J. C. BONNER.

TRANSPORTATION SYSTEM.

APPLICATION FILED MAR. 31, 1917.

1,280,142.

Patented Oct. 1, 1918.

3 SHEETS—SHEET 1.

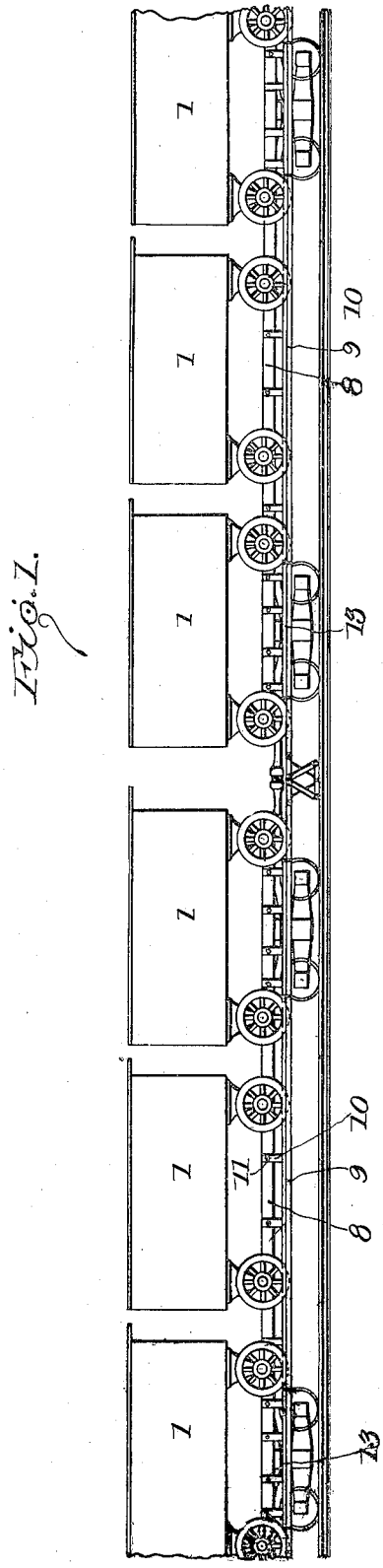


Fig. 1.

