Feb. 14, 1933. A. J. BAZELEY 1,897,461

UNCOUPLING MECHANISM FOR CAR COUPLERS

Filed Sept. 9, 1929 4 Sheets-Sheet 1

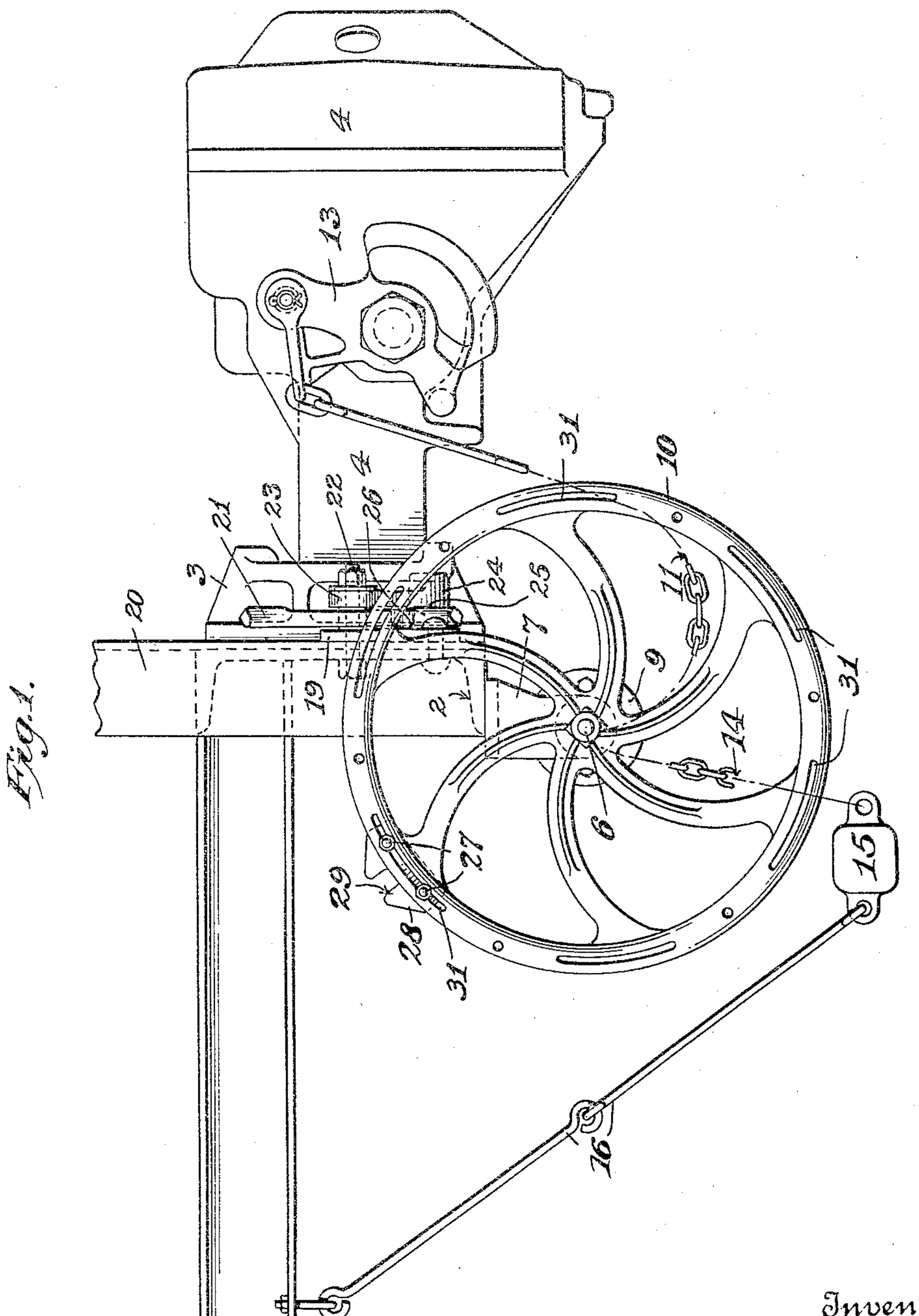


Fig. 1.

