June 27, 1933. A. E. SMALL 1,915,387

CAR COUPLER OPERATING DEVICE

Filed March 14, 1931 2 Sheets-Sheet 1

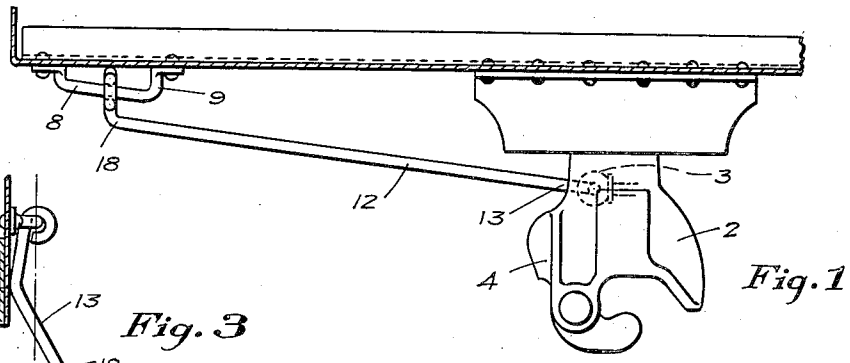


Fig. 1

Fig. 3

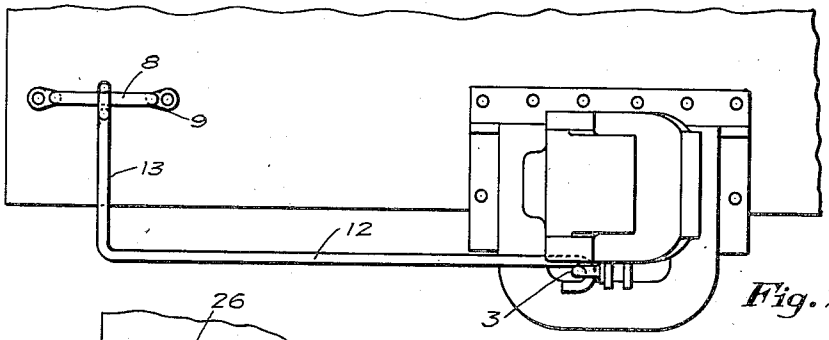


Fig. 2

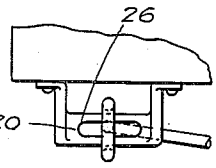


Fig. 6

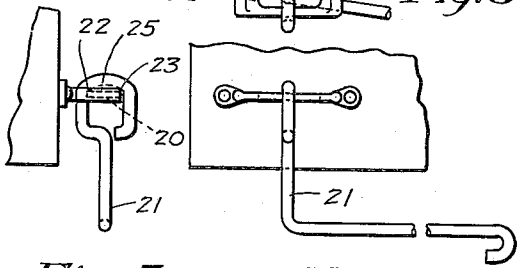


Fig. 5 Fig. 4

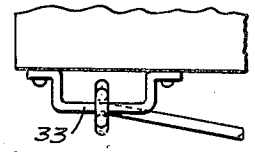


Fig. 9

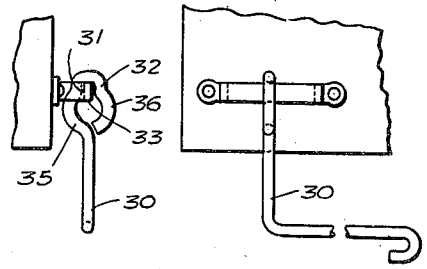


Fig. 8 Fig. 7

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CAR COUPLER OPERATING DEVICE

