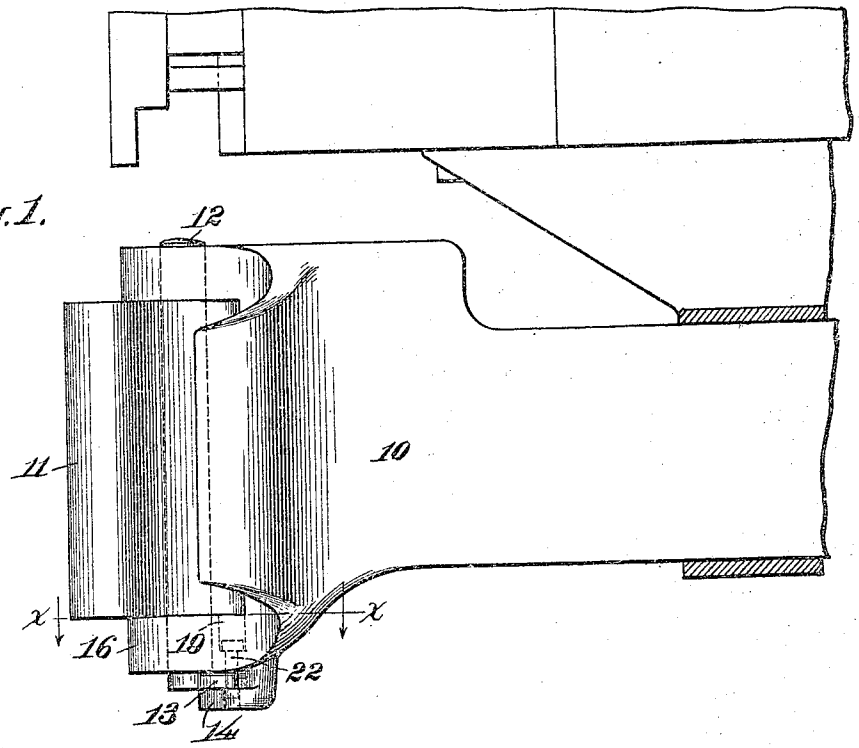
E. P. KINNE.

COUPLING KNUCKLE PIN RETAINER.

APPLICATION FILED JAN. 31, 1908.

949,772. Patented Feb. 22, 1910.

Fig. 1.



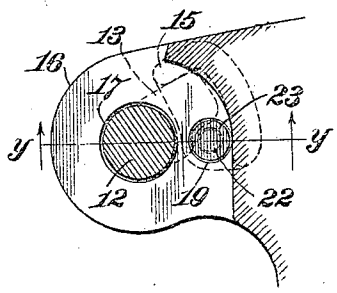


Fig. 2.

Fig. 3.

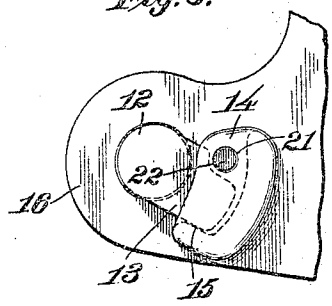
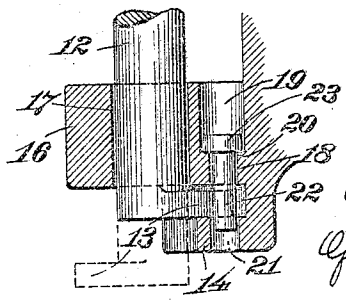


Fig. 4.



Witnesses;

H. S. Austin

Walter M. Fuller

Inventor

Edmund P. Kinne

Offield Towle & Linthicum

Attys

UNITED STATES PATENT OFFICE.

EDMUND P. KINNE, OF ALLIANCE, OHIO, ASSIGNOR TO AMERICAN STEEL FOUNDRIES, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

COUPLING-KNUCKLE-PIN RETAINER.

949,772. Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed January 31, 1908. Serial No. 413,601.

To all whom it may concern:

Be it known that I, EDMUND P. KINNE, a citizen of the United States, residing at Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Coupler-Knuckle-Pin Retainers, of which the following is a specification.

In the couplers of passenger cars, owing to the location and position of the platforms and vestibules, it is necessary to insert the knuckle pivot pins from the bottom of the couplers, and to provide means for holding the pins in place which will prevent their falling out of operative position and will also prevent their working up out of place. Owing to the fact that such a coupler is subjected to much jolting and jarring and frequently receives severe blows, it is desirable to make the pin retaining means as simple as possible and of as few parts, especially removable parts, as is feasible.

