Jan. 5, 1932. W. KELSO 1,840,165

UNCOUPLING MECHANISM

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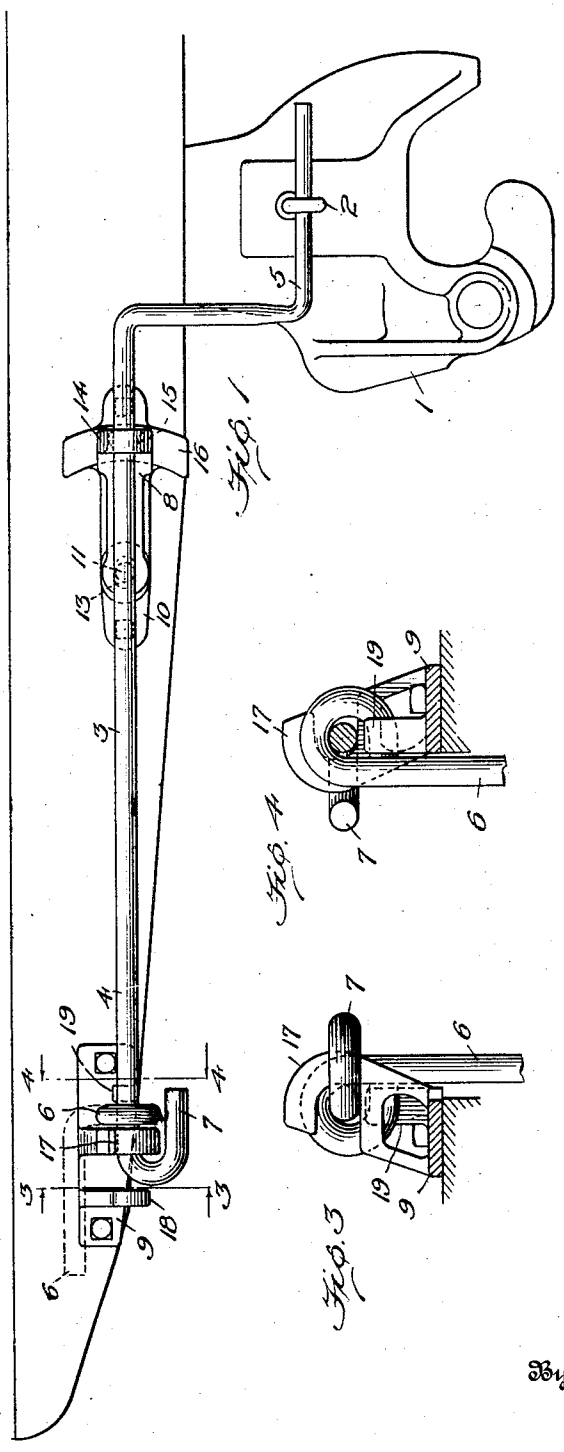


