

No. 867,174.

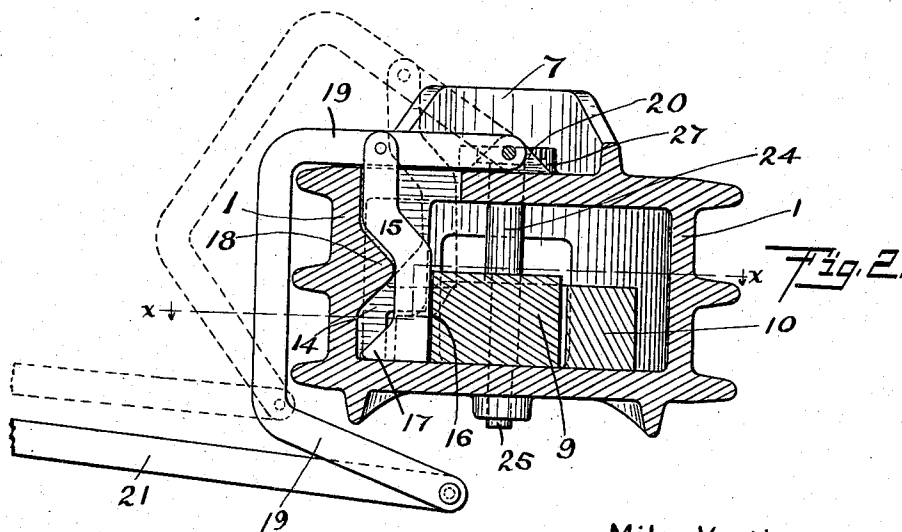
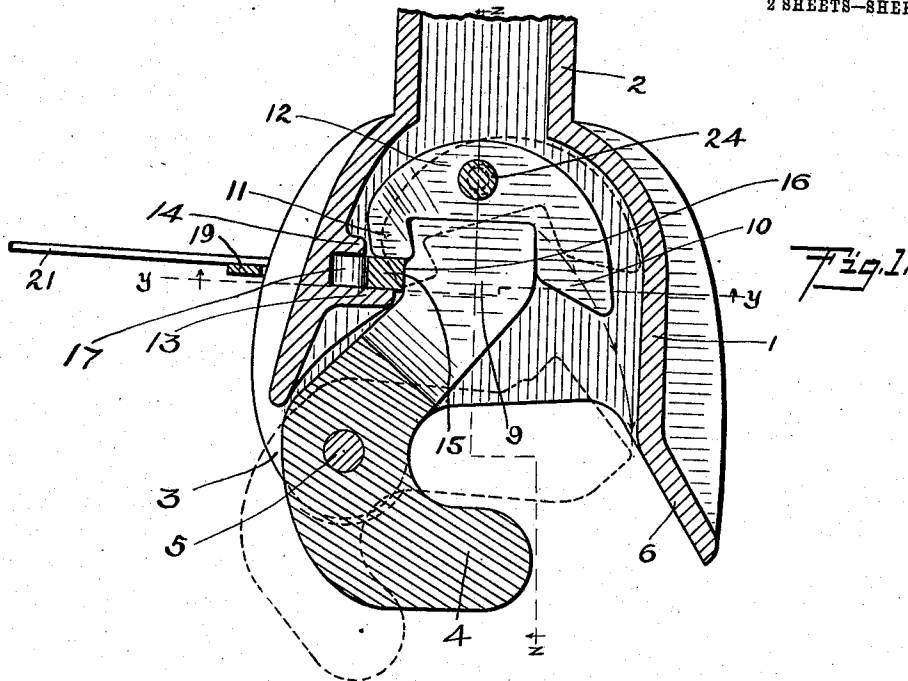
PATENTED SEPT. 24, 1907.

M. VASTINE & C. H. ZERBE.

CAR COUPLING.

APPLICATION FILED JULY 13, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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G. E. Armstrong

Miles Vastine
and
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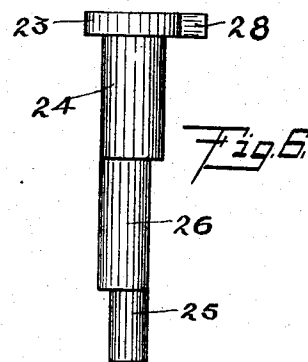
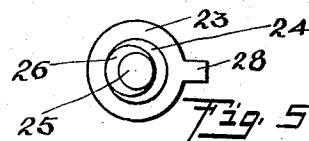
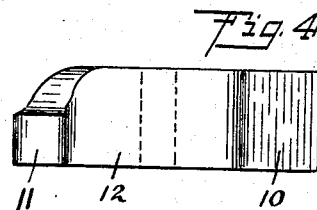
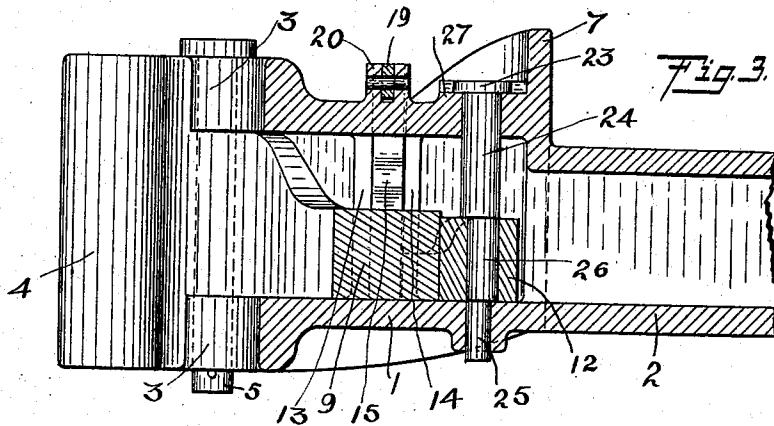
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

