July 25, 1933. W. J. REGAN ET AL 1,919,668

COUPLER OPERATING MECHANISM

Filed Feb. 4, 1931 5 Sheets-Sheet 1

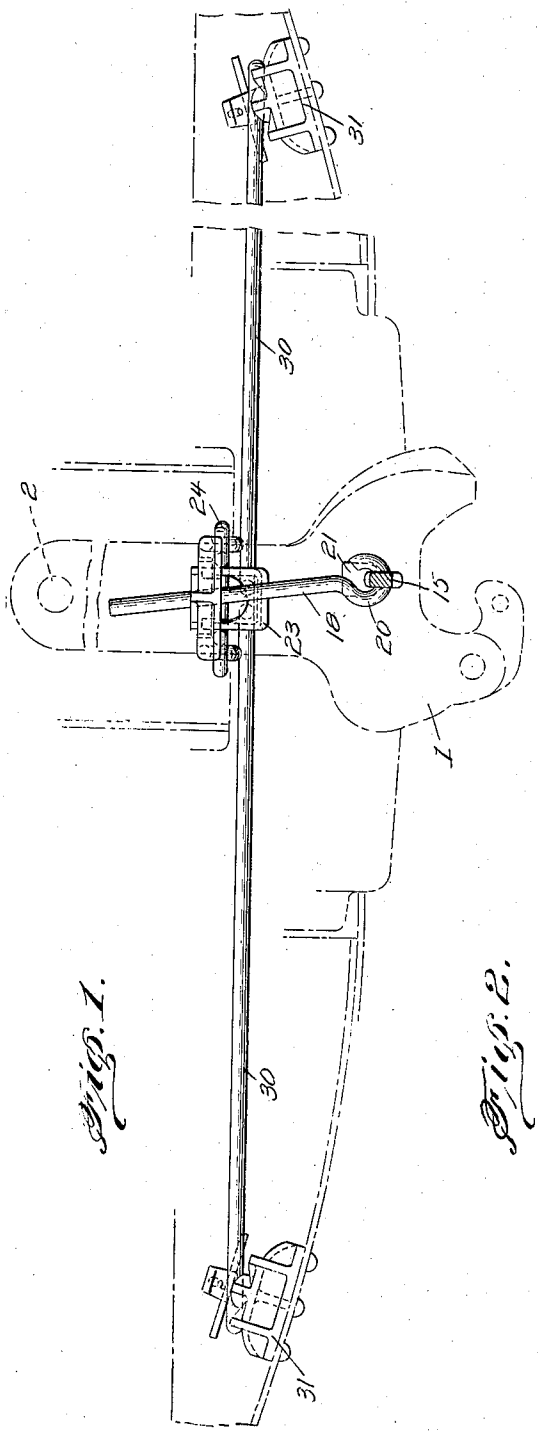


Fig. 1.

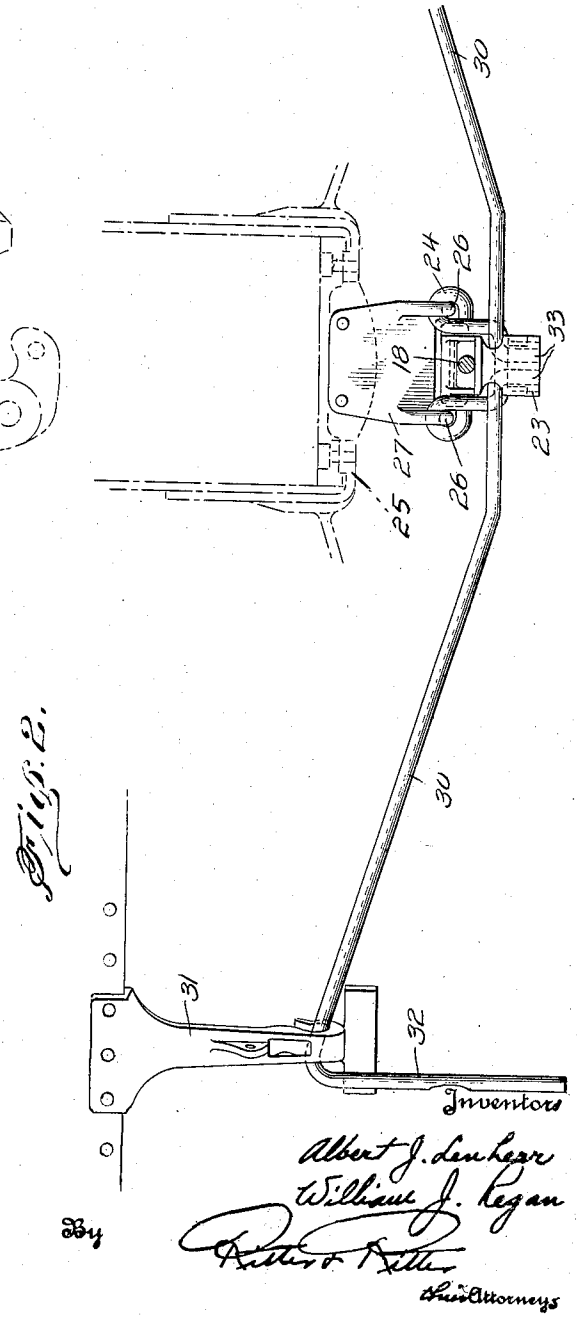


Fig. 2.

