

No. 809,705.

PATENTED JAN. 9, 1906.

L. LECOMPTÉ.

COMBINED RAILWAY DRAW HEAD AND AIR COUPLING.

APPLICATION FILED NOV. 21, 1904.

2 SHEETS—SHEET 1

Fig. 1.

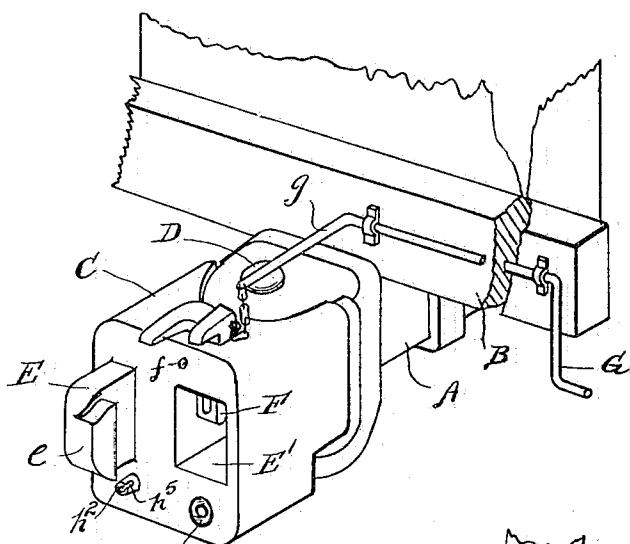
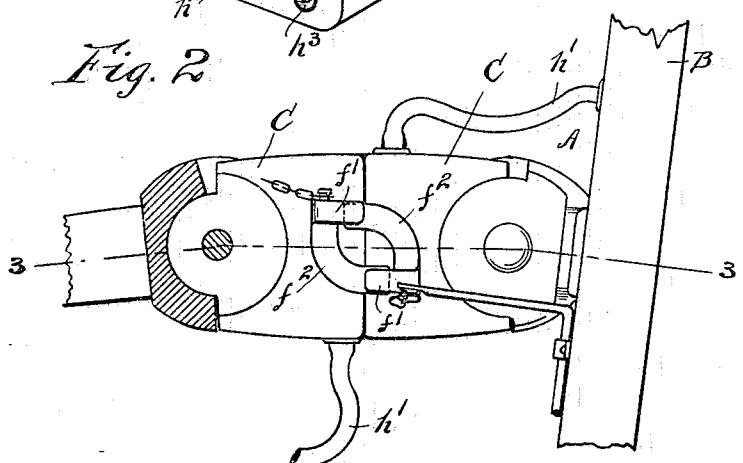


Fig. 2



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Fig. 3

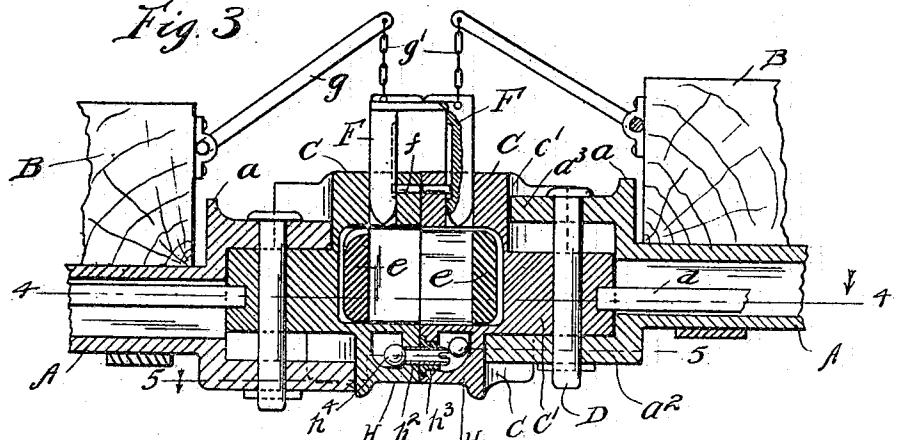


Fig. 4

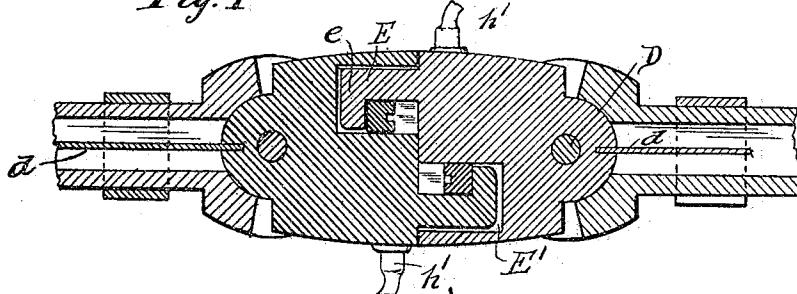
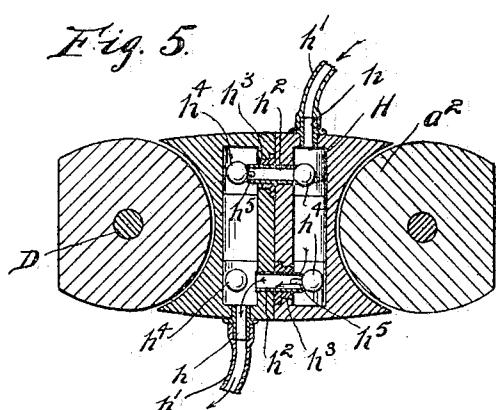


Fig. 5.



