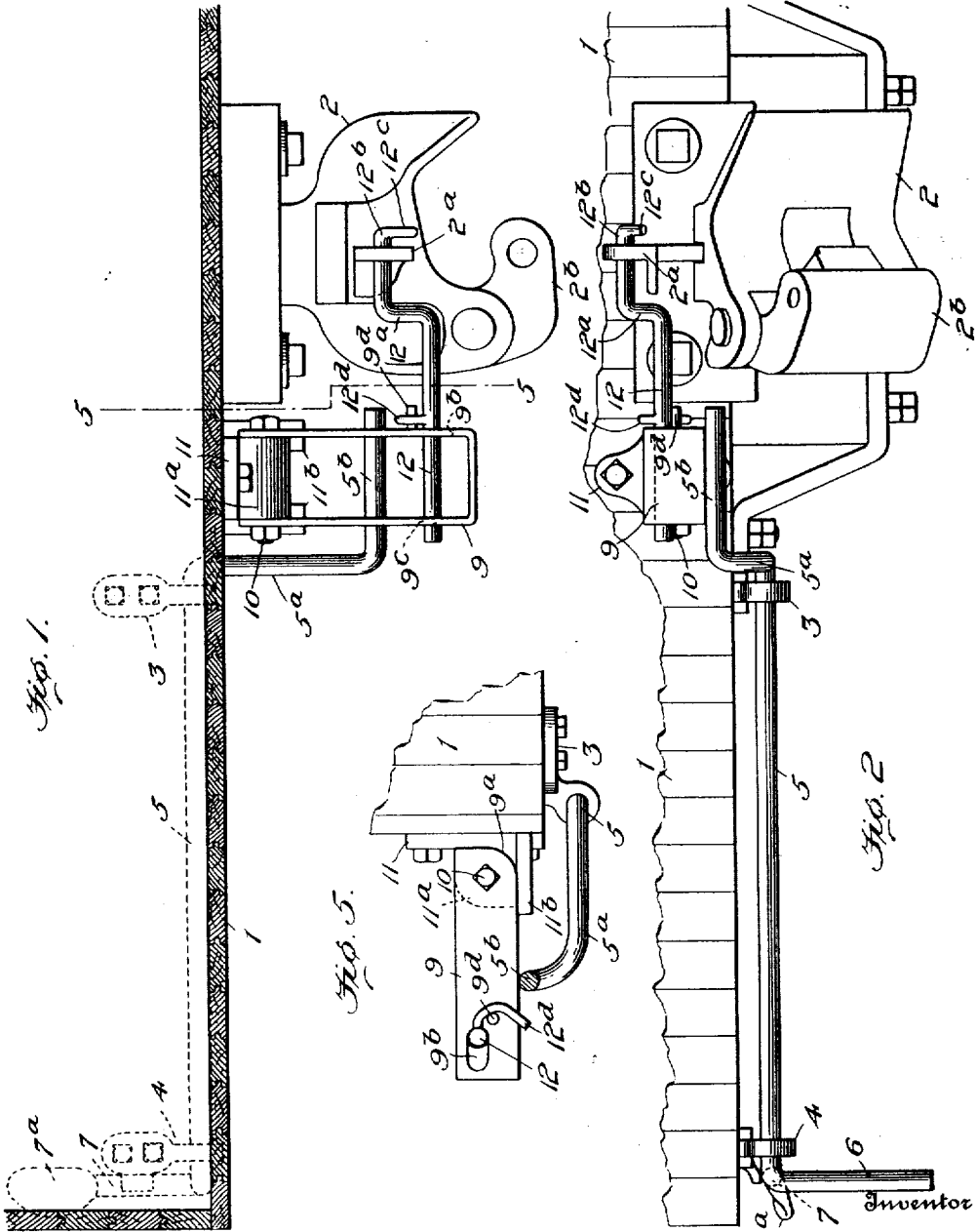


1,021,914.



