Dec. 13, 1949 S. C. BRONSON 2,491,359

COUPLER OPERATING DEVICE

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Fig. 1

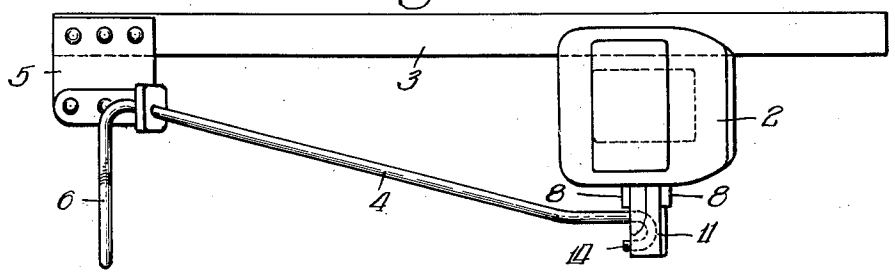
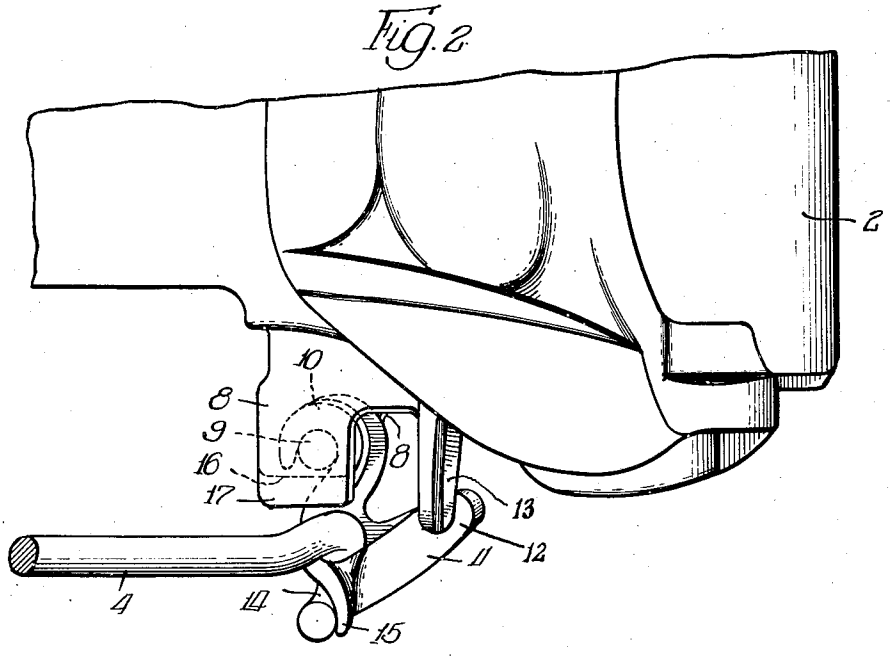


Fig. 2



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Fig. 3.

