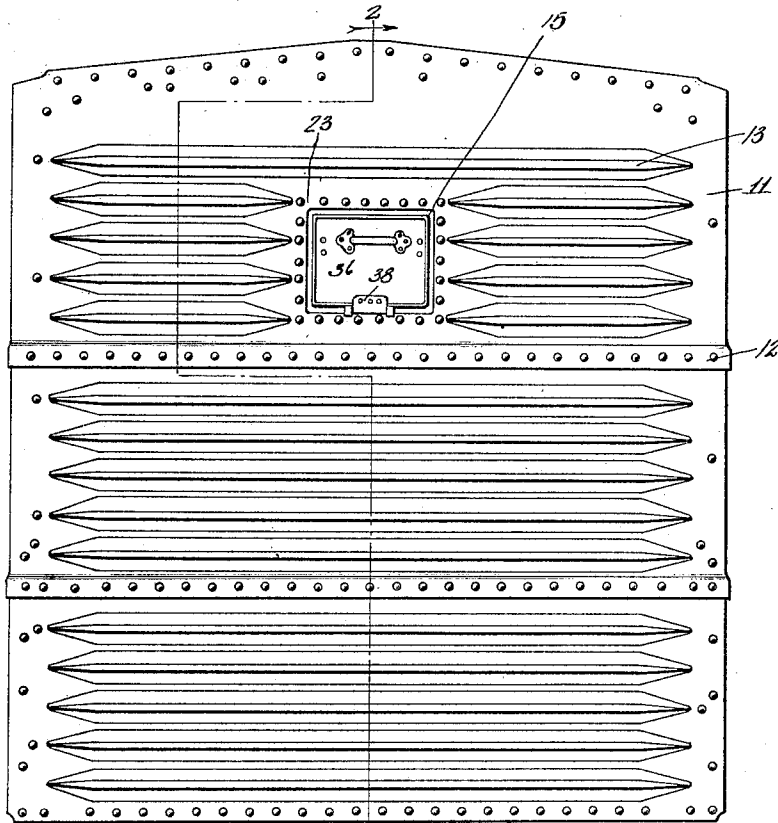


Fig. 4

Inventor:
Roy C. Munro

By: Munday, Clark & Carpenter
Attys.

Feb. 7, 1928.