Inventor

Arthur J. Bazeley

By his Attorney

Clarence O'Brien

Feb. 14, 1933. A. J. BAZELEY 1,897,461

UNCOUPLING MECHANISM FOR CAR COUPLERS

Filed Sept. 9, 1929 4 Sheets-Sheet 2

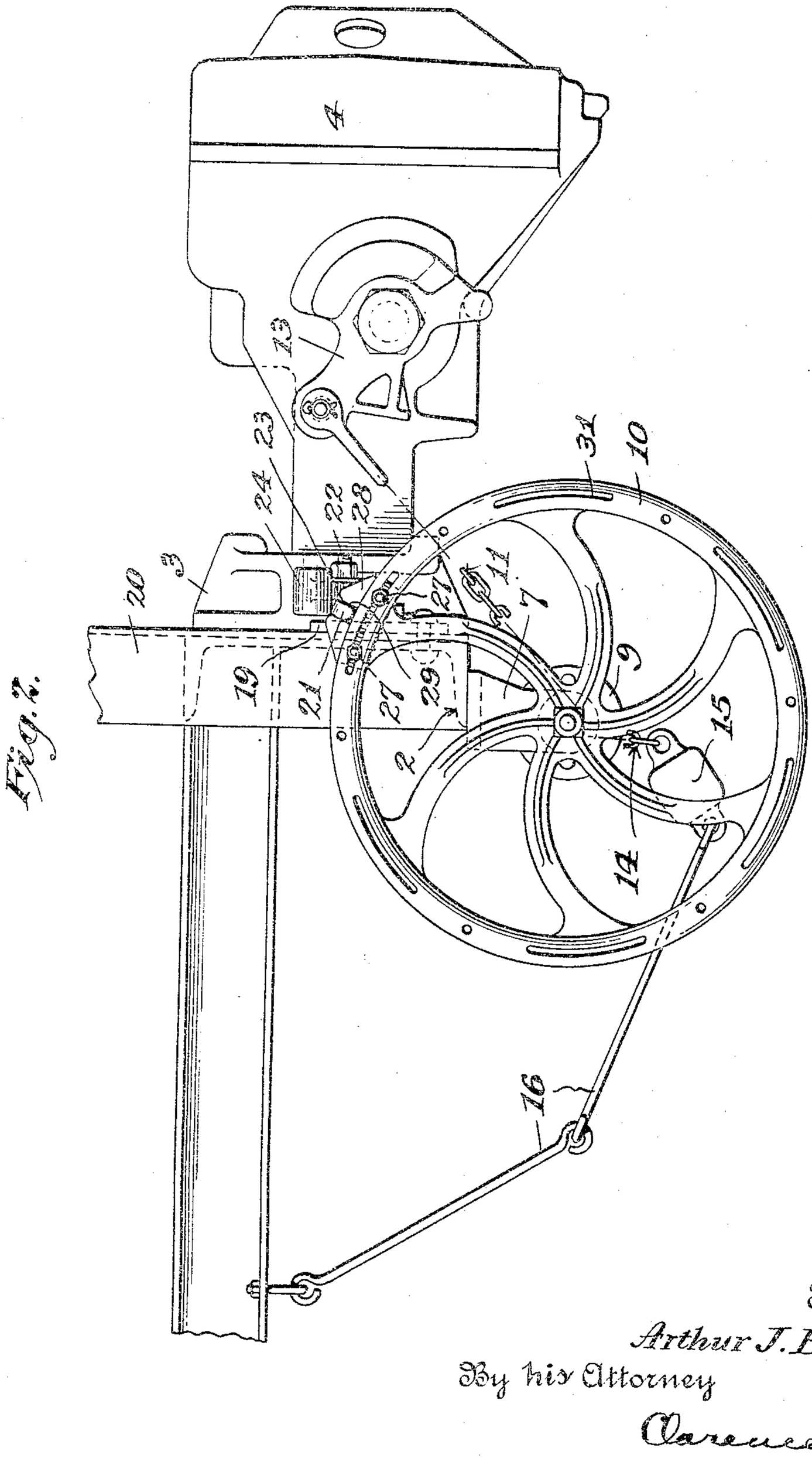


Fig. 2.

