G. M. EATON.

RAILWAY MOTOR JACK.

APPLICATION FILED DEC. 3, 1919.

1,431,939.

Patented Oct. 17, 1922.

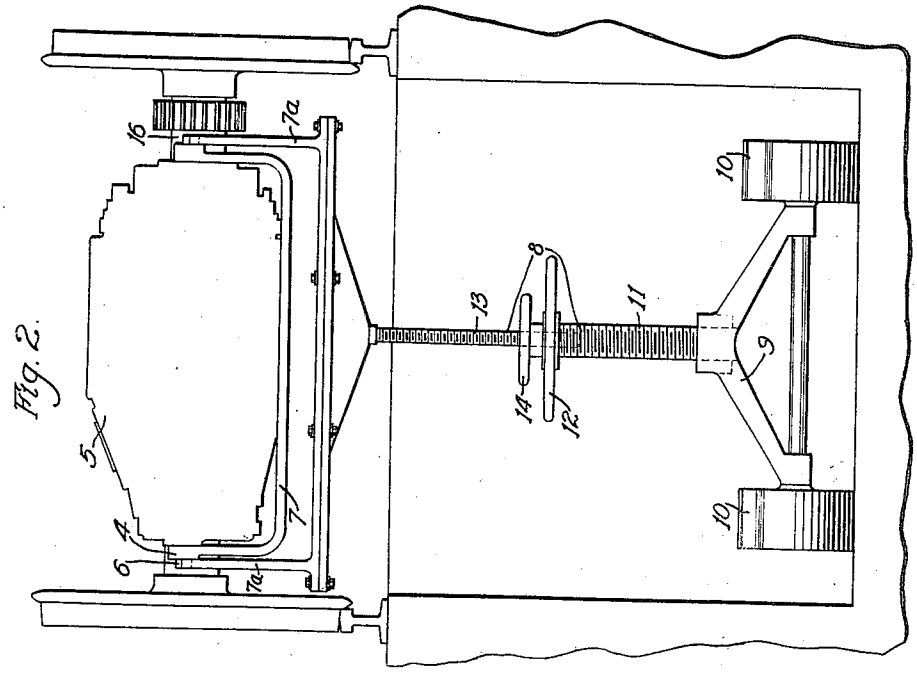


Fig. 2.

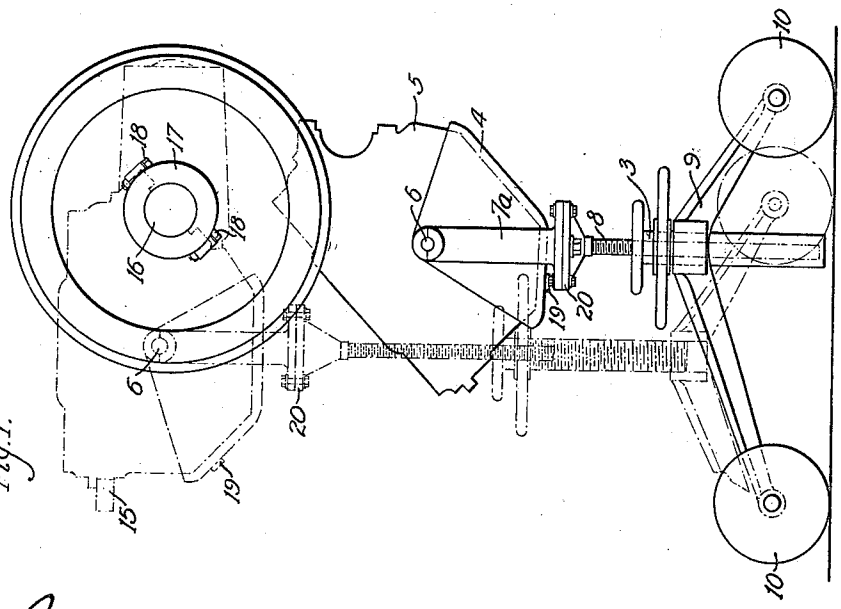


Fig. 1.

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Patented Oct. 17, 1922. 1,431,939

UNITED STATES PATENT OFFICE.

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RAILWAY MOTOR JACK.

Application filed December 3, 1919. Serial No. 342,266.

To all whom it may concern:

Be it known that I, GEORGE M. EATON, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Railway Motor Jacks, of which the following is a specification.

My invention relates to auxiliary apparatus for use in connection with railway motors of the box type, and it has for its object to provide a relatively inexpensive and rugged jack for use in pits in railway-car-repairing stations which shall permit the removal of the motor from the car truck without disturbing the car body.

