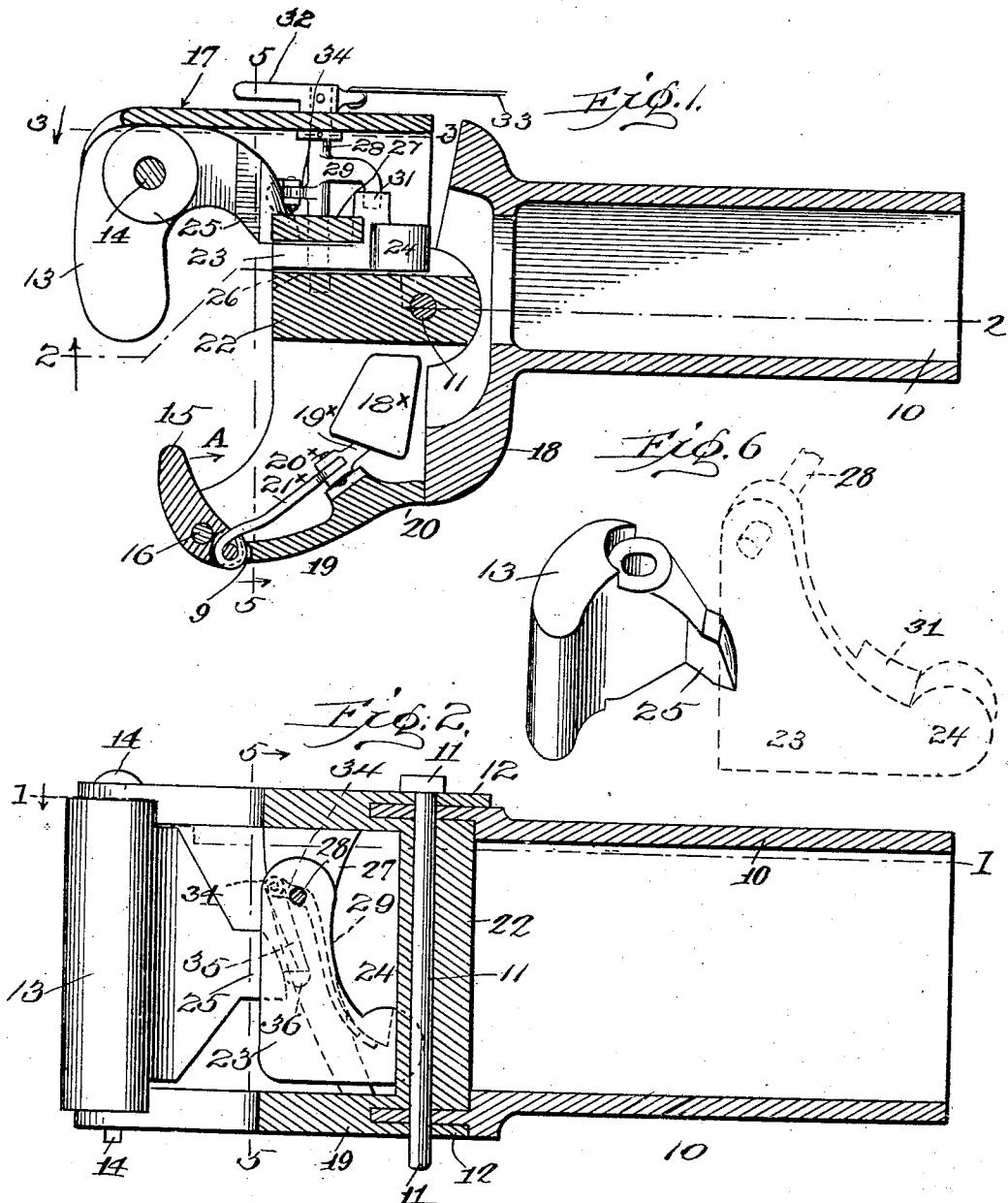


J. V. MUNGER.
CAR COUPLING.
APPLICATION FILED JAN. 10, 1908.

948,400.