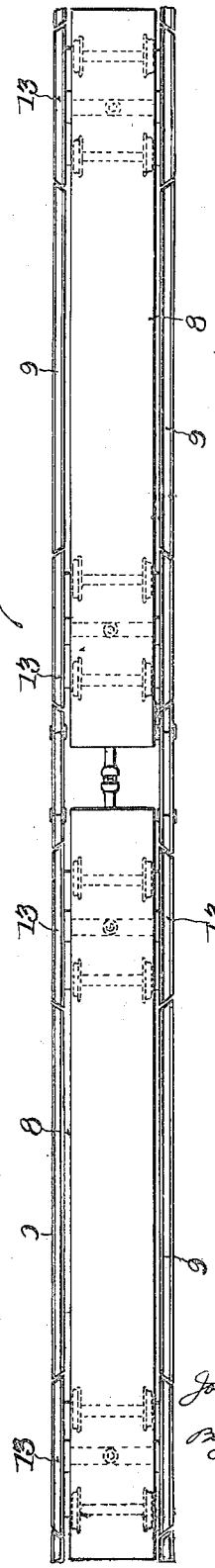


Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

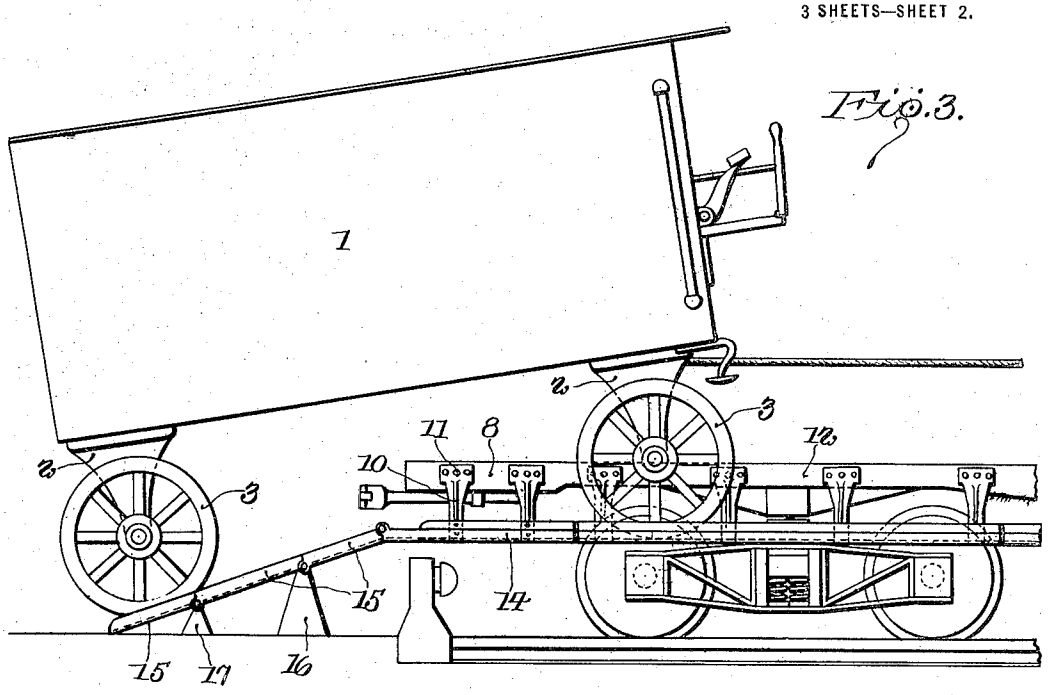


Fig. 4.

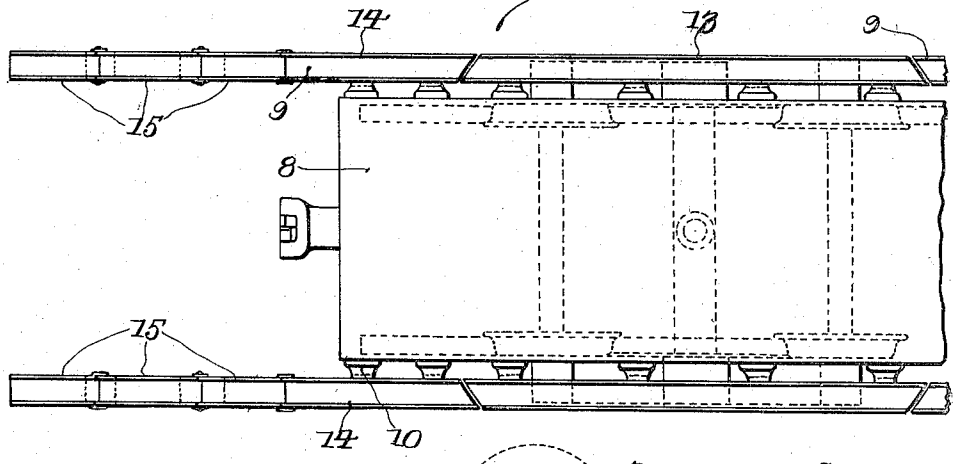
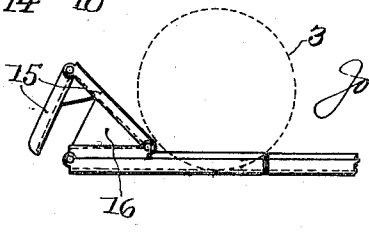


Fig. 8.



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3 SHEETS—SHEET 3.

Fig. 5.

