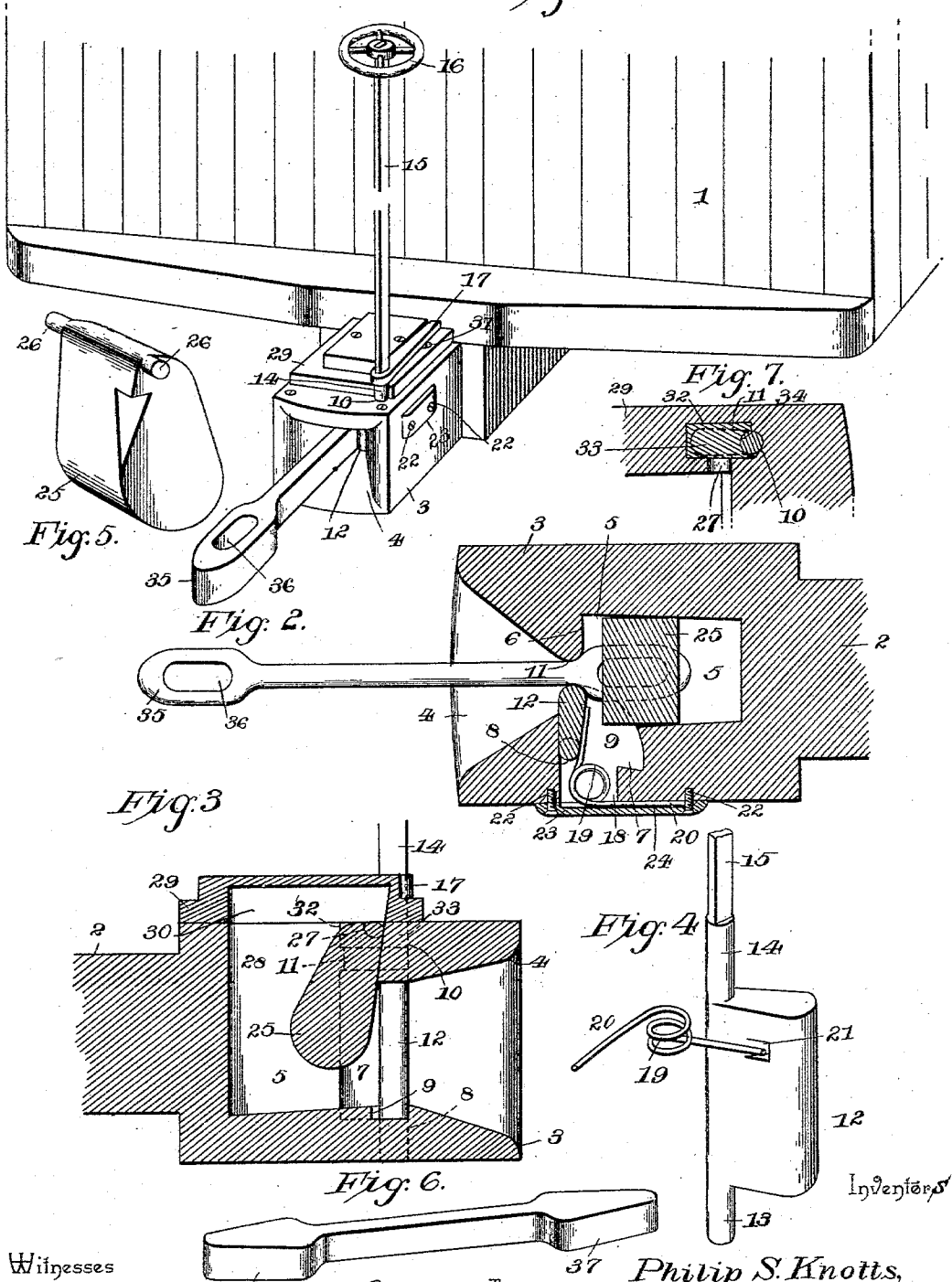


(No Model.)

P. S. KNOTTS & P. M. WOLF.
CAR COUPLING.

No. 559,854.

Patented May 12, 1896.
Fig. 1.



Witnesses

Chas. A. Ford.
H. H. Simms.

By their Attorneys.