Inventors
Albert J. Lenhegar
William J. Regan
By Ritter & Ritter
their Attorneys

July 25, 1933. W. J. REGAN ET AL 1,919,668

COUPLER OPERATING MECHANISM

Filed Feb. 4, 1931 5 Sheets-Sheet 2

Fig. 3.

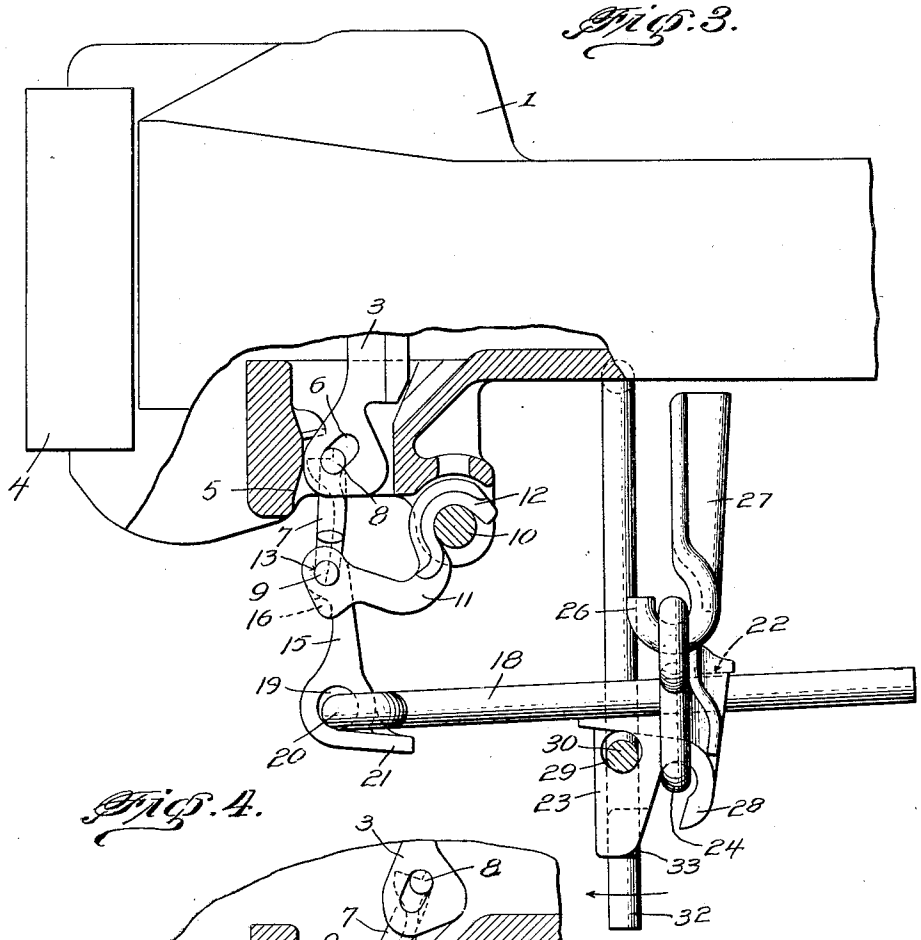
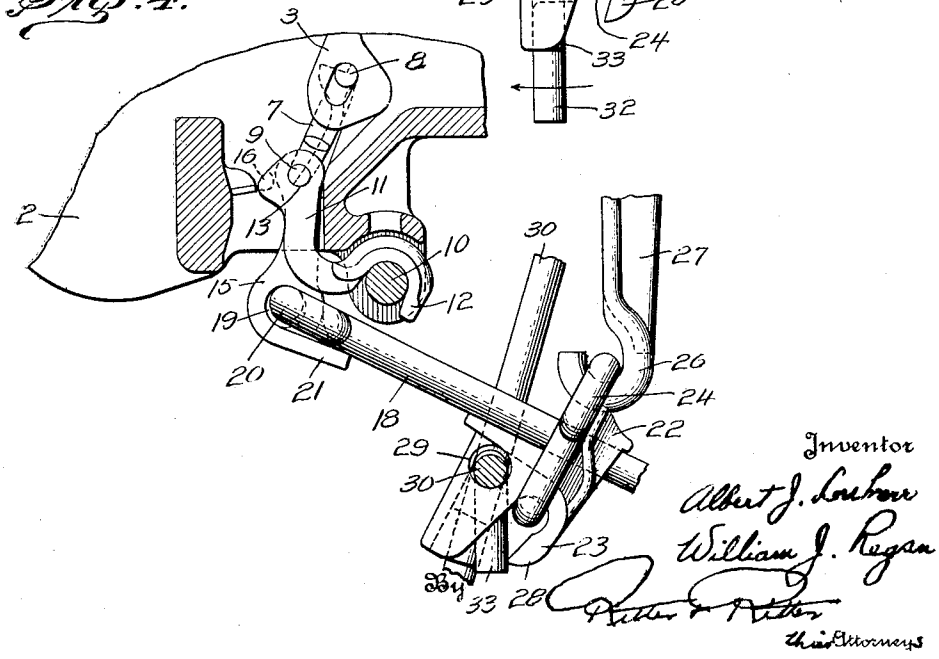


Fig. 4.