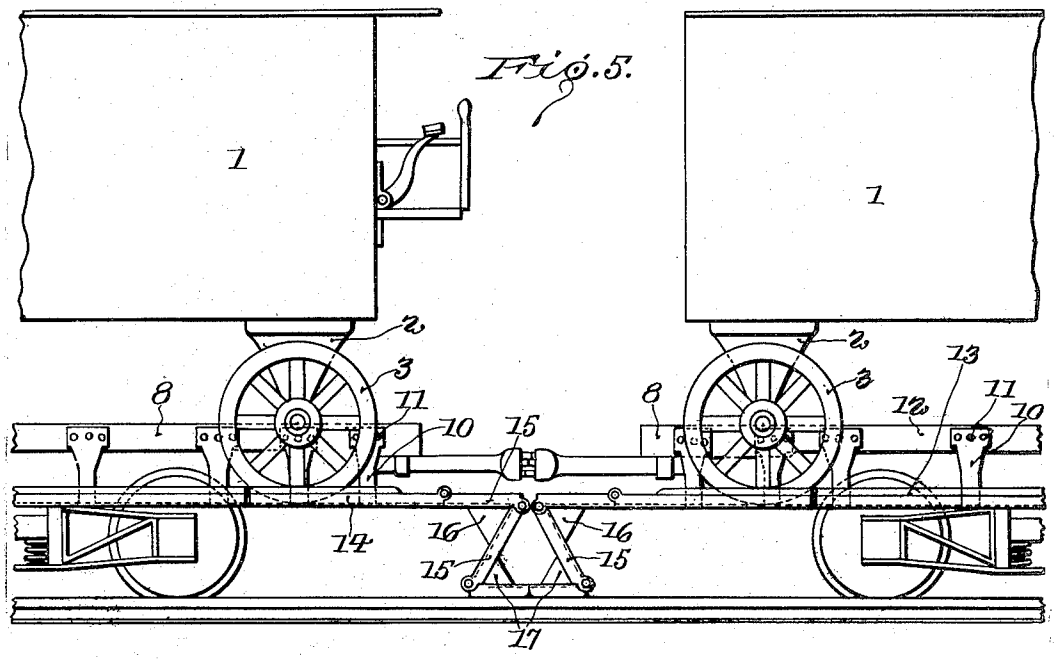


Fig. 7.

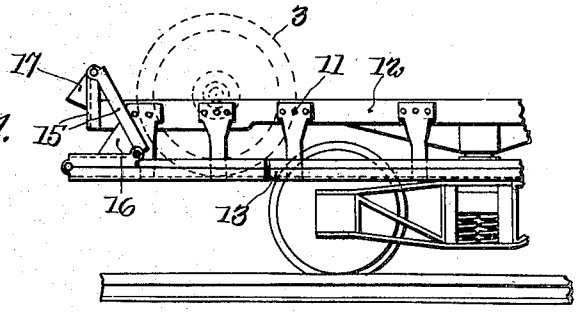
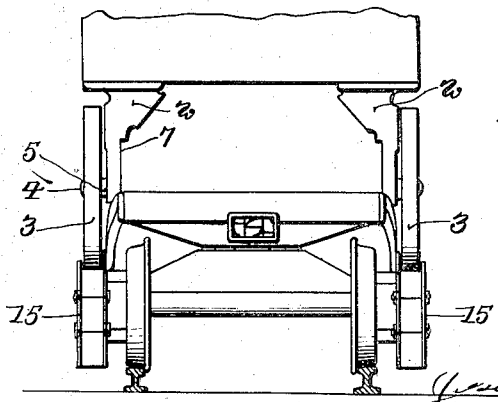


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH CLAYBAUGH BONNER, OF TOLEDO, OHIO.

TRANSPORTATION SYSTEM.

1,280,142. Specification of Letters Patent. Patented Oct. 1, 1918.

Application filed March 31, 1917. Serial No. 158,879.

To all whom it may concern:

Be it known that I, JOSEPH C. BONNER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Transportation Systems, of which the following is a specification.

This invention relates to transportation systems, and it comprises certain improvements on the invention disclosed in my pending application Serial No. 867,865, filed Oct. 21, 1914. In the present invention I provide a railroad car or other power driven vehicle and a wheeled receptacle or road wagon adapted to receive merchandise for the purpose of transportation, and means in the nature of rails, tracks or supports mounted on each side of the car for the reception of the wheels of the road wagon, the rails being constructed in sections which are normally in alinement to facilitate the placing of road wagons on the car; certain sections, however, being secured to the trucks of the car, independent of the other sections, which are rigidly secured to the body of the car, whereby the first mentioned sections are permitted to turn with the trucks when the car is rounding a curve; all as more fully hereinafter set forth and as claimed.

The art of transporting merchandise has been developed to a certain extent and the method of carrying of receptacles such as road wagons upon railroad cars has already been suggested but in such instances the road wagon has been placed on tracks or other supports on the flat tops of railroad cars. One serious disadvantage of such propositions is, that when particularly heavy loaded and relatively large road wagons are used the center of gravity is comparatively high, with result that the trains carrying a plurality of these vehicles must travel at a slow rate of speed, especially when rounding curves. In the present invention, I provide means for loading a vehicle upon a railway car or other power driven transportation means so that its center of gravity is at a relatively low point with respect to the truck of the car. To accomplish this, I place tracks or rails on the sides of the car at a point below the body of the car and advantageously below the upper tread of the car wheels. It will be understood that the gage of the road wagon must be sufficiently great to permit the same to straddle the car and space the wheels at a distance from each other equal to the distance between the rails or supports mounted upon the opposite sides of the car. For the purpose of restricting the gage of the road wagons as much as possible, the tracks or rails must be placed in close proximity to the sides of the car and I therefore find it advantageous to construct the rails in sections and secure certain sections to the body of the car and other sections to the car trucks, which arrangement permits the last named sections to turn with the trucks and therefore maintain their relative positions suitably spaced from the car wheels. In this manner I may load two or more road wagons upon one railroad car and maintain the center of gravity at a relatively low point, the wheels of the road wagon being received upon the tracks arranged on the sides of the car with the body of the wagon straddling the top of the car.

