

W. KELSO.
UNCOUPLING DEVICE.
APPLICATION FILED MAY 3, 1910.

1,021,411.

Patented Mar. 26, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

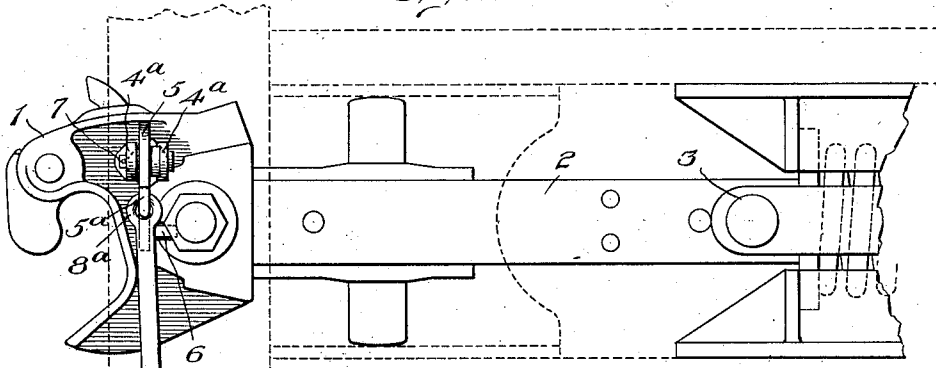


Fig. 3.

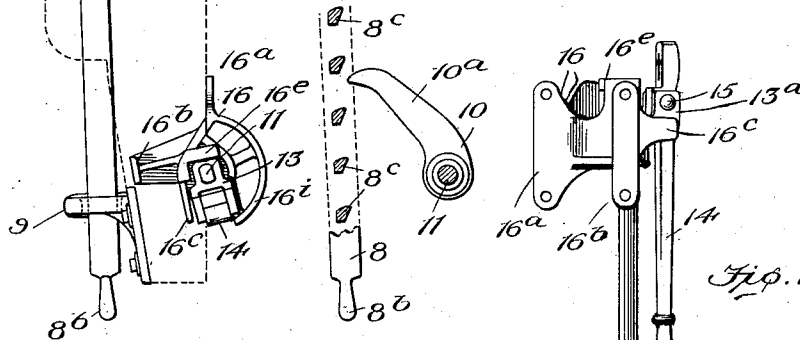
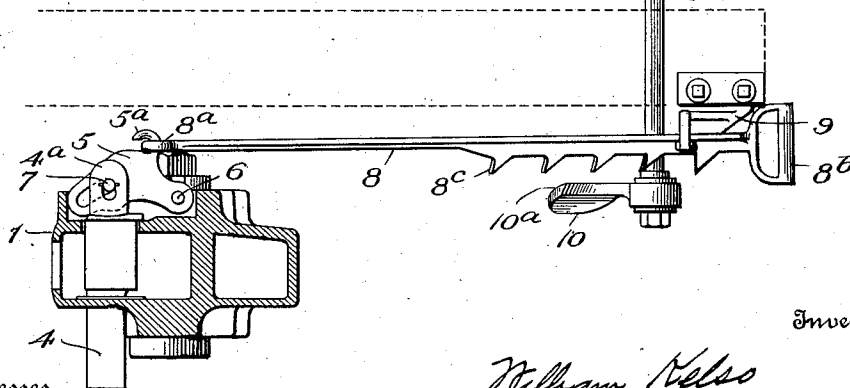


Fig. 2.