Inventor
Albert J. Loubow
William J. Regan
By Ritter & Ritter
their Attorneys

July 25, 1933. W. J. REGAN ET AL 1,919,668

COUPLER OPERATING MECHANISM

Filed Feb. 4, 1931 5 Sheets-Sheet 3

Fig. 5.

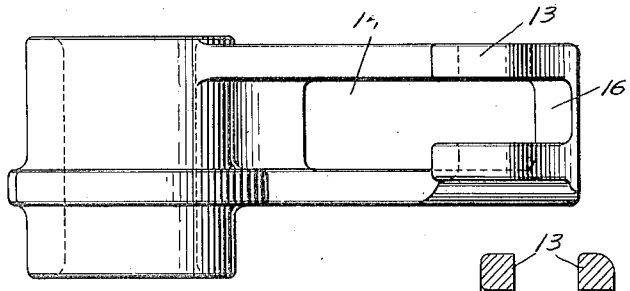


Fig. 7.

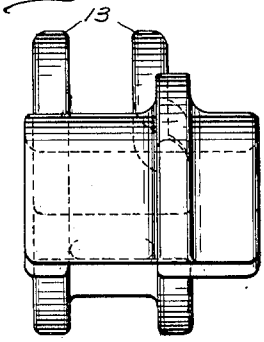


Fig. 9.

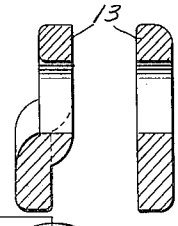


Fig. 6.

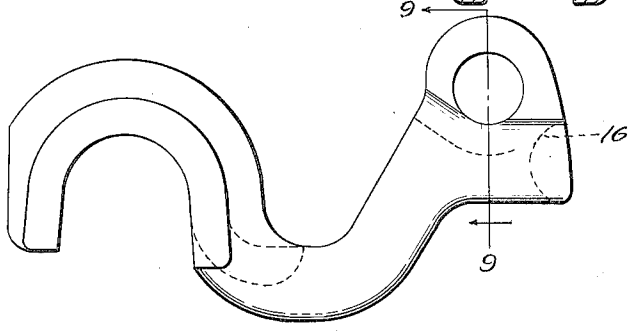


Fig. 8.

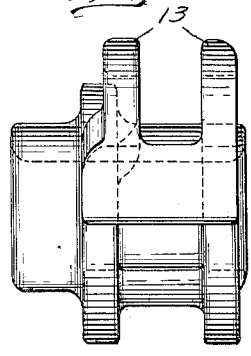


Fig. 16.

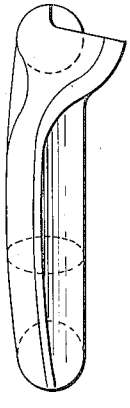
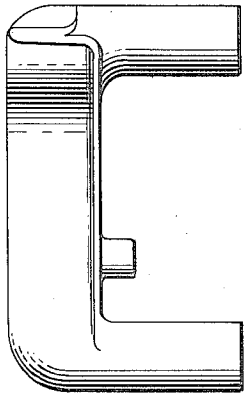


Fig. 15.



Inventor

Albert J. Lauherr

William J. Regan

By Ritter & Ritter

Their Attorneys

July 25, 1933. W. J. REGAN ET AL 1,919,668

COUPLER OPERATING MECHANISM

Filed Feb. 4, 1931 5 Sheets-Sheet 4

Fig. 12.

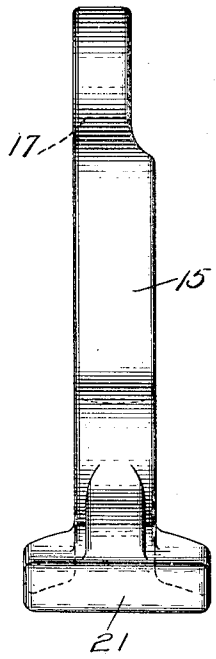


Fig. 10.

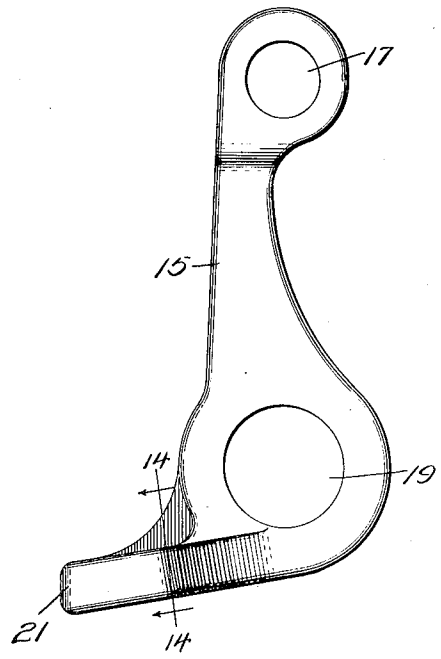


Fig. 13.