Inventor
Arthur J. Bazeley
By his Attorney
Clarence O'Brien

Feb. 14, 1933. A. J. BAZELEY 1,897,461

UNCOUPLING MECHANISM FOR CAR COUPLERS

Filed Sept. 9, 1929 4 Sheets-Sheet 3

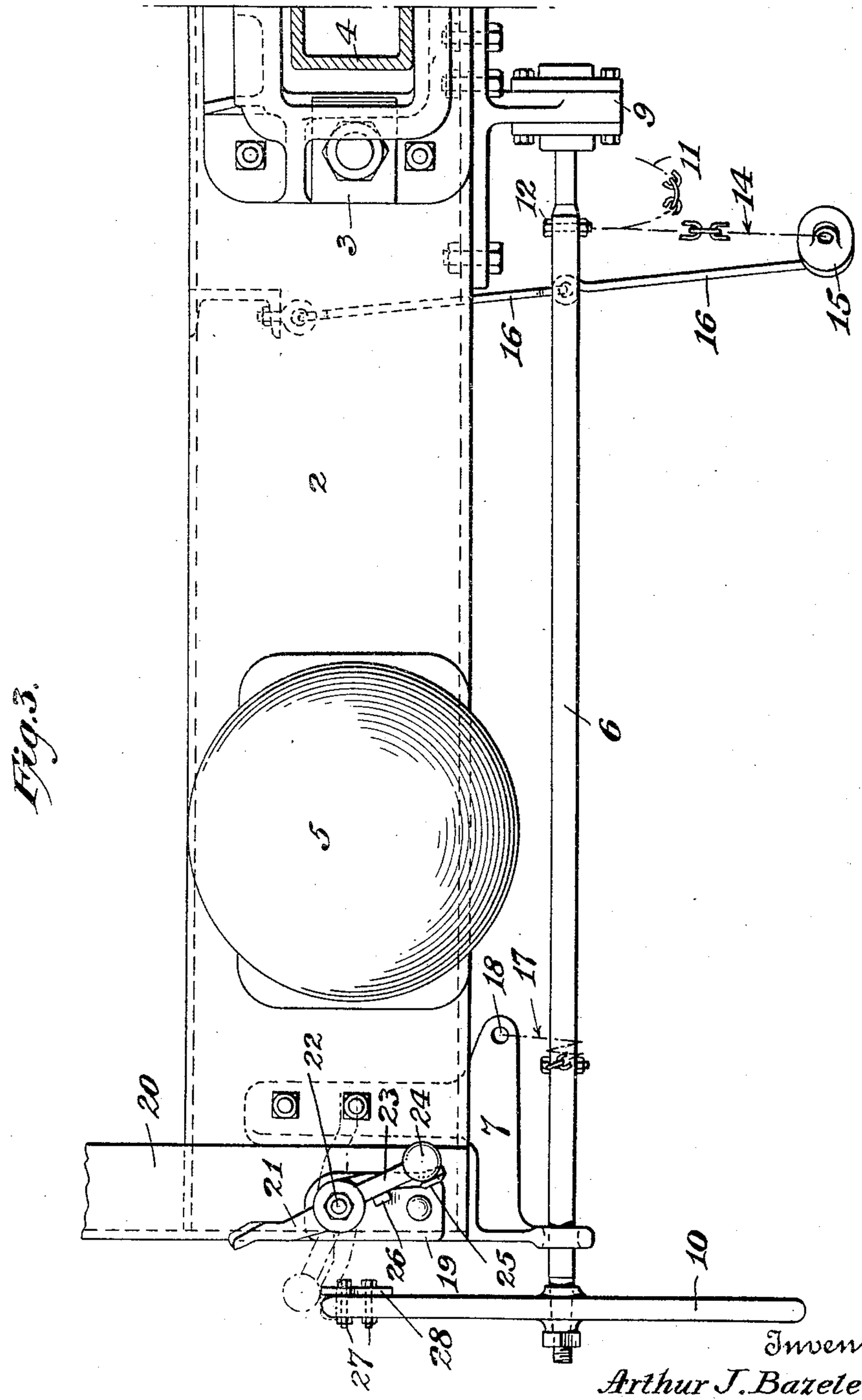


Fig. 3.