Cotter-pins and the like are objectionable because they are so readily shaken out or taken out by unauthorized persons, and it is the object of my invention to make the construction such that the pivot-pin will be held in place reliably but detachably, and at the same time offering no temptation for tampering.

In my improved device, the knuckle-pin is supplied at its lower end with a lateral extension or lug, which, when the pin is in proper position, may be turned so as to bring it between the bottom wall of the coupler or draw-head and a shelf or ledge cast integral therewith. By the coöperation of the transverse extension with these parts movement of the pin either up or down is effectually prevented. To prevent the pin from turning so that the extension would leave this position, I provide the shelf or ledge with a stop, preferably integral therewith, to limit rotation of the pin in one direction, and to preclude turning thereof in the opposite direction I equip the coupler-head with a locking-pin slidable vertically in an aperture or recess therein, the locking-pin in its lowermost position lying in front of the opposite edge of the extension, thereby preventing turning of the knuckle-pin and preventing the extension from leaving the shelf or ledge. The aperture in the draw-head accommodating the locking-pin is desirably shouldered, and the pin is preferably supplied with a head, which, by resting on the shoulder, limits the descent of the locking-pin. The shelf or ledge has an aperture or hole therethrough in alinement with the locking-pin and receives the lower end of the latter when the pin is in operative position.

To remove the knuckle-pin from the knuckle it is merely necessary to raise or lift the locking-pin by inserting a nail, pencil, or the like in the hole of the shelf or ledge, and push the locking-pin up so as to unlock the extension. Then the knuckle-pin and its integral extension or lug is turned to free the latter from the shelf in which new position the knuckle-pin may be readily withdrawn downwardly. As long as the knuckle is in place it is impossible to remove the locking-pin, since the upper end of the aperture within which it fits is closed by the knuckle. This locking pin, being out of sight to the casual observer, and being impossible of removal or withdrawal without dismantling the coupler, it is apparent that there are no parts to my device which could be readily lost or which would be ordinarily removed by any one.

I have illustrated a neat and desirable embodiment of my invention on the accompanying drawings which form a part of this specification, and to which reference will be made in connection with the following detailed description.

On the drawings—Figure 1 is a side elevation of my improved coupler showing a portion of the car to which it is attached; Fig. 2 is a horizontal section on line *x*—*x* of Fig. 1, as viewed in the direction indicated by the arrows; Fig. 3 is a bottom plan view of a portion of the coupler, the knuckle being omitted; and Fig. 4 is a section on line *y*—*y* of Fig. 2, as viewed in the direction indicated by the arrows.

The draw or coupler head 10 and the knuckle 11 may be of the usual and ordinary construction, while the pin 12 which holds the knuckle in place is supplied at its lower end with an integral lateral extension or lug 13, which, when the pin 12 is in proper position, is located just below the lower wall of the coupler-head, it being understood that the knuckle-pin 12 is placed in position from the lower side of the coupler, this operation being required by the presence of the platform and vestibule above the coupler, as is

indicated in Fig. 1. Cast on the bottom wall of the coupler-head is a shelf or ledge 14 spaced away from the lower wall of the coupler an amount approximately equal to the thickness of the extension or lug 13. This shelf is supplied at one end with a stop-wall 15 which limits turning of the knuckle-pin and extension in one direction, as is clearly indicated on Figs. 2 and 3. The lower arm 16 of the coupler-head to which the knuckle 11 is pivoted is supplied, adjacent to its aperture 17 which receives the knuckle pin, with another similar aperture 18, the top portion of which is enlarged at 19, a shoulder 20 occurring at the junction of the two parts. On Figs. 2 and 3 it is shown that this aperture is above one end of the shelf or ledge 14 and in Fig. 4 it is clearly indicated that the latter is apertured or provided with a hole 21 of sufficient size and in alinement with the aperture 18 so as to receive the lower end of a locking-pin 22 placed in the aperture 18 and equipped with a head 23 in the enlargement 19, this head by coöperation with the shoulder 20 limiting the descent of the pin. The length of this enlargement 19 is such that the pin may be raised sufficiently so that the whole pin will be received in the apertures 18 and 19. The knuckle proper ordinarily fits over the top of the recess or aperture 19, thereby preventing the locking-pin from being unintentionally removed and precluding the possibility of its becoming lost.