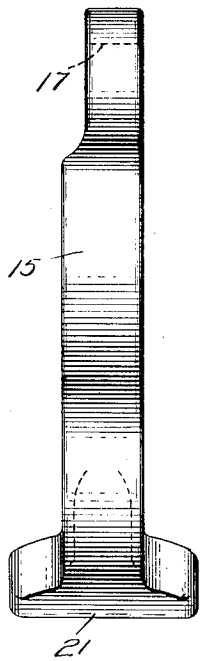


Fig. 11.

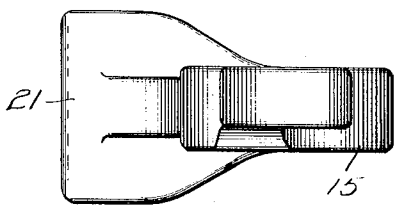
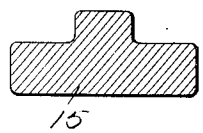


Fig. 14.



Inventors

Albert J. Lenherr

William J. Regan

By Ritter & Ritter

Their Attorneys

July 25, 1933. W. J. REGAN ET AL 1,919,668

COUPLER OPERATING MECHANISM

Filed Feb. 4, 1931 5 Sheets-Sheet 5

Fig. 17.

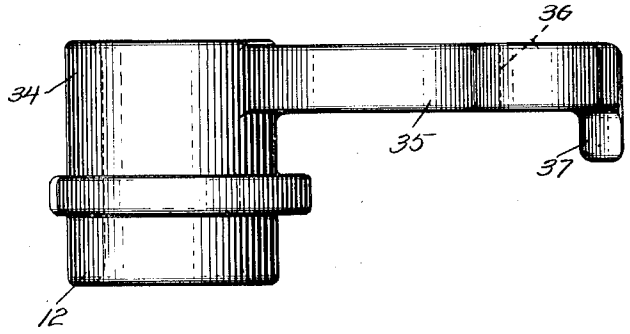


Fig. 18.

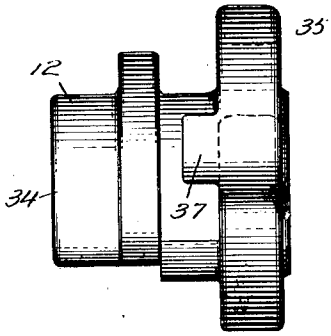


Fig. 19.

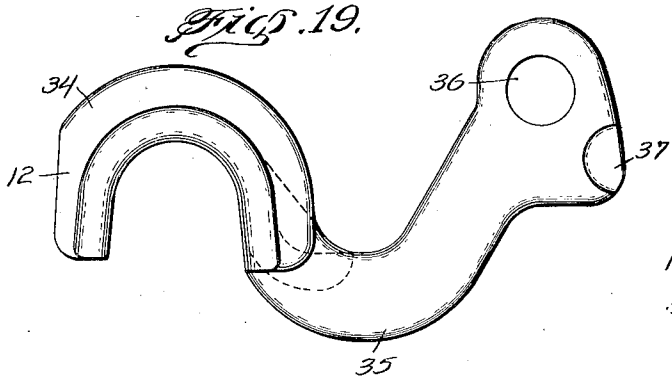


Fig. 20.

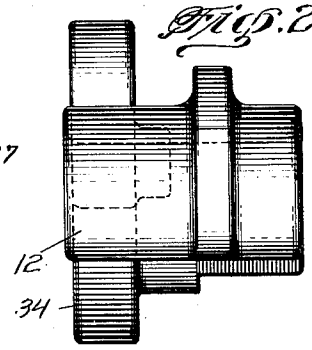


Fig. 21.

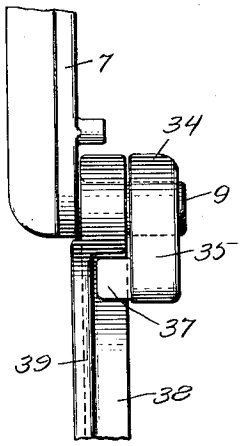
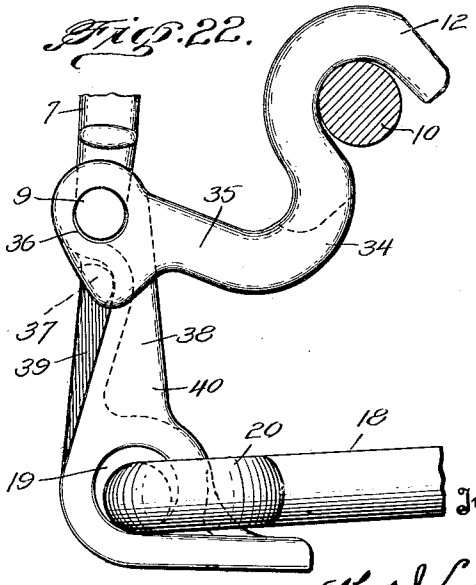


Fig. 22.