Fig. 1

Fig. 4

Fig. 3

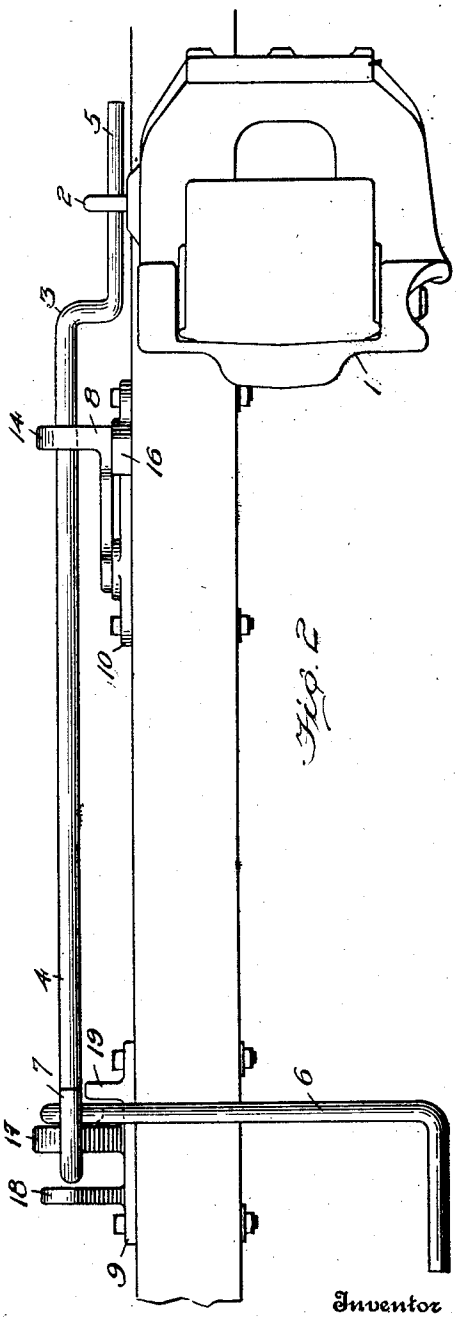


Fig. 2

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UNCOUPLING MECHANISM

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Fig. 5

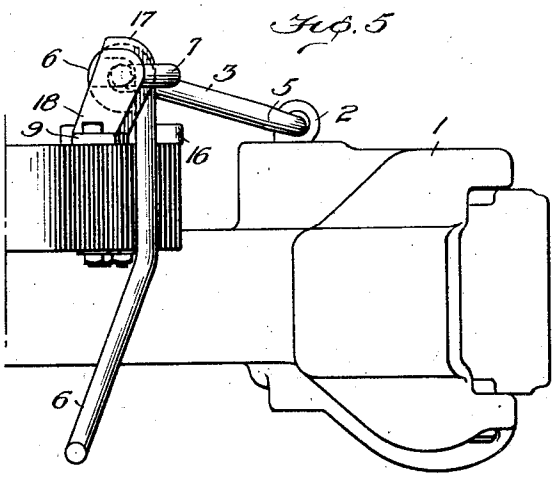


Fig. 6

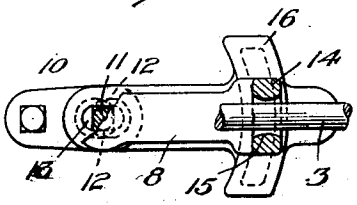


Fig. 7

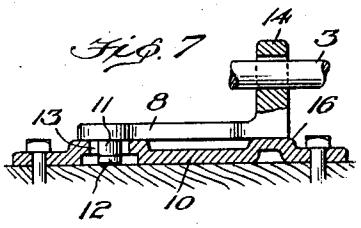


Fig. 8.

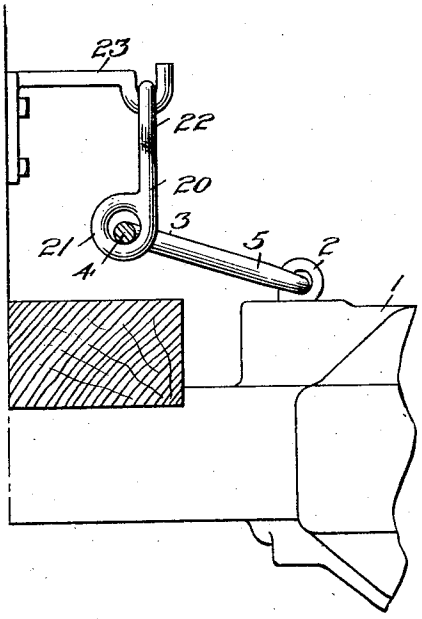
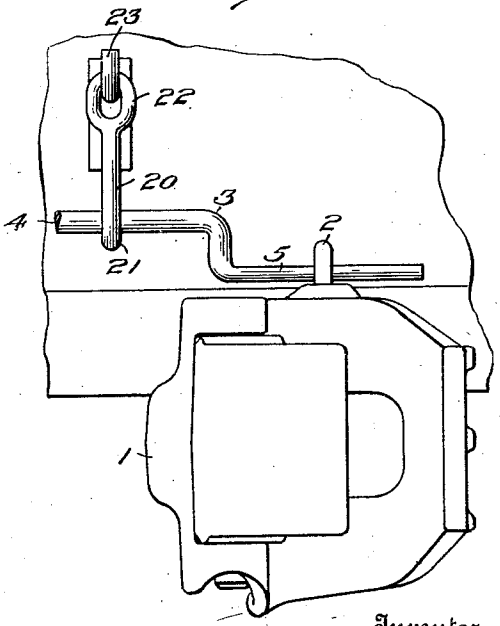


