

J. KELSO.
CAR COUPLING.

APPLICATION FILED DEC. 10, 1910.

1,002,918.

Patented Sept. 12, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

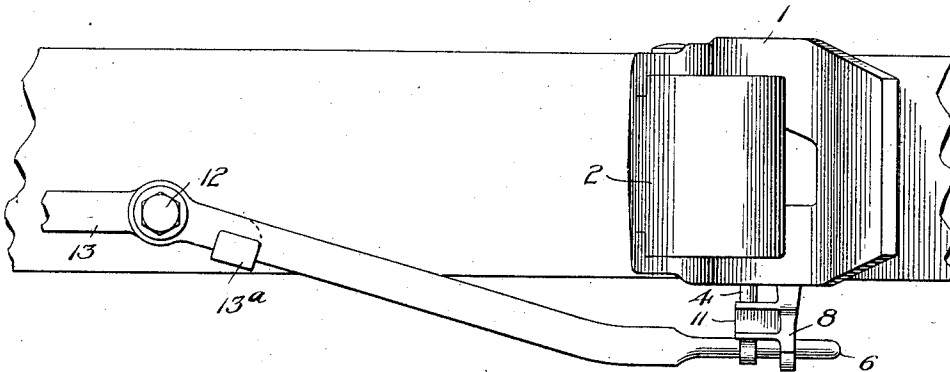


Fig. 2.

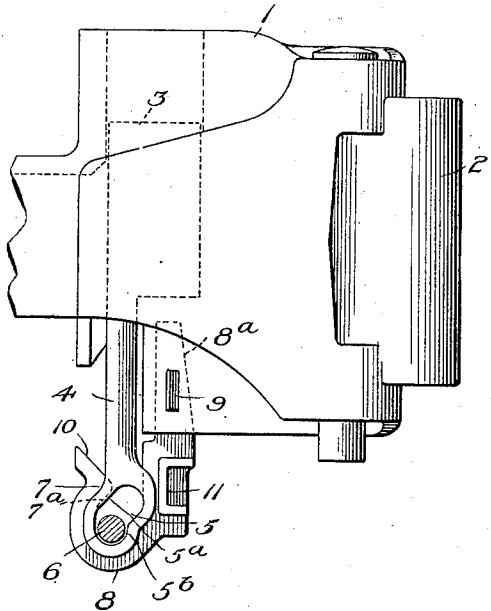
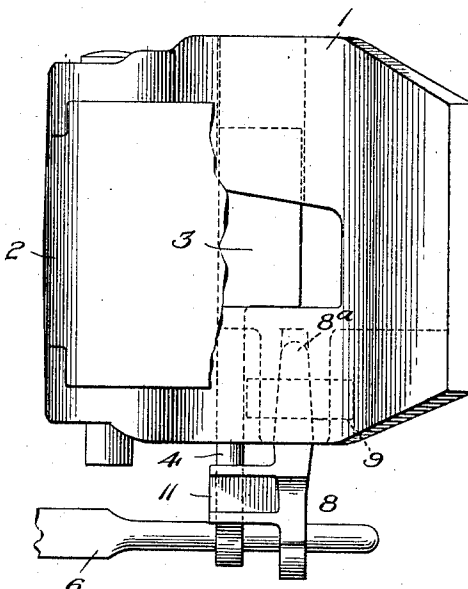


Fig. 3.