Inventors

Albert J. Lenharr

William J. Regan

By Ritter & Ritter their Attorneys

Patented July 25, 1933 1,919,668

UNITED STATES PATENT OFFICE

WILLIAM J. REGAN AND ALBERT J. LENHERR, OF PITTSBURGH, PENNSYLVANIA, ASSIGNORS TO THE McCONWAY & TORLEY COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

COUPLER OPERATING MECHANISM

Application filed February 4, 1931. Serial No. 513,428.

This invention relates to coupler operating mechanism for actuating the lock of a car coupler to cause it to assume unlocked position. More particularly the invention is concerned with providing simple, compact and easily operated mechanism for actuating the coupler lock and which may be installed below the coupler without interfering with the steam hose or other devices with which passenger cars are commonly equipped.

A primary feature of the invention involves a car coupler provided with a lock for the knuckle thereof and having an opening in the under side of its head affording access to said lock, with which is associated a vertically rotatable member mounted on the under side of the coupler head and extending forwardly from its center of rotation, a plurality of relatively movable link members each pivotally connected to the rotatable member at a common point, one of the link members extending upwardly from the rotatable member and being movably connected to the coupler lock and the other of said link members extending downwardly from the rotatable member and being movably connected to swinging means whereby it is actuated.

A further feature of the invention consists in combining a car coupler provided with a lock for the knuckle thereof and having an opening through the bottom wall of its head affording access to the lock, a plurality of pivotally connected link members arranged one above another, and the upper of which is movably connected to the coupler lock, means movably mounted upon the under side of the coupler head for defining the path of movement of the point of connection of said link members, means movably engaging the lower link member for actuating the latter to effect an uncoupling movement of the upper link member, and means for limiting the movement of the lower link member with respect to its operating means and also with respect to the means mounted on the under side of the coupler head for controlling the path of movement of the point of connection of the link members.

Other features of the invention relating to advantageous relations of parts and details of construction will hereinafter appear and be pointed out in the claims.

In the drawings illustrating the invention:

Figure 1 is a plan view illustrating the relation of the mechanism to a car coupler and the adjacent part of a railway car, the coupler and car being shown in dot and dash lines.

Figure 2 is a front elevational view of a portion of the construction shown in Figure 1.

Figure 3 is a view, partly in side elevation and partly in vertical section, illustrating the preferred embodiment of the invention shown in Figures 1 and 2, the parts of the mechanism being in the positions they occupy when the car coupler is locked.

Figure 4 is a detail view corresponding to Figure 3, but illustrating the positions assumed by the parts when the lock of the car coupler is caused to execute an unlocking movement.

Figure 5 is a detail plan view of the rotatable member which is pivotally mounted on the underside of the coupler head.

Figure 6 is a side elevational view of the rotatable member shown in Figure 5.

Figures 7 and 8 are detail end views of the member shown in Figure 5.

Figure 9 is a sectional view on the line 9—9 Figure 6.

Figures 10, 11, 12 and 13 are detail views of the lower link member of the mechanism, respectively showing said link member in side elevation, in plan, in rear elevation and in front elevation.

Figure 14 is a detail sectional view on the line 14—14, Figure 10.

Figures 15 and 16 are detail views respectively showing the upper link member in front elevation and in side elevation.

Figures 17, 18, 19 and 20 are detail views of a modified form of the rotatable member mounted on the under side of the coupler head, respectively showing said member in plan, front elevation, side elevation and rear elevation.

Figure 21 is a detail view in front elevation showing the relation of the modified form of rotatable member to the upper and lower link

members, a slightly modified form of the lower link being also illustrated.

Figure 22 is a detail side elevational view of the modified construction shown in Figure 21, the pivotal support of the coupler head and the means for actuating the lower link member being also illustrated.

In the drawings, 1 indicates a car coupler which is designed to be mounted upon the car so as to be capable of swinging laterally, the shaft of the coupler being for that purpose preferably provided near its rear end with a pivot pin opening 2 for receiving the usual tail pin whereby the coupler is pivotally connected to the draft rigging in a well-known manner.

The coupler chosen for the purpose of illustration is of the well-known E-type and therefore need not be described in detail. It is provided with a vertically movable and rearwardly swinging lock 3 by which uncoupling rotation of the coupler knuckle 4 is restrained, and the bottom wall of its head is provided with an opening 5 affording access to the lock. The lower end of the lock is preferably fashioned with a transversely extending inclined slot 6 providing means for forming an operative connection with the adjacent link member 7 of the mechanism. As shown in Figures 15 and 16, this link member is preferably like that employed in the E-coupler, being provided on one side at its ends with laterally projecting trunnions 8 and 9 respectively, the upper trunnion 8 extending into the inclined slot 6 of the coupler lock 3.