Inventor
Arthur J. Bazeley
By his Attorney
Clarence O'Brien

Feb. 14, 1933. A. J. BAZELEY 1,897,461

UNCOUPLING MECHANISM FOR CAR COUPLERS

Filed Sept. 9, 1929 4 Sheets-Sheet 4

Fig. 3.

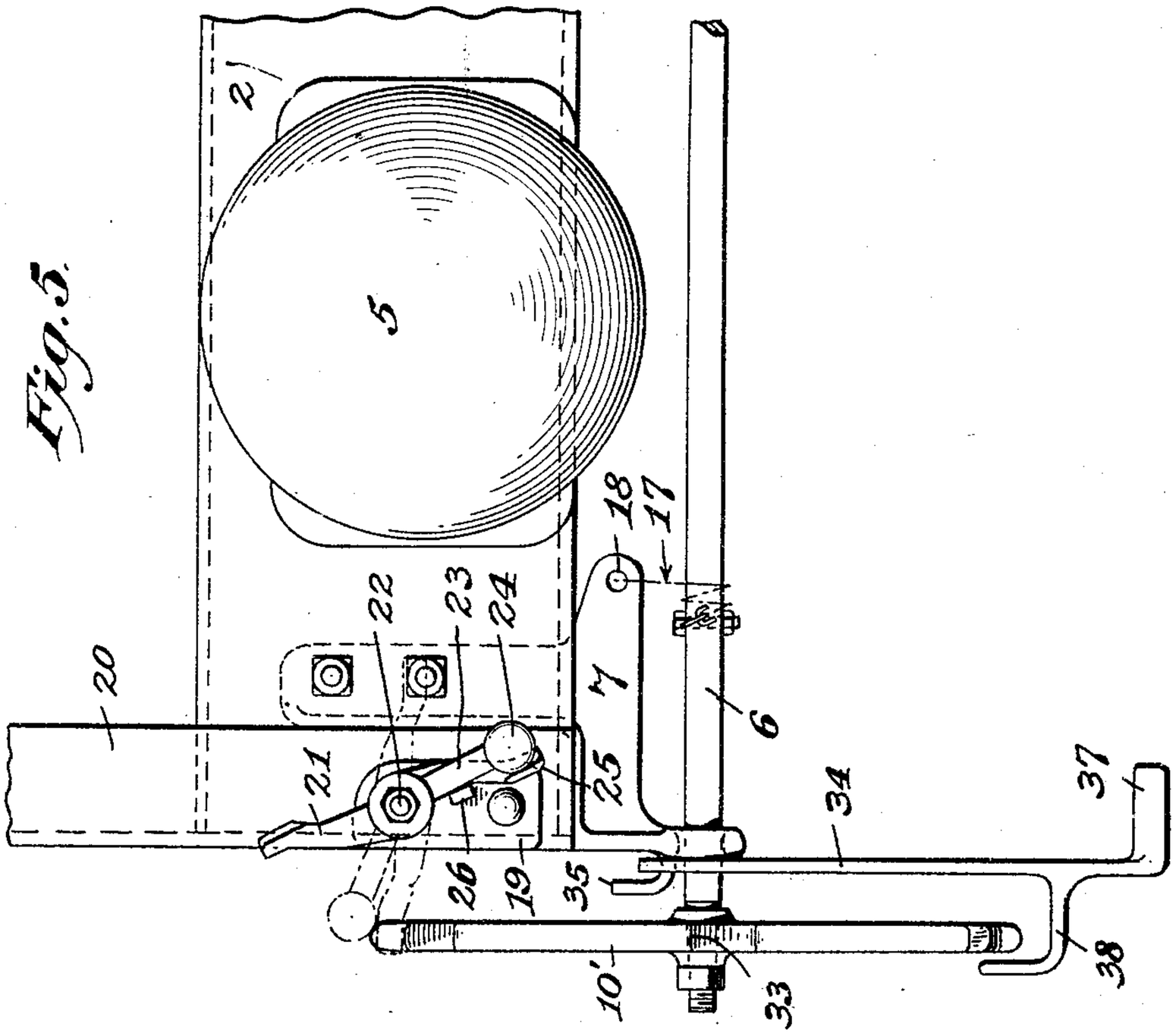
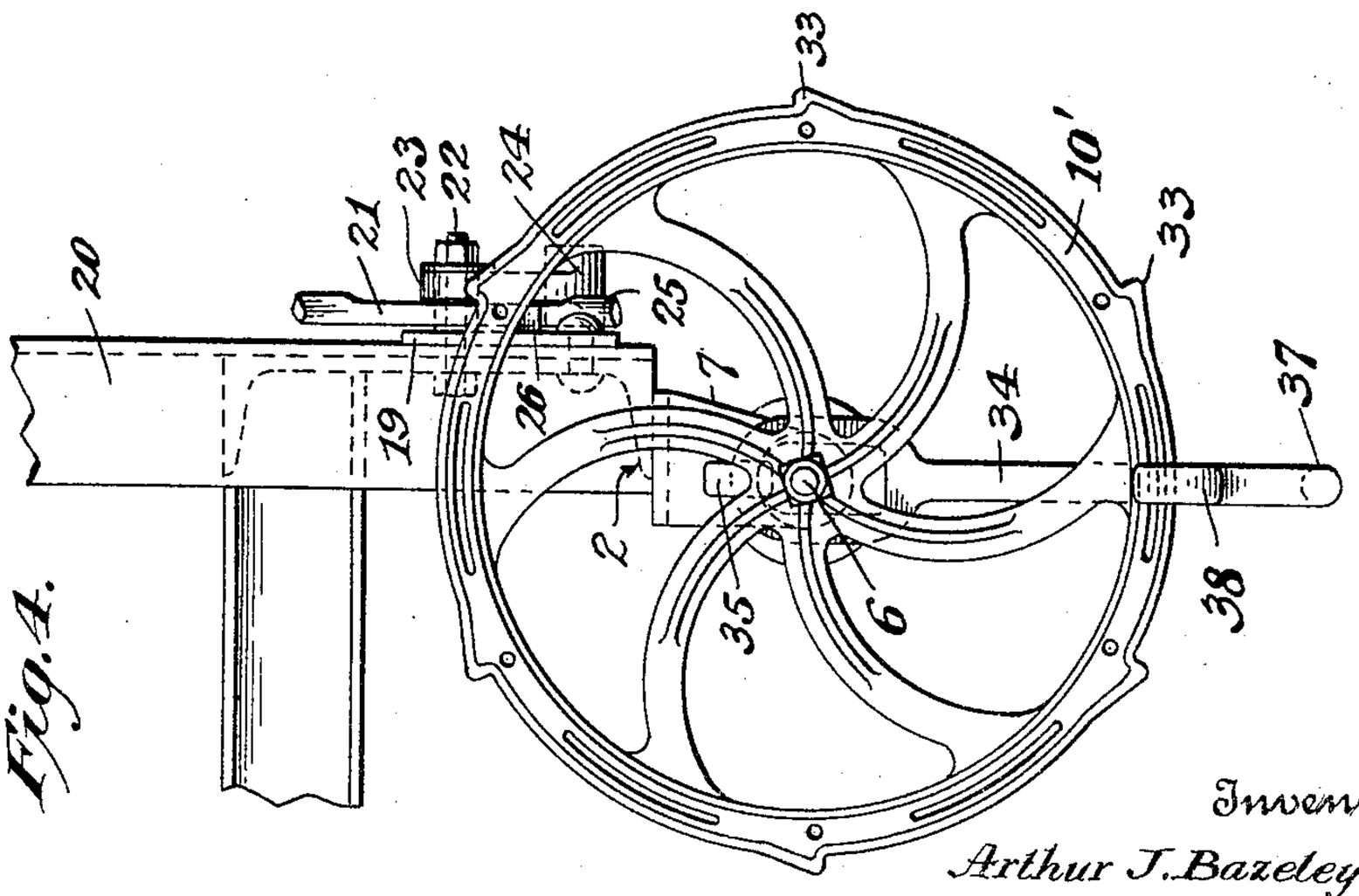


Fig. 4.



