A. CAMPBELL.

BALLAST DUMPING CAR.

APPLICATION FILED JUNE 17, 1912.

1,067,863.

Patented July 22, 1913.

3 SHEETS—SHEET 1.

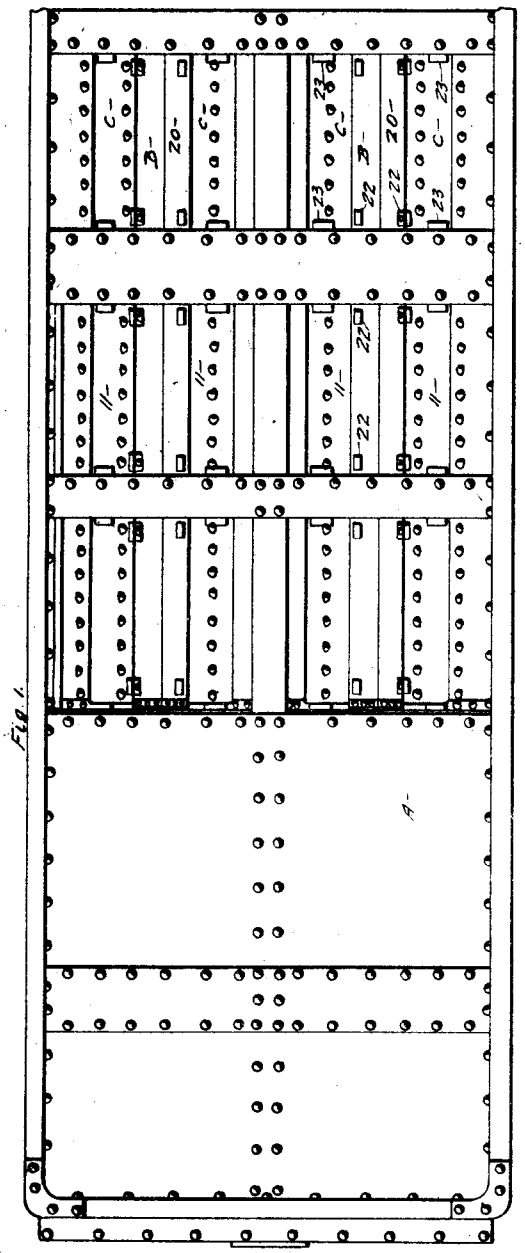


Fig. 1.

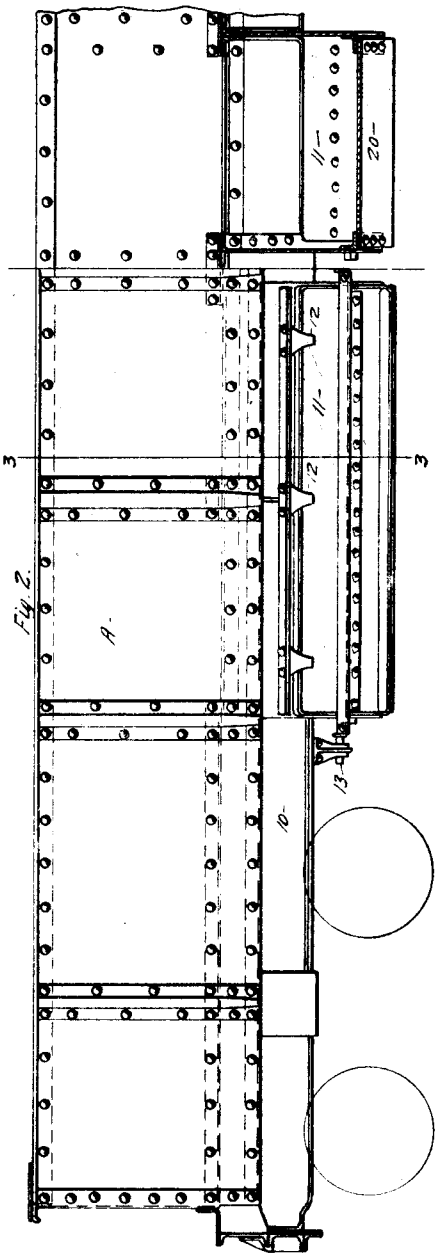


Fig. 2.

WITNESSES:

Wm. Geiger

Pearl Abrams.

INVENTOR.

Argyle Campbell

BY Munday, Evarts, Adcock & Clarke,

His ATTORNEYS.

A. CAMPBELL.

BALLAST DUMPING CAR.

APPLICATION FILED JUNE 17, 1912.

1,067,863.