Witnesses
 Edwin L. Bradford
 James H. Marr

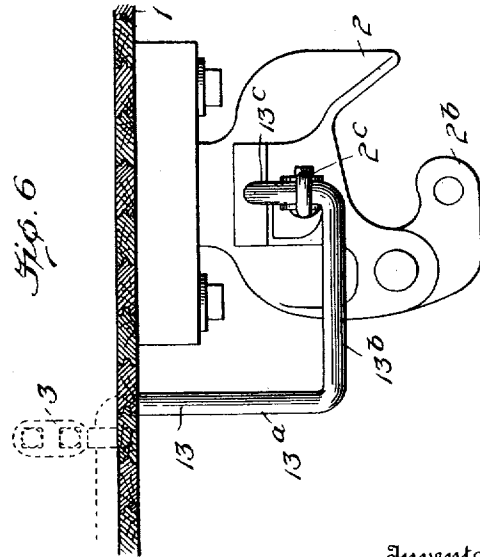
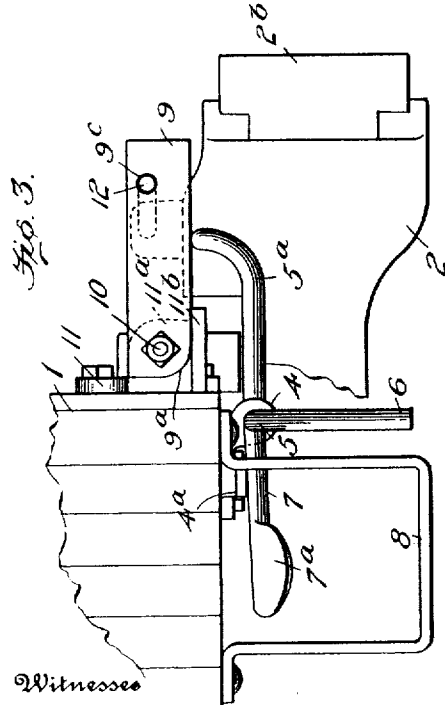
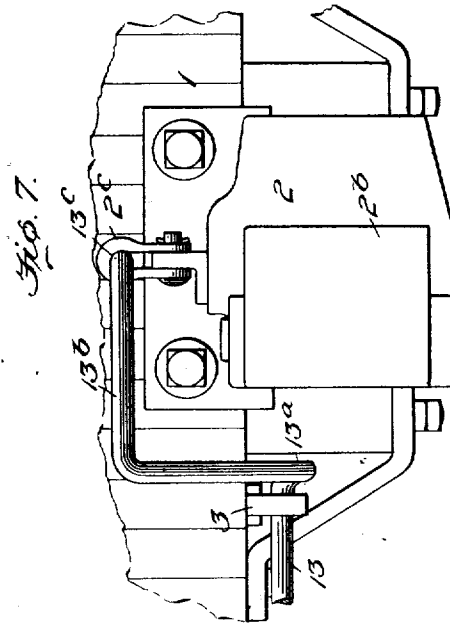
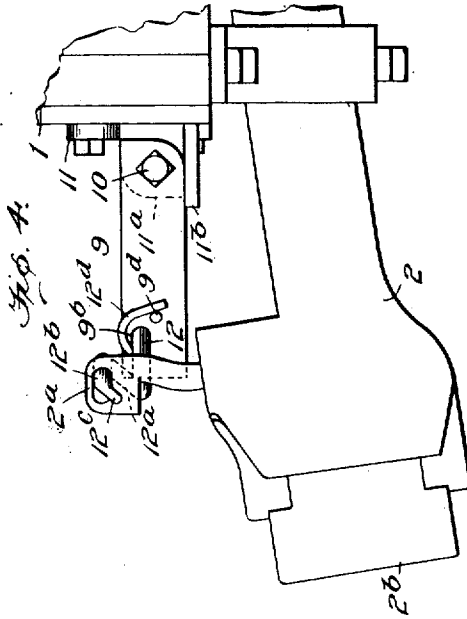
Harry C. Buhoup
 By *Ritter & Ritter*
 His Attorneys

H. C. BUHOUP.
COUPLING RELEASE RIGGING.
APPLICATION FILED APR. 4, 1911.

1,021,914.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 2.