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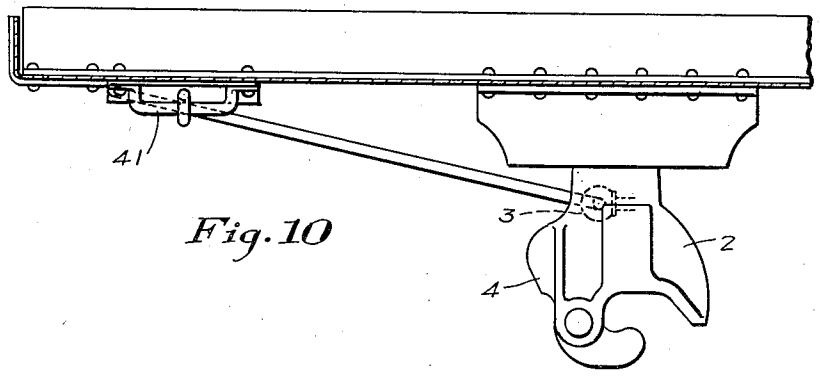


Fig. 10

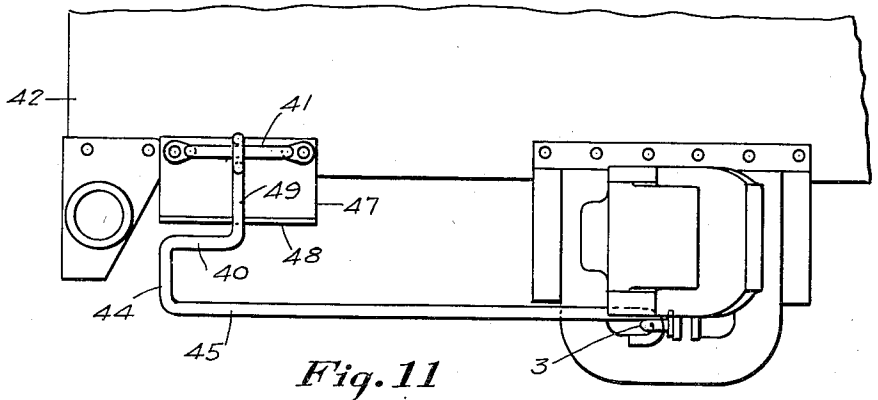


Fig. 11

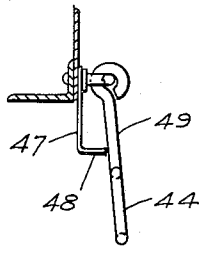


Fig. 12

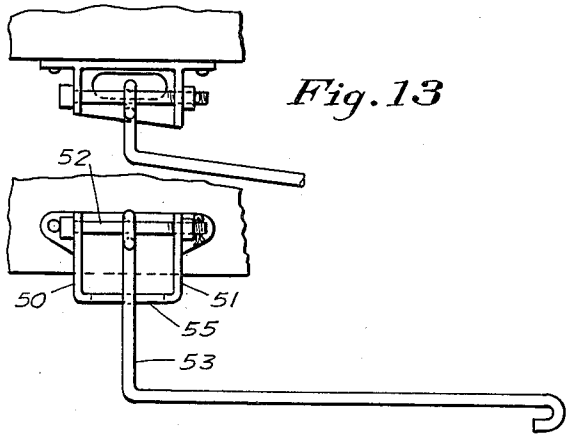


Fig. 13

Fig. 14

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UNITED STATES PATENT OFFICE

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CAR COUPLER OPERATING DEVICE

Application filed March 14, 1931. Serial No. 522,573.

This invention relates to a device for operating a railway car coupler mounted upon the car for lateral and longitudinal movement and having a pivoted knuckle provided with a tail engageable with a knuckle lock to which such an operating device is connected. The invention relates specifically to a railway car coupler having an anti-creep feature which is so formed that the lock can be raised to an unlocked position by the operating device, but cannot be raised by the creeping action of the locks due to the service movements of the car. Some of such couplers are provided with a member mounted upon the coupler and arranged to operate the coupler upon rotation of an operating rod operatively attached thereto.

Another object is to provide such a device which accommodates the longitudinal and lateral service movements of the coupler without effecting the efficiency of the device.

Another object is to provide a device wherein the handle thereof will return to normal vertical position when the coupler is left in lock-set position.

