

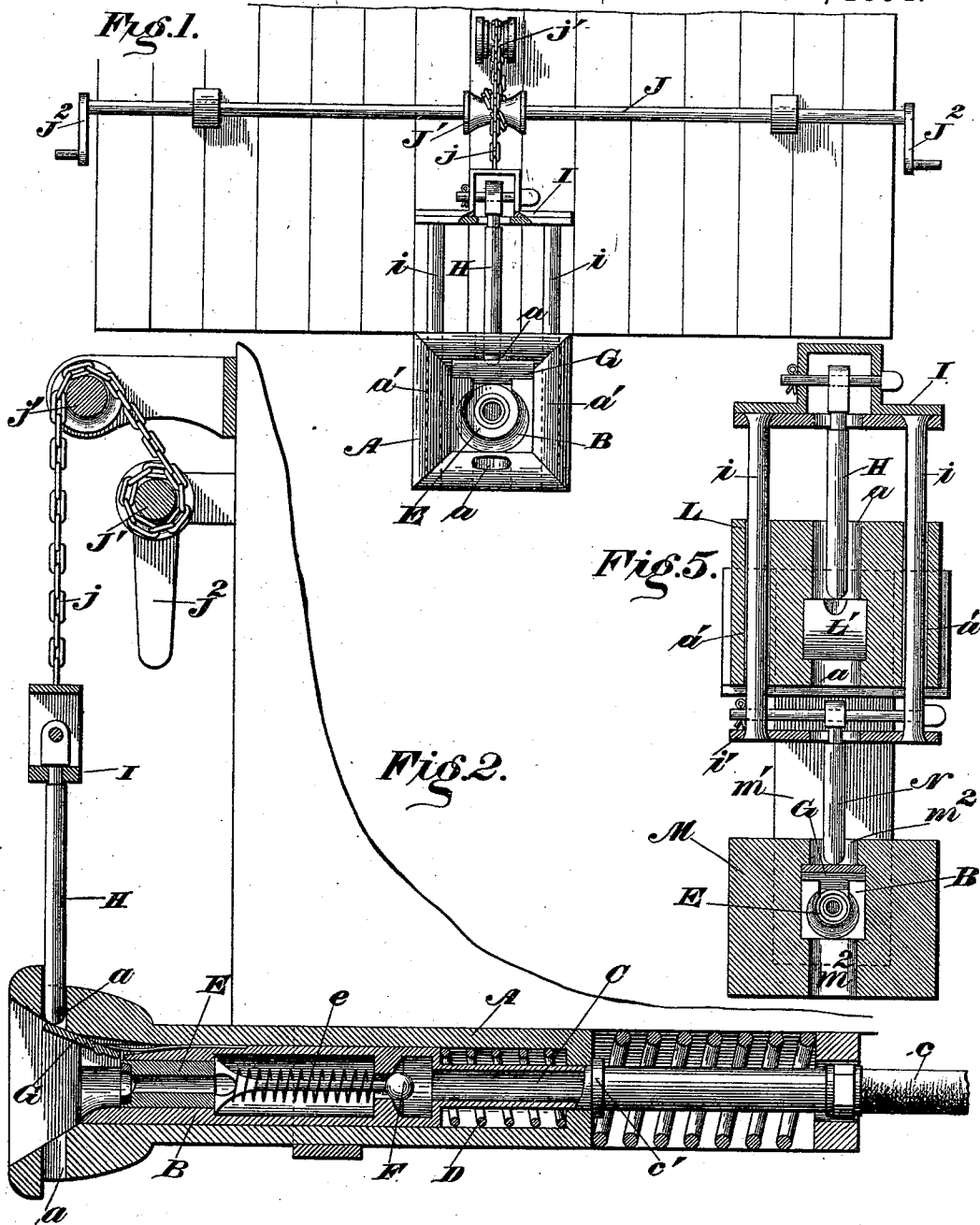
(No Model.)

2 Sheets—Sheet 1.

S. J. GALLOWAY.
COMBINED CAR AND AIR BRAKE COUPLING.

No. 514,184.

