June 14, 1932. G. G. GILPIN 1,863,243

CAR CONSTRUCTION

Original Filed May 16, 1929 2 Sheets-Sheet 1

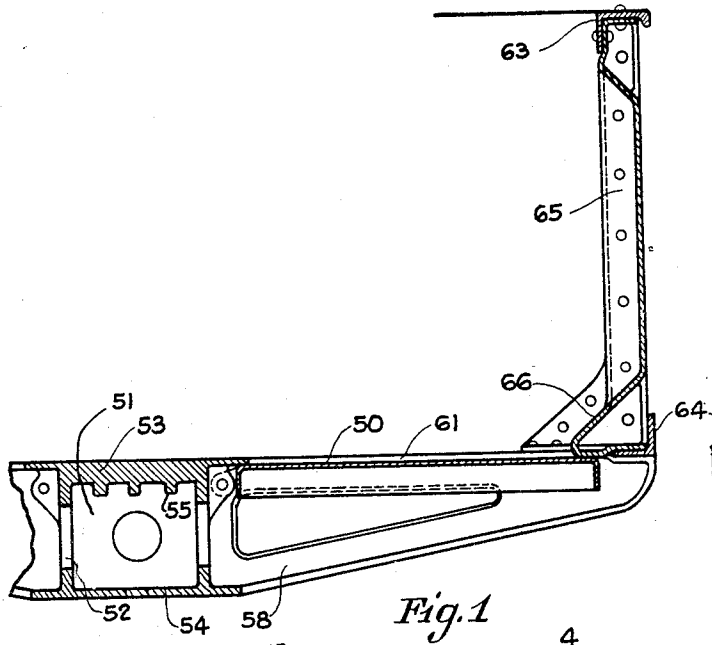

Fig. 1

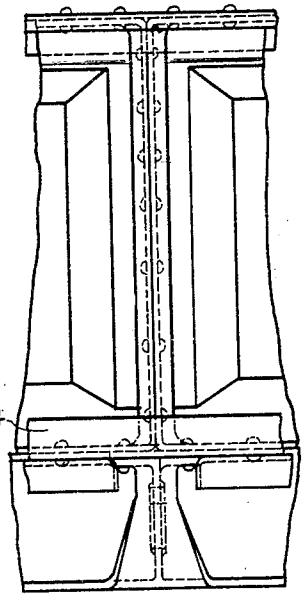

Fig. 2

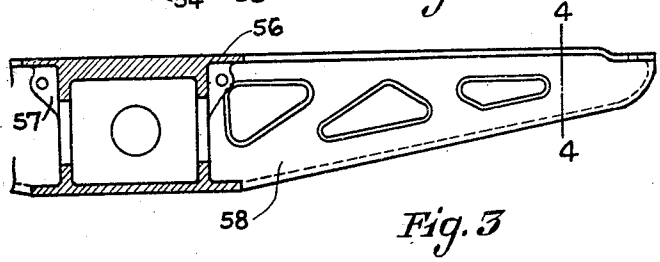

Fig. 3

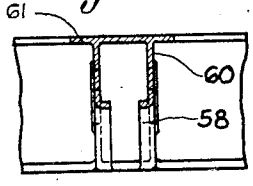

Fig. 4

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CAR CONSTRUCTION

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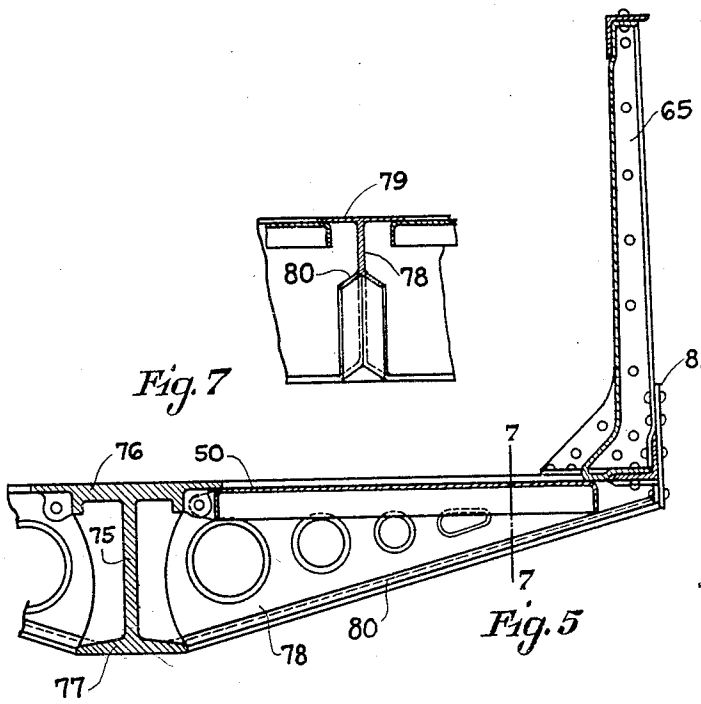


