Aug. 30, 1949. S. C. BRONSON 2,480,708

CAR COUPLER OPERATING DEVICE

Filed July 9, 1945 2 Sheets-Sheet 1

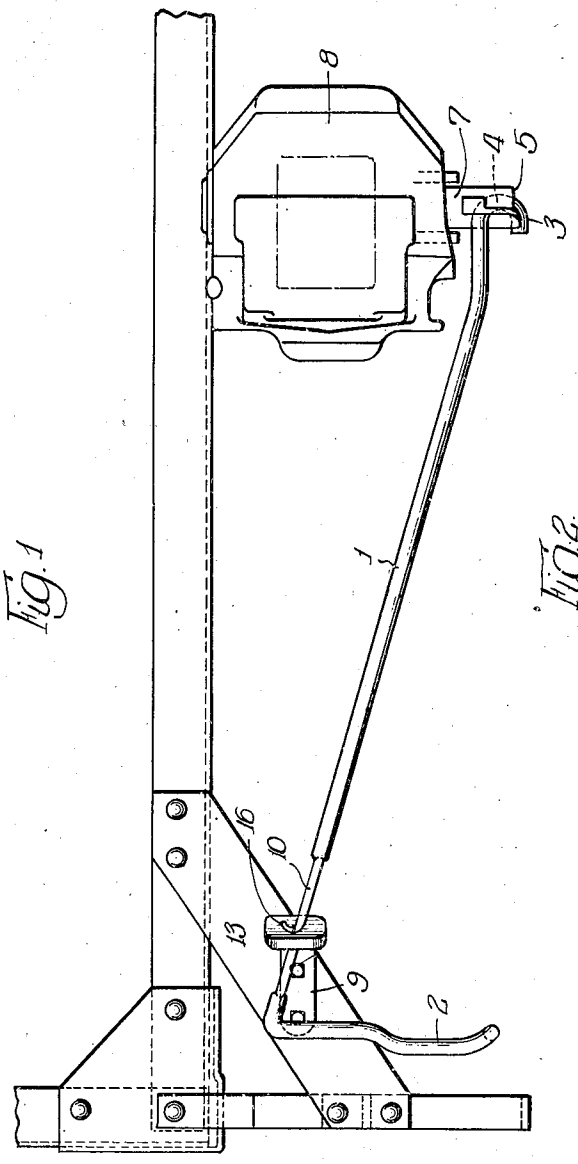

Fig. 1

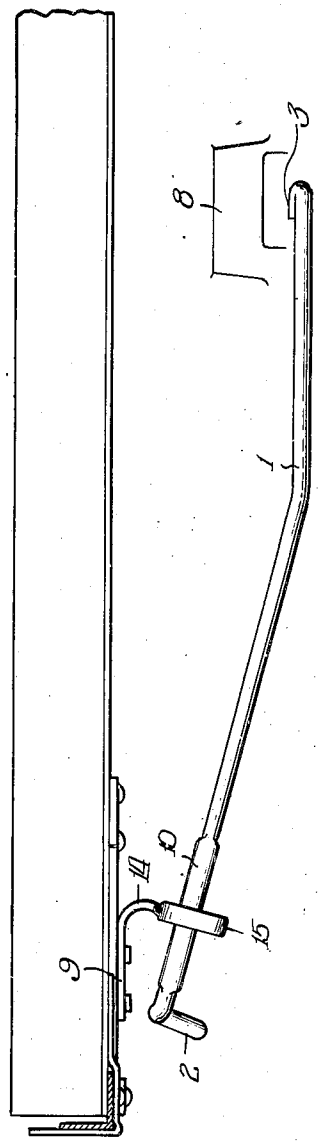

Fig. 2

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Fig. 3

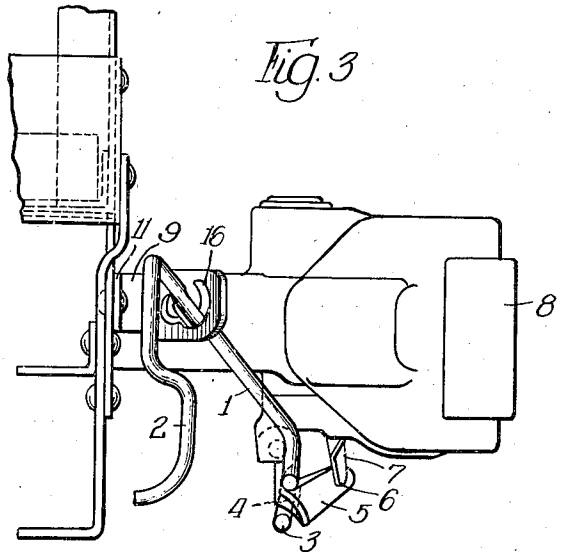


Fig. 4

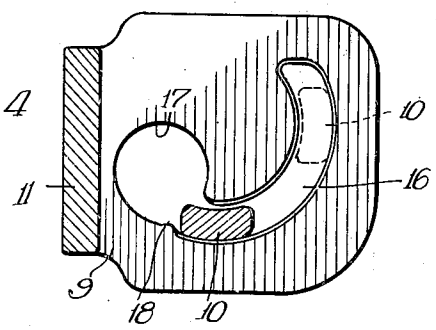
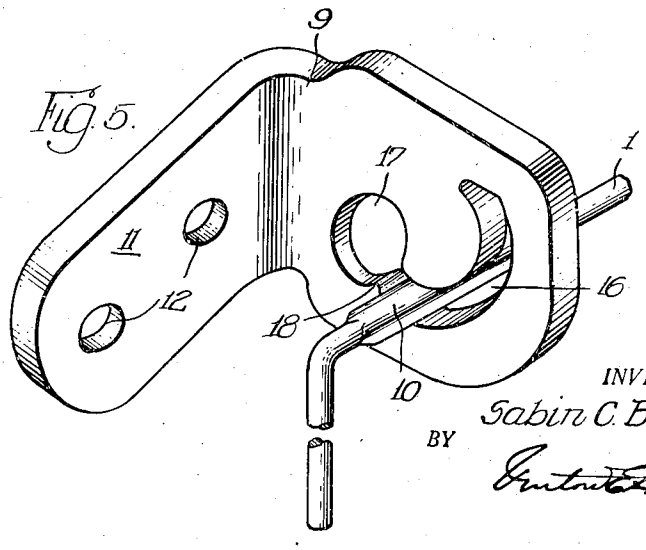


Fig. 5.



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Patented Aug. 30, 1949

2,480,708

UNITED STATES PATENT OFFICE

2,480,708

CAR COUPLER OPERATING DEVICE

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8 Claims. (Cl. 213—170)

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My invention relates to railway car coupler operating mechanisms operable from the side of the car, and the principal object of the invention is to provide an operating rod having a handle at its outer end, said rod being non-rotatively supported by a bracket attached to the car to prevent accidental rotation of said rod sufficiently to operate said coupler, said rod having means at its other end for attachment to the lock lifter of a car coupler so that upon rotation of said rod by a trainman said lock lifter is moved to raise the coupler lock and thereby operate the coupler.

Another object is to so form the supporting bracket and the part of the rod supported by the bracket so that the rod is non-rotative therein but movable in an arcuate path therein sufficiently to cause movement of the lock lifter of the coupler and thereby operate the same.

A further object is to so form the arcuate slot in the supporting bracket that when the rod handle is released from coupler operating position by a trainman the rod and handle will automatically return by gravity to its normal position therein.

Still another object is to provide an opening at one end of the slot large enough to insert the rod therethrough before attaching the bracket to the car and thereby avoid the necessity of making the bracket of a plurality of parts for convenience in applying the rod thereto.

The desirability of non-rotatively supporting a coupler operating rod has been recognized in the prior art, but in most instances known to applicant, it is necessary for the rod to be elevated out of its held position before it can be rotated. This is objectionable because it requires a special and initial operation by the trainman which is not readily apparent, especially when working in the dark.

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

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

Figure 1 is an elevational view showing the uncoupling rod supported adjacent its handle end in a bracket and connected at its inner end to the lock lifter of a coupler.

Figure 2 is a top plan view of the rod and its supporting bracket showing fragmentary portions of the car.

Figure 3 is an end elevation of Figure 1, fragmentary portions of said coupler being illustrated.

Figure 4 is an enlarged view of the bracket at

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right angles to that shown in Figure 1 and illustrating the relation of the operating rod to the bracket.

Figure 5 is an enlarged perspective view of the rod in its supporting bracket.

