June 14, 1949. J. A. SCHNEIDER 2,473,109

CAR MOVER

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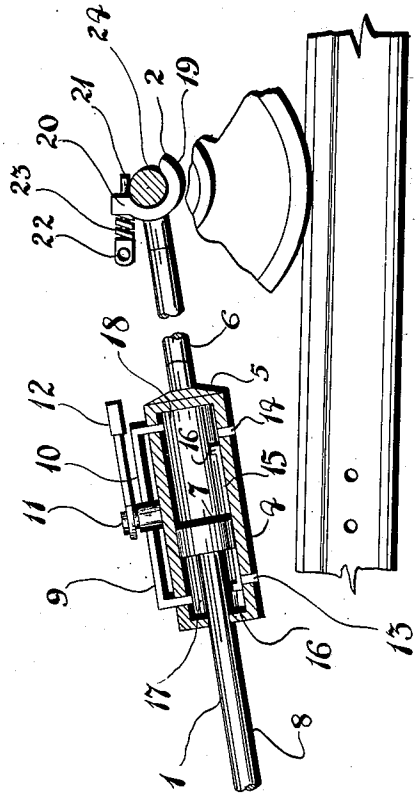


Fig 2

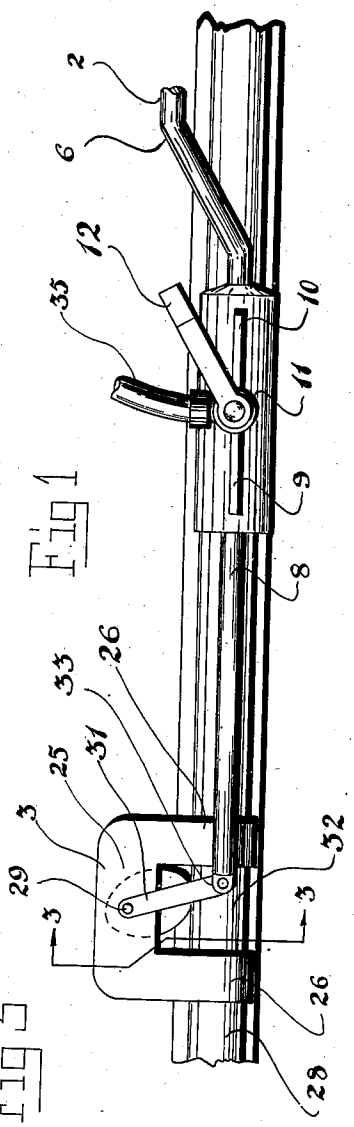


Fig 1

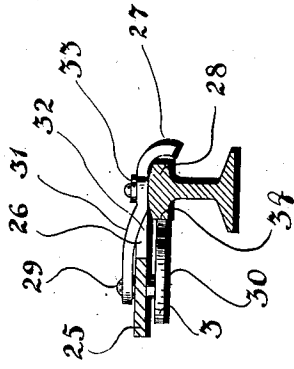


Fig 3

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CAR MOVER

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4 Claims. (Cl. 254—35)

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My invention relates to car movers, an object of the invention being to provide a device of the character herewithin described by the use of which box cars and the like may easily be moved by one man when my assembly is connected to a source of air pressure.

A further object is to provide a device of the character herewithin described which is of conspicuously simple construction and which may readily be detached from a railroad car axle from a remote point, and readily attached without the necessity for crawling under the car.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings, in which:

Figure 1 is a plan view of my car mover in situ upon a rail.

Figure 2 is a fragmentary side view illustrating the manner in which my mover is attached to a car axle.

Figure 3 is a view substantially on the line 3—3 of Figure 1.

In the drawings like characters of reference indicate corresponding parts in the different figures.

My invention embodies three main components collectively designated as a cylinder and piston unit 1 connected to a source of power, a car coupling 2, and a rail clamping assembly 3. These three main components I will now proceed to describe in detail.

The cylinder and piston unit comprises the cylinder per se to the end 5 whereof is secured the coupling rod 6 which I consider as part of my coupling unit 2. Movable within the aforesaid cylinder 4 is a piston 7 attached to connecting rod 8. Communicating with the interior of cylinder 4 adjacent the end thereof are the air ducts 9 and 10 which diverge from a 2-way valve 11 operated by the lever 12.

Diametrically opposite the points of entrance of the ducts 9 and 10 are exhaust ports 13 and 14 which may be opened and closed alternately by means of the interceptor plate 15 provided at the end thereof with upstanding lug 16 whereby the same may be reciprocated by a piston action. It is to be understood that a recess will be provided upon the wall of piston 7 to receive the plate 15 and act as a guide therefor to preserve

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the linearity of movement of the plate and proper registration with the exhaust ports 13 and 14.