MILES VASTINE AND CHARLES H. ZERBE, OF SOUTH OMAHA, NEBRASKA.

CAR-COUPLING.

No. 867,174.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed July 13, 1906. Serial No. 326,106.

To all whom it may concern:

Be it known that we, MILES VASTINE and CHARLES H. ZERBE, citizens of the United States, and residents of South Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

Our invention relates to railway draft appliances, more particularly to car couplings of the Janney type, and it is the object thereof to provide a coupler of this type which may be of strong, simple and durable construction, in which any broken parts may be readily removed and replaced, in which means of adjustment are provided for taking up or compensating wear of the parts, in which the coupling knuckle may be thrown open by means of the operating rod and locking pin without touching the knuckle by hand, in which the operating rod and locking pin are so situated that their action cannot be interfered with by a defective or broken deadwood, and embodying certain other novel constructions and arrangements as will be more fully described hereinafter.

Constructions embodying our invention are shown in the accompanying drawings in which

Figure 1 is a sectional plan view of the coupler, the section being on the line $x-x$ of Fig. 2. Fig. 2 is a sectional front elevation of the same, the section being on the line $y-y$ of Fig. 1, Fig. 3 is a longitudinal section on the line $z-z$ of Fig. 1, Fig. 4 is a detail front elevation of the locking block, Fig. 5 is a detail bottom plan view of the eccentric pivot pin for the locking block, and Fig. 6 is a detail side elevation of the same.

In the construction shown the draw head 1 is carried on the end of a draw bar 2 of ordinary form. At the front of the draw head are the lugs 3 between which the head 4 of the coupling knuckle is pivotally held by a pin 5 in the usual manner. The form of the knuckle head 4 and the front face of the draw head, including the lip 6, are such as to form the contour adopted by car builders as a standard for couplers of this class. At the rear and upper side of the draw head is a flange-supported buttress 7, as shown, for engaging the deadwood of the car. When the coupling knuckle is in closed or locked position the tail 9 thereof extends back into the draw head between the jaws 10 and 11 of the locking block 12 which is pivotally held in the head by a vertically extending pin of special form as hereinafter described. On the inside of the draw head adjacent the jaw 11 of the locking block are the vertically extending guide flanges 13 and 14 between which the locking pin 15 is loosely held. At the lower end of the rear flange 14 the same is notched, as shown in Fig. 2, to permit the jaw 11 of the locking block to swing past the same. When the parts are in the locked position shown in full lines in Figs. 1 and 2 the said jaw 11 of the locking block bears against the pin 15 at the lower end there-

of, pressing the same against the flange 13, and the inner side of the locking pin is in or nearly in engagement with the vertical face 16 on the tail of the coupling knuckle. On the outer side of the locking pin at the lower end thereof is a foot 17 having an inclined upper surface, as shown. Between the guide flanges 13 and 14 and extending inwardly over the foot 17 of the locking pin is a rounded projection 18, of which the inclined lower surface is of such height above the foot 17 that the locking pin may be raised an amount equal to the thickness of the jaw 11 of the locking block before the foot 17 will engage said surface of the projection. The upper end of the locking pin extends out through the top of the draw head through a suitable opening therein and is connected with the bent operating lever 19. One end of the said lever 19 is pivotally connected between the lugs 20 on top of the draw head and from said lugs the lever extends laterally to the side of the draw head, thence downwardly alongside the same, and thence diagonally downward and under the draw head, as shown in Fig. 2. At the lower end of the said lever is connected the operating rod 21.

