I. H. MILLIKEN & W. J. REGAN.

UNCOUPLING AND CENTERING MECHANISM.

APPLICATION FILED JAN. 24, 1917.

1,298,370.

Patented Mar. 25, 1919.

2 SHEETS—SHEET 1.

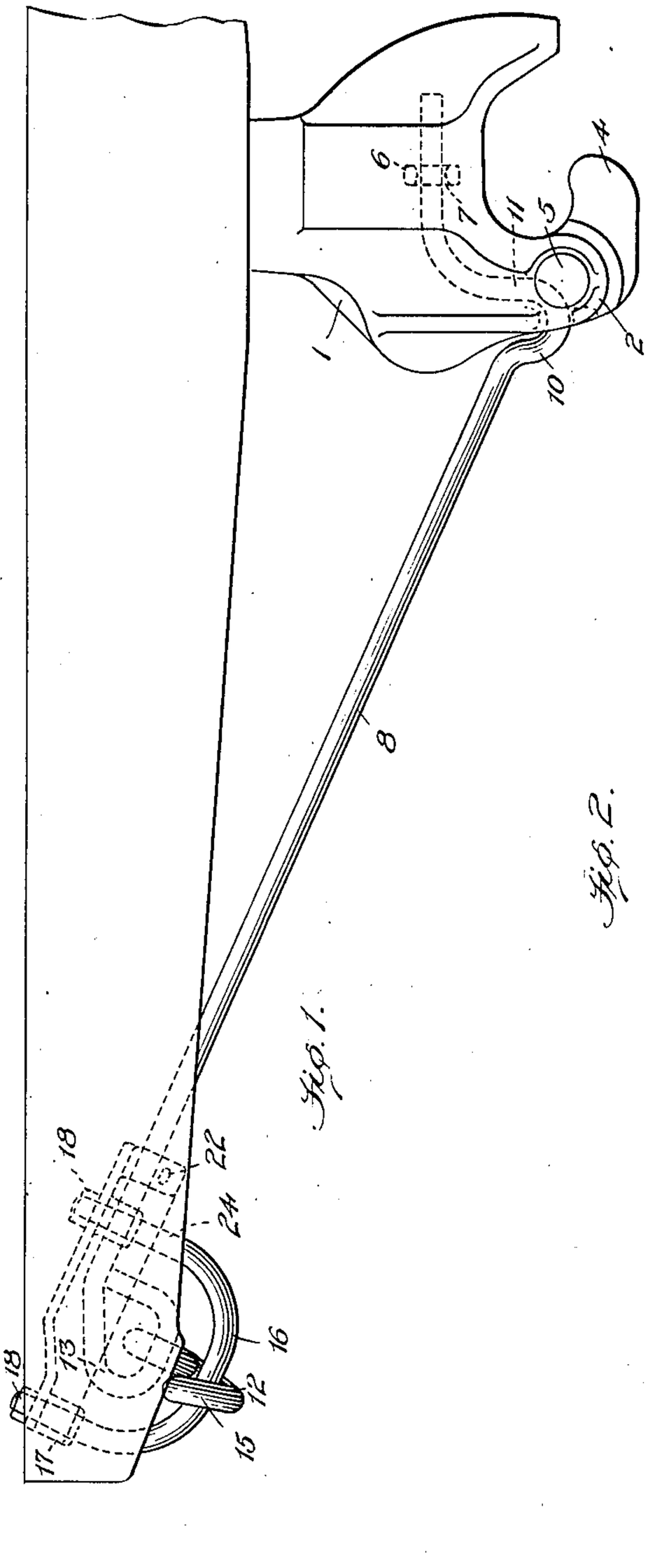

Fig. 1.

