(No Model.) 2 Sheets—Sheet 1.

P. PELTON.

COMBINED AIR BRAKE AND CAR COUPLING.

No. 482,382. Patented Sept. 13, 1892.

Fig. 1

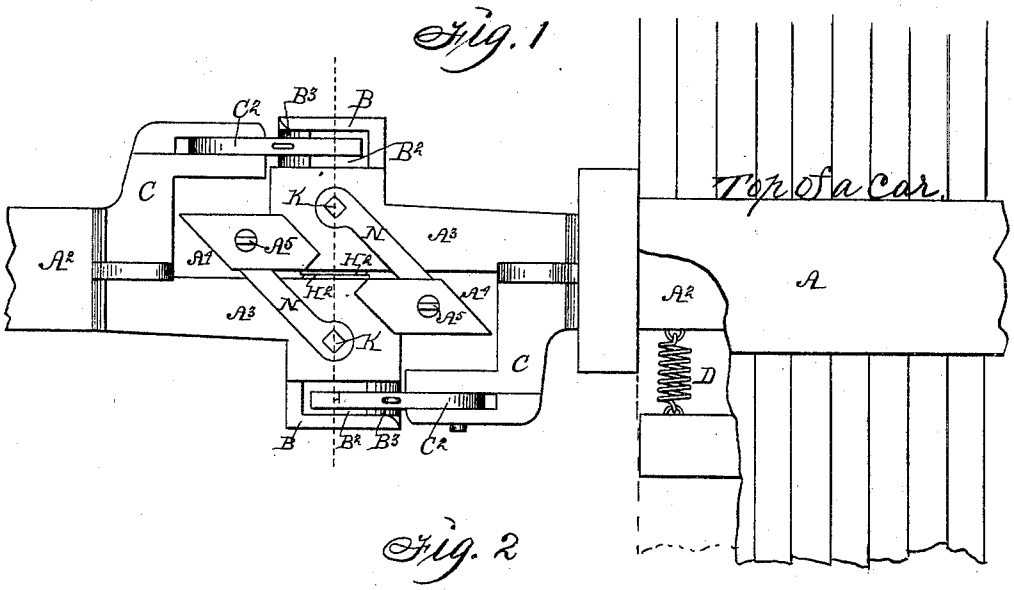


Fig. 2

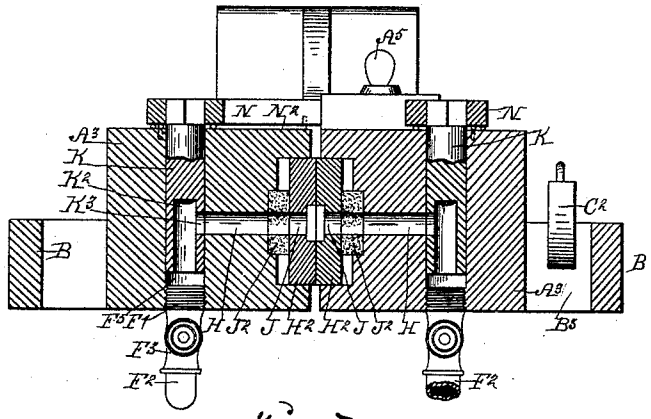
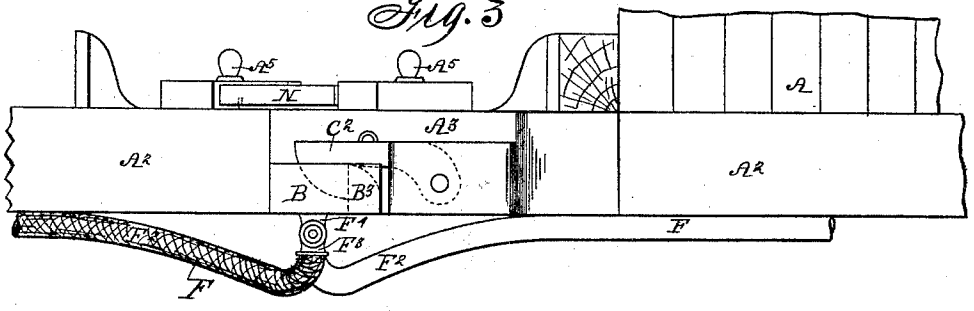


Fig. 3



Witnesses:
W. S. Saukey.
J. Ralph Orwig.

