R. E. BRESSLER.

RAILROAD MOTOR CAR.

APPLICATION FILED JULY 18, 1919.

1,388,236.

Patented Aug. 23, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

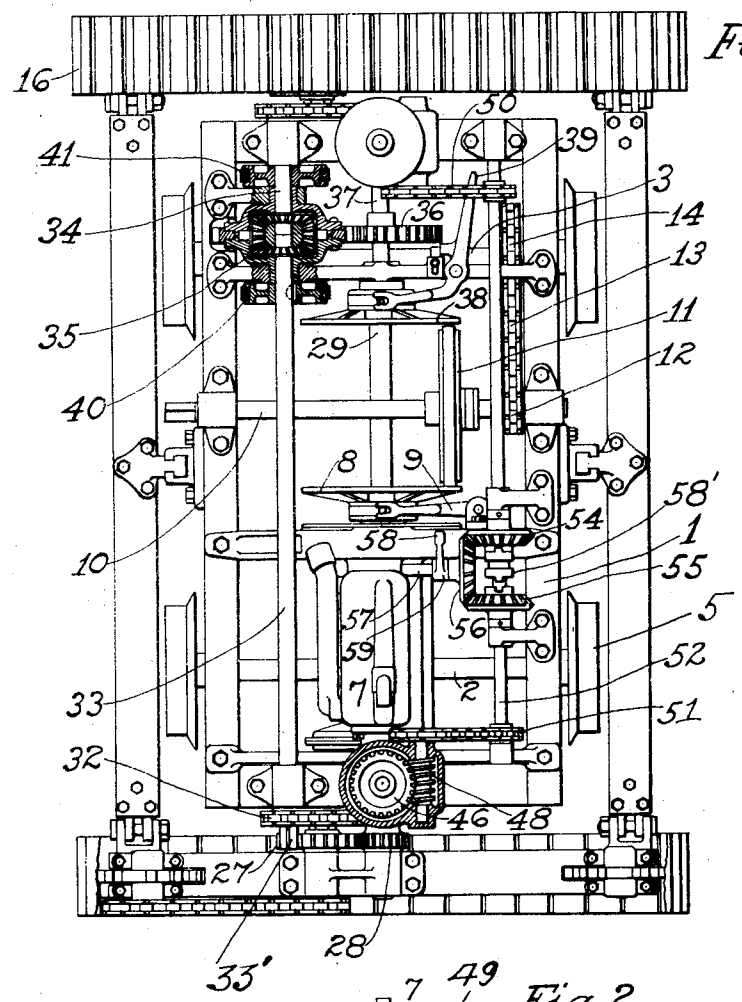
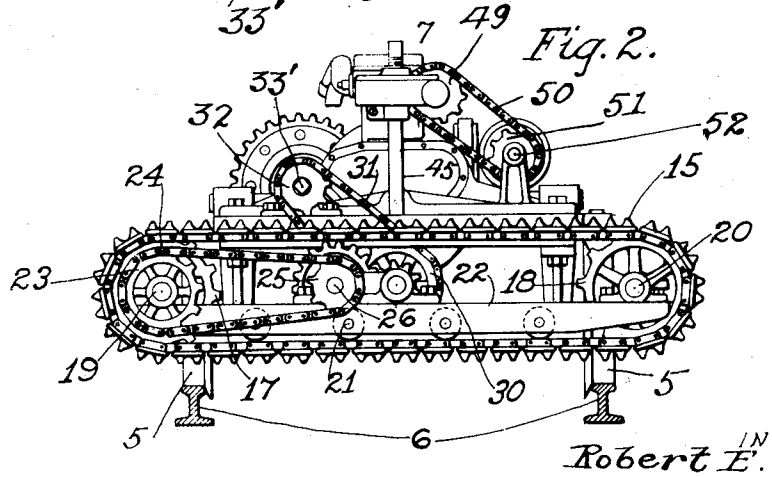


Fig. 2.