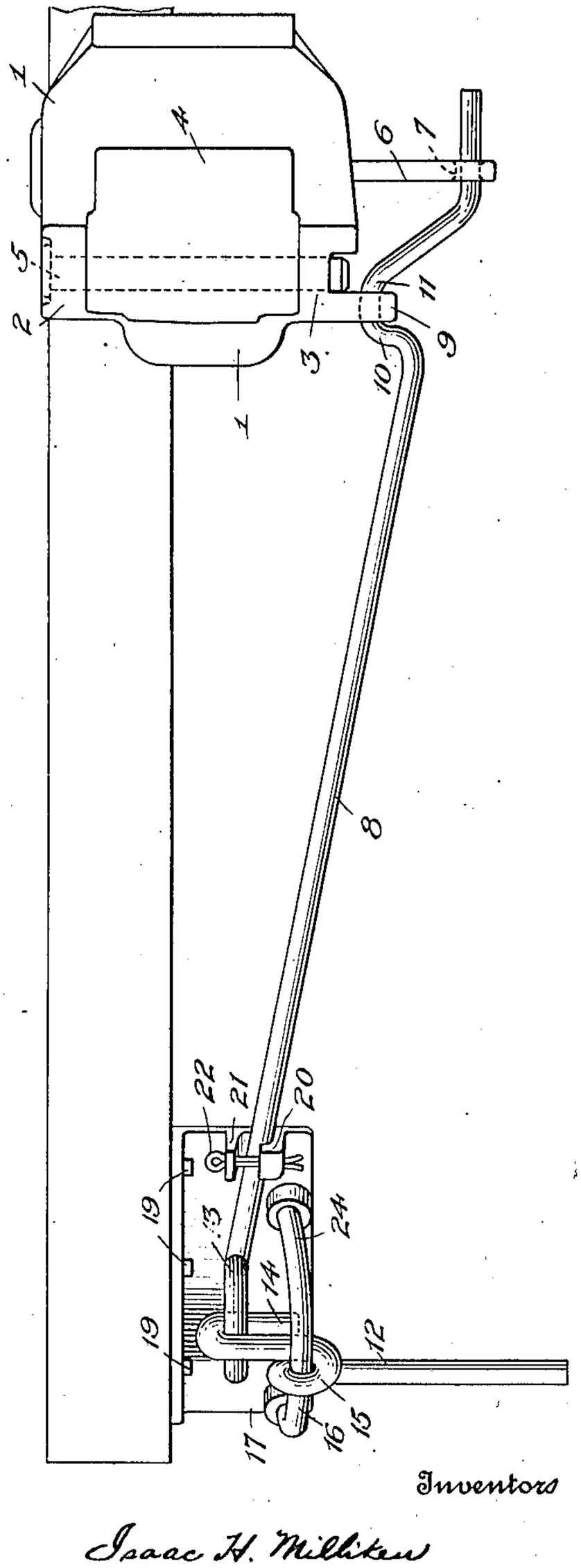

Fig. 2.

Witness

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Fig. 3.