On its under side and to the rear of the lock opening 5 in the bottom wall of the coupler head, the coupler head is provided with a pivot 10 which preferably is integrally connected to the head as in the E-coupler. The pivot 10 forms a mounting for a vertically rotatable member 11 extending forwardly from its point of pivotal support. The pivotal connection between the vertically rotatable member and the coupler head may advantageously be effected by forming the rear end of the member 11 with a hooked portion 12 which partially encircles the pivot 10. At its outer end, at a point which is below its axis of rotation when the coupler lock 3 is in normal locked relation, the rotatable member 11 is provided with a transversely extending pivot pin opening 13 for receiving the trunnion 9 at the lower end of the upper link member 7. Between its ends the member 11 is formed with a longitudinally extending slot 14 for receiving the upper end of the lower link member 15. The outer ends of the arms formed by the slot 14 are preferably rigidly united by a transversely extending lug or bridge 16 which, as will be apparent from an inspection of Figure 3 is adapted to engage the lower link member so as to limit forward pivotal movement thereof with respect to the rotatable member 11 mounted on the coupler head. By this means operative relation of the lower link member 15 to the vertically rotatable member 11 is assured under all conditions of service as the link 15 is prevented from rotating forwardly to an extent permitting it to assume a position in which it would buckle with respect to the member 11 without causing the latter to perform an uncoupling rotation.

The upper end of the lower link member 15 enters the outer end of the slot 14 in the rotatable member 11. It is provided with a pivot pin opening 17 for receiving the lower trunnion 9 of the upper link member 7, both link members and the rotatable member 11 thus being pivotally connected to each other at a common point. For movably connecting the lower link member 15 to the vertically swinging bar 18 by which it is actuated, said link member is preferably provided at its lower end with an eye or aperture 19 which may advantageously be of circular form for receiving the hooked forward end 20 of the bar 18. The hook and eye connection thus formed between the lower link member 15 and the bar 18 permits these members to have the necessary relative vertical rotation during an uncoupling operation and also permits the bar to angle sidewise so as to accommodate itself to the lateral movements of the coupler. At its lower end and projecting rearwardly of the eye 19 the lower link member 15 is provided with a lug or shelf 21 which extends under the bar 18 and is of sufficient width laterally to stand beneath said bar in all positions the latter may occupy. By engaging the under side of the actuating bar 18 to the rear of the eye 19 of the lower link member means are provided for preventing the angle formed between the bar and the adjacent link 15 from exceeding a predetermined maximum. By this means the lift bar 18, which is free to float longitudinally when the parts occupy a relation corresponding to locked position of the coupler lock 3, is prevented from shifting rearwardly as the result of sudden stopping or starting of the car to such an extent as would permit the bar and the lower link member to buckle upwardly at their point of connection upon the performance by the lift bar of an uncoupling movement. As will be appreciated, when the lift bar 18 attempts to shift rearwardly while the coupler lock is in locked position the lug 21 upon the under side of the lower link member 15 comes into contact with the bar and swings the rear end of the latter upwardly into contact with the portion 22 of the swinging carrier through which the bar extends, thus arresting further relative rotation of the bar with respect to the lower link member.

The means provided for actuating the lifter bar 18 to cause it to perform an up-

wardly swinging uncoupling movement may be of any suitable nature and preferably is of the character of that disclosed in the Milliken and Regan Patent No. 1,507,244, issued September 2, 1924. That is to say, it comprises a member 23 by which the lift bar is supported toward its rear end with capability of fore and aft sliding movement as well as lateral angular movement. This actuating member 23 is swingingly supported upon an inverted bail 24 which itself is swingingly or pivotally suspended from the coupler carrier 25 by means of a plurality of spaced hooks 26 formed on a bracket 27 secured to the carrier. The bar supporting member 23 is pivotally supported on the lower portion of the bail 24 at a point below the vertically rotatable lift bar 18, being for that purpose provided with a plurality of downwardly opening spaced hooks 28 forming a pivotal bearing for the lower portion of the bail. A portion of the member 23 passes over the lift bar 18 to the rear of the bail 24, while a portion passes under said bar and supports the same in advance of the bail. By this means the member 23 when caused to perform an uncoupling rotation engages opposite sides of the lift bar 18 and induces the latter to execute an upward swinging movement effecting an uncoupling operation of the link member 15 and the parts of the mechanism actuated thereby. The actuating member 23 is provided on opposite sides with openings 29 for receiving the inner ends of rotatable uncoupling levers 30 extending in opposite directions towards the sides of the car where they are respectively journalled in suitable brackets 31 and are provided with the usual operating handles 32. The inner ends 33 of these levers are bent downwardly so as normally to stand immediately behind the depending front wall with which the member 23 is provided. When the handle of either uncoupling lever is pulled forwardly its bent inner end presses outwardly against the front wall of the member 23 and thereby causes the latter to swing upwardly on the bail 24, thus inducing a corresponding rotation of the hooked lifter bar 18 connected to the lower link member 15.