Inventor
Arthur J. Bazeley
By his Attorney
Clarence O'Kerr

Patented Feb. 14, 1933 1,897,461

UNITED STATES PATENT OFFICE

ARTHUR J. BAZELEY, OF CLEVELAND, OHIO, ASSIGNOR TO NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO

UNCOUPLING MECHANISM FOR CAR COUPLERS

Application filed September 9, 1929. Serial No. 391,128.

The invention relates to car couplers and has for its principal object the provision of improved mechanism for neutralizing the lock of an automatic coupler, or, in other words, for holding such a lock in non-operating position. The invention is particularly useful in connection with car couplers employed by railroads in process of equipping their rolling stock with automatic couplers. During the transition period it is necessary that a uniform practice be followed, particularly in the classification yards, and hence provision must be made for manual coupling of all cars in order that the car inspectors may be compelled to treat all cars alike, irrespective of whether the various cars be equipped with couplers of the automatic or the non-automatic type. Through the provision of means for neutralizing the lock of an automatic coupler the manual releasing of the lock from the operation of such means is compelled before coupling can be effected. I have provided an improved lock-neutralizing means which is not only of comparatively simple construction but which at the same time is highly effective in action even during rough switching operations. My invention also comprises various features which I shall hereinafter describe and claim.

In the accompanying drawings:

Fig. 1 is a side elevation showing a portion of a railway vehicle equipped with my improved lock-neutralizing means, with the parts in normal position;

Fig. 2 is a view similar to Fig. 1 but showing the parts in position for holding the lock out of operation or in neutralized position;

Fig. 3 is a view in end elevation, the coupler itself not being shown for the sake of clearness of other parts;

Fig. 4 is a side elevation showing a modification of the invention; and

Fig. 5 is a view in end elevation of the parts shown in Fig. 4.

Referring to the drawings, the invention is shown applied to the end sill 2 of a vehicle which supports the usual coupler carrier and striking casting 3, the coupler 4, and buffers 5, one of which is shown in Fig. 3.

An uncoupling rod or shaft 6 is supported near its outer end in a bracket casting 7, bolted to the end sill 2, and at its inner end is carried in a ball bearing housing 9 bolted to the under side of the end sill 2 near its center. Secured to the squared outer end of uncoupling rod 6 is a hand wheel 10. A chain 11, adapted to be wound up on the uncoupling shaft 6 to actuate the coupler lock retracting mechanism, is connected to the shaft at 12, and to the uncoupling lever 13. Also connected to the shaft at 12 is a chain 14 with counterweight 15 attached, which serves to return the parts to their original positions following uncoupling operations. In order to keep the counterweight 15 from swinging too far forward and oscillating back and forth, it is preferably secured directly to a fixed part of the car by links 16 or other suitable means.

A control chain 17 is secured to the operating rod 6 and wound around it in a direction opposite to that in which the operating chain 11 is intended to be wound. It is secured to the bracket 7, at 18, and is of such a length as to be taut when the parts are in their normal position as in Figs. 1 and 3. With this arrangement it is impossible to turn the operating wheel in the wrong direction. It also serves as a limit stop for the unwinding action induced by the counterweight 15.

The lock of the coupler is retracted by turning the hand wheel 10 clockwise from its Fig. 1 position so that the chain 11 is wound upon the rod 6 and the uncoupling or lock-operating lever 13 is moved to the position shown in Fig. 2. Movement of the lever 13 from its Fig. 1 to its Fig. 2 position retracts the coupler lock to uncoupling position in a manner well known in the art and which need not

be described. For holding the lock in uncoupling or non-operating position I provide the following means. Pivotally mounted on a bracket 19 which in turn is secured to a corner post 20 of the car is a latch 21. Also pivotally mounted on said post, preferably on the same pin 22 as the latch 21, is an arm 23 having at one end thereof a weighted portion 24. When the weighted arm 23 is in its full-line position shown in Fig. 3 it contacts with a lug 25 on the latch and holds the latter up and away from the hand wheel 10. If, however, the arm 23 be swung over and to the left the latch is permitted to drop on to the rim of said hand wheel. The latch may be held in such position by the engagement therewith of the weighted portion 24 of the arm 23, said latch and arm being at that time in the position indicated by dotted lines in Fig. 3. The upper end of the latch 21 may be weighted sufficiently to cause said latch to drop into engagement with the rim of wheel 10 in response to operation of the arm 23, or said latch may be moved into such engagement by the contact of the weighted portion 24 of arm 23 with the upper end of the latch during the movement of said arm toward its dotted line position in Fig. 3. When in the normal position shown in full lines in Fig. 3, the latch 21 abuts a stop projection 26 on the bracket 19.