Patented July 22, 1913

3 SHEETS—SHEET 2.

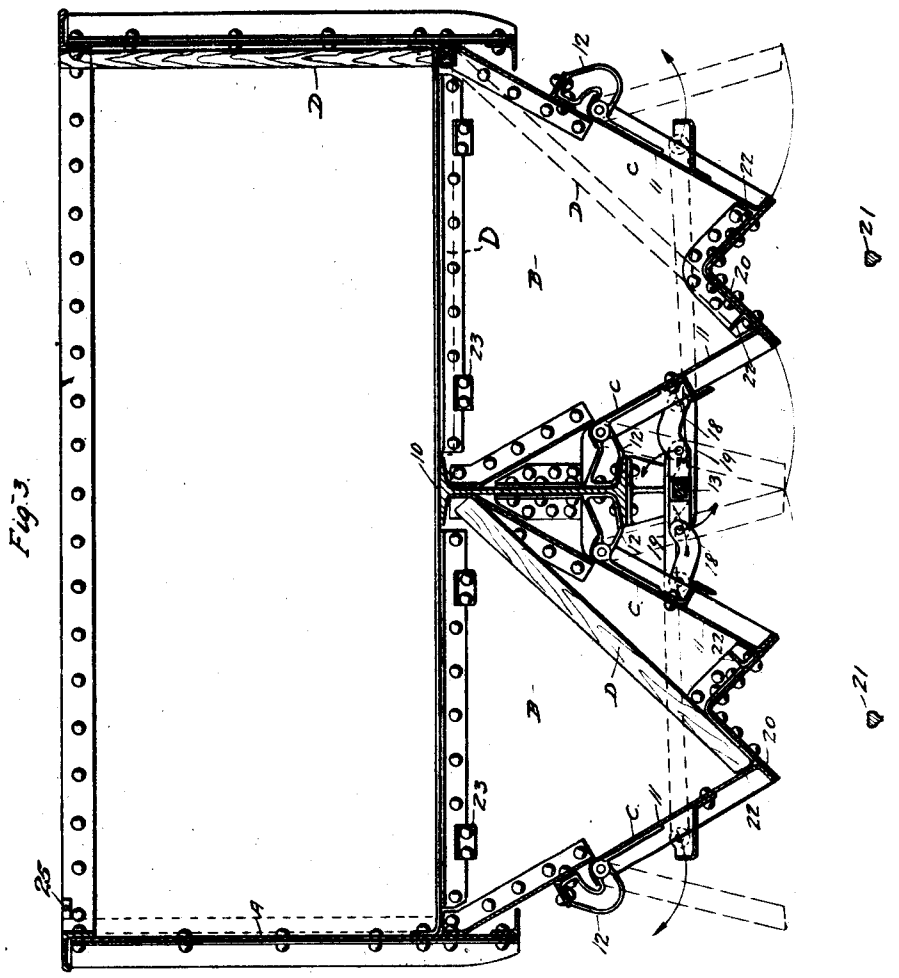


Fig 3.

WITNESSES

Wm Geiger

Paul Abrams

INVENTOR

Argyle Campbell

BY Munday, Evarts, Adcock & Clarke,

his ATTORNEYS

A. CAMPBELL.

BALLAST DUMPING CAR.

APPLICATION FILED JUNE 17, 1912.

1,067,863.

Patented July 22, 1913.

