

E. P. KINNE.
COUPLING.
APPLICATION FILED MAR. 12, 1917.

1,323,291.

Patented Dec. 2, 1919.

3 SHEETS—SHEET 1.

Fig. 4.

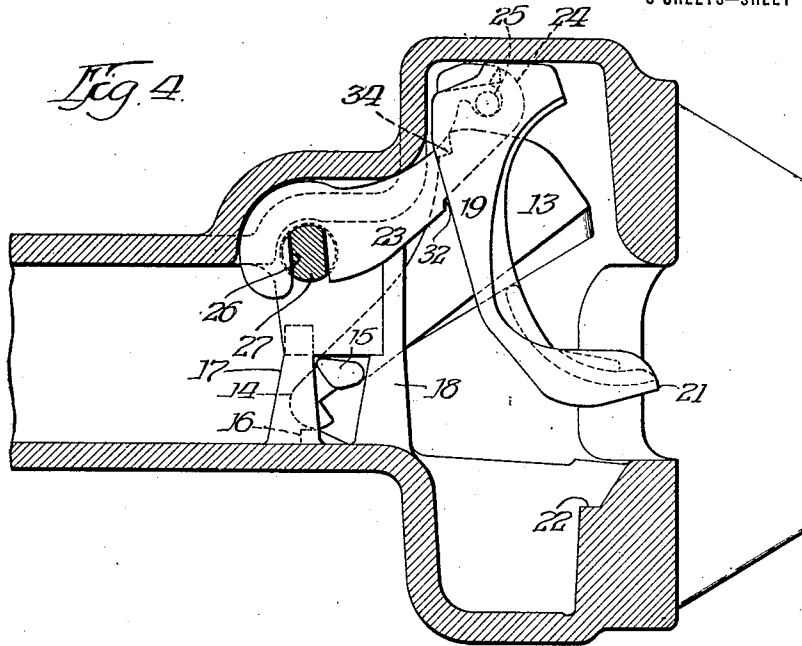
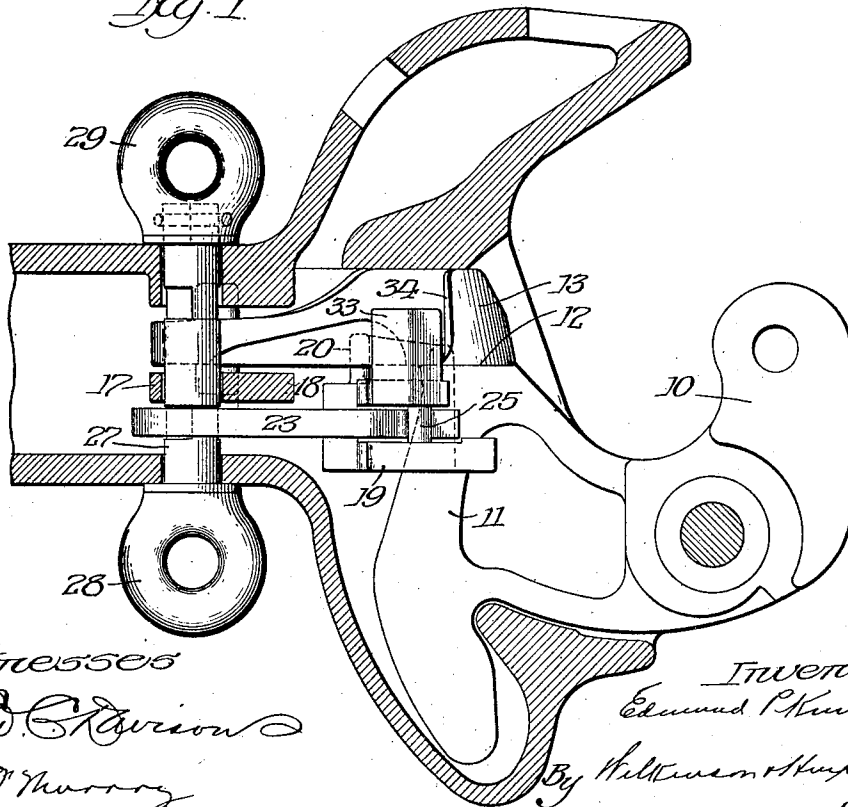


Fig. 1.