When the invention is applied to a train of flat railroad cars, I provide bridging means between the tracks attached to the cars in order that any number of road wagons may be loaded from one end of the train, such bridging means being supported in such manner that they may sustain a load between the cars, and the load sustaining means being capable of arrangement for forming inclined planes up and down which the road wagons may be drawn for loading upon the cars, and also adapted to be arranged upon the railroad cars so as to form chocks for the wheels of the road wagon when it has been properly positioned.

In this specification I have used the term "car" to designate the carrying vehicle which is best power driven and have used the term "road wagon" to designate the carried vehicle or the merchandise carrying vehicle. This road wagon is either horse or power propelled, but advantageously is of light construction, forming, in effect, removable box cars on wheels.

In the drawings I have shown, more less diagrammatically, one form of my invention, it being understood that these drawings are illustrative only and that different modifications may be used. In this showing:

Figure 1 is a side elevation of the car

with the road wagons in position after having been loaded upon the car, the bridging tracks between adjacent cars being in position to form continuous tracks;

Fig. 2 is a top plan view of Fig. 1 with the road wagons removed;

Fig. 3 is a side elevation illustrating the method of loading the road wagons upon the car and showing the use of the bridging means as inclined planes up which the road wagon may be drawn;

Fig. 4 is a top plan view of Fig. 3 with the road wagon removed;

Fig. 5 is a side elevation showing two adjacent cars in coupled position and illustrating on a large scale the arrangement of the bridging tracks;

Fig. 6 is a rear elevation of Fig. 1;

Fig. 7 is a side elevation showing the bridging means in folded position during transportation; and

Fig. 8 is a diagrammatic showing illustrating on a somewhat enlarged scale the method of folding the tracks after the road wagons have been loaded upon the cars.

In the drawings, element 1 indicates the road wagon provided with depending members 2 to which the wheels 3 are attached through means of the stub bolts 4 and blocks 5. This arrangement permits the road wagon to straddle the car, the road wagon being of wider gage than the car. Advantageously the blocks 5 ride in the depending members 2 and are under the influence of a spring (not shown) held between the blocks 5 and blocks 7.

The railroad cars may be of any usual construction. To the side beams 8 of the usual car I attach tracks 9 by means of hangers 10 riveted or otherwise fixedly secured to the beams 8, as at 11. To the beams 12 of the truck I fixedly secure the tracks 13 by means of similar hangers 10 riveted at 11, and to the ends of the car at the rear of the trucks I secure the sections 14 in the same manner. Therefore, for each side of the car I provide five sections of track, the sections supported from the trucks being adapted to move with them, but all of the sections being in alinement when the train or car is traveling on a straight track. The supporting tracks may be made in a greater number of sections if desired, but it is essential that the tracks attached to the trucks be independent of the other sections, as this permits the tracks to be arranged relatively close to the sides of the cars. In the absence of some provision of this character it will be readily understood that the tracks would necessarily have to be spaced a greater distance from the sides of the car to allow suitable clearance for the wheels of the car when they are out of alinement with the body of the car as for instance in running upon a curved track.

When it is desired to load a number of road wagons upon a train of flat railroad cars, rather than to load several road wagons upon one flat car, I provide bridging members consisting of a plurality of pivoted sections 15 adapted to afford inclined planes at the ends of each flat car but also arranged to form bridging members between the cars. These bridging members carry sustaining blocks 16 and 17 which also act as supports when the bridging members are used as inclined planes, as is clearly shown in Figs. 1 and 3. When it is desired to load the road wagons upon a train of flat cars the blocks 16 and 17 act as struts or braces, as is shown in Fig. 5. In this instance, the sections 15 of the bridging members pivoted to the sections 14 on the car are maintained in a horizontal plane while the extreme sections 15 of the bridging members are placed against the ground or the railroad rails.

In this manner the blocks 16 and 17 act as supports or braces, the section 15 between the extreme sections of the bridging members also act as inclined planes. The bridging members and inclined planes may be folded out of position either under or over the extreme sections 14 of the railroad car. In Figs. 7 and 8 I have shown these sections in folded position out of the way when the cars are in transit, and serving as chocks under the wheels of the road vehicle.

The railroad car is shown more or less diagrammatically in these drawings and certain details of construction of the road wagon have been omitted for clarity of presentation. It is advantageous to employ a road wagon adapted to straddle the railroad cars and for that reason I have adopted the stub axle construction, although in some instances the ordinary correct gage road wagons having horizontal axles may be used.