Inventor

Joseph Kelso

By Peter + Peter

Attorneys

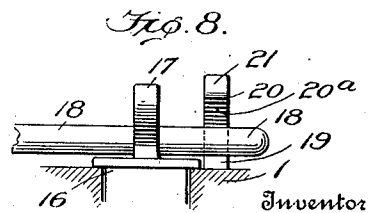
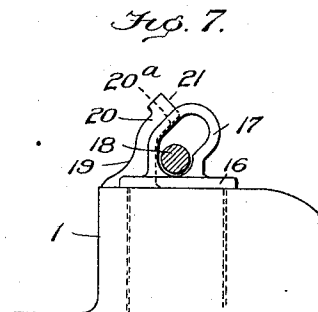
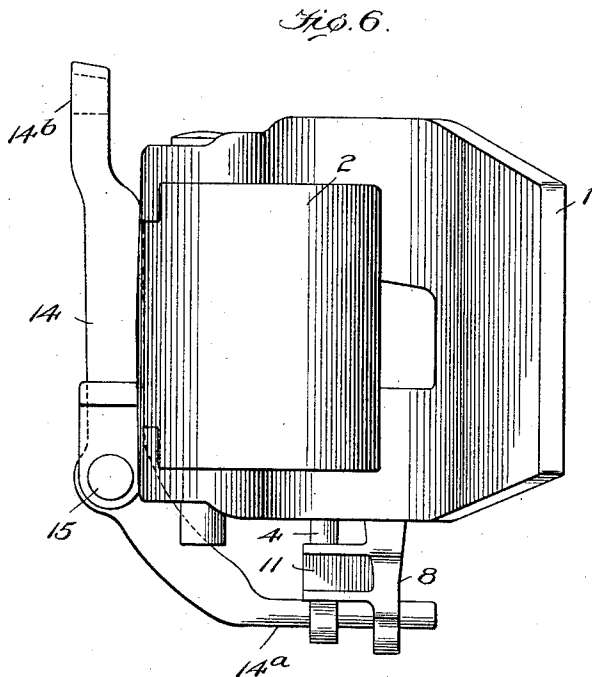
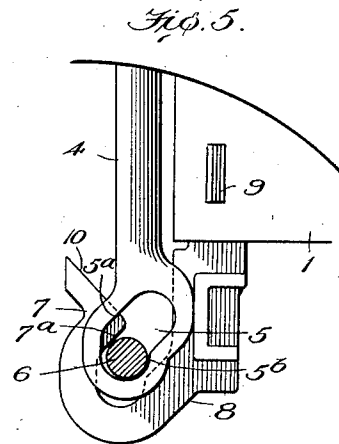
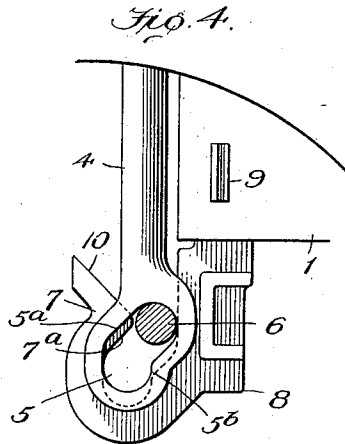
Witnesses
Edwin H. Bradford
M. O. Opre.

J. KELSO.
CAR COUPLING.
APPLICATION FILED DEC. 10, 1910.

1,002,918.

Patented Sept. 12, 1911.

2 SHEETS-SHEET 2.



Witnesses
Edwin L. Bradford
M. E. Dyre.

Joseph L. Kelso
By *Petter & Petter*
his Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH KELSO, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO MCCONWAY & TORLEY COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CAR-COUPLING.

1,002,918.

Specification of Letters Patent.

Patented Sept. 12, 1911.

Application filed December 10, 1910. Serial No. 596,691.

To all whom it may concern:

Be it known that I, JOSEPH 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 Car-Couplers; 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 car couplers and is particularly directed to the production of simple and efficient means for preventing the coupler lock from accidentally moving to an unlocked position.

Generally stated, the invention consists in providing the outside of a coupler head with a lug or hook and in forming the adjacent end of the coupler lock with an inclined slot which is adapted to receive a transversely extending actuating member by which the lock may be moved to an unlocked position, the actuating member extending into and being movable in the slot in the lock and being adapted to occupy a position beneath an overhanging portion of the hook or lug when the parts are in locked position.

In the drawings chosen for the purpose of illustrating my invention, the scope whereof is pointed out in the claims, Figure 1 is a front elevation of a car coupler and uncoupling lever embodying my invention, a portion of the end sill of a car upon which they are mounted being also shown and the positions they occupy when the coupler is locked; Fig. 2 is a side elevation of the coupler illustrated in Fig. 1, the uncoupling lever being shown in section and the parts being in locked position; Fig. 3 is an enlarged front elevation corresponding to Fig. 1, portions of the knuckle and uncoupling lever being broken away; Fig. 4 is a detail view, partly in side elevation and partly in section, illustrating the operation of the uncoupling lever in moving the coupler lock to its unlocked position; Fig. 5 is a detail view corresponding to Fig. 4, but illustrating the positions assumed by the parts when locking the coupler lock against accidental movement to an unlocked position; Fig. 6 is a view in front elevation of a modified

form of my invention in which the uncoupling lever is pivotally mounted on the coupler head; Fig. 7 is a detail view, partly in side elevation and partly in section, showing a modified form of my invention in which the uncoupling lever extends above the coupler instead of beneath it; and Fig. 8 is a front elevation of the construction shown in Fig. 7.

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.

