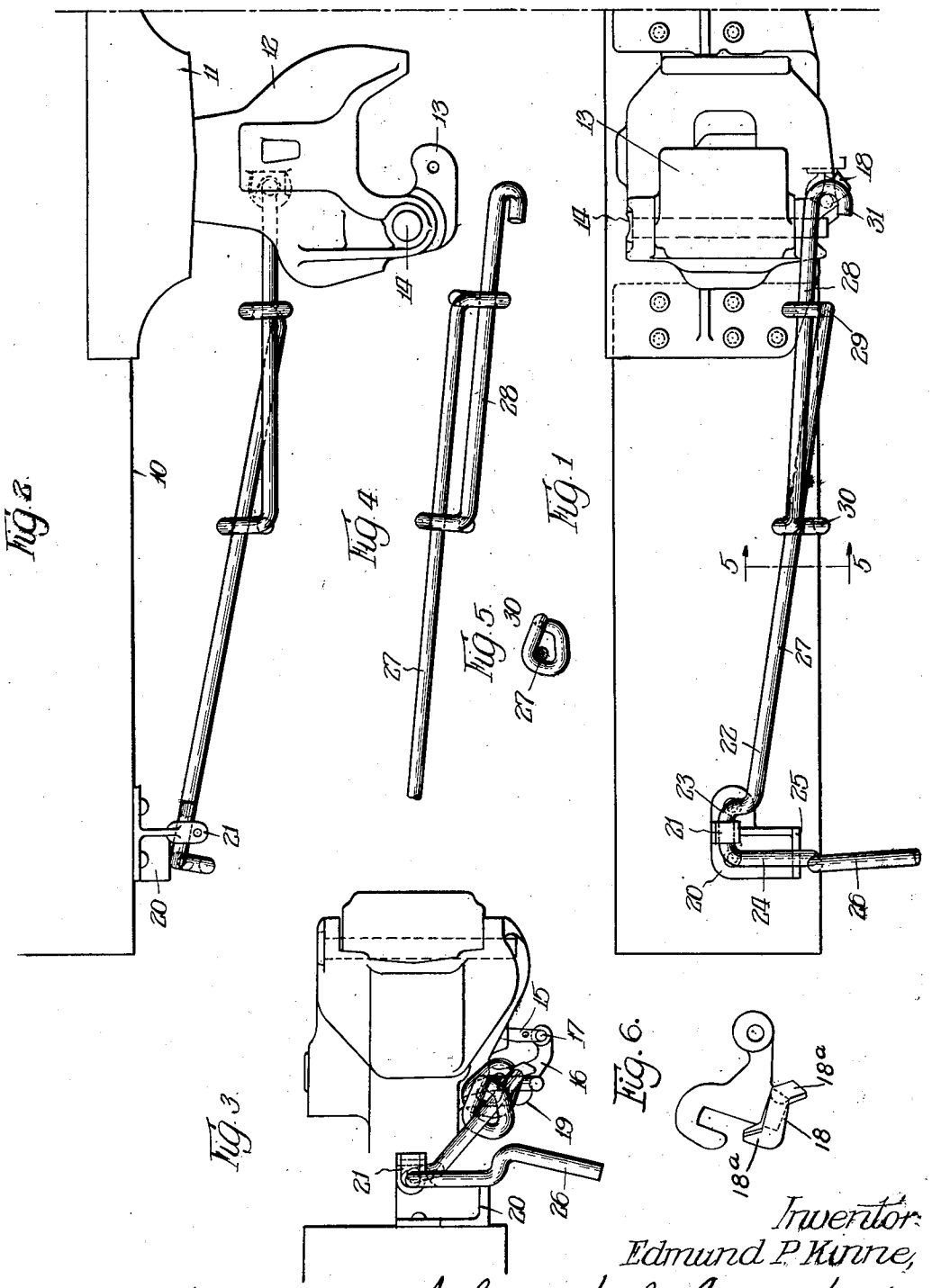
Nov. 20, 1934. E. P. KINNE 1,981,179

COUPLER

Filed Oct. 29, 1928



Inventor:
Edmund P. Kinne,
By Wilkinson, Huxley, Byron & Knight
Attys.

Patented Nov. 20, 1934 1,981,179

UNITED STATES PATENT OFFICE

1,981,179

COUPLER

Edmund P. Kinne, Alliance, Ohio, assignor to American Steel Foundries, Chicago, Ill., a corporation of New Jersey

Application October 29, 1928, Serial No. 315,624

10 Claims. (Cl. 213—167)

This invention pertains to coupler mechanism, and more particularly to means for operating a coupler from the side of the car.