In the drawings, 1 indicates an operating rod for an Association of American Railroads Standard "E" coupler, which rod is provided at its outer end with a depending handle portion 2, and at its inner end with a hook portion 3 connected to an eye 4 of the rotary lock lifter 5, pivotally connected at one end, as at 6, to the link 7 which lifts the lock of the coupler 8 upon movement of the lock lifter and thereby operates the coupler. Adjacent the handle portion 2, the rod is supported adjacent the side of a car in a bracket 9.

The trend of railway freight train operation is toward faster moving trains which causes greater wear and tear of the cars and equipment thereon, and sometimes the inertia built up in the operating rod, or the lock lifter, is sufficient to lift the coupler lock and thereby uncouple cars of a moving train. To prevent such an occurrence, I have designed my operating rod so that in normal operation, i. e., at all times other than when the coupler is to be operated to uncouple a pair of cars, said rod is non-rotatably supported and held in its supporting bracket against jumping upwardly. Consequently, the handle cannot "whip" or jump due to said inertia and thereby unlock the coupler. This is accomplished by flattening the sides of that portion of the rod adjacent the handle into concavo-convex or non-circular cross section, as at 10, which portion operates in the bracket.

The bracket for the rod comprises a supporting part 11 which is provided with spaced holes 12 through which bolts or other attaching means may secure said part to a fixed part of the end of a car, as, for example, the brace 13. The part 11 is formed at slightly more than a right angle, as at 14, forming a flange portion 15. In this flange portion is formed an arcuate slot 16 which is formed on a relatively short radius and in length is slightly more than 90 degrees. As before mentioned, adjacent the handle portion 2 a portion of the rod is deformed into preferably a concavo-convex or transversely arcuate cross-section, as indicated at 10, and of the same radius as the slot 16, which portion 10 is in thickness but slightly less than the width of the slot 16, for free slidable but non-rotative movement therein. The portion 10 is designed to operate in the slot 16, being slidable from end to end thereof, but

because of its shape and fairly snug fit therein, it cannot rotate on its own axis in the slot. Said portion 10 is of some length so that the rod may move longitudinally within the slot when the coupler moves laterally of the car in service.

The slot extends substantially diagonally across the flange 15 so that when the rod is located, as shown in Figures 4 and 5 in its normal position, in the lower end of the slot, the handle hangs substantially vertically and the portion 10 is substantially horizontal, but when raised to coupler operating position in the other end of the slot, as shown in dotted lines, Figure 4, the handle will be substantially horizontal and the concavo-convex portion substantially vertical. Thus when the trainman grasps the handle 2 and pulls outwardly and upwardly thereon, the portion 10 will move from the lower to the upper end of the slot 16 and in so doing the rod will be rotated slightly more than 90 degrees, or amply sufficient to unlock the coupler. When the trainman releases his hold on handle 2, the weight of the rod will cause it to immediately move by gravity to the lower end of the slot. In this position it cannot jump due to service movements of the car, because of its relatively snug fit in the slot and because the lower end of the slot is substantially horizontal, so that if the rod tried to jump it would be prevented from doing so by the upper edge of the slot at that point.

For application of the rod to the bracket, preferably the lower end of the slot terminates in an enlarged opening 17 of sufficient size for application of the bracket over the handle portion 2 of the rod and to the concavo-convex portion, after the hook portion 3 has been inserted in the eye 4 of the lock lifter. Then the bracket may be attached by the fastening means to the brace 13 and the device is ready for operation.

The slot is located diagonally across the bracket so that gravity alone will cause the rod to remain in normal position in the lower portion of the slot. To aid in preventing the handle end of the rod from jumping so that the portion 10 might get into the opening 17, I have provided a hump or stop 18 to materially retard, if not prevent, such undesirable movement.

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 an operating mechanism for a railway car coupler, an operating rod supporting bracket having a substantially arcuate slot therein, said bracket adapted for attachment to a railway car so that one end of said slot is higher than the other end thereof, and an operating rod for operating the locking mechanism of a car coupler upon rotation of said rod, said operating rod having a portion thereof of widened cross section which substantially fills that portion of said slot instantly occupied by said rod for non-rotative sliding movement within said arcuate slot, said slot and said portion being constructed and arranged so that movement of said rod substantially from the lower to the upper end of said slot will cause said rod to rotate sufficiently to operate said mechanism, and when said rod is released said rod will return to said lower part of said slot by gravity.