3 SHEETS—SHEET 3.

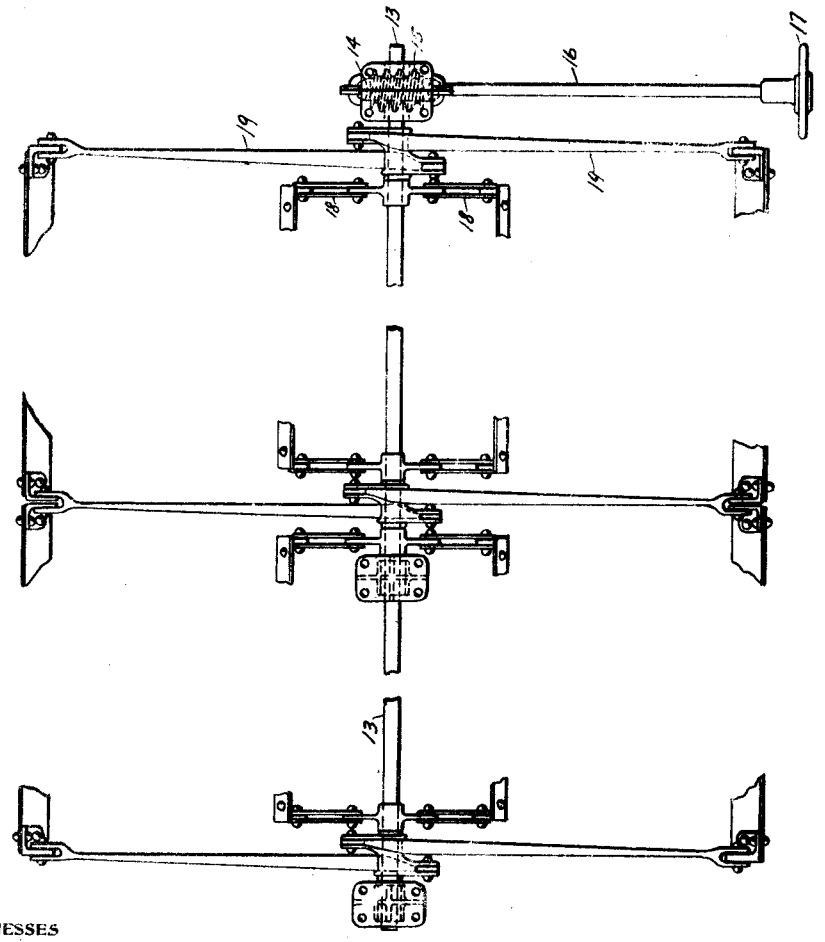


Fig 4.

WITNESSES

Wm Guyer

Pearl Abrams

INVENTOR

Argyle Campbell

BY Munday, Evarts, Adcock & Clarke,

his ATTORNEYS

UNITED STATES PATENT OFFICE.

ARGYLE CAMPBELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO ENTERPRISE RAILWAY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BALLAST-DUMPING CAR.

1,067,863. Specification of Letters Patent. Patented July 22, 1913.

Application filed June 17, 1912. Serial No. 704,087.

To all whom it may concern:

Be it known that I, ARGYLE CAMPBELL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Ballast-Dumping Cars, of which the following is a specification.

This improvement relates to dump cars, and more particularly to that type used for ballasting the rail track.

As is well known, it is customary to ballast a rail track by filling a car with ballast and then allow the ballast to gradually flow out through the openings in the hoppers and to allow the ballast to form longitudinal rows on each side of the track while the car is drawn slowly along the rails.

The object of my invention is to provide a car which will drop ballast at the right points on each side of each rail of the track, and which will distribute the ballast evenly and equally along each of the four lines.

Another object of the invention is to provide operating mechanism for the doors, which will have a single operating shaft for opening and closing each of the four sets of doors, although, as will be obvious to those skilled in the art, other arrangements of door operating mechanisms can be used.

My invention furthermore consists in the improvements in the parts and devices and in the novel combinations of parts and devices herein shown, described or claimed.

In the drawings forming a part of this specification, Figure 1 is a partial plan view of a car embodying my improvements. Fig. 2 is a side elevation of the car shown in Fig. 1. Fig. 3 is a transverse, vertical section, taken substantially on the line 3—3 of Fig. 2 and being upon a somewhat enlarged scale, one shiftable partition being shown in a vertical position against the side of the car and another partition in full in the hopper at the left hand side of the car and in dotted lines in two positions in the hopper at the right hand side of the car, and Fig. 4 is a plan view of the door operating mechanism, parts being broken away in order not to crowd the drawing.

In the drawing, A denotes the body of a car, the same being provided with a longitudinally arranged I-beam center sill 10 and a plurality of longitudinally arranged hoppers B, B on opposite sides of the center sill. Each of the hoppers B is provided with a pair of door openings C C at the lower end thereof, and hinged doors 11 for each of said openings, each of the doors 11 being preferably hinged at its upper edge to suitable hinge brackets 12, 12, secured to the upper, outer side sheets of the hoppers and the center sill of the car (see Fig. 3).

Arranged longitudinally of the car and centrally thereof is an operating shaft 13 which preferably extends throughout the length of the hoppers in order to operate the entire set of doors, said shaft as shown in Fig. 4, being provided with a worm gear 14 at one end thereof, the same being adapted to be rotated by means of a worm 15 secured to the end of a transversely arranged shaft 16, the latter being preferably provided at its outer end with a hand wheel 17. The worm 15 and worm gear 14 will serve to automatically lock the operating shaft in any position to which it may be turned whereby the amounts to which the doors are opened may be regulated and adjusted to thereby regulate the flow of material from the car through the openings.

Suitable connections for operating each of the doors are provided, the same, as shown in Figs. 3 and 4, consisting of short links 18, 18 for the inner set of doors 11 and elongated links 19, 19 for operating the outer sets of doors.

Each of the hoppers B at its lower end is provided with an upwardly pointed wedge shaped member 20, located centrally above the track rails 21, 21.