An object of the invention is to improve the operation of couplers, and more particularly standard A. R. A. rotary type couplers, in a manner whereby the coupler can always be operated positively and easily through the medium of the uncoupling rod.

Another object is to provide simple, reliable, efficient and inexpensive coupler operating mechanism having cooperating parts whereby a maximum operating force may be transmitted to the lock for facilitating the operation of the coupler.

Still another object is to provide coupler operating mechanism which will fulfill all requirements of service and manufacture and in which the operating handle will always seek a position such that there will be no tendency to disrupt the parts nor to have any interference with the relative movement of the coupled cars or cooperating parts.

A further object is to provide a coupler mechanism which will effect a great saving in the number of parts now in use, as for instance, the elimination of slack devices between the operating rod and the coupling lifter.

Still further object is to provide uncoupling mechanism having lost motion provided therein to permit the return of the operating handle to inoperative position upon release thereof but which has no substantially lost motion between the uncoupling rod and the coupler mechanism in operating the coupler to full knuckle throw position.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawing and claims appended hereto.

In the drawing, which illustrates an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is an end elevation of a portion of a railway car embodying the invention;

Figure 2 is a top plan view of the mechanism illustrated in Figure 1;

Figure 3 is a side elevation of the coupler and uncoupling rod mechanism illustrated in Figures 1 and 2;

Figure 4 is a representation of the position of the uncoupling rod after release from lock set or knuckle throw position; and

Figure 5 is a sectional elevation showing an eye connection between the parts of the operating rod, the same being taken substantially in the plane as indicated by the line 5—5 of Figure 1.

Figure 6 is a view in side elevation of the rotor eye disclosing the oppositely disposed shoulder portions.

The car end sill 10 is provided with the usual operating gear including the striking casting 11 and associated parts cooperating with the coupler 12, said coupler being of the usual A. R. A. rotary type of the bottom lift type and including a movable knuckle 13 pivoted as at 14 to the coupler head. The lift mechanism, including the link 15 for controlling the operation of the knuckle 13, operates the usual mechanism within the coupler head and is controlled by the lifter 16 pivoted to the link as at 17, said lifter being rotated through a rotor provided with an eye 18 having oppositely disposed shoulder portions 18a, said rotor being rotatably supported in depending lugs 19 provided on the coupler head.

A bracket 20 is secured to the end sill and is provided with a bearing 21 for supporting the operating rod 22, said rod being provided with an offset bearing engaging portion 23 permitting movement of rotation only between the rod and the bracket and depending portion 24 engaging with portion 25 of the bracket so that there is comparatively no lost motion between the bracket and portion 24, this portion 24 being provided with an offset handle portion 26 providing weight tending to return the handle to inoperative position, as illustrated in Figure 3.

The uncoupling rod 22 is constructed in two parts 27 and 28 to provide lost motion between the parts and also to provide for movements of the coupler. The parts 27 and 28 of the uncoupling rod overlap in normal position, as illustrated in Figure 2, and the parts are respectively provided with offset or closed eye portions 29 and 30 encircling and non-releasably co-operating with the adjacent portion of the operating rod 22, but the eye being large enough to provide limited rotative lost motion of the uncoupling rod. Portion 28 of the uncoupling rod is provided with a hook portion 31 adapted to have cooperative relation with the shoulder portions 18a of the eye 18 of the rotor for operating the lifter.

In operation then, the handle 26 is moved upwardly in a counterclockwise direction whereupon the portion of the rod 27 will impart rotation to the portion of the rod 28 through binding of the overlapping portions to thereby lift the lifter 16 and the link 15, causing the cooperating

mechanism to move the knuckle 13 to full knuckle throw position. Upon release of the handle 26, said handle will rotate in a clockwise direction to inoperative position, causing the sections 27 and 28 of the uncoupling rod 22 to assume the position illustrated in Figure 4, which position is permitted by the lost motion provided by the eyes in said rods. It will be noticed that there is comparatively little or no lost motion between the parts of the uncoupling rod when operated to full knuckle throw position, but ample lost motion is provided for the return of the handle after coupler operation.

It is to be understood that I do not wish to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a railway car or the like, the combination of a coupler, a bracket, and an operating device operatively attached to the coupler and supported at its outer end by said bracket, said operating device comprising two parts, said parts being connected together to transmit rotary movement from one part to the other, said parts being so constructed and arranged that the same are angularly disposed in relation to one another and in binding relation with one another when the coupler is in locked position so as to substantially eliminate lost motion therebetween upon initial movement thereof.