Philip S. Knotts,
Philip M. Wolf,

Attorneys.

UNITED STATES PATENT OFFICE.

PHILIP S. KNOTTS AND PHILIP M. WOLF, OF FELLOWSVILLE, WEST VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 559,854, dated May 12, 1896.

Application filed April 5, 1895. Serial No. 544,669. (No model.)

To all whom it may concern:

Be it known that we, PHILIP S. KNOTTS and PHILIP M. WOLF, citizens of the United States, residing at Fellowsville, in the county of Preston and State of West Virginia, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to that class of couplings wherein a headed link is employed and adapted to operate with a swinging jaw or detent arranged to engage the link and thereby retain it in the draw-head; and the object of the invention is to provide a coupling of this class which will be more efficient and durable than any heretofore known, and one which may be operated with greater ease than ordinarily.

With these ends in view the invention consists in certain novel features of construction and combination and arrangement of parts that will be more fully described hereinafter, and finally embodied in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of a car-coupling constructed after the manner of our invention, only one draw-head being shown; Fig. 2, a horizontal section thereof; Fig. 3, a vertical longitudinal section; Fig. 4, a detail perspective of the swinging detent, showing it detached from the remaining parts and together with its actuating-spring; Fig. 5, a detail perspective of the link-steadying weight; Fig. 6, a detail perspective of a modified form of link; Fig. 7, a detail section taken horizontally just above the detent.

The reference-numeral 1 indicates the front end of a freight-car to which we have shown our improvements applied, though this is not essentially a freight-car, since the invention is applicable to all kinds of cars.

2 indicates the shank or draw-bar, which extends rearwardly under the car and which is connected thereto by any approved means. The draw-head 3 is formed integral with the shank or draw-bar 2, and consists of an approximately square box provided with the bell-shaped or outwardly-flaring orifice 4, which communicates with the chamber 5 of the interior of the draw-head. The chamber 5 is formed on the right-hand side with a fixed catch or shoulder 6, while the opposite side is formed with a counter chamber or orifice 7. This orifice 7 is provided with an opening 8 at its lower end, which passes down through

the bottom of the draw-head 3, and which is attended by a segmental depression 9, formed adjacent thereto.

Vertically alined with the opening 8 is the semicircular passage 10, which communicates with the oval-shaped passage 11, and which forms one end thereof. The passage 11 is adapted to permit the insertion of the link-retaining detent 12, which is shaped to correspond with the shape of the passage 11, and which is of a size capable of being received in the counter-orifice 7, and of swinging therein. The detent 12 is provided with a downwardly-extending trunnion or journal 13, adapted to revolvably fit within the opening or passage 8, while the upper end of the detent is provided with a similar extension 14, round in cross-section and adapted to fit within the semicircular passage 10. By these means the detent 12 is rockably mounted in place.

Formed integral with the extension 14, and longitudinally alined therewith, is the extension 15, which is angular in cross-section and provided with the operating-wheel 16 and lever 17. The lever 17 extends normally longitudinally, and together with the wheel 16 furnishes a means for rocking the detent 12. Formed in the left-hand side of the draw-head and communicating with the counter-orifice 7 is the opening 18, in which the coil 19 of the spring 20 is arranged. The spring 20 is formed of stout steel wire and has one end extending rearwardly alongside the left-hand side of the draw-head, and provided with an inwardly-extending spur which passes into an opening in said draw-head, whereby the parts are connected to each other. The remaining end of the spring 20 extends inwardly from the coil 19 and is adapted to engage the left-hand side of the detent 12, while the detent is provided with a depression or recess 21, in which the free end of the spring is adapted to lie when the detent operates to retain a link in place. Securely fastened, by means of screws 22, to the left-hand side of the draw-head is the plate 23, which operates to cover that end of the spring 20 which lies on the outside of the draw-head, and this plate is formed with an opening or recess 24 on its inner side, adapted to receive that portion of the spring which is adjacent thereto, so that the plate will be allowed to lie snugly against the side of the draw-head.

The chamber 5 has its bottom formed with a rearwardly-slanting incline, adapted to have the end of the link rest thereon, so that the link will be inclined outwardly and upwardly from the flaring orifice 4. The purpose of this construction is to place the link in position to receive the adjacent car in the coupling operation.