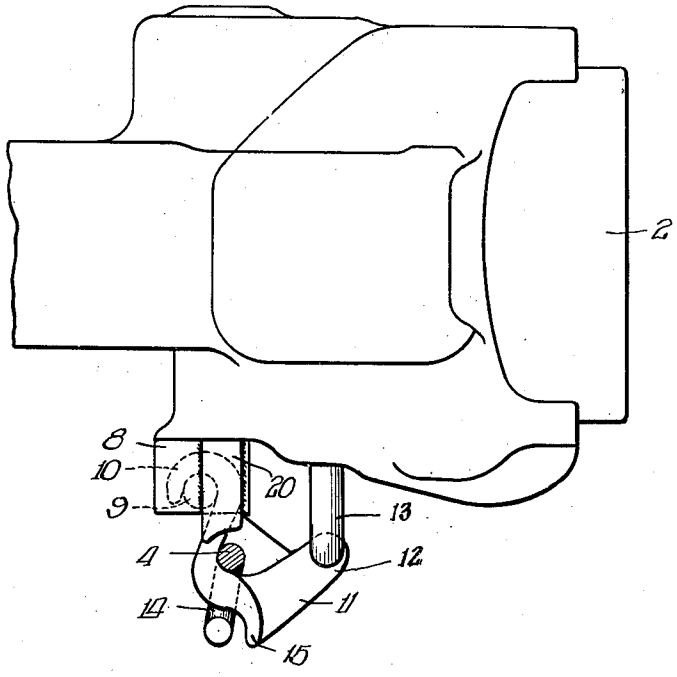


Fig. 4

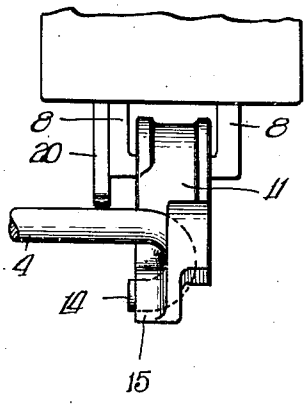
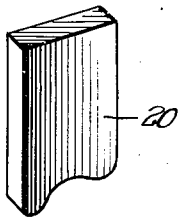


Fig. 5.



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UNITED STATES PATENT OFFICE

2,491,359

COUPLER OPERATING DEVICE

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Application August 25, 1945, Serial No. 612,633

2 Claims. (Cl. 213—166)

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My invention relates to bottom operated railway car couplers and specifically to means to prevent service movements of the car from jarring the coupler operating rod or causing it to jump sufficiently to unlock the coupler to which it is operatively attached.

In the modern type "E," or bottom operated railway car coupler, a lock lifter is pivotally mounted at one end upon the coupler and its other end is pivotally attached to the coupler lock. Between these pivotal points the lock lifter is provided with an eye. An operating rod is rotatively supported at its outer end in a bracket adjacent the side of the car, and the inner end of said rod is operatively connected to the lock lifter through said eye, so that rotation of said rod about its longitudinal axis swings the lock lifter about its pivot and raises the inner end of the rod in an arcuate path as well as the lock lifter and unlocks the coupler.

In the Schlesinger Patent No. 2,399,263, April 30, 1946, which is owned by my assignee, a means for accomplishing this purpose is illustrated and claimed, but in that application said means forms a part of the operating rod, which part projects from that portion of the rod which extends under the coupler and engages a stop surface on said coupler upon accidental upward movement of said operating rod without substantial rotation thereof. Coupler operating rods are usually drop forged, and to form such means thereupon requires special forging equipment, expensive dies, and a plurality of operations, thus increasing the manufacturing cost of the operating rod. It is the principal object of my present invention to provide a means for accomplishing this purpose without changing the design of the operating rod.

Another object of the invention is to associate the means to prevent accidental uncoupling of a pair of couplers with the couplers themselves. Since couplers are constructed of cast steel it is a simple matter to modify the pattern of same so that the castings made therefrom would have the desired projection in the path of upward movement of the operating rod, without substantial rotation thereof, and thereby prevent said upward movement from accidentally unlocking the coupler. Simplicity of the structure is, therefore, another object of the invention.

The invention furthermore is readily applicable to couplers now in service by simply securing to a part of the coupler directly over the operating rod passing thereunder a suitably formed piece of metal which projects toward

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said operating rod and, therefore, would prevent accidental jumping of the rod sufficiently to raise the lock lifter of the coupler and thereby unlock the same.

Of course, either modification would not interfere with the normal operation of the rod in rotating about its longitudinal axis which thereby swings the lifter upon its pivot and carries the inner end of the rod with it in an arcuate path which raises the lock and unlocks the coupler.

Other objects and advantages of the invention will appear in the following description thereof.

Referring now to the acompanying drawing forming part of this application and wherein like reference characters indicate like parts:

Figure 1 shows a typical application of a car coupler mechanism to a railway car incorporating my device.

Figure 2 is a perspective view of the lower portion of the outer end of a car coupler with my invention integrally formed therewith and illustrating the inner end of a coupler operating rod attached to the coupler lock lifter.

Figure 3 is a broken side elevation of a coupler head showing a modified form of the invention.

Figure 4 is a partial view at right angles to Figure 2.

Figure 5 is a perspective view of one form of member which may be secured to the coupler to accomplish the purposes of the invention.

Figure 1 shows an ordinary application of a coupler mechanism to a railway car, wherein the coupler 2 is mounted upon the end wall 3 of the car. The coupler is operated by the operating rod 4 which is rotatively mounted in a bracket 5 attached adjacent the car side. The operating rod 4 is provided with a handle portion 6 for rotation of the rod about its longitudinal axis to operate the coupler.