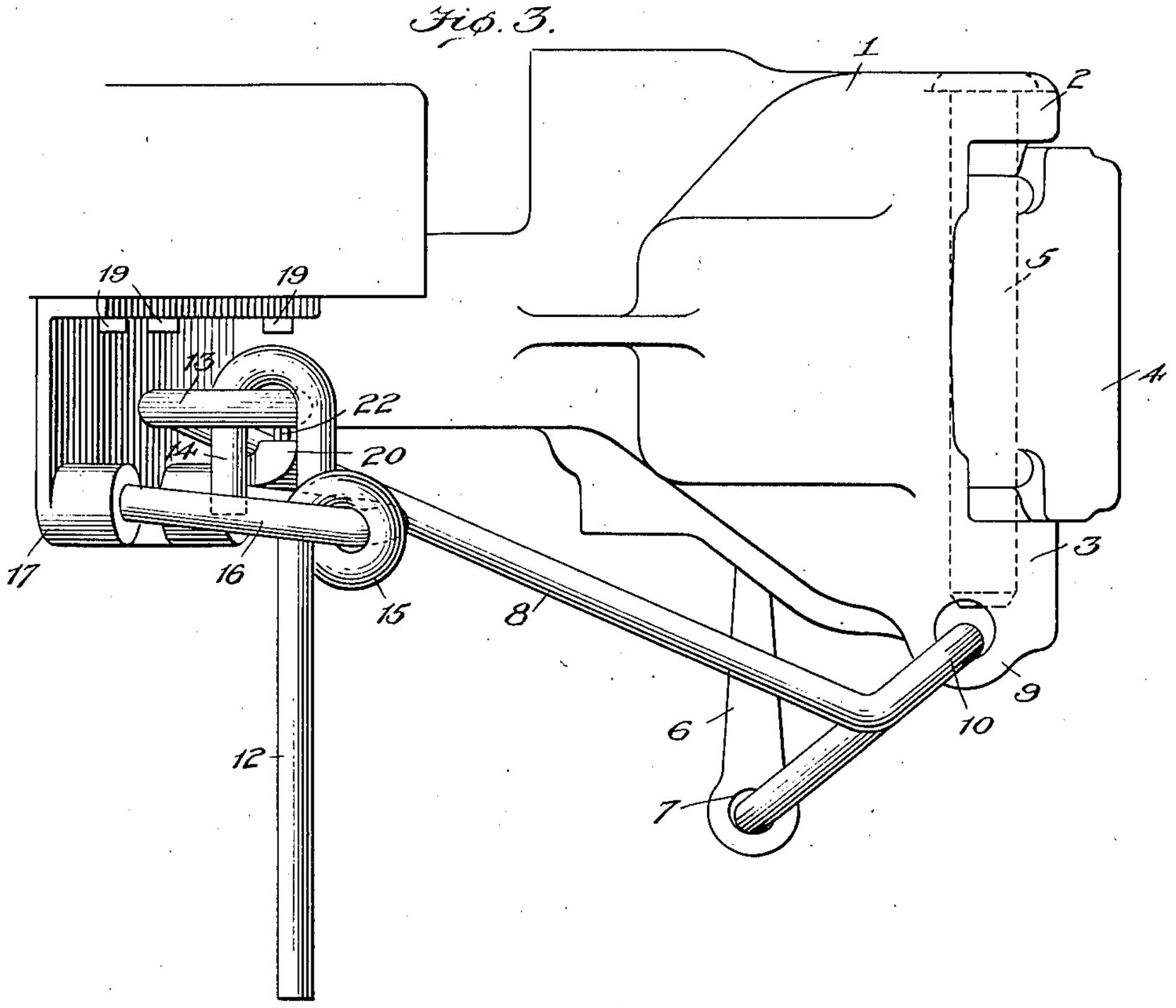
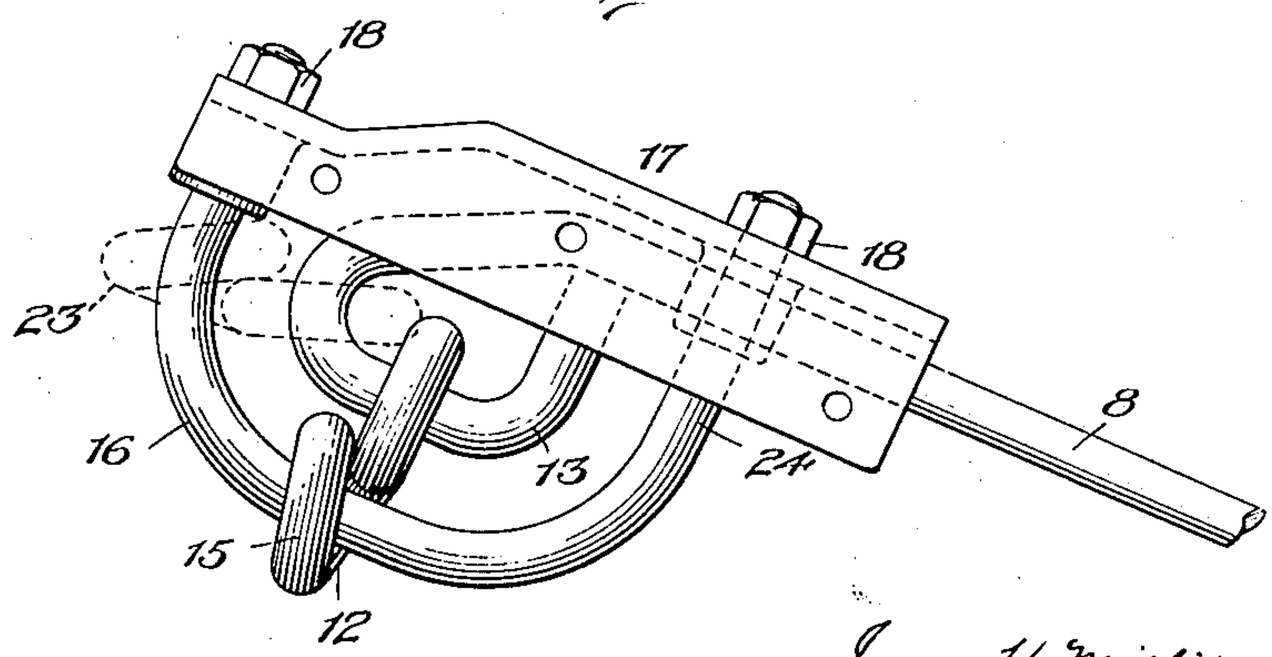


Fig. 4.



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UNITED STATES PATENT OFFICE.

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UNCOUPLING AND CENTERING MECHANISM.

