Dec. 8, 1931. R. D. PARSONS 1,835,895

GROUNDING DEVICE FOR TRACKLESS TROLLEYS

Filed Dec. 13, 1929 2 Sheets-Sheet 1

Fig. 1.

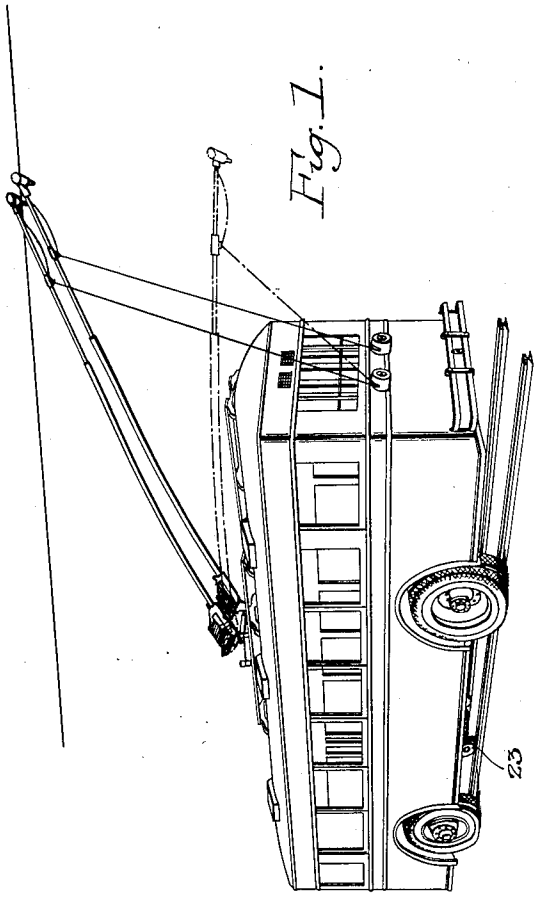


Fig. 2.

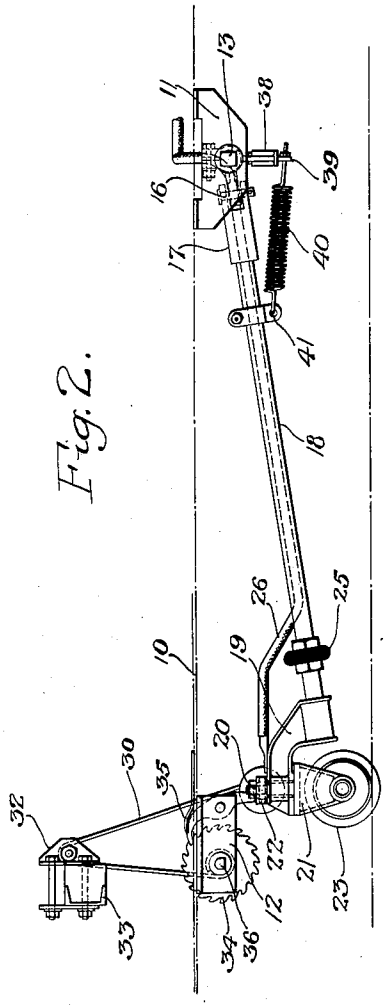
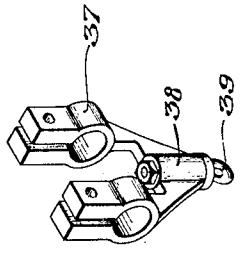


Fig. 4.