Inventor

William Kelso

By

J. M. Ritter Jr.

Attorney

Witnesses

Edwin L. Bradford

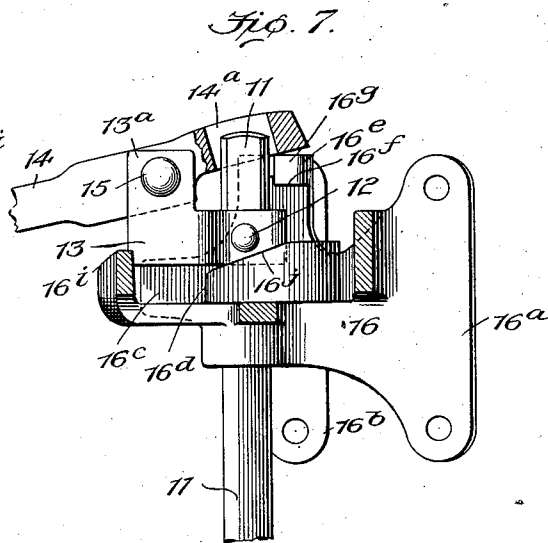
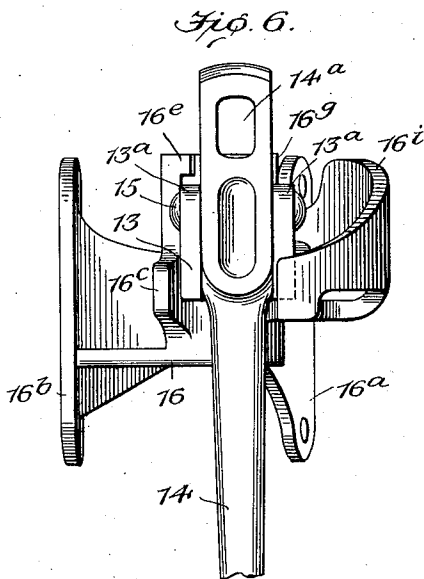
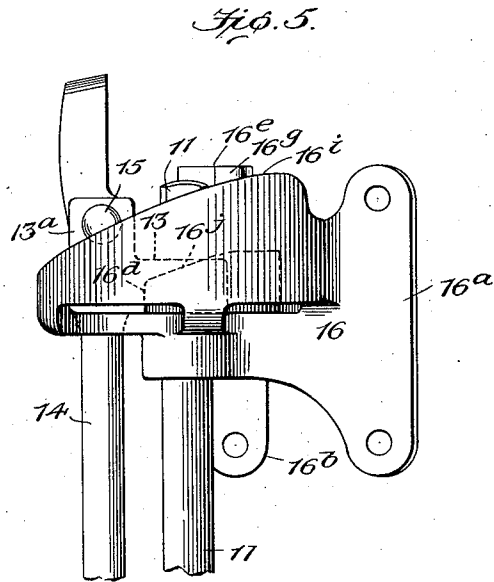
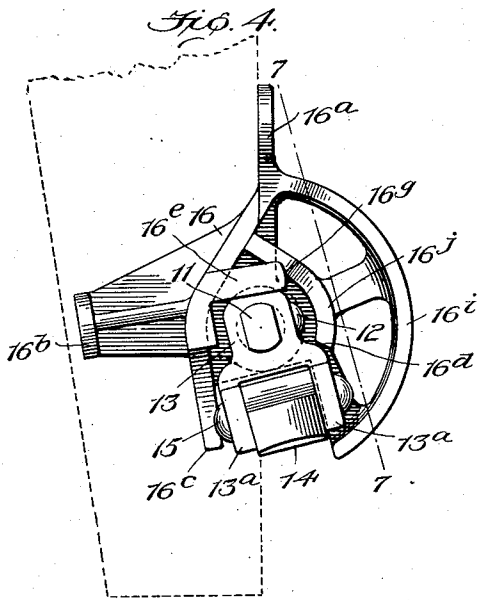
J. F. Ritter

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Witnesses
Edwin L. Bradford
G. F. Ritter

Inventor
William Kelso
By F. W. Ritter, Jr.
Attorney

UNITED STATES PATENT OFFICE.

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

UNCOUPLING DEVICE.

1,021,411.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed May 3, 1910. Serial No. 559,144.

To all whom it may concern:

Be it known that I, WILLIAM KELSO, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Uncoupling Devices; 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 devices for effecting the unlocking of car couplers, and, although not limited to such use, is particularly applicable to equipment in which the coupler is capable of an extended lateral swinging movement in both directions from its normal position in the center of the car.

The principal object of the invention is to provide an improved operating mechanism of simple construction which may be secured to and conveniently operated from the car platform and which, after being actuated by the trainman to unlock the coupler, will automatically return to and remain in a position corresponding to a locked position of the coupler lock.

In the drawings chosen for the purpose of illustrating my invention, the scope whereof is pointed out in the claims—Figure 1 is a plan view of a device embodying my invention, shown in connection with a coupler which is adapted to have a lateral swinging movement; Fig. 2 is a view partly in section and partly in elevation showing the devices illustrated in Fig. 1, the coupler release rigging elements being in elevation, the coupler head being in transverse vertical section and the knuckle of the coupler being omitted; Fig. 3 is a detail plan view showing the relation of the uncoupling rack bar and its operating arm; Fig. 4 is a detail plan view of the uncoupling staff and handle and the uncoupling staff bracket, the handle being shown in its normal position; Figs. 5 and 6 are detail elevations of the devices shown in Fig. 4, the views being taken at right angles to each other, and Fig. 7 is a detail vertical sectional view, taken in the plane of the line 7—7, Fig. 4.