Secured as by bolts 27 to the rim of the hand wheel 10 is a member 28 having a notch 29 for receiving the latch 21. The normal position of the hand wheel is shown in Fig 1. In the arrangement here shown, about 1 and 1/6 turns of the wheel are required to bring the coupler lock to retract or non-operating position. Such rotation of the wheel brings the notch 29 opposite the latch 21 so that the latter may drop into said notch, thus locking the latter against reverse rotation and thereby holding the coupler lock against movement out of non-operating position.

The rim of the wheel 10 is shown provided with a series of slots 31, in any one of which the bolts 27 may be received for securing the member 28 to said wheel. Said member may thus be attached to any of a plurality of portions of the wheel rim. Also, each slot is shown elongated so that the position of the member 28 may be very accurately adjusted to any desired position within the range of said slot.

In assembling the parts of my improved device, the rod 6 and chains 11, 14, and 17 are first connected up and the wheel is then turned until the lock of the coupler reaches its retracted or non-operating position. The stop member 28 is then bolted to the wheel in the proper position to be engaged by the latch. In case the uncoupling chain 11 should stretch the position of the member 28 can readily be changed to compensate for such stretching.

In the construction above described the wheel 10 cannot be locked in a position wherein the coupler lock has been only partially retracted. While the operator can, upon turning the wheel only sufficiently (1/6 of a revolution in the present instance) to bring the notch 29 opposite the latch 21, engage the latch with said notch, such comparatively small rotation of the wheel merely takes up some of the slack in the chain 11 and does not affect the working of the coupler.

When the wheel 10 has been operated sufficiently to fully retract the coupler lock and said wheel is locked in such operated position by the latch 21 the vehicle can be shunted around without coupling until the operator withdraws said latch from engagement with the notch 29, thus allowing the wheel 10 to return to the position shown in Fig. 1. The lock of the coupler is then free to function automatically to couple with an opposing automatic coupler.

In the modification shown in Figs. 4 and 5 the wheel 10′ is provided with several stop projections 33. A lever 34 loosely pivoted on a bracket extension 35 adjacent the axis of the shaft 6 is provided with a handle 37 and also with a lateral extension 38 engageable with the stops 33. It will be seen that by raising said lever slightly and pushing the same toward the wheel 10′ the extension 38 may be engaged with one of the stop projections 33 and the wheel thereby rotated. This arrangement provides greater leverage than could be obtained by effort applied directly to the wheel. The stops 33 also serve for engagement with the latch 21. With this construction the hand wheel 10′ is rotated until the lock of the coupler is retracted and the latch 21 is then dropped against the wheel and prevents reverse rotation by its contact with one of the stops 33.

With either form of the invention it may be noted that if the coupler is buffed rearwardly when the lock is neutralized the chain 11 merely becomes slack. So far as draft action is concerned, there is no danger of the chain becoming stretched or broken, since the coupler is incapable of locking with another coupler when the lock is neutralized and therefore cannot be pulled out from its normal position.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any mechanical equivalents of the features shown and described, or portions thereof, but recognize that various structural modifications are possible within the scope of the invention claimed.

What I claim is:

In combination, a coupler element operable to withdraw the lock of the coupler to uncoupling position, a manually operable

member for actuating said element, a pivotally mounted latch engageable with and mounted on an axis extending transversely of the axis of said member, and an arm pivotally mounted on the same axis as said latch for controlling the engagement of the latter with said member, said arm being shiftable independently of said latch to hold the latter in either effective or ineffective position.

In testimony whereof, I have signed my name to this specification this 5th day of September, 1929.

ARTHUR J. BAZELEY.