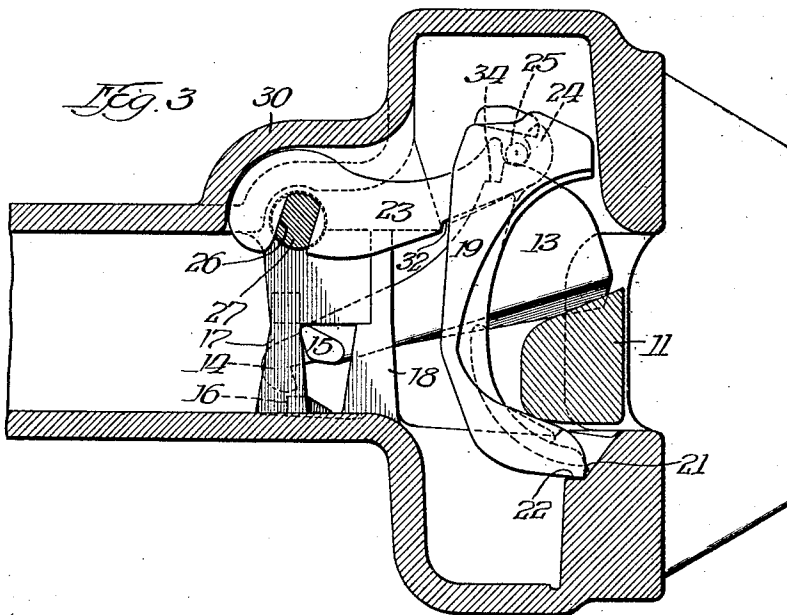
Witnesses
Ed. Karrison
G. J. Murray

Inventor
Edmund P. Kinne
By H. H. Kinnison & H. H. Kinnison
Attys.

COUPLING.

1,323,291.

3 SHEETS--SHEET 2.



Ed. C. Hurson

Inventor
Edmund P. Kune

By Helmerson & Hurley
Attys.

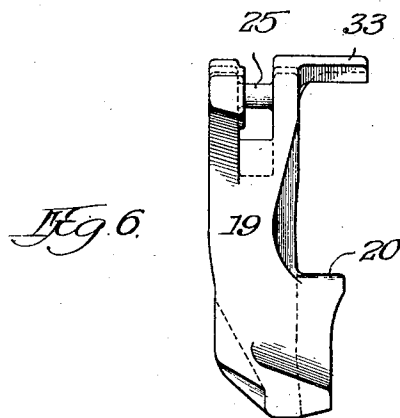
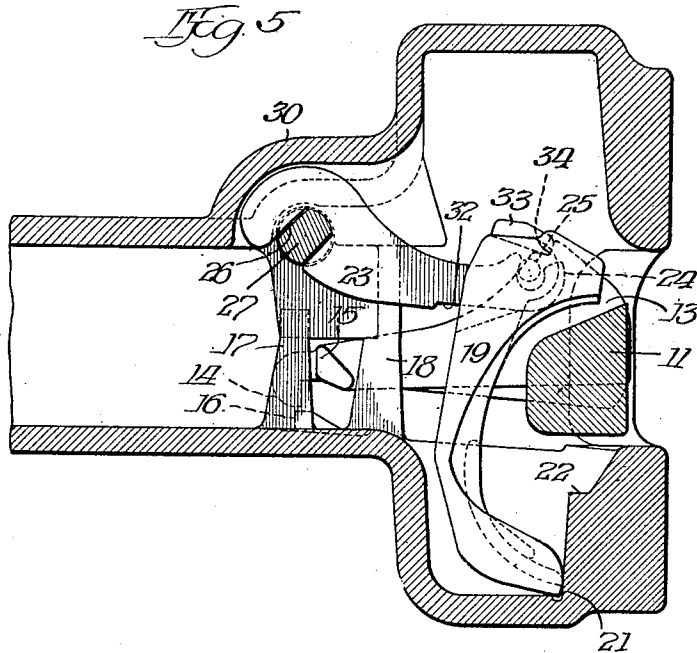
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3 SHEETS—SHEET 3.



Witnesses:
Ed. L. Lavin
W. T. Murray

Inventor
Edmund P. Kinne
By *Helkman & Skuply*
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.

1,323,291.

Specification of Letters Patent.

Patented Dec. 2, 1919.

Application filed March 12, 1917. Serial No. 154,128.

To all whom it may concern:

Be it known that I, EDMUND P. KINNE, a citizen of the United States, and resident of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Couplings, of which the following is a specification.

My invention relates to car couplers, and has particular reference to an improved operating device for the coupler shown in Patent No. 905,078, November 24, 1908.

An object in the present device is to provide suitable operating means for couplers having locks of the vertically moving, gravity actuated type, the parts being so arranged as to avoid interference with train lines and other attachments and which shall combine the advantages of both the bottom and top operated types. The fundamental objection to both of the last mentioned types is in that special means must be provided for actuation from the side of the car, such means including various links and levers, with the object of avoiding accidental unlocking of the coupler during its normal lateral oscillation.

A further object is, therefore, to avoid the necessity for using anything other than a single rod extending to the side of the car and adapted for rotation on its longitudinal axis in order to operate the coupler. By my arrangement it is impossible for the coupler to become accidentally unlocked due to any disarrangement of the operating parts.

A further object is to provide anti-creeping means which shall be effective at all times and particularly at times when the usual anti-creep shall be out of commission due to the presence of ice or dirt.

The invention will be more readily understood by reference to the accompanying drawings in which,

Figure 1 is a sectional plan view, parts being in section, of a coupler constructed in accordance with my invention;

Fig. 2 is a vertical sectional view showing the parts in their normal, locked position;

Fig. 3 is a similar view showing the parts in lock-set position;

Fig. 4 is a similar view showing the parts in knuckle throwing position;

Fig. 5 is a view showing the parts in an abnormal position, such as they would as-

sume when creeping of the lock had begun and when the normal anti-creep provision was inactive, and,

Fig. 6 is a front view of the knuckle thrower.