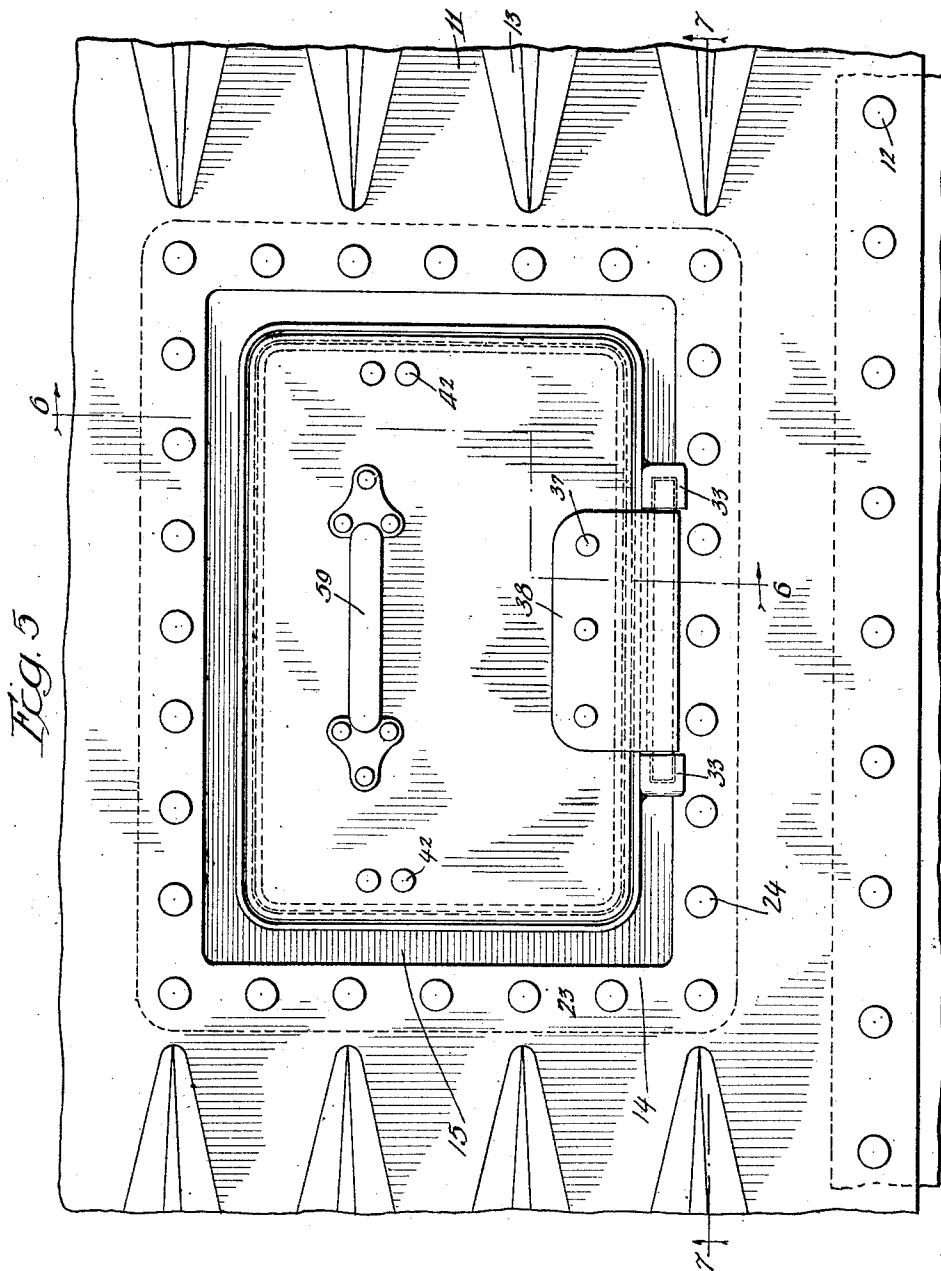
1,658,569

R. C. MUNRO

CAR END DOOR

Filed June 22, 1923

3 Sheets-Sheet 2



Inventor:-
Ray C. Munro.

By: *Munro, Glantz & Carpenter*
Attys:-

Feb. 7, 1928.