Another object of the invention is to provide such an operating device which is operable from anywhere between the coupler and the side wall of the car so that a trainman may throw the knuckle lock with one hand and operate the coupler with the other hand.

Another object of the invention is to provide a car coupler operating device which may also be used as a car coupler positioning device; that is, may be used to position the coupler laterally.

Another object is to provide a device having an operating rod which forms the handle of the device and is so arranged that a man's hand will not slip off the handle, which is possible in a device having a depending handle.

The Interstate Commerce Commission Safety Appliance Acts specify that the depending handle of an operating rod for car coupler shall not exceed fifteen inches (15″) from the center of the fulcrum to the end of the handle, therefore, the mechanical leverage obtainable by such a handle is the distance from the center of the operator's hand to the fulcrum, which is usually about twelve inches (12″). However, when an operator grabs the horizontal portion of my device the distance from the center of his hand to the fulcrum (bracket bearing) is the full fifteen inches (15″) and the device complies with the law, therefore, the lever arm has been increased about twenty-five percent (25%). In other words, with the same amount of force applied my mechanism is twenty-five percent (25%) stronger than the device now in general use.

Another object of the invention is to provide a horizontal step for trainmen climbing up or down the car, which might also be used as a horizontal grab iron for a trainmen caught between the cars.

Another object of the invention is to provide an operating rod for such a coupler having a stabilizer which is associated with a part of the car (preferably a bracket mounted on the car) so as to stabilize the rod by gravity against a rotative movement thereof which would release the coupler anti-creep feature. The device is preferably arranged to stabilize the rod against a rotative movement in either direction, as a swinging movement of the handle toward the car might cause a swinging movement away from the car, which latter movement would unlock the anti-creep.

In the drawings:

Figs. 1, 2 and 3 show the preferred form of my invention.

Figs. 4, 5 and 6 show a modified form of the invention which is provided with a stabilizer.

Figs. 7, 8 and 9 show a modified form provided with a stabilizer comprising means to positively hold the operating rod in normal position.

Figs. 10, 11 and 12 show a modified form of the device provided with a horizontal extension.

Figs. 13 and 14 show a simple method of providing the sliding bracket.

The coupler 2, as is customary, is mounted upon the car so as to move laterally and longitudinally thereof in service. The coupler

comprises a member 3 arranged to operate the coupler, which member is usually supported below the coupler head 4 by means integral with the coupler. (A typical coupler of this type is shown in Kinne Patent No. 1,639,300, August 16, 1927.)

Figs. 1, 2 and 3 show the preferred form of my invention wherein a bracket is mounted upon the car comprising a substantially horizontal portion or bearing 8 spaced from the car with arms 9 at its opposite ends forming means of attachment to the car. The operating rod comprises a shank portion 12 with its inner end operatively connected to the rotor 3 of the coupler and a portion extending upwardly from the outer end of the shank portion 12, the upper end of the upright portion being slidably and pivotally supported upon bearing 8 of the bracket so that as the coupler moves laterally in service the operating rod slides back and forth on the horizontal bearing of the bracket. If the car construction requires the operating rod to be positioned diagonally the bearing 8 of the bracket is preferably positioned substantially parallel to the operating rod, as shown in Fig. 1.

In order to stabilize the device and prevent it from swinging, which might rotate the rotor of the coupler or unlock the coupler anti-creep lock, I prefer to provide a point of contact 15 between the upright member 13 of the operating rod and an element 16 on the car, as shown in Fig. 3. Furthermore, I prefer to position the outer end 18 of the operating rod beyond a vertical plane 19 passing through the bearing of the bracket so the rod has a tendency to swing the upright member 13 toward the car, as shown in Fig. 3.

The device is operated by swinging the operating rod shank 12 around the axis of the bearing 8, which is done by preferably catching hold of the rod adjacent the upright member. However, the rod may be grabbed anywhere between its connection to the coupler and the upright member 13. In this arrangement the shank portion 12 is a handle for manual operation of the device. Furthermore, the coupler can be moved laterally by means of this operating rod forming what is commonly called a coupler positioning device.