Fig. 7

Fig. 5

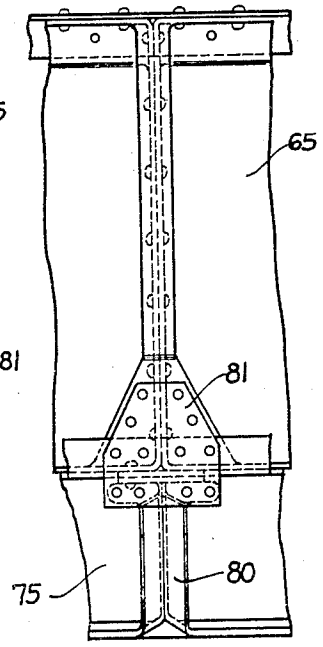
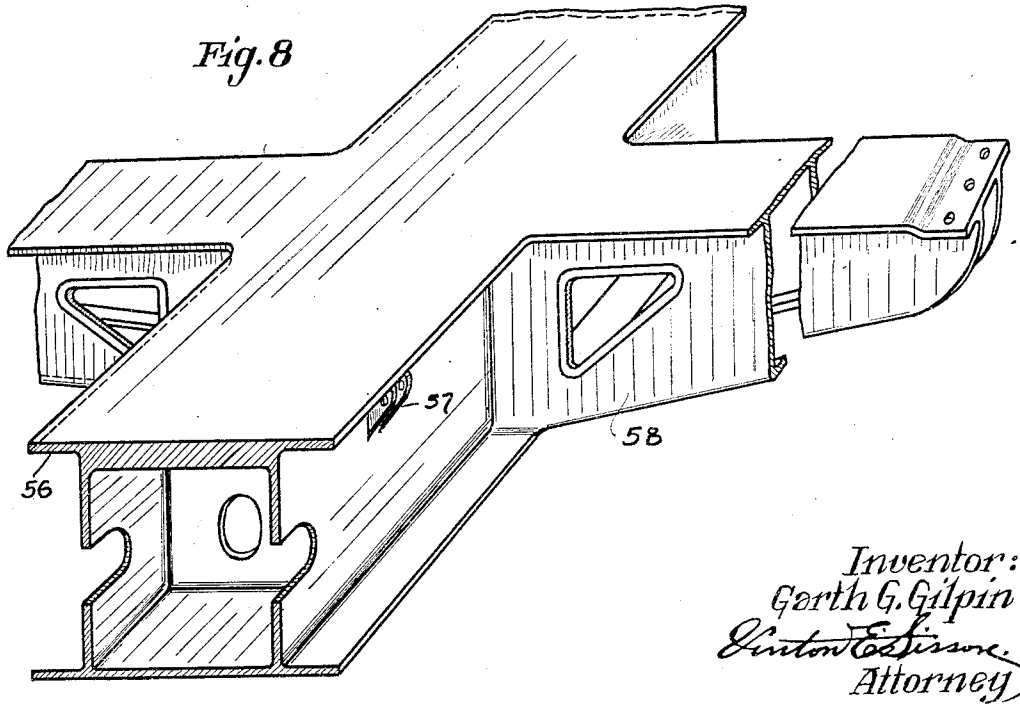


Fig. 6

Fig. 8



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Patented June 14, 1932

1,863,243

UNITED STATES PATENT OFFICE

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CAR CONSTRUCTION

Original application filed May 16, 1929, Serial No. 363,550, now Patent No. 1,813,537, dated July 7, 1931. Divided and this application filed October 30, 1930. Serial No. 492,231.