1,658,569

R. C. MUNRO

CAR END DOOR

Filed June 22, 1923

3 Sheets-Sheet 3

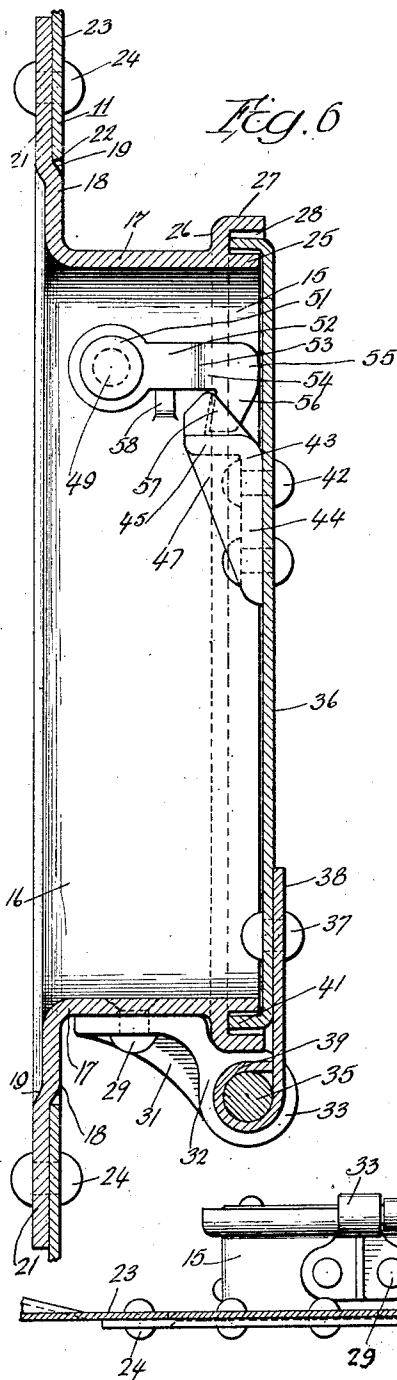


Fig. 8

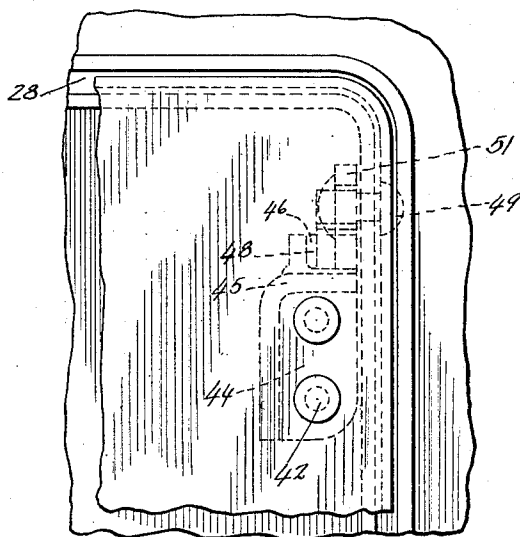
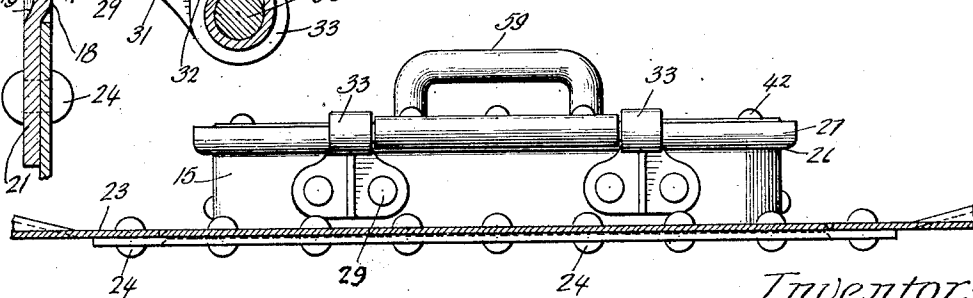


Fig. 7



Inventor:
Roy C. Munro.
By Munday, Clark & Carpenter
Attys

UNITED STATES PATENT OFFICE.

ROY C. MUNRO, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CHICAGO-CLEVELAND CAR ROOFING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

CAR-END DOOR.

Application filed June 22, 1923. Serial No. 647,026.

This invention relates in general to a new and improved door construction and more particularly to a door structure for reinforced metallic freight car ends.

5 Objects of this invention are: the provision of a metallic door construction that will remain practically water tight in service and that is readily and easily opened and closed without the use of guideways, lugs or other parts positioned remotely from the door frame and projecting outwardly from the end structure, where they are liable to be broken or bent out of line, should the end become warped, or distorted by load thrusts, weaving of the car and other causes; the provision of a door construction having locking mechanism therein adapted to automatically lock the door to the frame upon its being closed and which can be unlocked only from the inside of the car; and such other objects and advantages as may be found to obtain in the structure herein-after set forth or claimed.

In the accompanying drawings, forming a part of this specification, and showing, for purposes of exemplification, a preferred form and manner in which the invention may be embodied and practiced, but without limiting the claimed invention specifically to such illustrative instance or instances:

Figure 1 is an end elevational view of a sheet metal end structure for railway cars embodying my invention;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view of the structure shown in Fig. 1;

Fig. 4 is a bottom plan view of the structure shown in Fig. 1;

Fig. 5 is an enlarged fragmentary elevational view of a portion of an end structure showing the door in its closed position;

Fig. 6 is an enlarged vertical section taken on the line 6—6 of Fig. 5;

Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 5 looking in the direction of the arrows; and

Fig. 8 is an enlarged fragmentary view showing the arrangement of the locking mechanism.

The sheet metal end 10 comprises a plurality of sections 11 riveted together as shown at 12, each section being provided with horizontal corrugations 13 for the purpose of reinforcing, strengthening and rigidifying the end structure that is subjected to warping, weaving and load thrusts resulting from various causes among which is the movement of the contents of the car when the car is stopped and started. One of the sections 11 is provided with an opening 14 into which is positioned a door frame 15. The door frame 15 is provided with flat side walls 16 and top and bottom walls 17. These walls 16 and 17 are bent at one end to provide flanges 18 which are offset as shown at 19 to provide another flange 21 that fits within the opening so that the flange portions 18 are flush with the edges 22 of the end sheet 11 to provide a watertight joint. The horizontal corrugations opposite the door frame terminate a short distance therefrom to provide flat surfaces 23 to which the flanges 21 are secured on the inside of the car by rivets 24.

Cast integral with the walls 16 and 17, a short distance from their outer edges 25, is a flange 26 which is also flanged transversely to provide a wall 27. The flange 26 and the wall 27 extend continuously around the outer edges 25 of the walls 16 and 17 and form a continuous groove or channel 28. Two brackets 31 are secured by rivets 29 to the under side of the bottom wall 17, said brackets having downwardly and outwardly extending portions 32 and horizontal bearing members 33 that are provided with slots or openings 34 into which a pin 35 may bear. A door 36 has secured to it at its lower end, by rivets 37, a hinge member or leaf 38 that is curled, as shown at 39, to receive the pin 35 and said door has formed thereon a continuous marginal flange 41 that enters into the channel 28 and engages tightly therein

against the flange 26 to prevent the entrance of water into the frame when the door is closed.