From the foregoing it will be apparent that if it be assumed that compressed air is entering cylinder 4 at the left end thereof (with respect to Figure 2) through duct 9 and forcing the piston to the right, the chamber 17 will increase in volumetric capacity and air will accumulate therein until the head of piston 7 strikes the right-hand lug 16. Upon continued movement of the piston rightwardly, it will be apparent that port 13 will be uncovered and hence air may escape from chamber 17 preparatory to the admission of air into chamber 18 after lever 12 has been rotated whereby duct 10 is opened.

At the opposite end of shaft 6 to that which is secured to cylinder 4, is a hook 19 of the form clearly depicted and from which it will be seen that an upstanding apertured portion 20 is provided through which extends a bolt 21 provided with an eye 22, a spring 23 being positioned between eye and the member 20. Thus, when the bolt is in the position illustrated, my coupling is secured to the car axle 24, but may easily be disengaged therefrom at a remote point via the intermediacy of a cable (not shown) secured to eye 22. It is to be understood that the ends of spring 23 will be suitably secured to the member 20 and eye 22 and is only in tension when the bolt is drawn leftwardly as by means of the cable I have referred to.

It will also be apparent that the coupling arrangement depicted facilitates the attachment of my device to a car axle 24 since it is simply a matter of pushing the hook and bolt 21 against the axle. Bolt 21 will then yield slightly, and no accurate guiding, aligning or any other form of correct preliminary positioning is necessary.

My clamping assembly 3 comprises a plate 25 including the pair of claws 26, the downwardly curved ends 27 whereof are intended to partially embrace the rail head 28. Extending through plate 25 is a bolt 29 to the under end whereof is keyed a plate cam 30, link 31 being keyed to the upper end of the said bolt.

A rectangular aperture 32 exists between the claws 26, and by reference to Figure 3 it will be seen that my link 31 is curved downwardly so that the opposite end to that which is keyed to bolt 29 rests on the upper rail head surface. In lapping relationship to link 31 is pivotally secured the flattened end 33 of the connecting rod 8. Cam 30 lies horizontally in the planes of the rail head flanks 34.

From all the foregoing it will be apparent that

when the compressed air is admitted to cylinder 4 from a source of power through the line 35 and is admitted to chamber 18 via a duct 10, the expansion thereof will transmit a clockwise motion (with respect to Figure 1) via link 31 upon cam 30 which will accordingly bind against the rail head flank 34.

When such binding action takes place it will be recognized that cylinder 4 must move rightwardly with respect to Figure 2, which action will of course be transmitted to shaft 6 and the car axle 24. Hence the car will be moved after which the lever 12 may be rotated so as to admit compressed air into chamber 17 so as to free my rail clamping assembly 3 and pull the same along the rail preparatory to a further shoving action.

Since many modifications can be made in the invention herein described and since the accompanying drawings have been prepared only to illustrate the relative arrangement and interaction of parts and not with regard to accuracy of dimensions for manufacturing purposes which in view of this disclosure I consider to entail merely mechanical skill together with the skill of the mechanical draftsman, and since many apparently widely different embodiments of this invention may be made within the spirit and scope of the accompanying claims without departing from such spirit and scope it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. A fluid pressure railroad car mover, comprising in combination with a double-acting cylinder and piston unit connected to a source of power, a car coupling attached to said unit, a rail clamping assembly, said assembly embodying a plate having claws thereon overlying the head of said rail, a cam positioned beneath said plate to engage one flank of said rail head, a crank arm keyed to said cam and being journalled in said plate, the main portion of said crank arm overlying said plate, a connecting rod pivotally attached to said crank arm and said piston at the opposite ends thereof, said claws exerting a horizontal pressure against the opposite flank of said rail head to that engaged by said cam, upon the application of thrust by said connecting rod.

2. The car mover according to claim 1 in which said coupling is in the form of an upwardly open, axle engaging hook.

3. A car mover according to claim 1 in which at least a substantial portion of said connecting rod extends parallel with and overlies said rail head.

4. A fluid pressure railroad car mover, comprising in combination with a double-acting cylinder and piston unit, connected to a source of power, a car coupling attached to said unit and a rail clamping assembly, said rail clamping assembly comprising a pair of rail head gripping components and a connecting rod operatively attached to said components and to said piston, said coupling being in the form of an upwardly open, axially engaging hook.

JOSEPH A. SCHNEIDER.

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