A pair of spaced parallel lugs 8—8 extend downwardly from the bottom of the coupler 2, between which is provided a journal pin or trunnion 9 upon which is swingably mounted the hooked end 10 of the rotary lock lifter 11. At the other end 12 of the lock lifter there is provided a hole for pivotally receiving one end of the lifter arm 13 which operates the coupler lock within the coupler head. Between the two ends of the lock lifter 11 there is an opening or eye for reception of the hooked end 14 of the operating rod so that upon rotation of the operating rod in one direction the lower part of the hook 14 engages the portion 15 of the lock

lifter and swings the lock lifter about the trunnion 9, raises the lifter arm 13 and thereby unlocks the coupler.

All of the above is old and well known in the art. A disadvantage thereof is that due to the step-up in the speed of trains, rough roadbed, and more violent application of brakes, etc., the inner end of the operating rod sometimes gets to jumping and could, if unrestrained, build up enough inertia to swing the lock lifter and thereby raise the lifter arm and unlock the coupler, causing a break-in two of the train which would be very undesirable, obviously. The problem then is to provide means to prevent such possible undesirable jumping of the inner end of the operating rod.

In Figures 1 and 2, which show an application of the invention to new couplers, or in other words, a modification in the design and proportions of a part of the coupler itself so that it can then accomplish the purpose of my invention, I have shown in dotted lines at 16 the normal length of the lugs 8—8. It is obvious that there is a noticeable distance between this line 16 and top of the operating rod 4 immediately thereunder, so that the rod could jump upwardly and take the lifter 11 with it if the aforementioned inertia had been built up in the rod. To prevent such jumping I have extended the lugs 8—8 as at 17, so that they almost contact the upper surface of said rod 4 and, therefore, there is no possibility of the rod jumping any more than the mere clearance therebetween which is just sufficient for easy application of the hooked end 14 of rod 4 in the lifter eye, and so that the rod end may swing with the lifter on journal 9 out from under said extension 17 during the normal operation of the rod in unlocking the coupler.

For certain types of railroad equipment it is obviously desirable that the coupler be operable from adjacent either or both sides of the car, and, therefore, I have shown in Figure 1, both lugs 8 extended as heretofore described so that the operating rod may extend to the other side of the car, or if two rods are used, as in passenger cars, the lock lifter eye is sufficiently large to accommodate same.

In Figures 3 and 4 I have shown a modification for attachment to couplers already in service, and which comprises an extension member 20, as indicated in Figure 5, welded or otherwise secured flatwise against the coupler lug 8, and which member 20 extends downwardly to adjacent the operating rod to prevent the rod from jumping. A similar extension member may be secured to the other lug 8 as well in cases where the coupler is to be operated from either or both sides of the car.

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 coupler having a lock, a pair of lugs depending from said coupler, a lock lifter pivotally mounted between said lugs and operatively connected to said lock, and an operating rod rotatively supported at its outer end and operatively connected at its inner end to said lifter between the places of support of said lifter so that rotation of said rod about its longitudinal axis swings said lifter about its pivotal mounting thereby raising said lifter and inner end of said rod upwardly and unlocking the coupler; means attached to the lug nearest the outer end of said rod and projecting in the path of accidental upward, substantially non-rotating, movement of said inner end of said operating rod forwardly of the axis of rotation of said rod to prevent said inner end of said operating rod from accidental upward movement and thereby carrying said lifter with it sufficiently to unlock said coupler.

2. In a railway car coupler having a lock, a pair of lugs depending from said coupler, a lock lifter pivotally mounted between said lugs and operatively connected to said lock, and an operating rod rotatively supported at its outer end and operatively connected at its inner end to said lifter between the places of support of said lifter so that rotation of said rod about its longitudinal axis swings said lifter about its pivotal mounting thereby raising said lifter and inner end of said rod upwardly and unlocking the coupler; the lug nearest the outer end of said rod having means projecting in the path of accidental upward, substantially non-rotating, movement of said inner end of said operating rod forwardly of the axis of rotation of said rod to prevent said inner end of said operating rod from raising upwardly and carrying said lifter with it sufficiently to unlock said coupler.

SABIN C. BRONSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,399,263	Schlesinger	Apr. 30, 1946