Inventor: Phineas Pelton,
By Thomas G. Orwig, Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4

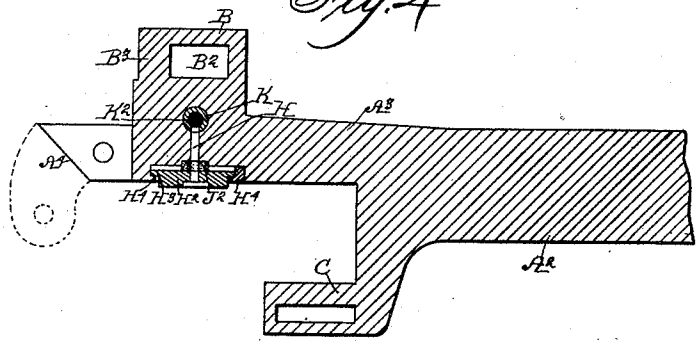


Fig. 5

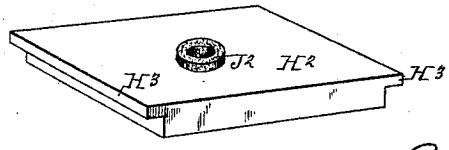


Fig. 6

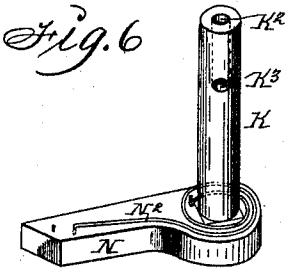
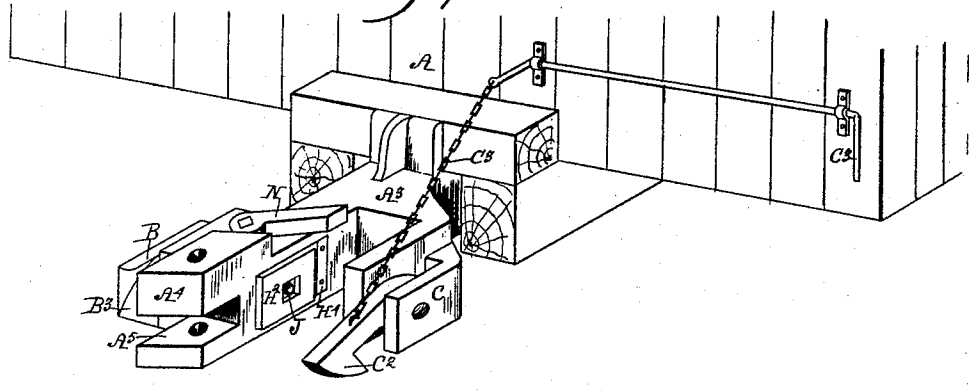


Fig. 7



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UNITED STATES PATENT OFFICE.

PHINEAS PELTON, OF PERSIA, IOWA.

COMBINED AIR-BRAKE AND CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 482,382, dated September 13, 1892.

Application filed April 26, 1892. Serial No. 430,665. (No model.)

To all whom it may concern:

Be it known that I, PHINEAS PELTON, a citizen of the United States of America, residing at Persia, in the county of Harrison and State of Iowa, have invented a new and useful Combined Automatic Air-Brake Hose-Coupling and Automatic Car-Coupling, of which the following is a specification.

My object is, broadly, to combine suitable mechanism with an automatic car-coupling whereby a continuity of passages suitable for conveying compressed air is automatically established between the air-conducting pipes secured beneath cars when the said cars are coupled together and the said air-passage is automatically closed, as required, to prevent the escape of compressed air when the cars are separated.

Another object of my invention is to produce an improved car-coupling especially adapted for use in connection with the said air-brake hose-coupling.

My invention consists, primarily, in the construction of a spring-actuated valve-stem communicating with the air-conducting hose or pipe of the car to which it is attached and with an air-passage leading through the connecting-plates and in the means for normally holding the valve closed and automatically opening it when two cars are coupled together.

My invention consists, further, in the construction of the said connecting-plates and in the means employed whereby they may conform to the movements of the cars and inequalities in their surfaces, &c.

My invention consists, further, in the construction of the means employed for automatically turning the valve-stem, as required, to open the valve when the cars are coupled and to close the same when uncoupled.

My invention consists, further, in the formation and manner of connecting the car-coupling devices with the air-brake hose-coupling apparatus and in certain other minor details, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of two complete couplers in engagement with each other, the one being attached to a car, parts of which are broken away to show the means for normally holding the couplers in proper position relative to each other. Fig. 2 is an enlarged transverse sectional view through the line $x\,x$ of Fig. 1. Fig. 3 is a side elevation of the parts shown in Fig. 1. Fig. 4 is a horizontal sectional view of one of the couplers. Fig. 5 is a perspective view of one of the connecting-plates. Fig. 6 is a perspective view of the valve-stem. Fig. 7 is a perspective view of a complete coupling device secured to a car, as required in practical use.