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UNITED STATES PATENT OFFICE.

LOUIS LECOMpte, OF CHICAGO, ILLINOIS.

COMBINED RAILWAY DRAW-HEAD AND AIR COUPLING.

No. 809,705.

Specification of Letters Patent.

Patented Jan. 9, 1906.

Application filed November 21, 1904. Serial No. 233,739.

To all whom it may concern:

Be it known that I, LOUIS LECOMpte, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Combined Railway Draw-Head and Air Coupler, of which the following is a specification.

This invention relates more particularly to that class of air-couplers or similar devices which are designed to couple the air or steam pipes of a car automatically with the coupling of the cars proper, such an apparatus being shown in Patent No. 749,900, granted to me January 19, 1904. The present invention provides means for automatically closing the orifices or pipes of the couplers through which such connections of the train-pipes are made when the draw-heads are disconnected. I prefer to use this improvement in connection with draw-heads of the character set forth in said patent and for this reason have illustrated this improvement as applied to such draw-heads.

In the accompanying drawings, Figure 1 is a perspective view, partly broken, of a car end provided with a draw-bar and coupler embodying my invention. Fig. 2 is a top plan view of the same, showing the draw-head coupled with a like draw-head and both flexed on the draw-bars under lateral strain, as in rounding a curve. Fig. 3 is a section taken on line 3-3 of Fig. 2 and showing the pins lifted. Fig. 4 is a central horizontal section taken on Fig. 3. Fig. 5 is a section on line 5-5 of Fig. 3.

As shown in the drawings, A indicates a draw-bar adapted to be engaged with draft-rigging of any preferred kind in the usual or any desired manner and having an axial aperture therein, as shown in Figs. 3 and 4. Near the outer end of said draw-bar is provided an upwardly-extending transverse shoulder a^1 , adapted when the car is coupled to communicate a part of the buffing stress to the end sill B of the car in the usual manner. The outer end of the draw-bar is enlarged and is recessed and a horizontally-extending shelf a^2 , which is rounded at its outer end, forms the bottom of said recess, and a corresponding forwardly-extended rounded plate or shelf a^3 is provided above said recess. Said plates a^2 and a^3 , as shown, fit in corresponding complementary curved sur-

faces at the rear end of the draw-head or coupler C, which, as shown, is provided with the complementary curved surfaces c^1 and c^2 , which receive the rounded ends of said plates a^2 and a^3 . A rearwardly-directed tail C', integral with the rear end of the draw-head and having less thickness than the height of the recess in the draw-bar, is secured to said draw-bar by means of the pivot-pin D. This pin extends through said tail and through the plates a^2 and a^3 and may be secured below the draw-bar by means of a cotter-pin or the like, if desired. As shown, a strong leaf-spring d engages in a slot at the rear end of the tail C' and extends longitudinally of the aperture in the draw-bar and at its inner end engages in a socket at the inner end of said aperture, so that when the draw-head is flexed on the draw-bar tension is brought on said spring.

The draw-heads comprise each a casting provided on its outer end with an integral forwardly-directed arm E, having an integral inwardly-hooked knuckle e. Said draw-head is also provided in its outer end near the opposite side from said arm with a recess E'. The arms E and recesses E' in said draw-heads are so disposed that when the draw-heads are brought together in coupling the arm and knuckle of each draw-head engage in the recess of the other. As shown, a coupling-pin F, having a downwardly rounded or inclined lower end, extends through and fits closely in an aperture in the top of each draw-head, into and partly through each of said recesses, and is provided with a longitudinal groove in one side thereof, into which extends the end pin or dowel secured in the draw-head. The upper surface of each of the knuckles is beveled or inclined outwardly and downwardly, as shown in Figs. 1 and 3, so that when the draw-heads are brought together in coupling relation the impact of said knuckles on the pins throws the same upwardly and permitting the passage of the knuckles beneath the same and permitting the pins to drop behind the knuckles, as shown in Fig. 4, presenting a square flat draft-surface for the knuckle, so that when the draw-heads are brought together the said arms and integral knuckles bring the ends of the same into register, holding the same firmly and unyieldingly locked together. Inasmuch as each of the pins F must rise to permit the draw-heads to couple,

means have been provided whereby either pin when lifted will lift the other simultaneously. For this purpose said pins are provided each with integral outwardly-extending flat arms 5 f' f'' , of which the arms f'' are of a sufficient length and so positioned that when the draw-heads are brought together in coupling said arms f'' extend beneath and in contact with the arms f' of the corresponding draw-head, 10 as shown in Fig. 2, so that either upward or downward movement of either produces corresponding movement in the other. This is important in uncoupling, inasmuch as the pins must be lifted simultaneously, and for the 15 purpose of facilitating uncoupling without necessitating the brakeman passing between the cars a crank G is provided on the car end, the outer end of which extends into position to be conveniently engaged by the brakeman 20 and the inner end of which extends forwardly over the coupling-pin, and a chain g' connects the same.