25 indicates a weight, which is provided with the journals or trunnions 26, adapted to be rockably seated in the recesses 27 of the upper side of the draw-head. This weight 25 is adapted to hang down into the chamber 5 and to bear upon the upper side of the link when located in the chamber, so as to press the link down upon the inclined bottom of the chamber 5. The weight 25 is capable of swinging upwardly on its journals or trunnions, and to permit this movement and to receive a portion of the weight the opening 28 is formed in the top of the draw-head. Through this opening the weight may pass when being raised by the introduction of the weight and when being inserted into the chamber 5.

29 indicates a cap-plate, which is formed with a downwardly-opening recess 30 therein, adapted to occur directly above and to register with the opening 28 and to furnish a space into which the weight may move when raised out of its normal position.

31 indicates a series of screws, preferably two, which pass through the cap 29 and into the draw-head, and which operate to hold said cap in place.

The upper end of the passage 11 is formed with a square or rectangular portion 32, which is adapted for the reception of the correspondingly-shaped block 33, fixed to or formed integral with the cap-plate 29. This block 33 is provided with a vertical semicircular passage 34, adapted to be located alongside the passage 10 and to form between the two a round passage capable of properly journaling the extension 14 of the detent.

The link for use with our coupling may be of any kind wherein a head is provided to form shoulders at each side of each end, and we have shown one as the preferred form with the heads 35, one for each end of the link, and having the openings 36 therein. The purpose of the openings 36 is to furnish a means for using the link with the usual pin.

The modified form of link in Fig. 6 is substantially that of the other figures, with the exception of the absence of the openings 36. This form of link is adapted for use on passenger-cars, and has for its object to prevent rattling and useless play of the parts. This end is attained by forming the link with the elongated points 37, one for each end, and adapted to engage the rear extremity of the chamber or cavity 5. It will be understood, of course, that one draw-head is attached to each end of the cars, and with cars so equipped the coupling operation is performed by moving the two cars together, thus causing the link

to be forced into the chamber or cavity 5. This will be attended by a swinging of the detent 12 to the rear, which will continue until the head 35 passes the detent, whereupon the detent will be free to return under the influence of the spring 20. As the detent returns it moves the link to the right, so as to throw the shoulder of its head into engagement with the shoulder 6 and so as to throw its right-hand edge into engagement with the opposite or remaining shoulder of the head. As the link enters the cavity or chamber 5 it raises the weight 25 into the recess 30 of the plate 29 and causes said weight to bear down upon the upper side of the link, which will throw the outer end thereof up and into position to pass into the orifice 4 of the adjacent coupling.

Changes in the form and proportion of the several parts of our invention may be made without departing from the spirit and scope thereof, and since these changes will suggest themselves to any skilled mechanic we do not propose to limit ourselves to the precise construction herein shown, but consider ourselves entitled to all such variations as come within the scope of our claims.

Having described our invention, what we claim is—

1. In a car-coupling, the combination of a draw-head having a cavity on the interior thereof, a detent rockably mounted in said cavity and on a vertical axis, a spring arranged in an opening in one side of the draw-head and engaging the detent, one end of said spring being projected to the outside of the draw-head and secured thereto, and a plate fixed to the draw-head and over the said end of the spring, whereby it is retained in place, substantially as described.

2. In a car-coupling, the combination of a draw-head provided at one side of its mouth with a vertically-disposed fixed catch 6, and having at its opposite side a vertically-disposed shoulder and provided in rear of the same with a vertically-disposed recess 9, a link provided at opposite sides with the shoulders, one of the shoulders engaging the fixed catch 6, the vertically-disposed horizontally-swinging detent 12 journaled in the recess 9 in rear of the shoulder, and adapted to engage the link, and bearing against and supported by the said shoulder when in engagement with the link, and a vertically-swinging weight pivoted at the top of the draw-head, and located in rear of the catches, and adapted to press the link downward and capable of yielding to permit the necessary movement of the link, substantially as and for the purpose described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

PHILIP S. KNOTTS.
PHILIP M. WOLF.

Witnesses:

WILLIAM E. STAFFORD,
JAMES W. ROBINSON.