In the drawings it will be noted that within the head is mounted a knuckle 10, having a tail 11, and a locking face 12. A lock is mounted in the head for vertical oscillation on a floating pivot, the lock comprising a head or body portion 13, which is connected by a shank to a hooked rear end 14. Adjacent to the hook 14, is a laterally projecting lug 15. As shown in Fig. 2, the hook 14, when the parts are in a position of rest, engages or overlies a ledge 16 on the lower wall of the shank of the coupler, while the lug 15 lies between two posts 17, 18, which extend between the lower and upper walls of the shank of the draw-bar. The operation of this lock is fully described in the patent heretofore referred to.

The lock is moved to unlocking position by means of a knuckle thrower 19, best shown in Fig. 6. The thrower is provided with a lateral lug or projection 20, which underlies the lock at a point to the rear of its center of gravity. The member 19, also acts as the lock-setting device, the toe 21 of the member engaging a ledge 22 on the coupler head.

The thrower is actuated by means of an oscillating lifter 23, the forward end of which is provided with a hook 24 which engages a pin 25 in the thrower. The rear of the lifter is provided with a square open-sided recess 26, adapted to securely engage the squared portion 27 of a transverse shaft, best shown in Fig. 1. Eyes 28, 29 are secured to the overhung ends of the shaft and are adapted to be engaged by operating rods, not shown, extending to the sides of the car. It is to be noted that the rear end of the lifter is semi-circular in form, the periphery thereof conforming to the shape of a recess formed in the bulged portion 30 of the head. Thus it will be seen that in any of the positions shown in the drawings the lifter cannot be disengaged from the shaft. In order to disengage it, the thrower must be first disengaged therefrom then the lifter be swung to a lower position than that shown in Fig. 2.

The knuckle thrower operates in the well-known manner, but attention is called to the manner in which the thrower and lifter engage during the knuckle throwing operation. The knuckle thrower is provided with an inclined recess within which the lifter is received, the lower wall of the recess being indicated by the dotted line 31. As the knuckle throwing operation begins, the parts have moved to such a position that the plane edge 32 of the lifter lies against the surface 31, as best shown in Fig. 4. Thus a rigid connection is made between the transverse shaft and the knuckle thrower, and that as the thrower is then bodily rotated about the shaft as a center the knuckle throwing operation is made much easier.

The auxiliary anti-creep is best shown in Fig. 5. This device is not necessary unless the anti-creep heretofore described and constituting the hooked end 14, and ledge 16, are out of engagement due to the presence of ice or dirt.

It is assumed in Fig. 5 that the rear end of the lock is thus held in an inoperative position. It will be noted that the knuckle thrower 19 is provided with a lateral extension or lug 33, which overlies the lock at all times. It will also be noted that the lock is provided with a notch 34 in its upper corner. The creeping operation is bound to proceed from the heavy end of the lock, that is, the forward end of the lock will raise and in so doing the notch 34 in the lock will engage with the lateral lug 33 on the knuckle thrower, the parts assuming the position shown in Fig. 5. Further upward creeping is prevented because of the necessity for backward movement after engagement between the lock and the thrower, and this backward movement is prevented because of engagement between the lifter and the thrower. This is an effective addition to the coupler.

Many modifications and improvements may be made in the construction here disclosed, and such modifications as are within the scope of my claims I consider within the spirit of my invention.

I claim:

1. In a car coupler, a knuckle, a gravity lock, a knuckle opener engaging said lock, and a lifter cooperating with said opener, said lifter being substantially horizontally disposed and extending substantially in line with the longitudinal axis of a drawbar, said opener and lock cooperating to act as an auxiliary anti-creeping means when said lifter and lock are in certain positions.

2. In a car coupler, the combination of a head, a knuckle pivoted therein, a lock having a floating pivot and mounted for oscillation in said head, a knuckle opener engageable with the lock, and a longitudinally extending oscillating lifter for actuating said lock through said knuckle opener, said opener and lock under certain conditions cooperating to act as an anti-creeping means.

3. In a car coupler, the combination of a coupler head, a knuckle pivoted therein, an oscillating block lock, a knuckle thrower, lock-setting means on said thrower and head, and a longitudinally extending oscillating lifter engaging said thrower and adapted to actuate said lock and thrower, said thrower and lock under certain conditions cooperating to act as an anti-creeping means.

4. In a car coupler, the combination of a head, a knuckle pivoted therein, a knuckle thrower, a lock, an oscillating lifter, and means whereby an auxiliary anti-creeping relationship is established by said thrower and lock under certain conditions.

5. In a car coupler, the combination of a head, a knuckle pivoted therein, an oscillating lock, anti-creeping means applied to the rear of said lock, a knuckle thrower, an oscillating lifter, and means whereby an additional anti-creeping relationship is established by said thrower and lock.

Signed at Alliance, Ohio, this 5th day of March, 1917.

EDMUND P. KINNE.

Witnesses:

BYRON McCausland,
LAUNA CARLISLE.