Patented Feb. 8, 1910.
2 SHEETS—SHEET 1.



Inventor

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2 SHEETS—SHEET 2.

Fig. 3.

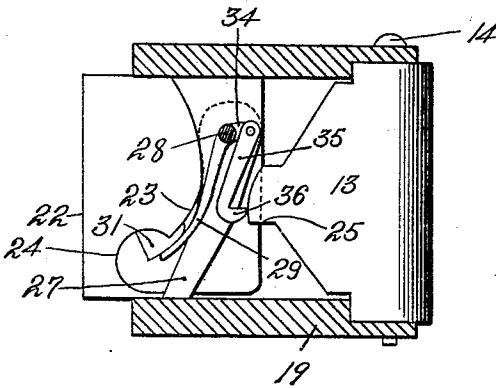


Fig. 4.

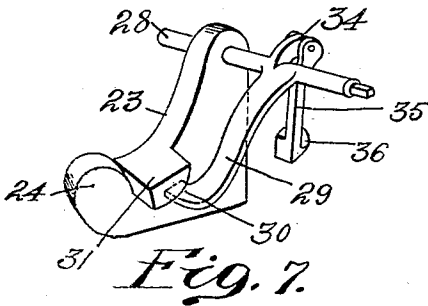
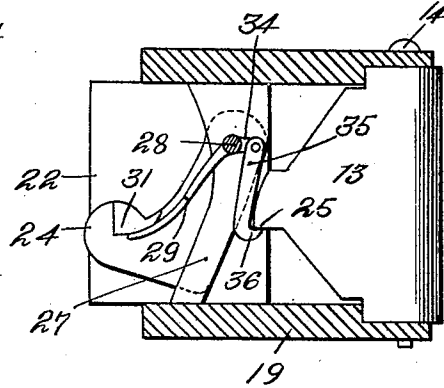


Fig. 7.

Fig. 8.

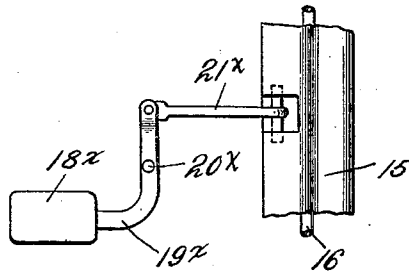
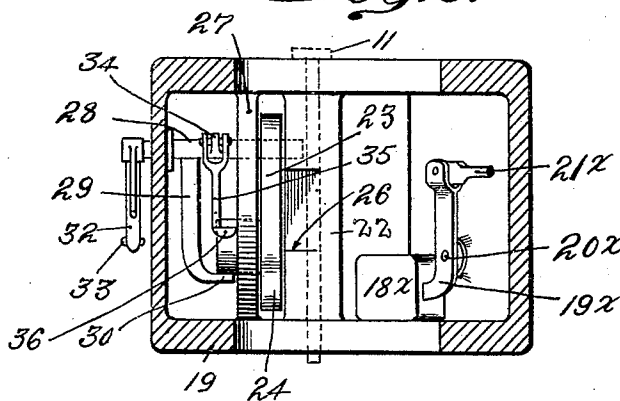


Fig. 5.



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James V. Munger Inventor
By his Attorney
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UNITED STATES PATENT OFFICE.

JAMES V. MUNGER, OF PORTLAND, NEW YORK, ASSIGNOR TO GEORGE H. DUNHAM, OF WARREN, PENNSYLVANIA.

CAR-COUPLING.

948,400.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed January 10, 1908. Serial No. 410,267.