In the modified form of the invention illustrated in Figures 17 to 22 inclusive, the vertically rotatable member 34 which is pivotally mounted upon the pivot pin 10 of the coupler, instead of being fashioned with spaced arms forming a slot for receiving the lower link member, is formed with a single forwardly extending arm 35 which is provided at its outer end with a pivot pin opening 36 and with a transversely extending lug 37 which latter cooperates with the lower link member 38 to limit relative rotation of the parts 34 and 38 in one direction after the manner heretofore described with respect to the lug 16 with which the vertically rotatable member 11 is provided. The pivot opening 36 in the member 35 which is rotatably supported on the coupler head receives the lower trunnion or pintle 9 of the upper link member 7. The intermediate portion of the modified form of lower link member 38 is formed with two flanges or webs 39 and 40 respectively, but its lower end is preferably fashioned like that of the link member 15 heretofore described, being provided with an eye 19 for receiving the hooked forward end 20 of the vertically swinging lift bar 18 and having a rearwardly extending shelf or lug 21 projecting under said bar. Other details of construction of the modified form of the invention being like those heretofore described have been identified by corresponding reference characters.

In assembling the mechanism the rotor 11 is hooked around the pivot pin 10 of the coupler head. The knuckle 4 of the coupler having been removed, the knuckle opener (not shown), which is within the coupler head, is pushed rearwardly far enough to allow the lock 3 to descend until the trunnion 8 at the upper end of the link 7 may be introduced into the slot 6 of the lock. The inverted bail 24 is then associated with the swinging support 23 and its eyes are then hooked upon the corresponding hooks 26 with which the bracket 27 secured to the carry iron is provided. The rear end of the bar 18 is then brought into assembled relation with the swinging actuating member 23 by which it is slidably supported and its forward end 20 is hooked into the eye 19 of the depending link member 15. After this is accomplished the pivot pin opening 17 in the upper end of the link 15 is brought into alinement with the pivot pin opening 13 in the vertically rotatable member 11 pivotally mounted on the coupler head. The lower trunnion 9 of the upwardly extending link 7 is then inserted through the pivot pin openings 13 and 17, while the upper trunnion 8 of the toggle link member 7 is simultaneously introduced into the slot 6 of the lock, the toggle links 7 and 15 and the vertically rotatable member 11 thereby being pivotally connected to each other. The coupler lock is then raised and held in elevated position by the knuckle opener and the knuckle 4 is applied to the coupler head, thus preventing the coupler lock when in service from moving downwardly far enough to permit accidental disconnection of the upper link member 7 from the lock. Finally the downwardly extending inner ends 33 of the uncoupling levers 30 are assembled with the swinging actuating member 23 and the outer ends of the levers are positioned in the brackets 31 at the sides of the car.

When either of the uncoupling levers 30 is operated to cause the lift bar 18 to perform an upward swinging movement the toggle

link 15 which depends from the vertically rotatable member 11 moves upwardly and thereby causes the upper toggle link 7 to communicate an unlocking movement to the coupler lock 3. During this uncoupling movement, as well as during the restoration of the parts to normal position, the vertically rotatable member 11 acts as a guide for the hinged joint of the toggle links 7 and 15, preventing buckling of the joint and defining the path of travel thereof. When assembled the several parts of the mechanism are interlocked against accidental disassociation and the device cannot be disassembled except by releasing the rotatable uncoupling levers 30 from their brackets 31 at the sides of the car.

We claim:

1. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its center of rotation, a plurality of relatively movable link members each pivotally connected to said rotatable member at a common point, one of said link members extending upwardly from said rotatable member and being movably connected to said lock and one of said link members extending downwardly from said rotatable member, and means for actuating said downwardly extending link member to cause an uncoupling rotation of said rotatable member.

2. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a plurality of link members arranged one above another and pivotally connected at a common point, means movably mounted upon the underside of the coupler head for defining the path of movement of said point of connection of said link members, the upper of said link members being movably connected to said lock, and means movably engaging the lower link member and extending rearwardly therefrom for actuating the latter to effect an uncoupling movement of the upper link member.

3. In mechanism of the character indicated, the combination of a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its center of rotation, a plurality of relatively movable link members one of which extends upwardly from said rotatable member and one of which extends downwardly therefrom, said upwardly extending link member being operatively connected to said lock, means for operatively connecting said link members and said rotatable member at a point which is below and in advance of the center of rotation of the rotatable member when said members are in normal relation corresponding to locked position of the coupler lock, and vertically movable means engaging and extending rearwardly from said downwardly extending link member for actuating the latter.

4. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member extending upwardly from said rotatable member and operatively connected to said lock, a link member extending downwardly from said rotatable member, vertically movable means engaging and extending rearwardly from said downwardly extending link member for actuating the latter, means for pivotally connecting said link members to said rotatable member at a common point, and means for limiting forward rotation of said downwardly extending link member with respect to said rotatable member.

5. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member operatively connected to said lock and extending upwardly from said rotatable member, a link member extending downwardly from said rotatable member, means for pivotally connecting said link members to said rotatable member, a vertically movable member movably connected to said downwardly extending link member and adapted to actuate the latter, said vertically movable member extending rearwardly from said downwardly extending link member and being angularly movable with respect thereto, and means for preventing the angle formed between said downwardly extending link member and said vertically movable member from exceeding a pre-determined maximum.