Patented Feb. 6, 1894.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

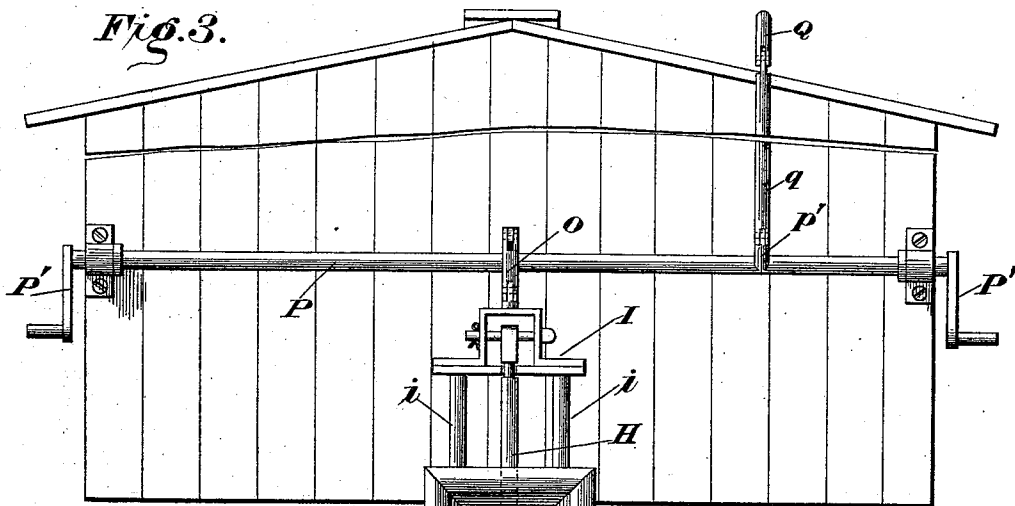


Fig. 6.

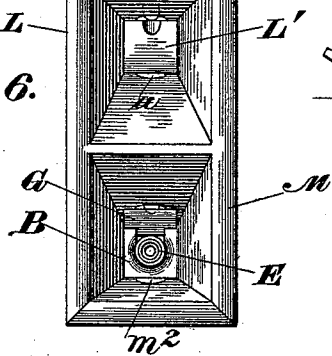
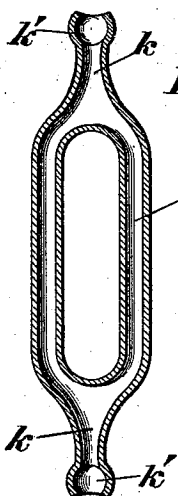
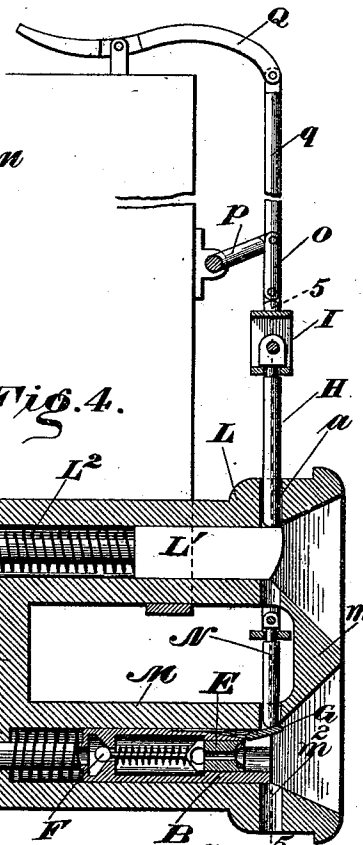
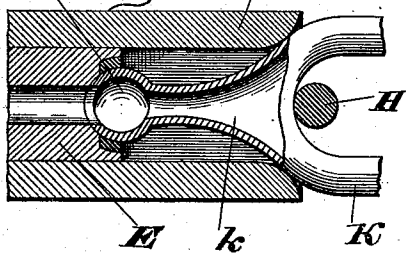


Fig. 4.



k' Fig. 7. B



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UNITED STATES PATENT OFFICE.