Fig. 9



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Patented Jan. 5, 1932 1,840,165

UNITED STATES PATENT OFFICE

WILLIAM KELSO, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO THE McCONWAY & TORLEY COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

UNCOUPLING MECHANISM

Application filed October 4, 1926. Serial No. 139,407.

My invention relates to uncoupling mechanism for actuating the lock of a car coupler. While it is especially well suited for application to the standard D-type coupler employing a top operating lock, the invention may be embodied in uncoupling mechanism applicable to other forms of couplers as well.

The primary object of the invention is to provide reliable, efficient and easily operating uncoupling mechanism consisting of a few simple parts which may be readily assembled and which are securely retained in operative relation.

The principal feature of the invention, generally stated, consists in constructing the uncoupling mechanism with a rotatable uncoupling lever extending transversely of the car and provided at one end with a crank arm for actuating the coupler locking mechanism and having at the other end a depending operating handle, and in providing a plurality of spaced bearing means in which the uncoupling lever is journalled, the said means being relatively movable so as to permit the lever to vary its angular relation in correspondence with the location of the coupler.

A further feature of the invention consists in combining the uncoupling lever with a plurality of relatively movable bearings in which the lever is journalled, said lever being formed with a hook portion cooperating with one of the bearing members to prevent the lever from shifting toward the coupler.

Another feature of the invention consists in journalling the uncoupling lever in a plurality of bearing members one of which is detachably pivoted on a bracket secured to the car body in such manner that the lever when in assembled relation serves to prevent said detachable bearing member from becoming disassociated from the mechanism.

Other features of the invention pertaining to advantageous combinations of parts and structural details will hereinafter appear and be pointed out in the claims.

In the drawings illustrating a preferred embodiment of the invention,

Figure 1 is a plan view of a portion of a car showing an uncoupling mechanism constructed in accordance with the invention applied thereto, the parts being in the positions they normally occupy when the car coupler is locked.

Figure 2 is an end elevational view of the construction shown in Figure 1.

Figure 3 is a detail sectional view on the line 3—3, Figure 1.

Figure 4 is a detail sectional view on the line 4—4, Figure 1.

Figure 5 is a side elevation of the mechanism.

Figure 6 is a detail view partly in plan and partly in section showing one of the bearing devices and a portion of the uncoupling lever journalled therein.

Figure 7 is a detail view partly in elevation and partly in vertical section illustrating the portion of the construction shown in Figure 6.

Figure 8 is a view partly in side elevation and partly in section of a modified form of the invention.

Figure 9 is a front elevational view of the construction shown in Figure 8.

The car coupler 1 shown in the drawings is of the well known standard D-type, its lock for preventing outward rotation of the knuckle being adapted to be actuated by a lifter 2 which also functions as a lock-to-the-lock for preventing accidental unlocking of the coupler.

The uncoupling lever 3 for causing the locking mechanism of the car coupler to assume unlocked position extends transversely of the car and preferably involves a plurality of relatively rotatable members, the inner member 4 being provided at its inner end with a crank portion 5 which extends through the opening in the upper end of the lock lifter 2 so as to be capable of sliding and turning movement with respect to the latter and the outer member 6 being constituted as a depending operating handle which is preferably fashioned with an outturned portion at its lower end. All parts of the uncoupling lever are preferably formed from round rods, the upper end of the handle member 6 preferably being bent to form an eye through which the lever member 3 extends

and the outer end of the latter member preferably being bent in the form of a loop or hook portion 7 which by cooperating with the handle member 6 enables the latter to induce an uncoupling rotation of the inner lever member 4.