In order to lock the knuckle-pin in position and prevent its descent or undue elevation, it is inserted from the bottom through the apertures of the coupler-head arms and the knuckle and is then turned so as to bring the extension 13 between the bottom wall of the coupler and the shelf or ledge 14, its turning being limited by the stop-wall 15 of the ledge. The locking-pin is then allowed to descend and drops far enough, as indicated in Fig. 4, to overlap the opposite end of the extension, whereby turning of the knuckle-pin and extension in either direction is effectually prevented. It cannot work up because the extension by its coöperation with the bottom of the coupler-head prevents such action. Neither can it fall out of place because the shelf or ledge prevents its descent. In order, however, to take out the pin and knuckle, the locking-pin 22 is raised by a pencil, nail, or other convenient implement inserted in the hole 21, and then the knuckle-pin is turned so as to free the extension 13 from the ledge. As is obvious, the pin is then in such position that it may be pulled out downwardly.

Although I have described in detail the various features of my improved construction, it is to be noted that my invention is not limited and restricted to the precise construction and arrangement of parts indicated, but that these may be varied to a considerable extent without departure from the substance or essence of my invention and without sacrificing any of its benefits and advantages.

Although I have described and shown a construction in which the knuckle-pin is turned in order to render its retaining means operative, it will be apparent to those skilled in this art that the essential feature of its operation is the relative turning of the knuckle-pin and ledge, which suggests a variety of modifications of the construction set forth in this application, since it is quite immaterial which part is turned to bring the shelf and extension above one another.

I claim:

1. In a car coupler, the combination of a coupler-head, a knuckle, a knuckle-pin having a lateral extension at its lower end, and a shelf on said coupler-head adapted to support said knuckle-pin by means of said extension resting thereon, said extension being brought over said shelf by turning said knuckle-pin after it has been placed in operative position in the coupler-head and knuckle, substantially as described.

2. In a car coupler, the combination of a coupler-head, a knuckle, a knuckle-pin having a lateral extension at its lower end, a shelf on said coupler-head adapted to support said knuckle-pin by means of said extension resting thereon, said extension being brought over said shelf by turning said knuckle-pin after it has been placed in operative position in the coupler-head and knuckle, and means to prevent said knuckle-pin from turning to free said extension from the shelf, substantially as described.

3. In a car-coupler, the combination of a coupler-head, a knuckle, a knuckle-pin having a lateral extension at its lower end, a shelf on said coupler-head below and adjacent to said head and adapted to support said knuckle-pin by means of said extension resting thereon, said extension being brought between said shelf and coupler-head by turning said knuckle-pin after it has been placed in operative position in the coupler-head and knuckle, said extension by cooperation with the coupler-head and shelf being prevented from working up or falling out of place, and means to prevent said extension from turning from its normal position over said shelf or ledge, substantially as described.

4. In a car coupler, the combination of a coupler-head, a knuckle, a knuckle-pin having a lateral extension at its lower end, a shelf integral with said head and having an abutment and adapted to support said knuckle-pin by means of said extension resting thereon, said extension being brought over said shelf by turning said knuckle-pin

after it has been placed in operative position in the coupler-head and knuckle, and means to prevent said extension from turning in one direction, the abutment precluding turning of the same in the opposite direction, substantially as described.

5. In a car coupler, the combination of a coupler-head, a knuckle, a knuckle-pin having a lateral extension at its lower end, a shelf on said coupler-head adapted to support said knuckle-pin by means of said extension resting thereon, said extension being brought over said shelf by turning said knuckle-pin after it has been placed in operative position in the coupler-head and knuckle, an abutment to limit turning of said extension in one direction when it is over said shelf, and a sliding pin to prevent turning of the extension in the opposite direction, substantially as described.

6. In a car coupler, the combination of a coupler-head, a knuckle, a knuckle-pin having a lateral extension at its lower end, a shelf on said coupler-head adapted to support said knuckle-pin by means of said extension resting thereon, said extension being brought over said shelf by turning said knuckle-pin after it has been placed in operative position in the coupler-head and knuckle, means to prevent said extension from turning in one direction when it is in position over said shelf, said coupler-head having a shouldered aperture, and a headed sliding locking-pin in said aperture and adapted to project beneath the same to lock said extension from turning in the opposite direction, substantially as described.

EDMUND P. KINNE.

Witnesses:
E. E. MILLER,
JOHN B. FREER.