SAMUEL JAY GALLOWAY, OF SANTIAM, OREGON.

COMBINED CAR AND AIR-BRAKE COUPLING.

SPECIFICATION forming part of Letters Patent No. 514,184, dated February 6, 1894.

Application filed October 3, 1893. Serial No. 487,060. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JAY GALLOWAY, of Santiam, in the county of Linn and State of Oregon, have invented certain new and useful Improvements in Car-Couplings and Air-Brakes; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My present invention is an improvement in a combined automatic car and air brake coupling for railway cars, and it consists:—first, in the novel construction of the car-coupling devices, proper; second, in the novel construction of the automatic air-brake coupling; and third, in the novel combination of and parts of such couplings.

The peculiar novel features of my invention will be best understood from the following description taken in connection with the accompanying drawings, in which—

Figure 1 is an end view of a car showing my improved combined air brake and car coupling and the uncoupling devices. Fig. 2 is a central vertical longitudinal section through Fig. 1. Fig. 3 is an end view of a car showing my manner of attaching the automatic air-brake coupling devices to other forms of car-couplings. Fig. 4 is a longitudinal vertical central section through Fig. 3. Fig. 5 is a vertical section through line 5—5 Fig. 4 looking in the direction of the arrows and showing the supporting devices, for the coupling pins, and the guide openings therefor in the draw heads. Figs. 6 and 7 are details.

In the construction shown in Fig. 1, A represents a draw-bar, such as is used in the ordinary freight car link and pin couplings. Within the throat of this draw bar is fitted a hollow sliding block B, the rear end of which is made fast to the end of a pipe C, which extends through the rear end of the draw-bar and serves as a guide for the block and as an air conduit also, the outer end of pipe C being connected with the air-tubes of the air-brake mechanism by a flexible pipe c, or other flexible connection. Block B is normally pushed forward by a spring D within

the drawbar, but is retained in the draw-bar by a suitable stop, which may be a collar c' on the pipe C, as shown in Fig. 1.

Within the block B is a short tube E, which is pressed forward by a spring, e, and when it is pushed back in block B, it will open a valve F, such as is shown in drawings, or of any suitable construction, and thereby permit the circulation of air through pipe C. A plate G is pivoted to the front upper end of block B, and projects beyond the same, in position to uphold the coupling pin H, until the block B is forced inward by a link entering the mouth of the draw-bar. The pin H, as shown in Fig. 1 is suspended from a yoke I having upright rods i, i, adapted to enter openings a', a', in the draw-bar at each side of the pin opening a, and thus guide the pin vertically. The pin openings a are wide, as shown, so as to allow the pin to move laterally in the draw-bar. The yoke I can be raised by means of a chain j, running over a sheave j' attached to the end of the car, one end of the chain being fastened to a drum J' on a transverse shaft J mounted in proper bearings on the end of the car, as shown in Fig. 2, and operated by crank handles J², on the end of said shaft. The yoke and pin will drop by gravity when the shaft is released and the block B pushed inward as described.

In order to establish communication between pipes C, C, on adjoining cars I employ a hollow link, preferably of the form shown in Fig. 6 which illustrates an oval link K, having single extensions k, at each end, the link and extensions being hollow, and the extensions having globular heads k' of a size to fit neatly in the open ends of blocks B. These links serve the same purpose as the ordinary coupling links, and the further purpose of an air conducting connection between the pipes C, C, of opposite couplings. In making a coupling with these links the extensions k, first enter the mouth of the draw-bar, and then enter the mouths of the hollow blocks B, contacting with the tubes E, and forcing the latter inward, so as to open valves F, and force blocks B inward also, until plate G moves back of the pin openings a and the pin drops locking the link and completing the coupling. Thussimultaneouslyan automatic

coupling is made between the cars, and between the air brake devices. The heads k' of the links and the ends of tubes E, and mouths of blocks B are so formed or packed, with any suitable material, as to constitute an air-tight ball and socket joint between the links and pipes C so long as the link is coupled to the draw-bar, and allows the necessary vibration or play of the link to accommodate curves of the track, or differences in heights of couplings on adjoining cars.