Witnesses

Edwin L. Bradford

James H. Marr

Inventor

Harry C. Buhoup

By *Ritter & Ritter*

Attorneys

UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

COUPLING-RELEASE RIGGING.

1,021,914.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed April 4, 1911. Serial No. 618,787.

To all whom it may concern:

Be it known that I, HARRY C. BUHOUP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coupler-Release Rigging; and I 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.

My invention relates to the construction of a coupler release rigging or uncoupling device by means of which the lock of a car coupler may be caused to assume an unlocked position.

The principal object of the invention is to provide a strong and simple form of rotating uncoupling lever which can be as readily operated by the trainman when standing upon the sill step as when standing on the ground beside the car. As is well known the forms of coupler release rigging now generally in use can only be conveniently operated when the trainman is standing on the ground at the side of the car, and as it is often necessary in switching operations for the operator to ride upon the car after it has been separated from the train and while the car is moving it frequently occurs that the trainman is required to jump on the car while it is in motion, thus exposing himself to danger. With my construction if the operator desires to go with the car after it has been separated from the train he can, by taking his position on the sill step, which is the usual means of mounting the car, readily actuate the coupler release rigging and unlock the coupler with entire safety to himself and without being compelled to assume any strained or unnatural position. My construction also provides means whereby the operator may actuate the coupler release rigging to unlock the coupler while standing on the ground beside the car, thus making it possible for him to uncouple the car without getting upon it.

A further object of my invention is to provide a coupler release rigging through the instrumentality of which the coupler will be automatically unlocked when drawn outwardly to a greater extent than its connection with the car normally permits. When, therefore, a coupler breaks or its draft rigging is disrupted the coupler lock

is brought to an unlocked position and the coupler is uncoupled from the opposite coupler, thus preventing it from falling on the track.

To accomplish certain of the before-noted objects I construct the coupler release rigging with an operating lever which is provided with a plurality of operating arms arranged at an angle to each other, the lever being rotatable about its longitudinal axis, which extends transversely of the car; and to effect other of the before-mentioned objects I combine with the lever having the divergent operating arms a pivoted extension lever and an additional lever which is connected to the lock of the coupler, the pivoted extension lever being mounted upon the end of the car and being operatively interposed between the operating lever and the additional or connecting lever which is connected to the coupler lock, the pivoted lever and the connecting lever having a loose connection permitting normal longitudinal movements of the coupler and being provided with means whereby an abnormal outward movement of the coupler causes the connecting lever to be rotated to cause the coupler lock to be brought to an unlocked position.

In the drawings chosen for the purpose of illustrating the invention, the scope whereof is pointed out in the claims, Figure 1 is a plan view of a coupler release rigging embodying my invention, the parts being shown in the positions they occupy when the coupler is locked and its manner of attachment to the car being also illustrated; Fig. 2 is an end elevation of the devices shown in Fig. 1, the parts being shown in the positions they occupy when the coupler lock is automatically raised to an unlocked position through an abnormal outward movement of the coupler; Fig. 3 is a side elevation of the devices shown in Fig. 1, the parts being in their normal or coupled position; Fig. 4 is a side elevation of the devices shown in Fig. 1, the view being taken from the guard arm side of the coupler and the parts being shown in the positions they occupy when the coupler is automatically unlocked to prevent it from falling upon the track; Fig. 5 is a detail view taken on the line 5—5, Fig. 1; Fig. 6 is a detail plan view of a modified form of my invention, and Fig. 7 is an end elevation of the devices shown in Fig. 6.

Like symbols refer to like parts wherever they occur.

I will now proceed to describe my invention more fully so that others skilled in the art to which it appertains may apply the same.