INVENTOR

Robert E. Bressler

BY Arthur W. Nelson

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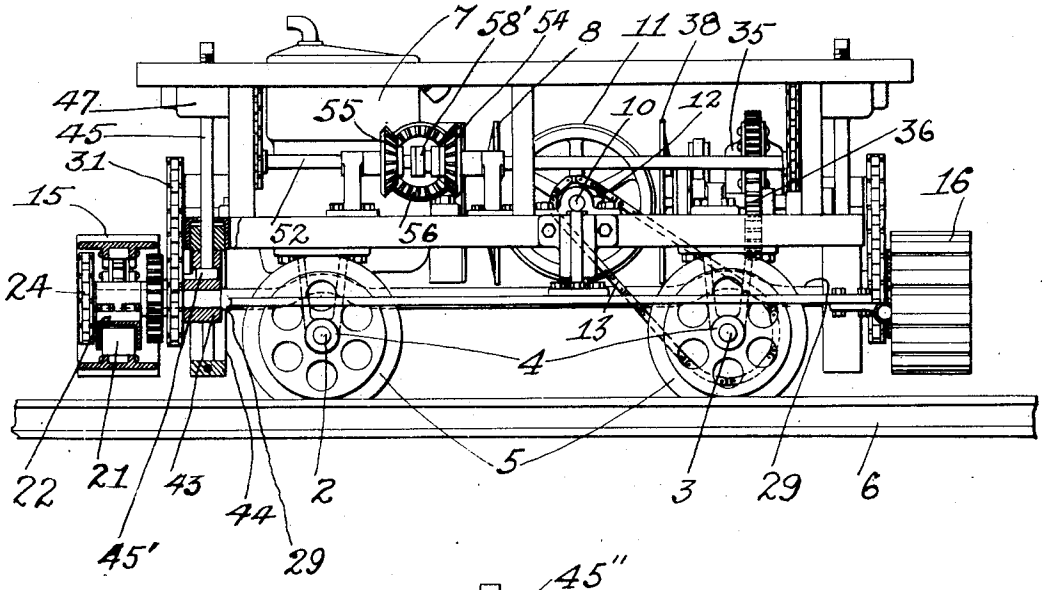
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2 SHEETS—SHEET 2.

Fig. 3.



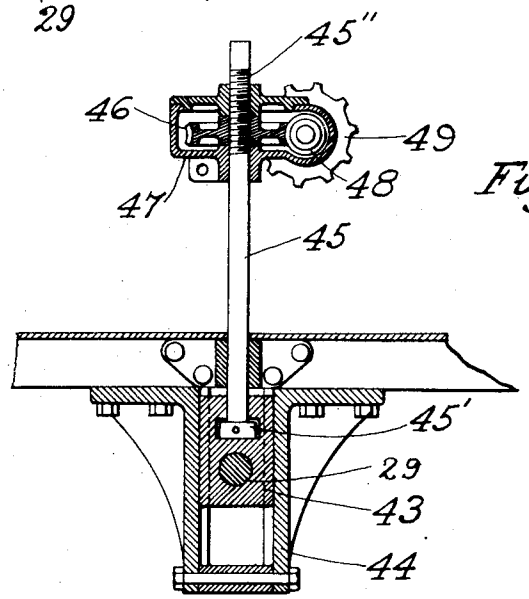


Fig. 4.

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UNITED STATES PATENT OFFICE.

ROBERT E. BRESSLER, OF HAMMOND, INDIANA, ASSIGNOR TO O. F. JORDAN COMPANY, OF EAST CHICAGO, INDIANA, A CORPORATION OF INDIANA.

RAILROAD MOTOR-CAR.

1,388,236. Specification of Letters Patent. Patented Aug. 23, 1921.

Application filed July 18, 1919. Serial No. 311,879.

To all whom it may concern:

Be it known that I, ROBERT E. BRESSLER, a citizen of the United States, and resident of Hammond, Lake county, Indiana, have invented certain new and useful Improvements in Railroad Motor-Cars, of which the following is a specification.

My invention relates generally to railroad motor cars, but relates more particularly to railroad motor cars of the type which it is desirable frequently to remove from and replace upon the rails. A typical example of a car of this type is the so-called motor section car or work car. Such a car, including the power plant, car structure, tools and equipment often carried as a part of the car, is of such weight that it is a slow, tedious and laborious task to remove the car from the rails and replace it thereon; and in fact this difficulty has tended greatly to prevent its more general adoption for work for which it is otherwise admirably adapted.

Again, it is practically impossible for a single man to remove and replace the car and for this reason it is necessary, at times, to send several men for work which could be attended to by a lesser number.

The general object of my invention is to provide a motor railroad car of such construction that it can be quickly and easily removed from the usual T-shaped rails at any place along the line and as easily and quickly replaced.

Another object of my invention is to provide a motor railroad car wherein the car can be moved under its own power either along the rails or to and from the rails as may be desired.