1,298,370. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed January 24, 1917. Serial No. 144,173.

To all whom it may concern:

Be it known that we, ISAAC H. MILLIKEN and WILLIAM J. REGAN, citizens of the United States, residing, respectively, at Aspinwall, in the county of Allegheny and State of Pennsylvania, and at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Uncoupling and Centering Mechanism; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to that class of car couplers which are mounted upon railway vehicles so as to be capable of moving or swinging laterally when the cars to which they are applied are passing around curves in the track. The principal object of the invention is to provide simple, efficient and readily assembled mechanism by which the trainman may easily and safely unlock the coupler and shift it laterally to any position that may be necessary to enable it to be coupled with a mating coupler on curved track. A further object of the invention is to so combine the parts that the uncoupling rod may act as a retainer for the lower portion of the knuckle pin in the event of breakage of the latter and may form a support for the knuckle pin if the same is not otherwise supported. A still further object of the invention is to provide a mechanism of the character indicated in which an uncoupling rod that rotates in a direction opposite to that customary in ordinary practice may be operated by means of a handle or lever which is designed to have the usual outward and upward movement with which trainmen are familiar. There are minor objects of the invention, as will hereinafter appear.

Generally stated, the primary objects of the invention are effected by employing a rotatable uncoupling rod which is operatively connected to the locking mechanism of the car coupler and which is actuated by a rotatable handle or lever, the rod and actuating handle being adapted to rotate in opposite directions in effecting an unlocking movement of the knuckle locking mechanism, and the said rod extending and operating beneath the knuckle pin of the car coupler in such manner as to constitute a retainer for such knuckle pin.

In the drawings showing the preferred form of our invention, the scope whereof is pointed out in the claims,

Figure 1 is a plan view of an uncoupling and centering mechanism embodying our invention, showing its relation to the car coupler and also illustrating its relation to the body of a car.

Fig. 2 is a front elevation of the constructions illustrated in Fig. 1.

Fig. 3 is a detail side elevation of the structures shown in Figs. 1 and 2; and

Fig. 4 is a detail plan view of the portion of the mechanism adjacent to the side of the car, one of the positions to which the operating handle or lever may be moved when the coupler is to be shifted laterally being shown in dotted lines.

Siuce many of the features of construction herein shown and described are applicable to car couplers generally, it is to be understood that the details of construction of the coupler illustrated in the drawings are not to be regarded as essential features unless pointed out as such in particular combinations claimed.

In the drawings, 1 indicates the head of a laterally movable car coupler. It is provided with upper and lower pivot lugs 2 and 3, respectively, which receive between them the rotatable knuckle 4. The knuckle 4 is pivotally secured to the coupler head by means of a knuckle pin 5 which passes through the openings in the pivot lugs 2 and 3 and through a corresponding opening in the knuckle 4 in the customary manner. The knuckle pin 5, as shown, is preferably inserted from above, instead of being inserted from below as is often the case. 6 indicates a portion of the coupler locking mechanism the function of which is, as usual, to retain the knuckle 4 in coupled position. In the form shown in the drawings, the portion 6 of the locking mechanism extends downwardly below the coupler head 1 and is provided at its lower end with an opening 7 which is adapted to receive the inner end of

a rotatable rod or rock shaft 8 which, as will hereinafter appear, the knuckle locking mechanism may be moved to unlocked position.

The uncoupling rod 8, which is preferably of round cross section, is pivotally supported from the lower pivot lug 3 of the coupler head by passing through the perforation in a supporting lug 9 which extends downwardly from the lower pivot lug at one side of the knuckle pin 5 and closely adjacent thereto. In order that the rod 8 may shift the coupler laterally in either direction it is shouldered or bent upon opposite sides of the supporting lug 9, as at 10 and 11, one or the other of which shouldered portions of the rod, depending upon the direction in which said rod is shifted laterally, being adapted to engage the interposed supporting lug 9 to thus transmit to the coupler head the lateral movement of the uncoupling rod. As shown, it is preferred that the bent or shouldered portions 10 and 11 shall constitute a U-shaped bend in the uncoupling rod 8. Such a construction reduces the distance the uncoupling rod extends forward beyond the end of the car body and permits the uncoupling rod to be attached to the coupler in a practical manner substantially on a line with the knuckle pin 5 which is a most favorable point for the application of force for shifting the coupler laterally.