Figs. 4, 5 and 6 show a modified construction wherein the device is provided with a stabilizer for the operating rod which, in the form illustrated, comprises a relatively wide bar 20 forming the bearing on the bracket and the upright member 21 of the operating rod is formed with spaced apart portions 22—23 engaging the margins of the bar 20 so that as the operating rod is swung the weight of the operating rod is shifted to one of said portions, causing a tendency for the rod to return to normal position by gravity. The top 25 of the loop forming the spaced apart portions is arched to clear any accumulation of dirt or ice on the bar. An aperture 26 may be provided to allow dirt and snow to fall through.

Figs. 7, 8 and 9 show a modified form wherein the device is provided with a stabilizer lock. The upright member 30 of the operating rod is provided with parts 31 and 32 which engage the opposite sides of the bearing 33 of the bracket so that the operating rod cannot swing laterally until it is lifted upwardly out of engagement with the sides of the shaft. The spaced apart portions 35—36 allow the member 30 to be swung after it is raised vertically.

Figs. 10, 11 and 12 show a modified form wherein the operating rod is provided with a horizontal extension 40 which is necessary when it is not practical to put the sliding bracket 41 adjacent the side wall 42 of the car. The horizontal extension provides a vertical (44) and horizontal (45) handhold which complies with the Interstate Commerce Commission Safety Appliance Acts specifying the distance of the handle from the side of the car. This modification shows a depending wall 47 having a horizontal flange 48 which engages the portion 49 of the upright member of the operating rod to retain it at the desired angle so that its weight provides a tendency for it to swing toward the car.

Figs. 13 and 14 show a simple slidable bracket formed of a casting having oppositely positioned walls 50—51 through which a bolt 52 extends to provide the sliding bearing for the upright member 53 of the operating rod. This casting is also provided with a shelf for keeping the rod at the desired angle.

The accompanying drawings, illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof, within the scope of the claims, will occur to persons skilled in the art.

I claim:

1. In a railway car, an operating device for use with a car coupler mounted upon the car to move laterally in service and having a member mounted upon the coupler arranged to operate the coupler upon rotation of an operating rod, said device comprising a bracket mounted upon the car, and an operating rod comprising a shank portion operatively connected to the member at its inner end and a portion extending upwardly from the outer end of said shank portion, said upwardly extending portion being slidably and pivotally supported at its upper end by said bracket so as to allow the rod to move longitudinally of itself with the movement of the coupler sidewise of the car, whereby said

shank portion is a handle for manual operation of the device.

2. In a railway car, an operating device for use with a car coupler mounted upon the car to move laterally in service and having a member mounted upon the coupler arranged to operate the coupler upon rotation of an operating rod, said device comprising a bracket mounted upon the car provided with a bearing, and an operating rod comprising a shank portion operatively connected to the member at its inner end and a portion extending upwardly from the outer end of said shank portion, said upwardly extending portion being slidably and pivotally supported at its upper end by said bracket so as to allow the rod to move longitudinally of itself with the movement of the coupler sidewise of the car, whereby said shank portion is a handle for manual operation of the device, said upright portion having spaced apart portions engaging said bearing forming a stabilizer for said device.

3. In a railway car, an operating device for use with a car coupler mounted upon the car to move laterally in service and having a member mounted upon the coupler arranged to operate the coupler upon rotation of an operating rod, said device comprising a bracket mounted upon the car, and an operating rod having a shank operatively connected to the member at its inner end and a portion extending upwardly from the outer end of said shank portion, said upwardly extending portion being slidably and pivotally supported at its upper end by said bracket so as to allow the rod to move longitudinally of itself with the movement of the coupler sidewise of the car, whereby said shank portion is a handle for manual operation of the device, and means forming a stabilizer for said device.

ARTHUR E. SMALL.