2. An operating rod and supporting bracket

therefor for operating the locking mechanism of a car coupler upon rotation of said rod, said bracket having a substantially diagonally disposed arcuate slot having upper and lower parts therein, said operating rod having a portion thereof of widened cross-section which substantially fills that portion of said slot instantly occupied by said rod for non-rotative sliding movement within said slot, said slot and said widened portion being constructed and arranged so that when in operable position and said rod is in the lower part of said slot it is prevented from oscillating vertically; when moved to the upper part of said slot it will operate said mechanism, and when released from said upper part it will return to said lower part by gravity.

3. In an operating mechanism for a railway car coupler lock, an operating rod supporting bracket having a substantially arcuate slot therein positioned with the lower part thereof substantially horizontally disposed, and an operating rod having a portion thereof of widened cross-section which substantially fills that portion of said slot instantly occupied by said rod for non-rotative sliding movement within said arcuate slot, whereby movement of said rod in said slot will cause a rotation of said rod sufficiently to operate the locking mechanism of said coupler, said slot and said portion of said rod being arranged so that when said portion of said rod is disposed within said lower part of said slot said rod is prevented from oscillating vertically.

4. In an operating mechanism for a railway car coupler lock, an operating rod supporting bracket having a substantially arcuate slot having lower and upper parts therein positioned with the lower part thereof substantially horizontally disposed, said slot adapted to receive an operating rod having a portion thereof of widened cross-section for non-rotative sliding movement within said arcuate slot, said widened portion of said rod and said slot being constructed and arranged so that movement of said portion from the lower to the upper part of said slot will cause said rod to rotate sufficiently to operate the lock of said coupler, and so that when said widened portion is in the horizontal part of said slot it cannot oscillate vertically therein due to service movements of the car.

5. In an operating mechanism for a railway car coupler lock, an operating rod supporting bracket having a substantially arcuate slot having lower and upper parts therein positioned with the lower part thereof substantially horizontally disposed and the upper part substantially vertically disposed, and an operating rod having a widened portion shaped for non-rotative sliding movement in said slot, and of such proportion in relation to said slot that when in said horizontal part it cannot oscillate vertically therein due to service movements of the car.

6. An operating mechanism for a railway car coupler lock comprising an operating rod for operating said lock upon rotation of said rod and having a portion adjacent its outer end of widened cross-section so as to substantially fill that portion of the hereinafter mentioned arcuate slot instantly occupied by said rod, and a bracket adapted for attachment to a railway car laterally of the coupler for supporting said portion of said operating rod, said bracket having a substantially arcuate slot having upper and lower parts therein and adapted to non-rotatively and slidingly receive and support said portion of said rod, said slot and said portion of said rod being

constructed and arranged so that when said portion is in the lower part of said slot, said portion is prevented by said slot from oscillating vertically due to service movements of said car.

7. An operating mechanism for a railway car coupler lock comprising an operating rod for operating said lock upon rotation of said rod and having a portion thereof widened in cross-section so as to substantially fill that portion of the hereinafter mentioned arcuate slot instantly occupied by said rod, and a bracket having a substantially arcuate slot therein having upper and lower parts, said bracket adapted for attachment to a railway car so that said lower part is substantially horizontally disposed, said slot adapted to non-rotatively and slidingly receive and support said portion of said rod, said slot and said portion of said rod being constructed and arranged so that when said portion is slid substantially from the lower part to the upper part of said slot said movement will cause a rotation of said rod sufficient to operate said coupler lock and when said portion is released from said coupler lock operating position in said slot said portion will return by gravity to the lower part of said slot.

8. An operating mechanism for a railway car coupler lock comprising an operating rod for operating said lock upon rotation of said rod and having a portion thereof widened in cross-

section so as to substantially fill that portion of the hereinafter mentioned arcuate slot instantly occupied by said rod, and a bracket adapted for attachment to a railway car laterally of the coupler for supporting the outer end of said operating rod, said bracket having a substantially arcuate slot therein having upper and lower parts and adapted to non-rotatively and slidingly receive and support said portion of said rod, said slot and said portion of said rod being constructed and arranged so that when said portion is in said lower part of said slot, said portion is prevented by said slot from oscillating vertically due to service movements of said car and when said portion is slid substantially from the lower part to the upper part of said slot said movement will cause a rotation of said rod sufficient to operate said lock and when said portion is released from said lock operated position in said slot said portion will return by gravity to the lower part of said slot.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
601,020	Kelso	Mar. 22, 1898