The inner lever member is journalled in a plurality of spaced bearing devices, 8 and 9 respectively, which, as shown in the principal figures of the drawings, are preferably mounted upon the car end sill. The inner lever bearing 8 is pivotally mounted on a stationary bracket 10 secured to the car body, its axis of pivotal rotation being substantially normal to that of the uncoupling lever, thus permitting the inner end of the uncoupling shaft or rod to accommodate its angular position to various locations of the coupler and also preventing any binding between the coupler body or head casting and the locking block lifter in the act of uncoupling. For the purpose of flexibly connecting the bearing member 8 to the bracket 10 the former is preferably integrally provided at its outer end with a downwardly extending pivot lug 11 having oppositely disposed locking projections 12 and the bracket 10 is formed with a pivot pin receiving opening 13 which is elongated to permit the locking projections 12 to pass therethrough when the movable bearing member 8 has been turned through an angle of ninety degrees from its assembled relation to the bracket. It will be understood therefore that the movable bearing 8 is interlockingly connected to its pivot bracket 10 in all movable positions which said bearing may occupy when the assembled device is in service. The upwardly extending perforated lug 14 at the inner end of the movable bearing member 8 is preferably formed with rounded inner surfaces 15 (see Figure 6) as such construction permits the uncoupling lever and movable bearing member to angle with respect to each other to the necessary extent while at the same time maintaining a desirable closeness of fit between the parts. To afford a substantial support for the bearing member 8 when the latter is angularly displaced from its normal position, the inner end of the pivot bracket 10 may conveniently be provided with a curved supporting segment 16 which overlies the inner end of the bearing member.

The outer bearing member 6 for the uncoupling lever is preferably stationary and is desirably constructed with an upwardly and forwardly extending journal lug 17 having a rearwardly opening slot for receiving the shaft portion of the inner lever member 4. Spaced outwardly from the lug 17 the member 9 is fashioned with an upstanding lug 18 which overlaps the outer end of the inner lever member 4 so as to prevent the latter from shifting outwardly transversely of the car. On the opposite side of the lug 17 the bearing member 9 is preferably provided with an upwardly projecting lug 19 which by engaging the inner face of the eye at the upper end of the handle member 6 of the lever prevents the latter from shifting inwardly toward the coupler 1. As the outer end 7 of the lever member 4 is hooked around the bearing lug 17 movement of said lever member towards the coupler is prevented when the parts are in assembled relation; and as the upper end of the handle member 6 stands adjacent the inner face of the lug 17 the latter thereby prevents outward movement of said handle member. It will also be appreciated that as the outer hooked end 7 of the uncoupling member 4 is looped around the bearing lug 17 so as to extend in front of the latter, no bolt or cotter is required to prevent the uncoupling lever from becoming accidentally disassociated from the bearing bracket 9 after the latter has been bolted in position on the car.

The assembling of the uncoupling device on the car may be accomplished as follows: The inner base casting or anchor 10 for the movable uncoupling bearing lever is bolted or riveted to the car end sill and the bearing member 8 is then operatively associated therewith by turning it about ninety degrees to its normal assembled position, then inserting its pivot lug 11 into the pivot opening of the anchor bracket and finally rotating the bearing 8 until its locking lugs 12 are out of alinement with the opening in the bracket. The inner uncoupling rod member 4 is then passed through the opening in the lug 14 of the movable bearing member and its inner end is inserted in the opening of the lock lifter 2. The handle member 6 is then placed on the uncoupling shaft 4 and the outer bearing bracket 9 is then associated with these parts. The bearing member 9 is then bolted or riveted to the end sill thus locking all parts in place.