In releasing the coupler the operating rod 21 is pulled outwardly, this movement raising the lever 19 and the locking pin 15 as indicated by the dotted lines in Fig. 2. As soon as the lower end of the locking pin is raised above the jaw 11 of the locking block said block is permitted to turn to the position shown by dotted lines in Fig. 1, thereby releasing the tail of the coupling knuckle which may turn to the open position also shown by dotted lines in Fig. 1. Now, as the locking pin is raised by the operating lever and after it is high enough to permit the jaw 11 of the locking block to pass under the end thereof, the upper inclined surface of the foot 17 engages the lower inclined surface of the projection 18 and by continued upward movement of the pin said projection 18 causes the lower end of the pin to move inwardly and push the tail 9 of the coupling knuckle over toward the open position thereof. If this upward movement of the locking pin be made rapidly the knuckle may be thrown thereby to the full open position shown by the dotted lines in Fig. 1. After the parts are brought to open position, as indicated by the said dotted lines, a portion of the jaw 11 of the locking block lies below the end of the locking pin so that, when the operating rod and lever are released, the locking pin drops onto said jaw 11 and is prevented thereby from returning to its original position. In returning the coupling knuckle to locked position the tail of the knuckle engages the jaw 11, turns the block 12 to its original position and permits the locking pin to drop in front of the jaw, thus preventing release of the knuckle until the pin is again raised by the operating lever. In closing the knuckle should the locking block be partly turned toward its

closed position the tail 9 engages the beveled face of the jaw 10, pushing the jaw back far enough to enable the tail to pass the same.

The pivot pin for the locking block 12 comprises a head 23, an upper portion 24, and a lower portion 25; all concentric, and an intermediate portion 26 disposed eccentrically to the head and upper and lower portions. The head 23 of the pin fits within a circular recess in a boss 27 on the upper side of the draw head and has on the side thereof a lug 28 adapted to engage with one of a number of notches in said boss 27. The upper portion 24 of the pin passes through the upper side of the draw head, the lower portion 25 passes through the lower side of the draw head, and the eccentric intermediate portion passes through the locking block 12, as shown in Fig. 3. By turning the pin and engaging the lug 28 with different notches in the boss 27, to retain the pin in position, the locking block may be varied in position to compensate wear thereof or of the tail of the coupling knuckle.

By reference to the drawings it will be apparent that any broken parts of the coupler may be readily removed and replaced. The knuckle being held by the pin 5 may be easily removed from the front of the draw head, the locking pin 15 and the eccentric pivot pin for the locking block may be withdrawn through the upper side of the draw head, and the locking block removed through the opening in the front of the draw head through which the tail of the knuckle swings in opening and closing. It will be noted also that on account of the position of the operating lever being considerably in front of the buttress 7 engaging the deadwood on the car body, the movements of said lever cannot be interfered with by a defective, battered or overhanging deadwood, as is possible in couplers of this class in which the locking pin is situated immediately in front of the deadwood and is raised by chain or link connections from a crank shaft journaled in brackets on the end of the car.

Now, having described our invention, what we claim and desire to secure by Letters Patent is:

1. In a car coupler, a draw head, a coupling knuckle pivoted thereon, a locking block pivotally held in the draw head, jaws on said block adapted to inclose the tail of the coupling knuckle, and a vertically slidable locking pin adapted to drop in front of one of the said jaws and pre-

vent turning of the block, said locking pin when raised being adapted to engage the knuckle and turn the same toward open position.

2. In a car coupler of the class described, a draw head, a coupling knuckle pivoted thereon, a block pivotally held in the draw head and having jaws adapted to inclose the tail of the coupling knuckle, a vertically slidable locking pin engaging one of said jaws of the pivoted block to prevent turning thereof and release of the tail of the knuckle, one side of said pin being in proximity to the tail of the coupling knuckle, and inclined surfaces on the pin and draw head, said surfaces being engageable after the pin is raised to release the pivoted block, and said engagement forcing the pin against the tail of the knuckle and tending to turn the same toward its open position.

3. In a car coupling of the class described, a draw head, a coupling knuckle pivoted thereon, a block having jaws adapted to inclose the tail of said knuckle, a pin passing through the draw head and said block to pivotally secure the same therein, the portion of the pin passing through the block being eccentric to the portions thereof passing through the draw head, and a locking pin engageable with the said pivoted block to prevent turning thereof and the release from the jaws thereof of the tail of the coupling knuckle.

4. In a car coupling of the class described, a draw head, a coupling knuckle pivoted thereon, a transversely tiltable locking block disposed within the draw head and having jaws adapted to inclose the tail of the knuckle, and releasable means for retaining the block in such position that said tail of the knuckle cannot turn out of the jaws of the block, said releasable retaining means also serving to engage the knuckle to turn the same toward open position.

5. In a car coupling of the class described, a draw head, a coupling knuckle pivoted thereon, a block pivotally held in the draw head and having thereon jaws adapted to inclose the tail of the knuckle, means for varying the pivotal center of the block, and means releasably engaging said block to prevent turning thereof.

6. In a car coupling of the class described, a draw head, a coupling knuckle pivoted thereon, a transversely tiltable block pivoted within the draw head, jaws on said block adapted to inclose the tail of the knuckle, a locking pin releasably engaging the tiltable block to prevent turning thereof, and means on the head engageable with said pin after releasing the block, said means operating to force the pin against the tail of the knuckle and turn the same toward its open position.

In testimony whereof we have hereunto subscribed our names in the presence of two witnesses.

MILES VASTINE.
CHARLES H. ZIERBE.

Witnesses:

J. S. ARMSTRONG,
D. O. BARNELL.