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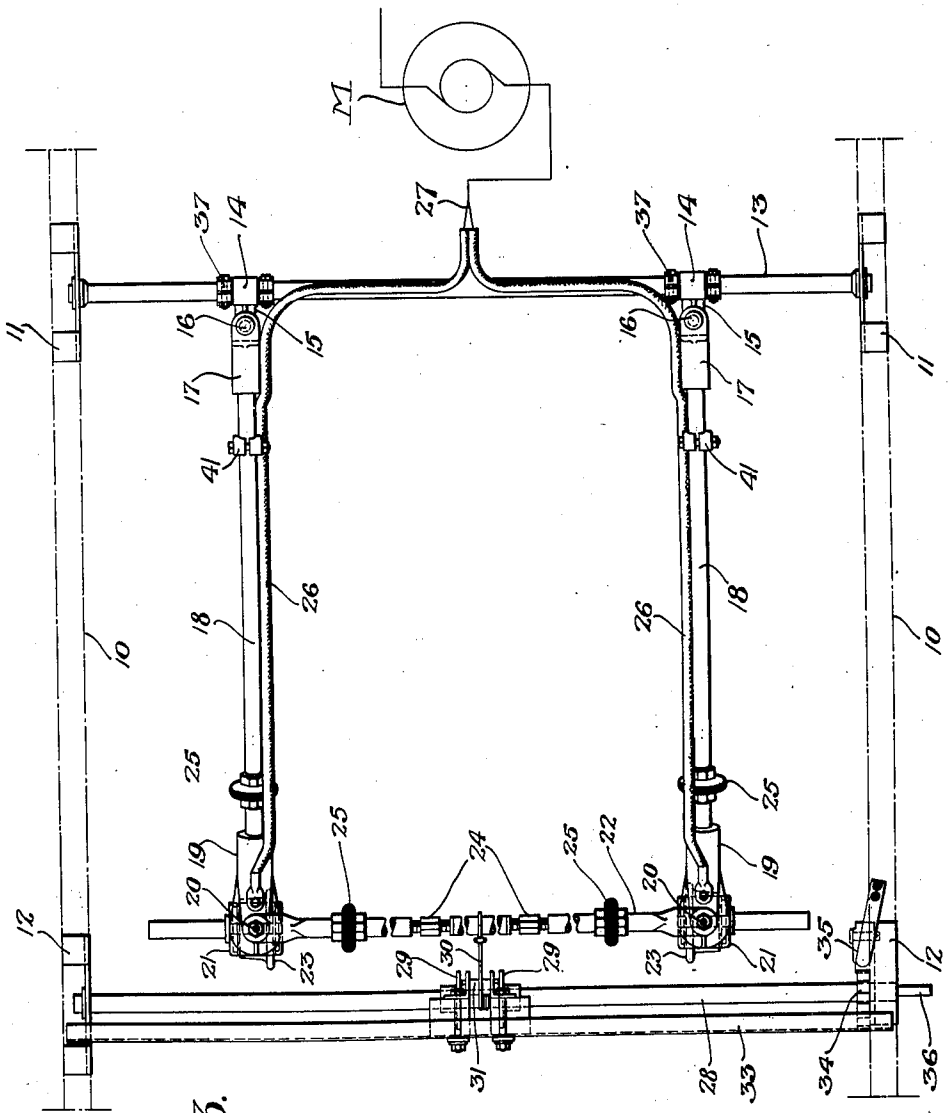


Fig. 3.

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1,835,895

UNITED STATES PATENT OFFICE

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GROUNDING DEVICE FOR TRACKLESS TROLLEYS

Application filed December 13, 1929. Serial No. 413,820.

This invention relates to grounding devices and more particularly to a grounding device for trackless trolleys.

Trackless trolleys, as is well known to those familiar with the art, are usually rubber-tired vehicles deriving electrical current for operation from long flexible trolley poles, the harp wheels of which operate upon a pair of wires. It is often necessary, in moving such trolleys into a barn for storage or repairs, that the vehicle be moved over a track system which, of course, employs only a single trolley wire. Accordingly, an important object of this invention is to provide a device which may be readily lowered to engage the tracks and provide a ground for the motors of the trolley which is so constructed that it may shift from side to side to accommodate variations between the path of the vehicle and the tracks which may be adjusted for use with differently spaced track rails and which, when in use, is so disposed that it will in no way interfere with the operation of the vehicle.

A further object of the invention is to produce a device of this character which may be very readily applied to trackless trolleys as at present constructed without in any manner altering the present construction thereof.

These and other objects I attain by the construction shown in the accompanying drawings wherein, for the purpose of illustration, I have shown a preferred embodiment of my invention and wherein:

Fig. 1 is a perspective view of a trackless trolley with the grounding device in use, the dot-and-dash lines indicating the position of the unused trolley during use of the grounding device;

Fig. 2 is a side elevation of the grounding device, the frame being indicated in dot-and-dash lines;

Fig. 3 is a plan view of the grounding device, the frame being indicated in dot-and-dash lines and the connections to the motor being indicated diagrammatically; and

Fig. 4 is a perspective view of the retaining element employed for maintaining the upper ends of the arms in proper position upon the shaft.