Again, it is an object of my invention to provide a car of this character which shall be of such construction that it can be cheaply made; which shall be simple and durable in operation; and which can be readily operated by any ordinary person.

Another object of my invention is to provide a car of this character which shall be adapted to traverse steep embankments and to operate successfully over ground no matter what its character may be.

My invention consists generally in the form, arrangement, construction, and cooperation of the parts whereby the above named objects, together with others that will appear hereinafter, are attainable; and my invention will be more readily understood by reference to the accompanying drawings which illustrate what I consider, at the present time, to be the best embodiment thereof.

In said drawings Figure 1, is a plan view of a railroad motor car embodying my invention. Fig. 2 is an end elevation of the car. Fig. 3 is a side elevation of the car and Fig. 4, is a detailed view illustrating the means for raising and lowering the ground traversing treads.

The car shown in this case, and which, it should be understood is by way of illustration and not by way of limitation, comprises a suitable, rigid, rectangular frame 1, upon the under side of which will be found axles 2 and 3 which, in turn, are mounted in suitable journals or bearings 4. Suitable flange wheels 5, are provided for operation on the usual shaped rails 6. For the purpose of operating the car, a power plant 7 is suitably mounted on the frame, which power plant may be of any desired construction, but which preferably is an internal combustion engine. Feathered on the engine shaft I mount a friction disk 8, which can be longitudinally moved as by means of a lever 9. Transversely of the car I mount a shaft 10, on which is feathered a friction wheel 11 which, in turn, may be shifted along shaft 10 by lever mechanism, not shown.

Also mounted on the shaft 10 is a sprocket 12, which through the medium of a chain 13 and sprocket 14 transmits power to the car axle 3. When it is desired to operate the car wheels the friction disk 8 is removed into engagement with the wheel 11 and both the speed and direction of the car can be changed by shifting the friction wheel 11 along the shaft 10 in well known manner. The means thus far described is sufficient to propel the car along the rails. For the purpose of bodily removing the car from the rails I have provided a novel mechanism which comprises essentially two transversely positioned endless elongated traction elements 15 and 16. These elements may be variously positioned, but as here shown, are placed at the ends of the car.

Inasmuch as the construction and operation of both endless traction elements is the same, a description of one will suffice for both. The traction element operates over spaced sprocket wheels 17 and 18 which, in

turn, are mounted upon suitable journals 19 and 20, and the lower portion of the tread engages a plurality of supporting wheels 21 pivotally mounted in the frame member 22. The endless elongated traction element is of such length that it spans the rails, the purpose of which will appear shortly. As a means of driving the traction element a sprocket wheel 23 is attached to one of the sprockets 17 of the traction element and this, in turn, is connected by means of a chain 24, to the sprocket 25 which is mounted upon a shaft 26, carrying a gear wheel 27. The gear wheel 27, in turn, meshes with a pinion 28 rotating upon a dead shaft 29, and fixed to rotate with a sprocket wheel 30. The sprocket wheel 30, in turn, is connected by means of a chain 31 to a sprocket wheel 32, mounted upon the longitudinal shaft 33. Obviously when the shaft 33 turns, motion is imparted to the endless traction elements. The traction element at the other end receives motion in like manner except that it is through a separate shaft 34. Both the shafts 33 and 34 are driven through the differential gear mechanism 35, which, in turn. receives its motion from the gear 36 mounted upon the shaft 37. The shaft 37 carries a friction disk 38, which is feathered thereon, and which, by means of the lever 39, can be thrown into and out of engagement with the friction wheel 11. Thus when it is desired to drive the traction elements the lever 39 is moved to bring the disk 38 into contact with the wheel 11, and obviously both the direction and speed of the traction elements can be changed by the movement of the wheel 11 along the shaft 10.

In order that one endless traction element may be operated at a speed different from the other, as may be necessary or desirable for turning the car when operating as a road or ground vehicle, I provide means for applying a resistance to the shaft 33 or 34, as the case may be. This mechanism comprises in effect a brake 40 for the shaft 33 and a brake 41 for the shaft 34. Thus by applying one of the brakes the traction element at one end may be caused to operate at a speed different from that at the other end.

Having now described the traction elements, and the mechanism for operating them, I shall now describe the means whereby the car can be moved from the tracks under the action of the aforesaid traction elements. This mechanism comprises essentially means for depressing the traction elements as a whole until they engage the rails at which time further movement elevates the motor car as a whole above the rails thus elevating the car wheels a distance above the rails sufficient to permit transverse movement of the car as a whole with respect to the rails.