To all whom it may concern:

Be it known that I, JAMES V. MUNGER, a citizen of the United States, residing at Portland, in the county of Chautauqua and State of New York, 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 improvements in car-couplers and particularly to improvements in the means for locking the knuckles or jaws of car-couplers; and an object of my invention is to provide a car-coupler with knuckle-locking mechanism which will be simple in construction, comparatively cheap in manufacture and most efficient, reliable and durable in use.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, Figure 1 is a horizontal section, the cutting plane being defined by the line 1—1 of Fig. 2; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 1, the knuckle being shown locked; Fig. 4 is a section taken on the line 3—3 of Fig. 1, the knuckle being shown unlocked; Fig. 5 is a section taken on the line 5—5 of Figs. 1 and 2, the knuckle being omitted; Fig. 6 is a perspective view of the knuckle, the guard-plate being shown in dotted lines; Fig. 7 is a perspective view of the guard-plate and its operating mechanism and Fig. 8 is a detail of the mechanism for moving the locking guard.

The coupler-head 20 is two-part, consisting of the base-member 18 and the coupling-member 19 attached to the latter by means of the connecting-pin 11 upon which the coupling-member 19 is free to swing relatively to the drawbar 10. Integral with the latter is the base-member 18 (Fig. 1). The rear portion of the coupling-member 19 is formed at top and bottom with rearwardly-extending flanges or tongues 12 by which the parts thereunder are protected from snow, ice and the like. In front and at one side the coupling-member 19 carries a hinge-

pin 14 upon which swings the knuckle 13; and opposite the latter is mounted free to swing on the hinge-pin 16 a locking-guard 15. The coupling-member 19 is provided with a centrally-disposed longitudinal partition 22 through which the connecting-pin 11 passes and by which the latter is protected.

Journalled in the partition 22 and the cheek 17 of the coupling-member 19 is a rock-shaft 28 to the outer end of which is attached a crank-arm 32 which may, if desired, be operated by pulling the cable 33. The rock-shaft 28 passes through the post 27 between which and the partition 22 lies a rotary guard-plate 23 which is substantially triangular in shape and is free to swing idly or loosely upon the rock shaft 28. The rear and lower corner 24 of the rotary guard-plate 23 is somewhat enlarged and is formed with a lip 31 under which is free to engage the finger 30 of a rocker-arm 29 formed integral with the rock-shaft 28. The latter is further formed with a lug 34 to which is pivoted the upper end of a detent or dog 35 the lower end of which is formed with a toe 36.

The inner end of the knuckle 13 is formed with a cam-lug 25 and the partition 22 at its front end is formed with a recess or notch 26 so shaped as to allow the cam-lug 25 to pass freely therethrough.

To unlock the knuckle 13 and thereby to permit its outer end to swing outwardly into uncoupled position, the rock-shaft 28 is rocked by means of the crank-arm 32, whereby the arm 29 is swung upwardly and brings the finger 30 under the lip 31 of the rotary or swinging guard-plate 23. The latter is thus swung inwardly and upwardly on the rock-shaft 28 as an axis or pivotal support, whereby an unobstructed path is provided for the passage of the cam-lug 25 through the notch or recess 26 in the partition 22. The knuckle 13 having passed from coupled to uncoupled position and the cam-lug 25 having, therefore, passed to the side of the partition opposite from that on which lies the guard-plate 23, the latter is allowed to fall by its own weight. When the knuckle 13 passes from uncoupled to coupled posi-

tion, the cam-lug 25 passes through the recess 26 in the opposite direction and pushes the guard-plate inwardly and out of its path. The cam-lug 25 having passed, the guard-plate 23 falls again by its own weight and prevents the return of the cam-lug, whereby the knuckle 13 is locked in coupled position.

The knuckle being in coupled position (Fig. 3), it is sometimes desirable to raise the guard-plate 23 to releasing position and to maintain it there, until the knuckle 13 is swung to uncoupled position by the draft or tractive effort of the engine. The crank-arm 32 is turned, as before, thereby raising the guard-plate 23 and lowering the dog 35. The turning movement of the crank-arm 32 is continued, until the toe 36 of the pivoted dog 35 engages under the cam-lug 25 (Fig. 4), and this interlocking of the dog 35 with the cam-lug 25 serves to hold the guard-plate 23 raised or in releasing position, until the knuckle 13, by moving from coupled to uncoupled position removes the cam-lug 25 from its position as a catch for the toe 36 of the dog 35, whereupon the guard-plate 23 falls to locking position.