Referring now more particularly to the drawings, the numeral 10 generally designates a side frame element of the chassis of a trackless trolley to which, in accordance with my invention, I attach spaced pairs of hanger plates 11 and 12, the plates of the pairs 11 and 12 being transversely aligned with one another. Plates 11 support a transversely-extending shaft 13 upon which are rotatably mounted spaced collars 14 each having an arm 15 supporting a vertically-directed pivot 16. Mounted upon this pivot is the head 17 of a rod 18 the outer end of which is connected through rod 18, the free end of which has a head 19 constructed for the passage of a pivot 20. Pivot 20 is carried by a frame 21 and serves to secure this frame to an end of a transversely-extending horizontal rod 22. Frame 21 mounts a small track wheel 23 and rod 22 incorporates a turn-buckle structure or structures 24 permitting adjustment of the effective length of this rod to accommodate the wheels of frames 21 to tracks of different gauges. Each of rods 18 and 22 adjacent the frame-connected end thereof includes an insulator 25 interrupting its continuity as a conductor and each of heads 19 has connected thereto a conductor 26, these conductors being spliced to one another as at 27 and led to the motor "M".

Brackets 12 rotatably mount a transversely-extending shaft 28 which is provided centrally with a cable drum illustrated at present as constructed by attaching to the shaft spaced flanged collars 29 defining a drum face therebetween. A cable 30 is attached to this drum, passed upwardly over a sheave or roller 31 mounted upon a bracket 32 secured to the vehicle body at a suitable point as a transversely-extending beam 33 thereof and then extended downwardly and secured to the center of rod 24. At one end, inwardly of its bracket 12, the shaft 28 has secured thereto a ratchet disk 34 and co-acting therewith a spring-pawl 35. The outer end of the shaft at this bracket is extended through the

bracket and adapted for engagement by a wrench as at 36.

In ordinary operation of the trolley, the frame represented by the rods 18 and 22 and the attached wheels is at its free end maintained in elevated position through cable 30 and at any time it is desired to operate the car along a trackway having a single overhead wire, pawl 35 is released permitting the free end of the frame to move downwardly so that the wheels 23 may be brought into engagement with the tracks, sufficient slack being left in cable 30 to admit of motion of the free end of the frame transversely of the vehicle to compensate for inaccuracies in steering.

In order that the contact between the wheels and truck be insured, spring means are provided for urging the free end of the frame downwardly. In the present instance the collars 14 are shown as held in place by substantially U-shaped yokes the arms 37 of which are split to permit them to be clamped upon shaft 13 and the cross bar 38 of which has rotatably mounted therein a vertically-extending member including an eye 39. A spring 40 has an end extended through this eye and secured, and the opposite end thereof secured to a clamp 41 carried by the associated rod 18.

Since the structure herein illustrated and described is obviously capable of a certain range of change and modification without in any manner departing from the spirit of my invention, I do not wish to be understood as limiting myself thereto except as hereinafter claimed.

I claim:

1. In combination with a motor-propelled vehicle having a frame, the motor normally receiving its supply from a pair of trolleys, means for adapting the vehicle for travel along a single wire track grounded system comprising transversely-spaced arms universally connected with the frame at corresponding ends, a connection between the opposite ends of the arms, track wheels carried by said connection, means for raising and lowering said connection, means constantly urging the arms downwardly, an electrical connection between said track wheels and a terminal of the motor, and means insulating the track wheels from said arms and said connection.

2. In combination with a motor-propelled vehicle having a frame, the motor normally receiving its supply from a pair of trolleys, means for adapting the vehicle for travel along a single wire track grounded system comprising transversely-spaced arms universally connected with the frame at corresponding ends, a connection between the opposite ends of the arms, track contacts carried by said connection, means for raising and lowering said connection, means constantly urging the arms downwardly, an electrical connection between said track contacts and a terminal of the motor, and means insulating the track contacts from the frame of the vehicle.

3. In combination with a motor-propelled vehicle having a frame, the motor normally receiving its supply from a pair of trolleys, means for adapting the vehicle for travel along a single wire track grounded system comprising a transversely-extending shaft carried by the frame, a pair of arms universally connected to the shaft at corresponding ends, a connection between the outer ends of said arms, track-engaging wheels carried by said connection and electrically connected with the terminal of the motor and a hoisting mechanism carried by the frame and engaged with said connection, said connection being adjustable as to length.

4. In combination with a motor-propelled vehicle having a frame, the motor normally receiving its supply from a pair of trolleys, means for adapting the vehicle for travel along a single wire track grounded system comprising a transversely-extending shaft carried by the frame, a pair of arms universally connected to the shaft at corresponding ends, a connection between the outer ends of said arms, track-engaging wheels carried by said connection and electrically connected with the terminal of the motor, a hoisting mechanism carried by the frame and engaged with said connection, and means insulating said connection and said arms from the track wheels.

5. In a trackless vehicle, the combination of a body, a contact adapted to follow a ground rail, a cross member supporting said contact, a pair of arms each pivoted at one end to said cross member and at the other end to said body, for supporting said cross member, and means on said body for directly lifting said cross member.

RICHARD D. PARSONS.