My invention not only comprises the improvement in the railroad car wherein the sectional tracks and sectional tracks together with the inclined planes are used, but also the combination with the railroad car with the road wagon in such position that the forward and rear wheels of the road wagon straddle the track sections of the trucks of the railroad car.

What I claim is:—

1. In combination a car and a road wagon, sectional supports carried by the car on each side, certain sections of said supports being adapted to turn with the car trucks, the road wagon being adapted to straddle the car with its wheels resting upon the sectional tracks.

2. In combination a car and a road wagon, sectional supports suspended from each side of the car and spaced from each other a greater distance than the width of the car, certain sections of said supports being adapted to turn with the car trucks, said

road wagon being positioned astride of the car with its wheels resting upon the suspended supports.

3. In combination a car and a road wagon, sectional supports suspended from each side of the car and spaced therefrom, certain sections of said supports being adapted to turn with the car trucks, said supports adapted to receive the wheels of the road wagon, and hinged sections formed on each end of the sectional supports.

4. In combination a car and a road wagon, sectional supports carried by the car on each side and below the plane of the top, certain sections thereof being arranged to turn with the car trucks, the other sections being parallel with the sides of the car, and the road wagon being adapted to straddle the body of the car with the wheels of the road wagon resting upon said sectional supports.

5. A transportation system, in combination, a car and a road wagon, sectional tracks mounted on said car below the upper tread of the car wheels, the sections of the tracks adjacent the trucks of the car being secured to the trucks, the remaining sections being secured to the top of the car, said road wagon being adapted to be positioned astride the car with its wheels upon the sectional tracks.

6. A railroad car adapted to receive a road wagon, rails positioned on each side of the car and mounted below the upper tread of the car wheels, said rails being formed in sections, the sections adjacent the trucks being secured thereto, the remaining sections being secured to the body of the car, and a plurality of hinged sections formed on each end of the rails, supporting means secured to said hinged section whereby the hinged section may be positioned to form inclined planes to permit the road wagon to be drawn upon the car.

7. In combination, a pair of vehicles, one of which is adapted to be mounted upon the other, tracks secured to the carrying vehicle and disposed below the upper tread of the wheels, hinged sections carried on the extremity of said tracks, said hinged sections being arranged to form inclined planes to permit the carried vehicle to be positioned upon said tracks, and said hinged sections being further adapted to be folded to provide chocks for the wheels of the carried vehicle when the vehicles are in position.

8. In combination, a train of cars, adapted to support a plurality of road wagons, sectional rails mounted on the sides of the cars below the upper tread of the wheels, the sections of the rails adjacent the trucks being secured thereto, the remaining sections being secured to the body of the cars, and a plurality of hinged sections formed on each extremity of the rails, the hinged sections being foldable to provide bridging elements between the two cars, and supporting means secured to the hinged sections.

9. In combination, a pair of complementary vehicles, one of said vehicles adapted to be mounted upon the other, sectional rails mounted on each side of the carrying vehicle below the body of the same, certain sections thereof being secured to the turning truck of said vehicle, the remaining sections being secured to the body, a plurality of hinged sections secured to the extremities of each rail, said hinged sections being capable of forming inclined planes to permit loading of the carried vehicle upon the carrying vehicle, and arranged to form bridging elements between two carrying vehicles to permit loading of a number of such carried vehicles from one end thereof.

10. In a transportation system, in combination, two complementary vehicles, one of which is adapted to be mounted upon the other, supports mounted on the carrying vehicle and extending throughout its length, the wheels of the carried vehicle resting upon said supports, a plurality of hinged sections connected to each end of such supports, said hinged sections adapted to form inclined planes to permit loading and unloading of the carried vehicle, and serving as chocks for the wheels of the carried vehicles when the same are in position.

11. In a transportation system, in combination, a plurality of carrying vehicles and a plurality of carried vehicles adapted to be mounted thereon, supports mounted on the carrying vehicles and extending throughout the length of each of said vehicles, the wheels of the carried vehicles resting upon said supports, and a plurality of hinged sections connected to the ends of each of said supports, said hinged sections adapted to form inclined planes to permit loading and unloading of the carried vehicles, the hinged sections also serving as bridging elements between two carrying vehicles, and being capable of arrangement as chocks for the wheels of the carried vehicles when the latter are in position upon one of said carrying vehicles.

In testimony whereof, I affix my signature hereto.

JOSEPH CLAYBAUGH BONNER.