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.

For the purposes of illustration merely, I have shown a laterally swinging coupler and draft gear such as are shown and described in my Patent No. 950,485, dated March 1, 1910; but it is to be understood that my invention is not limited to any such features of construction and that the improved form of coupler release rigging is capable of general application.

In the drawings, 1 is the coupler head and 2 the coupler stem. These parts may, if desired, be connected to the car through a pivot pin 3 which permits the coupler to have a lateral swinging movement toward each side of the car from its normal position.

The elements of the release rigging which are operatively interposed between the coupler lock 4 and the rotatable uncoupling staff may, as shown, consist of a lock engaging bell-crank lever 5 to which is pivotally attached a toothed uncoupling bar 8 which extends transversely of the car. The bell-crank lever 5, which is connected to the coupler head by means of a pivot pin 6, is preferably provided adjacent to its free end with a curved slot which receives a pin 7 that passes through the vertically slotted lugs 4^a which are formed on the coupler lock and receive the said bell-crank lever 5 between them, such a form of movable connection between the coupler lock and its releasing mechanism being especially suitable for couplers provided with vertically movable locks. For the purpose of pivotally connecting the bell-crank lever 5 with the uncoupling rack bar 8, the former may be conveniently formed with a hook 5^a which passes through an eye 8^a formed in the end of the latter.

Movably connected to the bell-crank lever 5, as by means of the hook and eye connection shown, is a transversely extending uncoupling bar 8 which is slidably supported in a bracket 9 secured to the car body, the opening in said bracket being made of sufficient size to permit the uncoupling bar to oscillate when the coupler moves inwardly and outwardly in draft and buffing. The outer end of the bar 8, when such is employed, is preferably formed with a handle 8^b which affords a convenient means whereby the coupler may be unlocked by a train-

man standing at the side of the car, as will be readily understood. Formed on and extending downwardly from the under side of the uncoupling bar are teeth 8° through which the said uncoupling bar is adapted to be moved to an uncoupling position by means of an operating arm 10 that is rigidly secured to the lower end of the vertically extending uncoupling staff 11. As shown more particularly in Fig. 3, the faces of the teeth 8° which engage the operating arm 10 are preferably rounded to insure efficient driving engagement with said operating arm as well as to present a large wearing surface.

Rigidly secured to the flattened upper end of the uncoupling staff 11, as, for example by means of a rivet 12, is a yoke 13 having arms 13^a between and to which an operating handle or lever 14 is pivoted by a pivot pin 15. The upper end of the handle 14 is formed with a slot or aperture 14^a which, when the handle is in a horizontal position, receives the flattened upper end of the uncoupling staff 11 and thus affords a strong and efficient driving connection with said staff, as will be readily understood.

The uncoupling staff 11 is journaled in a bracket 16 so as to be capable not only of a rotary movement, but of movement in the direction of its length as well, said bracket being provided with suitable means, such, for example, as a plurality of perforated flanges 16^a, 16^b, whereby it may be conveniently secured to the car. For the purpose of normally maintaining the operating handle 14 in its pendant position corresponding to the lowest position of the uncoupling staff 11, as well as for the purpose of preventing said uncoupling staff from accidentally rotating, the staff bracket 16 is preferably formed with vertically extending stops 16^c, 16^d, between which the handle supporting yoke 13 normally rests, thus preventing the rotation of the attached uncoupling staff 11 until said staff has been lifted vertically a considerable distance. This vertical movement of the staff 11 is accomplished through the engagement of the upper end of the handle 14 with the top of a post or abutment 16^e which is formed on the bracket 16 opposite the yoke receiving space between the stops 16^c and 16^d, such abutment, when the handle 14 is swung upwardly to its operating position, serving as a fulcrum for said handle to thus cause the staff 11 to be lifted vertically and its flattened upper end to enter the slot or aperture 14^a in the upper end of the handle 14, as will be readily understood upon reference to Fig. 7. The upward movement of the staff 11, and consequently of the handle 14 also, is arrested by the engagement of the yoke 13 with the under face 16^f of the abutment 16^e. When, by means of the operating

handle 14, the yoke 13 and attached uncoupling staff have been lifted sufficiently to permit said yoke to pass above the stop face 16^a, the handle may be turned to move the operating arm 10 fixed to the lower end of the staff 11 into driving engagement with one of the teeth 8° of the uncoupling bar 8, the said uncoupling bar being thus actuated to cause the lock 4 of the coupler to assume an unlocked position. The extent of this uncoupling rotation of the staff 11 may be conveniently limited by making the abutment 16^e of the bracket 16 of such length as will cause the outer end 16^g thereof to engage the face 13^b of the yoke 13 after the desired rotation has been effected.