The modified construction illustrated in Figures 8 and 9 is the same as that heretofore described except that the movable inner bearing for the uncoupling lever is of a form suitable for attachment to the end of the car body instead of to the end sill. In this construction the bearing member 20 for the uncoupling lever is fashioned as a link having eyes 21 and 22 respectively, lying in planes at right angles to each other, the lower eye forming a bearing for the shaft of the inner uncoupling lever member 4 and the upper eye, 22, receiving the hooked end of a supporting bracket 23 secured to the car body.

After the trainman has rotated the handle member 6 of the uncoupling lever forwardly until it has come into contact with the outer hooked end 7 of the inner lever member 4, further rotation of said handle member in the same direction causes the inner lever

member to rotate in its bearings thereby causing the crank portion 5 to pull the lock lifter 2 upwardly and thereby actuate the coupler locking block. If the operation of the coupler lock is such that it remains in elevated or unlocked position when the trainman releases the handle member 6, the latter because of its flexible connection with the inner uncoupling member 4 is enabled to fall back to its normal position, thus affording the maximum clearance between cars at all times except while the act of uncoupling is being performed.

I claim:—

1. In uncoupling mechanism for car couplers, the combination of an uncoupling lever involving an inner member and an outer member rotatable with respect to said inner member and adapted to actuate the latter, said inner member being provided at its inner end with a crank arm for actuating the locking mechanism of a car coupler, and a plurality of spaced bearing devices for rotatably mounting said inner member on the car, one of said devices being interposed between said crank arm and said outer member and being adapted to swing horizontally with respect to the car body on a fixed pivotal axis disposed between said crank arm and said outer member.

2. In uncoupling mechanism for car couplers, the combination of an uncoupling lever, and a plurality of relatively movable spaced bearing members in which the lever is journaled, one of said bearing members being formed with a rearwardly opening slot for receiving the lever, said lever involving an inner member having at its inner end a crank portion for actuating the coupler locking mechanism and being provided at its outer end with a bent portion having hooked engagement with said slotted bearing member, and an outer member rotatably mounted on said inner member and adapted to cooperate with said bent portion for effecting an uncoupling rotation of said inner member.

3. In uncoupling mechanism for car couplers, the combination of an uncoupling lever for actuating the coupler locking mechanism, laterally spaced relatively movable bearing members in which the lever is journaled, and a bracket on which the inner of said bearing members is detachably pivoted, the outer of said bearing members being secured to the car body and being provided with a lug adapted to engage the lever to prevent outward shifting of the latter transversely of the car, and having a lug forming a rearwardly opening bearing for the lever and said lever being adapted to be disengaged from said outer bearing member only after the latter has been detached from the car body.

4. In uncoupling mechanism for car couplers, the combination of an uncoupling lever comprising inner and outer relatively rotatable portions, the inner portion having a crank arm for cooperating with the coupler locking mechanism and having a hook portion at its outer end, and the outer portion being dependent from said inner portion and providing a handle for operating the latter, and a plurality of relatively movable laterally spaced bearing members in which said inner lever member is journaled, the outer of said bearing members being provided with a lug for preventing outward lateral shifting of the inner lever member and also being formed with a lug for cooperating with the outer lever member to prevent lateral shifting of the latter toward the coupler.

5. In uncoupling mechanism for car couplers, the combination of a rotatable uncoupling lever extending transversely of the car and having a crank handle and a relatively movable crank arm for actuating the coupler locking mechanism, and a plurality of spaced bearing means disposed between said crank arm and the car side and in which said uncoupling lever is rotatably mounted, the said means nearer the crank arm being pivotally connected to the car body so as to rotate on a fixed vertically extending axis to thereby permit said lever to vary its angular position in correspondence with the location of the coupler, said pivotal axis being disposed between said crank arm and said handle.

In testimony whereof I affix my signature.

WILLIAM KELSO.