Fastened by rivets 42 on the inner side of the door, at each side close to the top, is a locking member 43. Each locking member, in the present instance, is cast in one piece, and has a vertical portion 44 extending up alongside the door and fastened thereto by the rivets 42. Projecting inwardly from the top of the portion 44 is a horizontal flange 45 having a vertical flange 46 extending transversely to the flange 45 and there is also provided a vertical web 47 that strengthens the portion 44 and flanges 45 and 46. The web 47 and the flanges 45 and 46 form a pocket 48 into which the head of a gravity latch automatically engages when the door is closed. Two gravity latches 51, one for each side wall 16, are pivoted on rivets 49, on the inside of the frame, close to the upper ends of the walls 16, each latch having a portion 52 extending outwardly in the direction of the door. The portion 52 is bent at 53 to provide an outwardly extending offset portion 54 having a head 55 curved at 56 so that when the door is closed the flange 46 will push the latch upwardly so that the flange 46 may pass thereunder and the head 55 may drop by gravity into the pocket 48. This head 55 also has a straight edge 57 that makes contact with the flange 46 when the head 55 is in the pocket 48.

To limit the downward movement of the latches, a lug or projection 58 is provided on each of the walls 16 beneath the portions 52 of the latch. This lug is so positioned that it is sufficiently high to hold the latch in position to be raised by the flange 46 when the door is being closed.

The upward movement of the latch is limited by the top wall 17 of the frame.

If desired, a handle 59 may be fastened on the outside of the door to facilitate its opening and closing.

It will be manifest from the foregoing that the corrugations of the sheet metal end may extend in directions other than the direction herein shown and also the shape of the door structure may be other than that illustrated herein.

The invention as hereinabove set forth is embodied in a particular form of construction but may be variously embodied within the scope of the claims hereinafter made.

I claim:

1. An end structure for railway freight cars having an opening therein, a metal frame positioned within said opening, said frame having flanges secured to the inner face of said end structure, said frame having a member integral therewith and extending from the outer surface of said frame, said member together with said frame forming

a continuous channel, a metallic door hinged to the bottom of said frame, said door having a continuous marginal edge engaging within said channel when said door is in closed position, a member secured to the inner face of said door near the upper end thereof, said member providing a pocket, a latch pivotally mounted on the inner face and near the upper portion of the side of the frame, said latch having a projecting portion fitting in the pocket of the member on the door, and a lug on the side of the frame for supporting the latch in position for engagement with the member providing the pocket.

2. An end structure for railway freight cars having an opening therein, said end structure having reinforcing corrugations formed therein, certain of the corrugations stopping short of the opening, a rectangular metallic frame positioned within the opening, said frame having flanges secured to the inner face of said end structure, said frame having a member integral therewith and extending from the outer surface of said frame, said member together with said frame forming a continuous channel, a metallic door hinged to the bottom of said frame, said door having a continuous marginal edge engaging within said channel when said door is in closed position, a member secured to the inner face of said door near the upper end thereof, said member providing a pocket, a latch pivotally mounted on the inner face and near the upper portion of the side of the frame, said latch having a projecting portion fitting in the pocket of the member on the door, and a lug on the side of the frame for supporting the latch in position for engagement with the member providing the pocket.

3. An end structure for railway cars having an opening therein, a metal frame positioned in said opening and secured to the inside of the end structure, an outwardly offset portion extending continuously around the frame adjacent its outer end and forming therewith a channel, a door hinged to the frame, said door having a flange adjacent the margin thereof and adapted to enter the said channel when the door is in closed position.

4. An end structure for railway freight cars having an opening therein, a door frame member positioned in said opening, and a door member hinged to the bottom of the frame, said frame having flanges secured to the inner face of said end structure, and also having at its outer end a portion spaced outwardly therefrom to provide a channel, the door having a flange engaging within said channel when the door is in closed position, and means adapted to hold the door in closed position involving, a gravity actuated latch secured to the inside

of said frame, and a latch engaging element secured to the inside of the door.

5 An end structure for railway freight cars having an opening therein, a metal frame positioned in said opening and extending outwardly from the end structure, a member outwardly offset from the frame having a portion substantially parallel to

the frame, said offset member and frame forming a channel, a door hinged to the bottom of said frame, a flange adjacent the margin of the door adapted to enter the channel when the door is in closed position, and pivoted means within the frame for holding the door in closed position. 10

ROY C. MUNRO.