2. In a railway car or the like, the combination of a coupler having a lock, a bracket, and an operating device operatively attached to the lock at its inner end and supported at its outer end by said bracket, said operating device comprising two parts, said parts being connected together to transmit rotary movement from one part to the other for raising said lock in said coupler, said parts being so constructed and arranged that the same are angularly disposed in relation to another and in binding relation with one another when the coupler is in locked position so as to substantially eliminate lost motion therebetween upon initial movement thereof and to provide sufficient lost motion therebetween for return of said part supported by said bracket to normal locking position after the lock of said coupler has been moved into its lock-set position.

3. In a railway car or the like, the combination of a laterally movable coupler, a bracket, and an operating device operatively attached to the coupler and supported at its outer end by said bracket, said operating device comprising two parts connected together so as to support each other and permit longitudinal movement therebetween and transmit rotary movement from one part to the other, said parts being so constructed and arranged that the same are angularly disposed in relation to one another and in binding relation with one another when the coupler is in locked position so as to substantially eliminate lost motion therebetween upon initial movement thereof.

4. In a railway car or the like, the combination of a laterally movable coupler having a lock, a bracket, and an operating device operatively attached to the lock at its inner end and supported at its outer end by said bracket, said operating device comprising two parts connected together so as to support each other and permit longitudinal movement therebetween and transmit rotary movement from one part to the other for raising said lock in said coupler, said parts being so constructed and arranged that the same are angularly disposed in relation to one another and in binding relation with one another when the coupler is in locked position so as to substantially eliminate lost motion therebetween upon initial movement thereof and to provide sufficient lost motion therebetween for return of said part supported by said bracket to normal locking position after the lock of said coupler has been moved into its lock-set position.

5. In coupler mechanism having a movable lock, the combination of a rotary member for transmitting movements to the coupler lock, a bracket, and operating means supported by said bracket and extending and connected to said rotary member for rotating the latter for operating the coupler lock, said operating means including a plurality of rods each having a portion intermediate said bracket and rotary member through which the other extends for transmitting rotative movement to one another and to said rotary member to raise said lock, said portions being aligned and spaced apart to permit relative movement of translation and rotation between said rods, one of said rods being secured to said rotary member and another of said rods being rotatively carried by said bracket, said portions providing for sufficient lost motion between said rods to permit return of said last-named rod to normal locking position after said lock has been moved into its lock-set position.

6. In coupler mechanism having a movable lock, the combination of a rotary member for transmitting operating movements to the coupler lock, a bracket, and operating means supported by said bracket and extending and connected to said rotary member for rotating the latter for operating the coupler lock, said operating means including a plurality of rods each having an angularly disposed looped portion through which the other extends to provide limited lost motion and permit relative movement of translation therebetween, one of said rods being secured to said rotary member and another of said rods being rotatively carried by said bracket, said looped portions providing for sufficient lost motion between said rods to permit return of said last-named rod to normal locking position after said lock has been moved into its lock-set position.

7. In coupler mechanism having a movable lock, the combination of a rotary member for transmitting operating movements to the coupler lock, a bracket, and operating means supported by said bracket and extending and connected to said rotary member for rotating the latter for operating the coupler lock, said operating means including a rod secured to said rotary member, and a handled rod movably secured to said bracket, each of said rods being in overlapped relation with the other and having means loosely engaging the other at spaced intervals, and said rods being angularly disposed to each other and said means being so formed that the rods are in binding relation with one another when the coupler is in locked position to substantially eliminate lost motion therebetween upon initial movement thereof.

8. In coupler mechanism having a movable lock, the combination of a rotary member for transmitting operating movements to the coupler lock, a bracket, and operating means supported by said bracket and extending and connected to said rotary member for rotating the latter for

operating the coupler lock, said operating means including a rod secured to said rotary member, and a handled rod secured to said bracket, each of said rods being in overlapped relation with the other and being provided with apertured end portions loosely engaging the other in spaced relation, and said rods being angularly disposed to each other and the apertured end portions being so formed that the rods are in binding relation with one another when the coupler is in locked position to substantially eliminate lost motion therebetween upon initial movement thereof.

9. In a railway car, the combination of a laterally movable coupler, a bracket, and an operating device operatively attached to the coupler and supported by said bracket at its outer end, said operating device comprising two parts having a substantially common axis of rotation, said parts being connected directly together so as to support each other and permit longitudinal movement therebetween and transmit rotary movement from one part to the other and to provide sufficient lost motion between said parts to permit return of the part supported by said bracket to normal locking position after the lock of said coupler has been moved into its lock-set position.

10. In a railway car or the like, the combination of a coupler, a bracket, and an operating device operatively attached to the coupler and supported by said bracket at its outer end, said operating device comprising two parts connected together so as to support each other and transmit rotary movement from one part to the other and to provide sufficient lost motion between said parts to permit return of the part supported by said bracket to normal locking position after the lock of said coupler has been moved into its lock-set position.

EDMUND P. KINNE.