To enable the coupling of the draw-head to simultaneously couple the train-pipes, a transverse chamber H is provided in the lower part 25 of each draw-head, from which a nipple h or other connection adapted to permit a hose h' to be coupled therewith extends laterally from the draw-head. As shown, an apertured conical nipple or pipe h^2 , communicating with said chamber, extends from the front end of the draw-head below the knuckle e, and an aperture extends through the end of the draw-head opening into said chamber near the opposite side of the draw-head and is provided 30 with a bushing h^3 , of rubber or other resilient material. Said conical nipples and the apertures at the outer ends of the respective draw-heads are so disposed as to register exactly 35 when the draw-heads are brought together, as shown in Fig. 5, thus forming an air-tight connection through which the chambers in the respective draw-head communicate, providing when the train-pipe hose h' is connected with the nipples h a continuous passage 40 through the draw-head, as shown in Fig. 5, for the passage of air, steam, or the like, as indicated by the arrows.

In order to prevent the escape of air or 45 steam from the end of the draw-head or the hose-coupling when the draw-heads are uncoupled, I prefer to use an automatic check-valve device. Such a device is illustrated particularly in Figs. 3 and 5 of the drawings. At 50 either end of the chamber H is a recess having a curved bottom, and in said recesses are located balls h^4 . These balls act as valves to close the inner end of the nipple-aperture or to close the opening through the rubber bushing h^3 when the draw-heads are uncoupled. The outer or projecting ends of the nipples or connecting-pipes h^2 are provided with slots or 55 openings h^5 . When the draw-heads are cou-

pled, the projecting ends of the nipples h^5 extend sufficiently through the bushings h^3 to dislodge the corresponding ball h^4 . When in this position, the air or steam, which is admitted into one draw-head—as, for instance, shown entering the top pipe h' in Fig. 5—will pass through the slots or openings h^5 in the lower 60 nipple and will raise the opposite ball h^4 from its seat and pass out through the lower pipe h' . The reverse operation will of course occur if the air or steam is admitted in the opposite direction. It is evident that other check-valves 65 could be used to perform the functions of the valves just described, and I do not wish to limit myself to this particular form of valve apparatus.

What I claim, and desire to secure by Letters 80 Patent, is—

1. In an air or steam pipe coupling device, the combination with a suitably-chambered head, of an aperture in said head, a check-valve for said aperture, a projecting nipple 85 from said chamber, and a check-valve for said nipple, said nipple being adapted to enter the aperture of a corresponding head to unseat the check-valve in said aperture.

2. The combination with a chambered draw-head or the like, of an aperture leading from said chamber, a pipe or nipple extending from said chamber, slots or the like in the outer end of said nipple, a ball-valve for closing said aperture, a second ball-valve for closing 90 the opening through said nipple, the arrangement being such that when said device is brought into co-operative relation with a corresponding device, one or more of the ball-valves will be opened to admit the passage of 95 a fluid.

3. In a draw-head or the like, provided with chambers connected with the train-pipes, the combination of an aperture leading from said chamber, said aperture being provided with a 100 rubber bushing, a nipple leading from said chamber having slots or openings in its outer end, ball-valves in said chamber adapted to close said aperture and said nipple, a corresponding draw-head provided with suitably-disposed similar apertures and projecting nipples, the arrangement being such that when the draw-heads are connected, the projecting nipples will unseat the balls closing the apertures in the opposite draw-heads.

4. A draw-head having in its bottom a transverse chamber, a pipe connected with the chamber, and a projection extending outwardly from the draw-head and provided with an aperture communicating with said chamber, said projection adapted to extend into an aperture in a corresponding draw-head and communicating with a like chamber therein, and valves adapted to close said apertures when the draw-heads are uncoupled.

5. An automatic car and hose-pipe coupling,

comprising similar draw-heads having flat contact-faces and an arm each interlocking with a pin in the other, a lateral recessed hook on said arm, a chamber in the base of each draw-
5 head, a conical tubular nipple extending outwardly from each chamber and adapted for connection in a bushed opening leading to the chamber in the other draw-head, automatic

valves for closing said opening and said nipple, and hose-pipe connections on each coupling opening into the chamber therein.

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Witnesses:

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