For a better understanding of my invention, reference may be had to the accompanying drawings of which Figure 1 is a side elevational view of a jack embodying my invention; and Fig. 2 is a front elevational view of the same.

Heretofore, it has been customary, when it became necessary to remove a railway motor from the truck carriage for purposes of inspection or repair, to remove the body of the car and lift the motor from the truck by means of a crane. One objection to this method of removal is the great amount of work necessary to remove, and afterwards replace, the car body on the truck. By my invention, I provide a device whereby this step in the removal of a motor is eliminated.

For a more detailed description of my invention, reference may now be had to the drawings in which is shown a jack 3 comprising a cradle or receiving member 4 which conforms to the general contour of the casing of the railway motor 5 of the box type. The cradle 4 is provided with a trunnion 6 on each end thereof by means of which it is pivotally mounted upon a yoke member 7, which comprises two spaced arms 7^a for supporting the respective trunnions 6. The yoke member 7 is supported upon a standard 8 which, in turn, is mounted upon a base 9 provided with wheels 10 which rest on the bottom of the pit. The standard 8 comprises a hollow screw 11 of relatively large diameter that engages a screw threaded socket in the base 9 and a relatively small screw 13 that is supported by, and is adapted to slide in the screw 11. The upper end of the screw 11 is provided with a hand wheel 12, to which it is rigidly attached, and the screw 13 is provided with a combined nut and hand wheel 14 which may be turned to raise and lower the cradle 4 independently of the corresponding movements effected by turning the screw 11. One side of the motor 5 is supported on a suspension bar 15 and its other side on a car-wheel axle 16 by means of an axle cap 17, held rigidly in position by means of bolts 18. A lug 19 on the bottom of the cradle 4 engages a member 20 which is a part of the standard 8 to prevent it from tilting too far.

When it is desired to remove a motor from its position in the truck, the gear case (not shown) is first removed from the end of the motor, and the portable jack is so positioned that the cradle engages the bottom side of the motor casing. The axle-cap bolts 18 are then loosened and the axle-cap 17 is removed. The suspension bar 15, by means of which the side of the motor opposite the car wheel axle is supported, is next removed, and the jack is lowered, causing the motor to swing about the cradle axis as a pivot. Movement of the motor about the cradle axis causes the axle-bearing member to be moved away from the axle 16, so that it will clear the axle as the cradle is lowered. This avoids the necessity of moving the jack after it has been positioned. The motor is next lowered, and the jack, supporting the motor, is moved along the pit to any desired position. The full-lines in Fig. 1 show the motor and jack in position to be moved to a repair station.

It will be observed that the center of gravity of the motor is located substantially in the axis of the trunnions 6. This serves to prevent tilting of the motor when it is supported by the jack alone. Motors of different sizes may be removed by using cradles of different sizes, all of which are provided with trunnions of one size to fit the bearing seats provided in the arms 7^a of the yoke 7.

From the foregoing description, it will be obvious to those skilled in the art that, by simply removing the motor-suspension bar and taking off the axle-caps, which must be done in order to take the motor out, in any manner whatsoever, the motor may be removed from the truck by the use of the jack embodying my invention, without disturbing the car body and also, that the jack is made adaptable for use on motors of any

number of different sizes by using cradles of different sizes, and that the danger of tipping the motor is reduced to a minimum by causing the axis of the threaded members 11 and 13 to pass substantially through the center of gravity of the motor, as does the axis of the trunnions 6.

While I have shown but one form of my invention, and have described in detail but one application of the same, it will be obvious to those skilled in the art that it is not so limited, but that various minor modifications and changes may be made therein without departing from the spirit of my invention, and I desire, therefore, that only such limitations shall be imposed thereon as are set forth in the appended claims.

I claim as my invention:

1. In a motor jack, a cradle-supporting structure, a cradle member supported thereon in trunnions in such manner that the center of gravity of the cradle and of a motor carried thereby will lie in a plane below the trunnions, and a screw jack for moving the said structure in a vertical plane.

2. In a motor jack, a cradle-supporting structure, a cradle member supported thereon in trunnions in such manner that the center of gravity of the cradle and of a motor carried thereby will lie in a plane below the trunnions, and a single vertically adjustable supporting member for the cradle-supporting structure.

3. In a motor jack, a cradle-supporting structure, a cradle member supported thereon in trunnions in such manner that the center of gravity of the cradle and of a motor carried thereby will lie in a plane below the trunnions, and a supporting member for the cradle-supporting structure disposed therebeneath and adapted to move the platform vertically.

In testimony whereof, I have hereunto subscribed my name this 26th day of November, 1919.

GEORGE M. EATON.