Inasmuch as the raising and lowering means for each traction element is the same, a description of one will serve for both. This mechanism comprises the shaft 29, the end of which is mounted in a box 43, which box is mounted in brackets or ways 44, rigidly attached to and depending from the car frame structure. For moving the box 43 a shaft 45 is provided, the lower end of which has a head 45′ operating the box 43 and the upper end being threaded as indicated at 45″. Mounted adjacent the upper end of the shaft 45 is a worm wheel 46 provided with a screw threaded core for co-action with the threaded part 45″ of the shaft 45. The worm wheel 46 is mounted within and held against anything but rotary motion by the stationary housing 47. Therefore, it is obvious that rotation of the worm wheel 46 in one direction lowers the endless traction element and rotation in the other direction raises the traction element. This operation may be carried on by hand but I prefer to provide power mechanism for this purpose and to this end I provide a worm 48 which engages the worm wheel 46. The shaft carrying the worm 48 also carries a sprocket wheel 49 and by means of a chain 50 is connected to a sprocket 51 mounted on the shaft 52. A similar sprocket 53 is mounted at the other end of the shaft 52 for operating the traction element at the other end of the car. Mounted loosely on the shaft 52, intermediate its ends, will be found bevel gears 54 and 55, both of which are in mesh with the single bevel gear 56 mounted upon shaft 57 that receives motion from the engine. Feathered upon the shaft 52 between the gears 54 and 55 is a double ended clutch member 58′ which can be longitudinally shifted to connect either the gear 54 or 55 operatively to the shaft 52. By this means, the shaft 52 can be driven in either direction under engine power.

In order to operate the raising and lowering mechanism by hand in case this should be necessary I provide a lever 58 which carries in its hub 59 ratchet mechanism which can be adjusted so that by swinging movement of the lever 58 the shaft 57 may be turned in the desired direction. It may likewise be set so that when the shaft 57 is power operated the ratchet mechanism is disengaged. Suitable ratchet mechanism is of such well known construction that it is not thought necessary to illustrate or describe the same in detail.

For manually operating the traction elements cyclically I provide a squared end 33′ on the shaft 33 to which a crank (not shown) can be affixed.

When it is desired to remove the car from the rails clutch 58′ is moved to connect the proper gear to the shaft 52 and the traction elements move downwardly until both of them reach the rails at which time further

movement elevates the body of car above the rails. When the car, as a whole, has been sufficiently elevated above the rails, the downward movement of the traction element is discontinued by moving the clutch 58′ to neutral position, and the friction disk 38, is thrown into engagement with the wheel 11, thereby causing both of the traction elements to move in the desired direction, and movement thereof obviously moves the car bodily off the rails, one end of the traction elements dropping on the ties on the inside of one of the rails, but no difficulty is found in climbing over the rails. When the car is entirely free of the rails it can be operated, to all intents and purposes, as a ground vehicle and can be moved, if desired, to a considerable distance from the railroad right of way, down steep embankments, and over ground which is difficult to traverse. At such time, if desired, heavy loads may be carried on the car for placement at some distance from the railroad. For replacing the car opon the rails obviously the reverse of the foregoing operation is performed and it can likewise be replaced with as great ease.

Because of the ease with which the car can be moved and its capacity to carry great loads, both on and off the rails, it becomes possible to use a car of this type for much work which heretofore has required a work train of locomotive and one or more cars. The manifold advantages of the car herein shown and described will be obvious to those skilled in this art without further comment, but inasmuch as this disclosure will suggest to others modified means whereby the substantial objects and purposes of my invention may be attained, I do not wish to be limited to the specific construction herein shown and described, except only as may be necessary by limitations in the hereunto appended claims.

I claim:

1. A car embodying therein wheels formed for rail travel; an elongated endless traction device transversely mounted on the car and of a length sufficient to span the distance between the rails, and adapted to travel on the ground; and means for moving the elongated endless traction device downward relative to the wheels of the car and thereby to free the wheels from the rails.

2. A car embodying therein wheels formed for rail travel; a plurality of elongated endless traction elements transversely mounted on the car, of a length sufficient to span the distance between the rails, and adapted to travel on the ground; and means for moving the elongated endless traction elements downward relative to the wheels of the car.