Because of the relative locations of the locking mechanism 6 to the lug 9 in which the uncoupling rod 8 is journaled, the uncoupling rod, in moving the locking mechanism to unlocked position, rotates in a direction opposite to that usual in ordinary practice. In order to avoid confusion on the part of trainmen it is desirable that the handle or lever 12 by which the uncoupling rod is actuated shall move outwardly and upwardly in the usual manner when manipulated to effect an unlocking of the coupler. To accomplish this in a simple and efficient manner the outer end of the uncoupling rod is preferably provided with an offset portion in the form of a loop or eye 13 which is adapted to receive the hooked upper end 14 of the uncoupling lever or operating handle 12. This operating lever, which is preferably round in cross section, is bent intermediate of its ends to provide an eye or loop 15 that is adapted to receive a U-shaped member 16 which forms a pivotal support for the lever. The member 16 is stationary, being rigidly secured to a bracket 17, by means of nuts 18 which have threaded engagement with the ends of the U-shaped member, the bracket 17 being secured to the car body, as by means of bolts 19. In order to support the outer end of the uncoupling rod 8 the bracket 17 is provided with projecting lugs 20 and 21 between which the rod 8 is adapted to be received and by the lower one, 20, of which such rod is supported, a cotter 22 being preferably employed to retain the uncoupling rod in assembled position.

The U-shaped supporting member 16 is also preferably of round cross section, to reduce the friction between it and the operating lever or handle 12 carried thereby, and it is preferably inclined downwardly away from the bracket 17 so as to permit the operating lever 12 to return by gravity to the position from which it is operated to effect an unlocking of the coupler.

The member 16 forms an extended pivotal support upon which the operating handle 12 is adapted to be bodily shifted so as to occupy either the position shown in dotted lines at 23, in Fig. 4, or a corresponding position at the point 24 on the opposite side of the member 16. When occupying either of the positions last mentioned, the operating lever 12 is adapted to rotate in a plane substantially parallel with the direction of length of the uncoupling rod 8, being thus enabled to efficiently shift said uncoupling rod in its direction of length to effect a corresponding lateral movement of the coupler. When the trainman grasps the operating handle 12 and pulls upwardly and outwardly upon it, the uncoupling rod 8 is caused to rotate in the reverse direction, as will be readily understood. To shift the coupler laterally in either direction, the lever 12 is slid around on the U-shaped member 16 until it occupies either of the positions 23 or 24, as may be most convenient, and is then manipulated by the trainman to impart to the coupler movement of the desired direction and extent.

In assembling the mechanism with relation to the coupler, the uncoupling rod 8 is first passed through the supporting lug 9 and is then inserted into the opening 7 at the lower end of the lifter 6 of the knuckle locking mechanism of the coupler. The offset loop or eye 13 at the outer end of the rod 8 and the hooked upper end 14 of the operating lever 12 may then be brought into assembled relation by rotating both these members, after which the rod is slipped over its support 20 on the bracket 17 and retained in place by the cotter 22, the lever 12 having been previously threaded upon the U-shaped pivotal support 16 and the latter having been secured to the bracket 17 by means of the nuts 18.

We claim:

1. In mechanism of the character indicated, the combination with a car coupler, of means for actuating the knuckle locking mechanism thereof to unlock said coupler, said means involving a rod rotatable on an axis extending in its direction of length and operatively connected to said locking mechanism, and a rotatable lever for actuating said rod, said lever and said rod being oper-

atively connected so as to be capable of moving with respect to each other and being adapted to rotate in opposite directions in effecting an unlocking movement of said knuckle locking mechanism.

2. In mechanism of the character indicated, the combination with a car coupler, of means for actuating the knuckle locking mechanism thereof to unlock said coupler, said means involving a rotatable rod supported from the lower pivot lug of the head of said coupler and extending rearwardly from said point of support to engage said locking mechanism and also extending from said pivot lug laterally toward the side of the car, and a lever for rotating said rod, said lever being rotatable upwardly and forwardly to effect an unlocking movement of said knuckle locking mechanism.

3. In mechanism of the character indicated, the combination with a coupler head, a rotatable knuckle, a knuckle pin pivotally securing said knuckle to said head, and knuckle locking mechanism spaced rearwardly from said knuckle pin, of an uncoupling rod rotatable on an axis extending in its direction of length for actuating said knuckle locking mechanism to unlock said knuckle, said uncoupling rod constituting a knuckle pin retainer extending under said pin in all operative positions of the parts.