In order to insure the automatic return of the uncoupling staff 11 and operating handle 14 to their normal positions after the toothed uncoupling bar 8 has been actuated to unlock the coupler, the bracket 16 is preferably provided with a plurality of concentrically arranged, segmental, helical or inclined guides or bearing faces 16^h, 16ⁱ, which are adapted to cooperate with the operating handle 14 and yoke 13, respectively, to cause said parts, under the influence of gravity, to rotate to their normal positions as soon as the trainman drops the operating handle 14 after having turned it to a position corresponding to an unlocked position of the coupler lock 4. As shown in Fig. 2 the upper face 10^a of the operating arm 10 is preferably inclined so that, after actuating the uncoupling bar 8, it may escape from between the teeth 8° of the uncoupling bar and return to normal position while the said bar still remains in uncoupling position. Such a construction is especially desirable when the coupler to which the release rigging is applied is provided with a lock-set for retaining the coupler lock in an unlocked position to permit a subsequent unlocking rotation of the knuckle.

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

1. In an uncoupling mechanism, the combination with a laterally swinging coupler, of a rotatable staff which is movable in the direction of its length, a handle attached to and adapted to rotate said staff, a bracket in which said staff is journaled, said bracket having an inclined face adapted to cause said staff to rotate automatically in one direction, horizontally movable means for effecting an unlocking movement of the lock of the car coupler, and means for operatively connecting said staff and horizontally movable means and operating to actuate said horizontally movable means upon a rotation of said staff following a movement of the latter in its direction of length.

2. In an uncoupling mechanism, the com-

5 bination with a slidable uncoupling bar having teeth upon one side, of a rotatable staff which is movable in the direction of its length, and an operating arm which is secured to said staff and is movable into and out of driving engagement with the teeth of said uncoupling bar by movement of the said staff in its direction of length.

10 3. In an uncoupling mechanism, the combination with a slidable uncoupling bar, of a rotatable staff which is movable lengthwise independently of said uncoupling bar, and means actuated by said staff for engaging the under side of said uncoupling bar and moving it lengthwise in one direction only.

20 4. In an uncoupling mechanism, the combination with a rotatable staff which is movable in the direction of its length, of a handle pivotally connected to said staff, a bracket provided with stops constituting means for preventing accidental rotation of said staff prior to a lengthwise movement thereof, a slidable uncoupling bar which is actuated by said staff and is provided with teeth upon its under side, and means movable with said staff for engaging said teeth to actuate said slidable uncoupling bar.

30 5. In an uncoupling mechanism, the combination with a rotatable staff which is movable in the direction of its length, of a handle pivotally secured to said staff, and a bracket having inclined guide faces which are adapted to engage and cause a rotation of said staff and handle, said bracket also having an abutment adapted to be engaged by said handle when the latter is swung upwardly.

40 6. In an uncoupling mechanism, the combination with a rotatable staff which is movable in the direction of its length, of a handle pivotally secured to said staff, and a bracket in which said staff is journaled, said

bracket having a plurality of segmental inclines one of which is adapted to cause the rotation of said staff and the other of which is adapted to cause the rotation of said handle.

7. In an uncoupling mechanism, the combination with an uncoupling bar provided with downwardly extending teeth having inclined faces, of a rotatable staff which is movable in the direction of its length, and an operating arm secured to said staff, said operating arm being formed with an inclined face and being movable into engagement with the uncoupling bar by a movement of said staff in its direction of length, and said uncoupling bar being actuated by a rotation of said staff.

8. In an uncoupling mechanism, the combination with a rotatable staff which is movable in the direction of its length, of a bracket in which the staff is journaled, a handle pivoted to said staff and adapted to rotate the same, said handle and said bracket cooperating to move said staff lengthwise, a slidable uncoupling bar, and means for effecting a movement of said uncoupling bar, said means being attached to said staff and being movable into engagement with said bar when said staff is moved in the direction of its length.

9. In an uncoupling mechanism, the combination with an uncoupling bar having teeth upon its under side, of a rotatable staff which is movable in the direction of its length, and means secured to said staff and adapted to engage the teeth of said uncoupling bar to actuate the latter.

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

WILLIAM KELSO.

Witnesses:

J. W. HARTLEY,
F. D. ECKER.