In the drawings, 1 indicates a portion of the end of a car and 2 a coupler, which is shown as of the vertical plane or Master Car-Builders' type. The car body and coupler may be of any suitable construction, and forms no special part of my invention.

Extending transversely of the car and rotatably mounted thereon, as by means of brackets 3 and 4, is an operating lever 5 which is provided at its outer end with a plurality of divergent operating arms 6 and 7 respectively, the arm 6, which normally extends vertically downward, being in a position where the trainman may readily grasp it with his hand to rotate the operating lever 5, and the arm 7, which extends inwardly under the car, and which, as shown, may be fashioned with a broadened foot plate 7^a, being located adjacent to the sill step 8, and preferably normally standing in the center of the sill step opening near the top thereof so that the trainman may easily operate it with his foot while standing upon the sill step. As shown more particularly in Figs. 1, 2 and 3 the outer portion of the operating lever 5 is preferably located beneath the end sill of the car where it is to a great extent protected from accidental injury.

Toward the center of the car the operating lever 5 is preferably provided with a forwardly and upwardly extending crank arm 5^a which is designed to engage the under side of the extension lever 9 and rotate the latter upwardly around its pivot pin 10, the crank 5^a being for this purpose preferably formed with a projecting portion or lifting finger 5^b which extends under the pivoted extension lever 9 and is parallel to the axis upon which the operating lever 5 rotates. In order to prevent the operating arms 6 and 7 from swinging upwardly beyond their normal positions, as shown in Fig. 3, the trunnion bracket 4 may be conveniently provided with a lug or stop 4^a which is adapted to engage the upper face of the operating arm 7 and thus normally maintain the lever 5 in proper position corresponding to the locked position of the coupler.

The extension lever 9, which may be conveniently made of skeleton form as shown, is preferably mounted on the end of the car on a supporting bracket 11 which is provided with a centrally disposed perforated lug or boss 11^a that is adapted to receive a pivot bolt 10 by which the extension lever is connected to the bracket. As will be seen upon reference to Fig. 3 the inner lower

faces of the extension lever 9 are curved or rounded as at 9^a to permit the extension lever to swing upwardly, while the downward movement of this lever is limited by the supporting shelf 11^b which is formed on and extends outwardly from the bracket 11 beneath the extension lever 9.

Near its outer end the extension lever 9 is provided on one side with a slot 9^b and on the other side with an aperture 9^c, the former being sufficiently long to permit the portion of the connecting lever 12 which passes therethrough to have sufficient forward movement beyond its normal position to cause the connecting lever 12 to be rotated by the cam devices hereinafter described to thus effect the unlocking of the coupler when the latter is pulled outwardly to an abnormal extent and the latter being sufficiently large to receive the end portion of the connecting lever 12 and permit it to turn therein as if upon a pivot.

Adjacent to the slot 9^b the extension lever 9 is provided with a laterally extending pin or lug 9^d by means of which the connecting lever 12 is adapted to be rotated to unlock the coupler when the latter moves outwardly an abnormal amount, as will presently appear.

Mounted upon the outer end of the pivoted extension lever 9 in the apertures 9^b and 9^c thereof is a connecting member or lever 12 having an arm or crank 12^a that is provided with a finger 12^b which is connected to the lug 2^a of the coupler, the latter being preferably formed with an elongated slot which permits the coupler to have normal longitudinal movements without affecting the member 12. The lock engaging finger 12^b is preferably fashioned with an angular or bent end 12^c which prevents disassociation of the member 12 and the coupler lock. Adjacent to the extension lever 9 and in vertical alinement with the transversely extending pin 9^d of the latter, the connecting lever 12 is provided with a cam member 12^d which engages the pin 9^d, the cam being preferably formed as a hooked member which is rigidly attached to the member 12.