4. In mechanism of the character indicated, the combination with a coupler head, a rotatable knuckle, a knuckle pin pivotally securing said knuckle to said head, and locking mechanism for retaining said knuckle in coupled position, of means for moving said locking mechanism to unlocked position, said means involving a rod extending from the coupler toward the side of the car and constituting a knuckle pin retainer and also constituting means for shifting said coupler laterally in either direction.

5. In mechanism of the character indicated, the combination with a coupler head having upper and lower pivot lugs, a knuckle pivotally mounted between said pivot lugs, a knuckle pin connecting said knuckle to said pivot lugs, locking mechanism for retaining said knuckle in coupled position, and an uncoupling rod for actuating said locking mechanism to unlock said knuckles, said uncoupling rod extending from the coupler toward the side of the car and being supported from the lower pivot lug and constituting means for shifting said coupler laterally in either direction.

6. In mechanism of the character indicated, the combination of a coupler head, a knuckle, a knuckle pin pivotally connecting said knuckle to said coupler head, locking mechanism for retaining said knuckle in coupled position, and means for shifting the coupler laterally in either direction, said means being connected to the coupler head adjacent to said knuckle pin and in advance of the plane of the buffing face of said coupler head.

7. In mechanism of the character indicated, the combination of a coupler head, a knuckle, a knuckle pin pivotally connecting said knuckle to said coupler head, locking mechanism for retaining said knuckle in coupled position, and a rod rotatable on an axis extending in its direction of length and connected to the coupler head adjacent to said knuckle pin and extending toward the side of the car for shifting the coupler laterally in either direction, said rod having shouldered engagement with said coupler head enabling it to shift said head laterally in either direction.

8. In mechanism of the character indicated, the combination of a coupler head having upper and lower pivot lugs, a knuckle rotatably mounted between said pivot lugs, a knuckle pin pivotally connecting said knuckle to said pivot lugs, locking mechanism for retaining said knuckle in coupled position, and a rod for shifting the coupler laterally, one of said pivot lugs being provided with a perforated lug through which said rod passes, and said rod having bent or shouldered portions upon opposite sides of said perforated lug.

9. In mechanism of the character indicated, the combination with a laterally movable coupler, of a rod operatively connected to said coupler for shifting the same laterally, a lever movably connected to said rod and adapted to shift the same transversely of the car in either direction, and an extended pivotal support for said lever, said lever being adapted to engage said rod above said pivotal support and being adapted to be shifted bodily upon said pivotal support to change the pivotal relation of said support and lever for effecting lateral shifting of said coupler.

10. In mechanism of the character indicated, the combination with a laterally movable coupler, of a rod operatively connected thereto for unlocking said coupler and shifting the same laterally, a lever operatively connected to said rod and adapted to shift the same transversely of the car in either direction, and an extended pivotal support for said lever, said lever being adapted to be shifted bodily upon said pivotal support to change the pivotal relation of said support and lever for effecting lateral shifting of the coupler, and said pivotal support being inclined to permit said lever to return by gravity to the position from which it is operated for uncoupling.

11. In mechanism of the character indicated, the combination with a car coupler, of means for shifting the same laterally and for actuating the locking mechanism thereof to unlock the coupler, said means involv-

ing a rotatable rod operatively connected at its inner end to said locking mechanism and provided at its outer end with an offset portion, a rotatable lever operatively engaging the offset portion of said rod and adapted both to rotate said rod and to shift said rod laterally in either direction, and an extended pivotal support for said lever, said lever being adapted to pivot upon said support both when operating to unlock the locking mechanism of the coupler and when shifting the coupler laterally.

12. In mechanism of the character indicated, the combination with a car coupler, of a rotatable uncoupling rod operatively connected to the knuckle locking mechanism of said coupler and adapted to shift said coupler laterally in either direction, a rotatable lever for actuating said rod to effect an unlocking movement of said locking mechanism and to effect lateral shifting of the coupler, and means rigidly secured to the car forming a pivotal support for said lever, said rod and said lever being detachably connected, and said lever being formed with an eye for the reception of said lever supporting means and being adapted to be shifted bodily with respect to said lever supporting means.

13. In mechanism of the character indicated, the combination with a laterally movable coupler and its locking mechanism, of means for unlocking and shifting said coupler laterally, said means involving a lever and an extended pivotal support for said lever, said lever being adapted to engage and pivot upon said support when operating to unlock said coupler and being adapted to be shifted bodily upon said pivotal support to change the pivotal relation of said support and lever for effecting lateral shifting of said coupler.

In testimony whereof we affix our signatures.

ISAAC H. MILLIKEN.
WILLIAM J. REGAN.