With the door operating mechanism which I have shown, it will be obvious that all of the doors 11 are operated simultaneously, and hence, unless some means is provided to prevent it, four streams of material or ballest will always be allowed to flow from the hoppers to the track below, but inasmuch as it is not always desirable to allow the ballast to drop in this manner, I provide suitable means adapted to cover any of the door openings C, C of the hoppers, and said means preferably consist of shiftable partitions D, which may be composed of a plurality of loose boards, said partitions D being so proportioned and arranged that they extend the entire length of each hopper longitudinally and vertically from a point adjacent the upper end of the center sill to the lower outside end of the member 20 in the one case, as shown in section in the hop-

per at the left hand side of Fig. 3, or from a point adjacent the junction of the side of the car with the bottom floor to a point at the bottom of the inside portion of the member 20, as shown in dotted lines in the hopper at the right hand side of Fig. 3, and in order to properly support these partitions D when placed in either of the above described positions, I provide suitable angle irons or stops 22, 22. The dimensions of the hoppers B are also made such that the shiftable partitions D may extend across the top of the hoppers as shown in dotted lines in the hopper at the right hand side of Fig. 3, in which case the partitions are supported by angle braces 23, 23 to form a flooring for the car and thus cut out the hoppers when the latter are not needed. Whenever it is desired to allow ballast to flow from all of the openings of the hoppers, the shiftable partitions D may conveniently be retained in position against the sides of the car by retaining members 25, as shown in full in Fig. 3 at the right hand side thereof.

From the foregoing description, it will be seen that the shiftable partitions or door covers coöperate with the door operating mechanism which I have shown to make a car which may be adapted to drop ballast or other materials to the outsides of the rails only or to the insides of the rails only, or to points one inside one rail and outside of the other rail, or to cut out the hoppers entirely.

Various changes and modifications may be made in the details of construction without departing from the spirit of the invention, and such changes and modifications are contemplated as fall within the scope of the claims appended hereto.

I claim:—

1. In a car of the class described, in combination, a car provided with hoppers arranged on opposite sides of the longitudinal center of the car, a pair of hinged side doors, a pair of hinged center doors and a longitudinally arranged operating shaft, and separate connections from said shaft directly to each of the doors, whereby all the doors are adapted to be positively opened and closed from said shaft.

2. In a car of the class described, in combination, two sets of doors, one set on each side of the center sill and each set comprising a pair of oppositely swinging doors, an operating shaft and separate connections from the operating shaft directly to each of the doors for positively opening and closing the same.

3. In a car of the class described, in combination, a hopper provided with a pair of door openings, a hinged door for each of said openings, mechanism for operating the doors and shiftable means for covering one of said openings to thereby prevent escape of material therethrough, but at the same time allow material to pass through another opening of the hopper.

4. In a car of the class described, in combination, a hopper provided with door openings, hinged doors for each of said openings, mechanism for operating the doors and shiftable means for covering one of said openings to thereby prevent escape of material therethrough, but at the same time allow material to pass through another opening of the hopper, said means comprising a partition adapted to be positioned over the top of the hopper and form part of the floor of the car when the hopper is not in use.

5. In a car of the class described, in combination, a hopper provided with door openings, hinged doors for each of said openings, mechanism for operating the doors, and a removable and detachable partition adapted to cover one of the openings in the hopper to prevent escapement of material therethrough, but at the same time to allow material to pass through another opening of the hopper, and means for retaining the partition in place.

6. A car of the class described, provided with a plurality of hoppers, each hopper being provided with door openings, hinged doors for each of the openings so arranged as to adapt the car for center or side dumping, door operating mechanism and shiftable means adapted to cover any of said openings, whereby the car may be arranged for either side or center dumping or a combination of both.

7. A car of the class described, having a plurality of hoppers provided with door openings, hinged doors for each of said openings, said doors being so arranged that the load may be dumped either to the side or the center, operating mechanism for said doors, comprising a shaft, and connections from the shaft to each of the doors, and shiftable partitions adapted to be positioned over either of the openings of the hoppers to thereby prevent escapement of material therethrough when the door for said opening is opened at the same time that the remaining doors are opened.

8. In a car of the class described, in combination, a car body provided with longitudinally arranged hoppers disposed on each side of the center sill, a pair of door openings in each of the hoppers, oppositely swinging doors for each pair of openings, the bottom of each of said hoppers being provided with a longitudinally arranged wedge shaped member located centrally above the rail, whereby the material, while being dropped from the car through the hopper door openings, is deflected to points each side of the rail, and mechanism for operating said doors.

9. In a car of the class described, in com-

bination, a car body provided with longitudinally arranged hoppers disposed on opposite sides of the center sill, each of said hoppers being provided with a pair of door openings for side and center dumping, doors hinged at their upper edges for each of the door openings, and mechanism for operating said doors including a shaft, connections from the shaft to each of the doors, and a worm and worm gear for rotating the shaft, the worm and worm gear being adapted to hold the doors in any adjusted position, whereby the flow of material from the car through the hopper door openings may be regulated.

ARGYLE CAMPBELL.

Witnesses:
A. E. ZIMMER,
W. L. GUNNISON.