It will be obvious that the lock provided by the guard-plate 23 is reliable and readily manipulated and that the construction is simple and not liable to get out of order or need repair.

In Fig. 8 is shown mechanism by which the locking-guard 15 is thrown outwardly to its normal or locking position. The arm 19^x carries at one end a weight 18^x and at its other end is pivotally fastened with a link 21^x by which the locking-guard 15 is attached to the arm 19^x. The latter is free to swing on the pivot 20^x. When the locking-guard 15 is swung inwardly or in the direction of the arrow A of Fig. 1, the weight 18^x is raised. When the pressure upon the locking-guard 15 is removed, the weight 18^x falls and thereby throws outwardly to locking position the locking-guard 15. The outward travel of the latter is limited by its shoulder 9.

I claim:

1. The combination of a locking device pivoted to swing in a vertical plane; a knuckle pivoted adjacent to the lock and provided with a lug adapted to engage said device and thereby hold the knuckle in coupled position; a swinging member adapted to move the said device out of engagement with said lug; and a swinging detent adapted to engage said lug and thereby to hold said device out of locking position.

2. The combination of a locking device adapted to swing in a vertical plane; a knuckle pivoted adjacent to said device and

provided with a lug adapted to push said device aside and swing past the same into coupled position and to coöperate with said device to maintain said knuckle in coupled position; a swinging arm adapted to engage and move said device out of locking position; and a detent attached to said arm and adapted to engage said lug and thereby to maintain said device out of locking position.

3. The combination of a coupling-member provided with a partition; a knuckle formed with a lug and pivoted to swing with said lug in juxtaposition to said partition; a locking device pivoted to swing between said lug and partition; an arm adapted to swing said device; means operable from without said coupling-member to actuate said arm; and means attached to said arm and adapted to engage said lug.

4. The combination with a coupling member and a knuckle pivotally mounted therein and formed with a lug; of a shaft journaled within and extending without said coupling member; a locking device pivoted to swing into and out of the path of travel of said lug; a swinging arm which is carried by said shaft and which when swung thereby in one direction, forces said locking device out of the path of travel of said lug; and a retaining device which engages said lug and by said engagement therewith retains said locking device out of the path of travel of said lug.

5. The combination with a coupling-member and a knuckle mounted free to swing therein; of a rock-shaft journaled in said coupling-member; a locking device which is adapted to swing idly upon said rock-shaft as a pivotal support and thereby to move into and out of the path of said knuckle to lock and release the same; and a rocker-arm carried by said rock-shaft and adapted to engage and move said device out of the path of said knuckle, when said rock-shaft is turned.

6. The combination with a coupling-member and a knuckle mounted free to swing therein; of a rock-shaft journaled in said coupling-member; a locking device mounted free to swing idly upon said rock-shaft as a pivotal support and thereby to move into and out of the path of said knuckle; a rocker-arm carried by said rock-shaft and adapted to engage and to swing said device out of the path of said knuckle; and a dog carried by said rock-shaft and adapted to engage said knuckle, whereby said locking device is held in releasing position.

7. The combination with a coupling-member and a knuckle mounted free to swing therein and formed with a cam-lug; of a rock-shaft journaled in said coupling-member

ber; a locking device mounted free to swing
idly upon said rock-shaft as a pivotal sup-
port and thereby to move into and out of
the path of said cam-lug, the latter in pass-
5 ing said device in one direction being
adapted to push the same out of its path;
and a rocker-arm carried by said rock-shaft
and adapted to engage and to swing said
device out of the path of said lug, when the
latter is moving in the opposite direction. 10

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

JAMES V. MUNGER.

Witnesses:

JOHN L. FLETCHER,
L. L. MORRILL.