3. A car embodying therein wheels formed for rail travel; a power plant carried by the car, and means for operatively connecting it to said wheels; an elongated endless traction device transversely mounted on the car and of a length sufficient to span the distance between the rails, and adapted to travel on the ground; and means for moving the elongated endless traction device downward relative to the wheels of the car and thereby free the wheels from the rails.

4. A car embodying therein wheels formed for rail travel; a power plant carried by the car and means for operatively connecting it to said wheels; a plurality of elongated endless traction elements transversely mounted on the car, of a length sufficient to span the distance between the rails, and adapted to travel on the ground; and means for moving the elongated endless traction elements downward relative to the wheels of the car.

5. A car embodying therein wheels formed for rail travel; an elongated endless traction device transversely mounted on the car and of a length sufficient to span the distance between the rails, and adapted to travel on the ground; means for moving the elongated endless traction device downward relative to the wheels of the car and thereby to lift the wheels free of the rails, a power plant carried by the car, means for operatively connecting it to said wheels and for operatively connecting it to drive said elongated endless traction device.

6. A car embodying therein wheels formed for rail travel; a plurality of elongated endless traction elements transversely mounted on the car, of a length sufficient to span the distance between the rails, and adapted to travel on the ground; means for moving the elongated endless traction elements downward relative to the wheels of the car; a power plant carried by the car, means for operatively connecting it to drive said wheels, and for operatively connecting it to drive said elongated endless traction elements.

7. A car embodying therein wheels formed for rail travel; a power plant carried by the car, and means for operatively connecting it to said wheels; an elongated endless traction device transversely mounted on the car and of a length sufficient to span the distance between the rails, and adapted to travel on the ground; and means connected to said power plant for moving the elongated endless traction device downward relative to the wheels of the car and thereby to lift the wheels off the rails.

8. A car embodying therein wheels formed for rail travel; a power plant carried by the car and means for operatively connecting it to said wheels; a plurality of elongated endless traction elements transversely mounted on the car, of a length sufficient to span the distance between the rails, and adapted to travel on the ground; and means for moving the elongated endless traction elements downward relative to the wheels

of the car, said means being operatively connected to the power plant.

9. A car embodying therein wheels formed for rail travel; an elongated endless traction device transversely mounted on the car and of a length sufficient to span the distance between the rails, and adapted to travel on the ground; a power plant carried by the car, means for operatively connecting it to said wheels and for operatively connecting it to drive said elongated endless traction device; and means actuated by said power plant for moving the elongated endless traction device downward relative to the wheels of the car and thereby to lift the wheels free from the rails.

10. A car embodying therein wheels formed for rail travel; a plurality of elongated endless traction elements transversely mounted on the car, of a length sufficient to span the distance between the rails, and adapted to travel on the ground; a power plant carried by the car, means for operatively connecting it to said wheels and for operatively connecting it to drive said elongated endless traction device; and means actuated by said power plant for moving the elongated endless traction elements downward relative to the wheels of the car.

11. A car embodying therein wheels formed for rail travel; a power plant carried by the car; an elongated endless traction device adapted to travel on the ground; means for moving said elongated endless traction device downward relative to the wheels of the car; means for driving said wheels from the said power plant; means for driving said elongated traction device from said power plant; and means for driving said elongated endless traction elements at different relative speeds.

12. A car embodying therein wheels formed for rail travel; a power plant carried by the car; an elongated endless traction device adapted to travel on the ground; means for moving said elongated endless traction device downward relative to the wheels of the car; means for driving said wheels in either direction from the said power plant; means for driving said elongated traction elements in either direction from said power plant; and means for driving said elongated endless traction elements at different relative speeds, said means including a differential gear mechanism, shafts extending to respective traction elements, and brake means for resisting rotation of said shafts.

13. A car embodying therein wheels formed for rail travel; a power plant carried by the car; an elongated endless traction device adapted to travel on the ground; means for moving said elongated endless traction device downward relative to the wheels of the car; means for driving said wheels in either direction from the said power plant; means for driving said elongated endless traction elements in either direction from said power plant; and means for manually operating said elongated endless traction device.

14. A car embodying therein wheels formed for rail travel; a power plant carried by the car; an elongated endless traction device adapted to travel on the ground; means for moving said elongated endless traction device downward relative to the wheels of the car; means for driving said wheels in either direction from the said power plant; means for driving said elongated endless traction elements in either direction from said power plant; and means for manually lowering said elongated endless traction device relative to the wheels.

In testimony whereof, I have hereunto set my hand, this 26 day of June, 1919.

ROBERT E. BRESSLER.