It may sometimes be desired to attach the pipe-coupling to draw-bars already in use, or to have the car-coupling and pipe-coupling separate instead of combined together as in Fig. 1. In this case I can adopt the construction shown in Figs. 3 and 4, in which the draw-bar L is constructed as like the ones above described, and is provided with an interior solid block L' pushed forward by a spring L² and adapted to uphold the pin when in normal position. A short draw-bar M is suspended from and beneath draw-bar L by front and rear connections m, m' . These connections would be separate pieces when draw-bar M is attached to an old draw-bar, but they may be formed integral with the draw-bars (all cast together) if desired. The draw-bar M has a sliding block B in it, attached to a pipe C, and a tube E, and valve F, as above described.

In use the cars will be coupled by ordinary links between the draw-bars L, L, and the air brakes coupled by hollow links between draw-bars M, M, as will be obvious from the foregoing description. In this latter construction the lower ends of rods i, i , are connected by a transverse piece i' , from which is suspended a pin N, adapted to play through openings m^2 , in draw-bar M, so as to lock the tubular links therein.

In place of the shaft and chain for raising yoke I, I may employ the devices shown in Fig. 3, in which the yoke is connected by a link O to an arm p , on a rock shaft P, secured across the end of car and provided with crank handles P' on its ends by which it can be shifted from either side of the car. The shaft also has an arm p' , which is connected by a link q to one end of an oscillating lever Q pivoted on the top of the car, so that by depressing the other end of said lever the shaft will be rocked and the yoke raised, thus simultaneously releasing the links from both draw-bars L and M.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent thereon, is—

1. The combination of the draw-bar, with a movable hollow block therein concealed, the air pipe connected to, and the air valve in, said block opened automatically by the link in coupling, substantially as described.

2. The combination of the draw-bar, with a hollow block therein adapted to uphold the pin; an air pipe connected to said block, and

an air valve for said pipe, substantially as specified.

3. The combination of the draw-bar, with a movable hollow block therein, the air pipe connected to, and the air valve in, said block; and a hollow coupling link adapted to open said air valve when coupled, substantially, as set forth.

4. The combination of the draw-bar, with a hollow block therein adapted to uphold the pin; an air pipe connected to said block, an independently movable air valve in said block, and a hollow link, adapted to unseat said air valve and establish communication between the air pipes of opposite couplings, as and for the purpose set forth.

5. The combination of the draw-bar, a movable block therein, and a spring controlled pin-upholding plate connected to said block, as and for the purpose specified.

6. The combination of the draw-bar, a movable block therein, an air pipe connected to said block, a valve for said pipe, within the draw-bar adapted to be automatically opened by the entrance of a coupling pin; and a spring controlled pin-upholding plate connected to said block, substantially as set forth.

7. The combination of the draw-bar, the movable hollow spring-controlled block therein, the air pipe attached to said block, the spring controlled tube, and the independently spring controlled air-valve in said block, substantially as described.

8. The herein described hollow link for combined car-and-air-brake couplings, consisting of a hollow oval link having extensions at its ends provided with globular heads, substantially as and for the purpose set forth.

9. The combination of the upper and lower connected draw-bars, the pins and pin operating devices therefor, the automatic pin upholding devices therein, and the air-pipe coupling devices in the lower draw-bar, all substantially as specified.

10. The combination of the draw-bar L, and the spring controlled block L' therein: with the draw-bar M, the spring controlled block B therein, the pipe C, and air valve F, all substantially as described.

11. The combination of the draw-bars L and M, the yoke I, the pins H and N, the rock shaft P, the link connection between said rock shaft and yoke, and the oscillating lever Q and the connection between said lever and said rock shaft, all constructed and arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

SAMUEL JAY GALLOWAY.

Witnesses:

MARTIN PAYNE,

W. W. WADSWORTH.