In the normal operation of the release rigging force properly applied to either of the angularly disposed operating arms 5 or 7 will cause the extension lever 9 to be rotated upwardly around its pivot bolt 10, the connecting member 12 being also carried upwardly around the same pivot bolt as if it were an integral part of the extension lever, for the engagement of the cam pin 9^d of the extension lever with the cam hook 12^d of the connecting member 12 prevents the latter from rotating on the extension lever 9. If, however, the coupler 2 of the draft rigging should be broken the outward movement of the coupler beyond that normally allowed causes the connecting member 12 to

move forwardly into the slot 9^b of the pivoted extension lever 9, thus causing the cam finger 12^d of the connecting lever to slide over the cam pin 9^d, and consequently causing the connecting member 12 to rotate upon its axis as it moves forward in the said slot. This rotation of the connecting member causes the lock engaging finger 12^b of the crank arm 12^a to rotate upwardly, thus raising the coupler lock 2^a to an unlocked position and permitting the knuckle 2^b of the coupler to rotate outwardly. If the coupler 2 is provided with a lockset device for temporarily maintaining its lock in unlocked position the extension lever 9 and connecting member 12 will be supported in raised or unlocked position by the coupler lock after the latter has been brought to an unlocked position by the operation of the release rigging by the trainman, but the operating lever 5 will reassume its normal position as shown in Fig. 3 as soon as the trainman ceases to apply force to the operating arms thereof.

In Figs. 6 and 7 of the drawings is shown a modified form of my invention which it is preferred to employ where it is not desired to have the release rigging operate to automatically uncouple the cars when the coupler with which the release rigging is associated is drawn outwardly to a greater distance than that normally permitted by the draft rigging. In this form of construction the pivoted extension lever 9, pivot bracket 11, and the connecting member 12 are dispensed with and the operating lever 13 alone is employed to raise the coupler lock. This operating lever is constructed and arranged in precisely the same manner as the operating lever 5 heretofore described except that the forwardly and upwardly extending crank arm 13^a, which corresponds to the forwardly and upwardly extending crank arm 5^a of the lever 5, is made somewhat longer in order that the transversely extending lifting finger 13^b thereof may be in alinement with the clevis 2^c which is attached to the upper end of the coupler lock for lifting the same. For the purpose of permitting the coupler to have the normal longitudinal movements without transmitting any strain to the operating lever the inner end of the latter is preferably formed with a lock-engaging finger 13^c which extends through the lock clevis 2^c

in the direction of movement of the coupler. Upon applying force in the proper direction either to the hand operating arm 5 or foot operating arm 7 with which the operating lever 13 is provided the latter will rotate on its axis in the trunnion brackets 3 and 4, thus causing the crank arm 13^a and lifting finger 13^b to move upwardly and raise the coupler lock to unlocked position, as will be readily understood.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a coupler release rigging, the combination with an operating lever extending transversely of a car, of a pivoted lever extending outwardly from the car and adapted to be operated by said operating lever, a lever connected to the lock of the coupler and movable with and also independently of said pivoted lever, and means for actuating said last named lever.

2. In a coupler release rigging, the combination with a rotatable operating lever which extends transversely of a car and is provided with a crank arm, of a lever pivotally mounted on the car and adapted to be actuated by said crank arm, and a lever connected to the lock of the coupler and movably mounted upon said pivotally mounted lever, one of the two last named levers being provided with a cam and the other being provided with a lug adapted to engage said cam to rotate the lever connected to the coupler lock.

3. In a coupler release rigging, the combination with an operating lever which is rotatable upon an axis extending transversely of the car, of a lever pivotally mounted upon the car and operated by the said operating lever, said pivotally mounted lever having a slotted aperture and a cam lug adjacent to said slotted aperture, and a lever slidably and rotatably mounted in said slotted aperture and having a cam member which engages the cam lug on said pivotally mounted lever.

In testimony whereof I affix my signature, in the presence of two subscribing witnesses.

HARRY C. BUHOUP.

Witnesses:

HARRY W. STANNARD,
D. B. MASON.