The coupler head 1 and knuckle 2 may be of any suitable construction. In the particular construction illustrated they are shown as designed to cooperate with a vertically movable sliding gravity lock which, in the principal figures of the drawings, is formed as a member 3 having an integrally attached lifting stem 4 which extends downwardly through the lower wall of the coupler head. The lifting stem 4, which is of sufficient length to permit the lock 3 to be brought to an unlocked position by means of an uncoupling bar or lever extending beneath the coupler head, is provided with an aperture 5 which is adapted to receive an actuating member or uncoupling lever 6, the receiving aperture 5 being preferably formed as a slot or eye which is located at the lower end of the lifting stem 4 and is angular in form. As shown more particularly in Figs. 2 and 5, the uncoupling lever 6 rests in the lower end of the slot 5 when the parts are in normal or locked position, but when, as shown in Fig. 4, the lock 3 is being brought to an unlocked position, the uncoupling member or uncoupling lever 6 occupies a position at the upper end of its receiving aperture 5. In passing from its lowermost to its uppermost position in the slot 5 the uncoupling member or lever 6 passes out from beneath the overhanging portion 7 of the lug 8, being guided from beneath such overhanging portion by the upper inclined wall 5^a of the slot 5. If desired, the under or lower face of the overhanging portion 7 may also be inclined, as at 7^a, so as to be in the same plane with the inclined wall 5^a of the slot 5 when the parts

are in locked position as shown in Fig. 2, said incline 7^a thereby likewise serving to guide or direct the uncoupling lever 6 out from beneath the overhanging portion 7 of the lug 8.

For convenience of repair the lug 8 is preferably formed separate from the coupler head and is attached thereto by suitable means, such, for example, as a split key or cotter 9 which passes through the coupler head 1 and through an upwardly extending tang 8^a that is formed on the lug member 8 and is adapted to fit into a corresponding socket formed in the coupler head, as indicated in dotted lines in Figs. 2 and 3.

For the purpose of forming a support for the uncoupling lever 6 which will prevent its undue vibration or oscillation when the coupler is locked and the car to which it is attached is in motion, the lug 8 is, as shown, preferably formed as a hook which is adapted to receive the outer end of the uncoupling lever; and in order to guide the uncoupling lever into its proper position in the hook when the lever is released and is permitted to drop after having been actuated to unlock the coupler, the upper outer face 10 of the lug member 8 is inclined outwardly and upwardly at an angle to the direction of movement of the lock to form a downwardly converging entrance to the bight of the hook. The inclined guiding face 10, it will be understood, is made of sufficient length to insure its engagement with the downwardly moving uncoupling lever at the extreme limit of oscillation of the latter.

Preferably formed upon and integral with the lug member 8 and projecting outwardly therefrom on the side opposite the portion 7 thereof which overhangs the uncoupling lever 6 is a stop or abutment 11 which extends transversely across the stem 4 of the coupler lock in proximity thereto. This stop or abutment prevents the lower end of the lifting stem 4 from moving away from the overhanging portion 7 of the lug 8 when the lock 3 accidentally attempts to move toward its unlocked position, the result being that upon such an accidental movement the uncoupling lever 6 is wedged between the overhanging portion 7 of the lug and the wall 5^b of the receiving aperture 5 of the lifting stem and the unlocking movement of the lock 3 is restrained.

In the construction shown in Figs. 1 to 5, inclusive, the uncoupling lever 6 is mounted upon the car body on a pivot bolt 12 and is actuated by means of an operating lever 13 which is also mounted on the pivot bolt 12 and extends beneath the lever 6 as at 13^a. This is a form of coupler release rigging which is well known in the art and commonly used.

In Fig. 6 is shown a construction in which

the uncoupling lever is a bell-crank 14 that is pivotally mounted upon the coupler head by means of a pivot bolt 15. The lower arm 14^a of the bell crank lever corresponds in form, function and arrangement to that portion of the uncoupling lever 6 which cooperates with the lifting stem 4 of the lock and the lug member 8 of the coupler, as heretofore described. By the application of force in the proper direction to the upper end 14^b of the bell-crank lever, the lock 3 of the coupler may be moved to unlocked position, as will be readily understood. With the exceptions noted, the construction illustrated in Fig. 6 is quite the same as that illustrated in the preceding figures of the drawings.