6. In mechanism of the character indicated, the combination with a car coupler

having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member operatively connected to said lock and movably connected to said rotatable member at a point in advance of the pivotal point of the latter, a link member rotatably connected to said rotatable member and extending downwardly therefrom, a vertically movable member rotatably connected to and extending rearwardly from said downwardly extending link member for actuating the latter, means for limiting forward rotation of said downwardly extending link member with respect to said rotatable member, and means for limiting relative downward rotation of said vertically movable member with respect to said downwardly extending link member.

7. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member movably connected to said rotatable member and having a pin and slot connection with said lock, a link member pivotally connected to said rotatable member and extending downwardly therefrom, means for limiting relative rotation of said downwardly extending link member and said rotatable member in one direction, and means for actuating said downwardly extending link member, said last-named means including a vertically swinging member rotatably connected to said downwardly extending link member, said swinging member and said downwardly extending link member being provided with cooperating portions limiting downward rotation of said swinging member with respect to said downwardly extending link member.

8. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock of a slotted vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member movably connected to said rotatable member and extending upwardly therefrom and movably connected to said lock, a link member extending into the slot of said rotatable member and movably connected to and depending from the latter, and vertically movable means movably engaging and adapted to actuate said depending link member.

9. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being slotted intermediate its ends and extending forwardly from its point of pivotal support and being formed in spaced relation to its pivotal support with a pivot pin opening, a link member movably connected to said lock and provided at its lower end with a trunnion extending into said pivotal opening of the rotatable member, a link member extending into said slot of the rotatable member and having an opening for receiving said trunnion, and a vertically swinging member movably connected to and extending rearwardly from said last-named link member.

10. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally mounted upon the underside of the coupler head and extending forwardly from its point of pivotal support, said vertically rotatable member being slotted, a link member pivotally connected to said vertically rotatable member and movably connected to said lock, a link member extending into said slot and pivotally connected to said vertically rotatable member, and a vertically swinging member movably engaging and extending rearwardly from said last-named link member, said vertically rotatable member being provided with means for engaging said last-named link member to limit rotation of the latter with respect to said vertically rotatable member in one direction.

11. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member movably connected to said lock and movably connected to said rotatable member at a point in advance of the pivotal point of the latter, a link member pivotally connected to said rotatable member and extending downwardly therefrom, and

means for actuating said downwardly extending link member, said means including a vertically swinging bar having a hook and eye connection with said downwardly extending link member, and said downwardly extending link member having a rearwardly projecting portion extending under said bar and engageable therewith to limit the swinging movement of said bar with respect to said last-named link member in one direction.

12. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member operatively connected to the coupler lock and movably connected to said rotatable member at a point in advance of the center of rotation of the latter, a link member pivotally connected to said rotatable member and depending therefrom, and a vertically swinging member for actuating said depending link member, said vertically swinging member and said depending link member being provided with cooperating means forming a movable connection between them, and said depending link member having a portion extending under said swinging member for engaging the latter to limit swinging movement thereof in one direction with respect to said last-named link member.

13. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member operatively connected to the coupler lock and movably connected to said rotatable member at a point in advance of the pivotal point of the latter, a link member movably connected to said rotatable member and depending therefrom, said depending link member being provided at its lower end with an eye and having a lug portion extending rearwardly of said eye, and means for actuating said depending link member, said means including a bar extending over said lug portion and provided at its forward end with a hook for cooperating with said eye, said lug portion being adapted to cooperate with said bar to prevent rotation of the latter in one direction with respect to said depending link member.

14. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, a link member operatively connected to said lock and movably connected to said rotatable member at a point in advance of the point of pivotal support of the latter, a link member movably connected to said rotatable member and depending therefrom, said last-named link member being provided at its lower end with an eye and with a lug rearwardly of said eye, and means for actuating said depending link member, said means including a swinging vertically movable bar provided at its forward end with a hook for cooperating with said eye of the depending link member, said lug portion of said last-named link member extending under said bar in all operative positions of the latter and being adapted to engage said bar to limit swinging movement thereof in one direction with respect to said depending link member.

15. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, said lock being provided at its lower end with a transversely extending aperture, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support and having a pivot pin opening in advance of its point of pivotal support, an upper link member provided on one side with laterally projecting spaced trunnions, a lower link member having a pivot pin opening at one end and provided at its other end with an eye, one of said trunnions extending into said aperture of the lock and the other of said trunnions extending into the pivotal opening of said rotatable member and into the pivotal opening of said lower link member, and means for actuating said lower link member, said means including a vertically movable bar having a portion extending into said eye of the lower link member.

16. In mechanism of the character indicated, the combination with a car coupler having a knuckle and provided with a lock for the knuckle and having an opening in the underside of its head affording access to said lock, of a vertically rotatable member pivotally supported by and movable with the coupler, said rotatable member being positioned beneath the coupler head and extending forwardly from its point of pivotal support, an

upper link member operatively connected to said lock, a lower link member, said link members and said rotatable member being pivotally connected to each other at a common point in advance of the center of rotation of said rotatable member, and means for actuating said lower link member, said means engaging said last-named link member below and in advance of the center of rotation of said rotatable member.

WILLIAM J. REGAN.
ALBERT J. LENHERR.