By nature of their requirements railway freight cars are out of doors substantially all of the time, therefore, are subjected to corrosive action of the elements, and while paint and other non-corrosive coatings have been applied to the car parts, such protection not only has been found to be expensive in time and money, but the lading removes the coating. This is particularly true of the inside of open type cars which are turned upside down in unloading machines causing the load to slide across the inside surface of the car body and also when the discharging load slides across the surface of a drop door and also when the long lading rests upon the lowered drop end gate of a gondola car the friction therebetween caused by the movement of the car also removes the protective coating from the end gate. Furthermore, certain ladings, such as sulphur, wet coal, which forms sulphuric acid, and saline water (in refrigerator and stock cars) cause rolled steel or iron to corrode. On account of its increased strength rolled steel in the form of plates and bars has supplanted wood in car construction but the corrosive action of the elements eats away the rolled steel or iron material reducing their strength and their length of life. This applies to both the load carrying members, such as the sills, plates and diaphragms and also to the lading retaining members, such as side and end walls, floors, hoppers, hopper doors, etc. It has been found that cast metal, particularly cast steel, has more than twice the resistance to corrosion than rolled steel, therefore, one of the objects of the invention is to make the car part of cast metal, preferably cast steel, to enable the car part to resist corrosion, and furthermore, to produce a construction wherein the metal can be disposed and positioned to accommodate the stresses set up by the car in service. Such a cast construction necessitates a minimum amount of material for strength requirements.

Another object is to eliminate the cost and delay in fabricating the numerous component parts of the present structural steel car parts.

Another object of forming the car part of cast metal is to eliminate the possibility of loose connections which would permit relative motion between the component parts of the car part, as it is common knowledge that the vibration of the car in motion, due to rough and uneven track, and steel wheels rolling on steel rails, together with longer trains and high speeds in present day practice, cause riveted joints and built up sections to work loose and the railroads look with favor upon any device which reduces the number of parts and joints, as these are the weak parts of the car and the more such weak parts are eliminated, the longer the life of the car.

In the drawings:

Figs. 1 and 2 show a general service car with my invention applied thereon.

Fig. 3 shows a modified cross bearer for the same car.

Fig. 4 is a section on line 4—4 of Fig. 3.

Figs. 5 and 6 show a modification of my invention, wherein the center construction consists of a single web.

Fig. 7 is a section on line 7—7 of Fig. 5.

Fig. 8 is a perspective showing the center construction and cross bearer of the car similar to that shown in Figs. 1 and 2.

Figs. 1 to 4 inclusive and Fig. 8 show my improvements applied to an open top gondola car wherein the floor comprises a plurality of doors 50 hinged to the center construction with cross bearers or diaphragms positioned between the doors. Such cars are called "general service cars". The center construction 51 consists of an integral casting comprising oppositely disposed webs 52 with an upper compression member 53 and a lower tension member 54. As cast metal is stronger under compression than in tension the compression member is preferably made of thicker material and reinforced with ribs 55. The center construction is provided with outwardly projecting flanges 56 under which the door 50 projects. The hinge butts 57 are preferably cast integral with the center construction. The center construction is also provided with integral cross bearers 58 to secure cooperation between the webs under load.

Figs. 5, 6 and 7 show a modified form of my

improvement as applied to a "general service" car. The center construction consists of an I-beam section having a web 75 and upper relatively thick compression member 76 and lower tension member 77. The cross diaphragm is preferably cast integral and also comprises an I-beam section having a web 78, upper member 79 and lower member 80. The lower members of the I-beam section are positioned obliquely to prevent them retaining part of the load when the car is dumped.

The accompanying drawings illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof, within the scope of the claims, will occur to persons skilled in the art.

This is a division of my co-pending application Serial No. 363,550, filed May 16, 1929, now Patent No. 1,813,537, issued July 7, 1931.

I claim:

1. A cast metal center construction for a railway car consisting of an integral casting comprising spaced apart webs, an upper portion, a lower portion, and hinge lugs integral with said webs.

2. A cast metal center construction for a railway car consisting of an integral casting comprising spaced apart webs, a relatively thick upper portion, and a relatively thin lower portion.

3. A cast metal center construction for a railway car consisting of an integral casting comprising spaced apart webs, an upper portion with outwardly projecting flanges to overlap a door, and a lower portion.

4. A cast metal underframe for a railway car consisting of an integral casting comprising a center construction with spaced apart webs, an upper portion with outwardly projecting flanges to overlap a door, and a lower portion with outwardly projecting flanges, and cross bearers comprising spaced apart webs, a lower portion and an upper portion with outwardly projecting flanges to overlap a door.

5. A cast metal center construction for a railway car consisting of an integral casting comprising spaced apart webs, an upper portion with an outwardly projecting flange to overlap a door, and hinge lugs integral with said webs and said upper flange.

6. A cast metal center construction for a railway car consisting of an integral casting comprising spaced apart webs, an upper portion with an outwardly projecting flange to overlap a door, and cross bearers comprising upper portions with outwardly projecting flanges to overlap a door.

GARTH G. GILPIN.