Figs. 7 and 8 illustrate the applicability of my invention to a construction in which the uncoupling lever is outside of the coupler and extends above instead of beneath it. In this form of construction the upper end of the coupler lock 16 is provided with a lifting member in the form of a slotted eye 17 which is adapted to receive the uncoupling lever 18, said slot being of the same form as the receiving aperture 5 in the lower end of the lifting stem and the uncoupling member 18 extending therethrough in the same manner as shown in Figs. 1 to 6, inclusive. The uncoupling member 18 may be conveniently fashioned either in the form of the uncoupling lever 6 or the bell-crank uncoupling lever 14. Formed upon the outside of the coupler head and projecting upwardly adjacent to the lock opening therein is a lug 19 the upper portion 20 of which overhangs the uncoupling member 18 when the latter is in its normal position corresponding to a locked position of the coupler parts. The under face of the overhanging portion 20 of the lug is preferably inclined, as at 20^a, and so located as to guide the uncoupling member 18 out from beneath the overhanging portion 20, as heretofore explained of the corresponding incline 7^a of the lug 8. The upper end of the lug 19 may be, and preferably is, formed with a face 21 which is inclined with respect to the direction of movement of the coupler lock, such inclined face serving to direct the uncoupling lever to its proper position when the lever is released after having been operated to move the coupler lock to unlocked position.

The construction being substantially such as hereinbefore pointed out, the operation of the device will be as follows. Referring to Figs. 1 to 5, inclusive, and assuming the parts to be in locked position as shown in Figs. 1, 2 and 3, the uncoupling lever 6, when caused to perform an unlocking movement by the lever 13, moves upwardly in the slot 5 of the lock stem 4 until it contacts the inclined guiding faces 5^a and 7^a of the stem 4

and lug-8, respectively. These guiding faces shift the uncoupling lever 6 transversely as it continues its uncoupling movement, thus directing it from beneath the overhanging portion 7 of the lug 8. When the uncoupling lever has moved outwardly from beneath the overhanging portion 7 of the lug 8 it is, as illustrated in Fig. 4, free to execute the extended unlocking movement required to bring the lock 3 to unlocked position. If the coupler is not provided with any so-called lock-set device for temporarily retaining the coupler lock in unlocked position, the uncoupling lever 6 and lock 3 return to the locked position shown in Figs. 1, 2 and 3 when the uncoupling lever is released and permitted to fall after having brought the lock to an unlocked position, the uncoupling lever being, if necessary, directed to proper position by the inclined face 10 of the lug 8. When the parts are in locked or coupled position, if the lock 3 accidentally attempts to move to unlocked position the uncoupling lever 6 is carried upwardly by the lifting stem 4 of the lock until it engages the under face 7^a of the overhanging portion 7 of the lug 8, whereupon, as the stem 4 is prevented by the stop or abutment 11 from moving away from the overhanging portion 7 sufficiently far to permit the uncoupling lever 6 to pass out from beneath such overhanging portion of the lug 8, the unlocking movement of the lock 3 is arrested. The position of the parts when operating to lock the coupler lock 3 in locked position is illustrated in Fig. 5.

The operation of the modified forms of my invention illustrated in Figs. 6, 7 and 8 is substantially identical with the operation of the devices shown in the principal figures of the drawings.

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

1. In a car coupler, the combination with a coupler head, of a knuckle, a vertically slidable lock for said knuckle, a lug upon the

under side of said coupler head, and an uncoupling lever, said lock having a stem which extends downwardly outside the coupler head and is provided with an aperture to receive the uncoupling lever, and said lug being formed as a hook having an overhanging portion adapted to engage said uncoupling lever and having an abutment adapted to engage said stem.

2. In a car coupler, the combination with a coupler head, of a knuckle, a vertically movable lock for said knuckle, a lug upon the under side of said coupler head, and an uncoupling lever which engages said lock and is adapted to engage said lug to retain the lock in locked position, said lock having a stem which extends downwardly outside the coupler head and is provided with an angular slot in which the uncoupling lever is movable, and said lug being formed as a hook having an overhanging portion adapted to engage said uncoupling lever and having its upper outer face inclined to direct said uncoupling lever to its seat within said hook.

3. In a car coupler, the combination with a coupler head, of a knuckle, a lock for said knuckle having a portion projecting outside the coupler head, a lug upon the outside of the coupler head, and a pivoted vertically movable uncoupling member which engages the projecting portion of said lock and is adapted to engage said lug to retain the lock in locked position, the projecting portion of said lock being formed with an angular slot through which the uncoupling member passes and said lug having an inclined portion which normally extends over said uncoupling member to retain the lock in locked position.

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

JOSEPH KELSO.

Witnesses:

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