Referring to the accompanying drawings, the reference-letter A is used to designate the car.

A^2 represents the draw-bar, secured to a car in a common way. Its outer end is divided longitudinally into two parts. The part designated by the symbol A^3 projects forwardly beyond the other part and has an enlarged head. The forward end of this portion A^3 is inclined forwardly and outwardly at A^4 to engage a mating coupling and direct it into proper position relative thereto. A^5 is a link-cavity formed therein, and A^6 a pin intersecting the said link-cavity, as required, to adapt the device for use with a link-and-pin coupling.

B is a formation on the outer side of the part A^3, having a cavity B^2 and a wall B^3 at right angles to the part A^3, said wall having a downwardly and forwardly inclined front face for purposes hereinafter set forth.

The other portion of the forward end of the draw-bar is designated by the letter C and has a hook C^2 pivoted therein and projecting forwardly therefrom. This hook has a downwardly and rearwardly inclined front face and is supported in an approximately-horizontal position, as required, to engage the wall B^3 of a mating coupling and enter the opening B^2, and thereby couple the cars together. C^3 represents means for elevating the said hook, as required, to uncouple.

D is a spring connected with the draw-bar and with a portion of the car to normally hold the coupler in such a position that the meeting faces of the parts A^3 will engage each other and at the same time allow the requisite lateral motion.

Having thus described the car-coupling mechanism, I shall now proceed with a description of the air-brake hose-coupling.

F represents the air-conducting pipe, secured beneath a car. F^2 is a flexible hose-section connected therewith, having a coupling-

piece F^3 secured to its end, and F^4 is a mating coupling-piece screwed into the lower end of a vertical bore F^5, extended through the part A^3.

H is an intersecting bore extending horizontally therefrom to the approximate central portion of the inner face of the part A.

H^2 is a connecting-plate rectangular in form and placed in a cavity in the inner face of the part A^3. It is secured therein by having a flange H^3 formed on its ends to be extended under the flanges H^4, formed or fixed to the part A^3. One of these flanges H^4 is preferably removable, as required, to provide for removal of the plate H^2.

J is a bore extended through the plate H^2 and preferably larger at its outer end.

J^2 is a spring-cushion having an opening in its center preferably formed of rubber and interposed between the plate H^2 and the part A^3, as required, to allow the said plate to conform to a mating plate and be held in close contact therewith. It will now be obvious that a continuity of air-passages is provided from the pipe F to the outer face of the plate H^2.

K represents a valve-stem placed in the said bore F^5 and extending therein below the bore H. This valve-stem has a bore K^2 extending from its lower end upwardly to the bore K^3, which is in alignment with the bore H and adapted to communicate therewith when the valve is in proper position relative thereto and to be shut off when the valve-stem is turned in the bore F^5.

N is a pawl actuated by the spring N^2 and secured to the top of the valve-stem K and normally extending forwardly, in which position the bore K^3 will be shut off from communication with the bore H. Its outer face is adapted to contact with the inclined forward face A^4 of a mating coupling and be swung rearwardly, in which position the said bores will communicate and provide a continuity of air-conducting passages.

In Fig. 4 there is illustrated by dotted lines a fixed vertical jaw, as required, to adapt the device to be coupled with cars provided with a hinged vertical jaw.

In practical operation when two cars provided with the coupling devices come together the hooks will reciprocally engage the walls B^3 and thereby couple the cars, the pawls N will be moved rearwardly, as required, to open the valves of air-conducting passages, and the plates H^2 will remain in close contact with each other, as required, to produce an air-tight joint by reason of the pressure of the cushion J^2 and the lateral pressure of the spring D.

I do not desire to be understood as limiting myself to the particular form of car-coupling used nor to location of the parts relative to each other; but

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

1. The combination, in a combined car-coupling and automatic air-brake hose-coupling, of a draw-bar having an enlarged formation on its forward end, a car-coupling device formed on or fixed thereto, a vertical bore extended therethrough, and a horizontal bore intersecting it, an air-conducting pipe or hose in the lower end of the said vertical bore, a valve-stem in the upper end of the said vertical bore, a bore extending upwardly from the lower end of the said valve-stem and terminating at its side in alignment with the said horizontal bore, and means for automatically turning the said stem in the bore, so as to cut off or establish a continuity of air-conducting passages from the said horizontal bore when two mating draw-heads come together.

2. The combination, in a combined car-coupling and automatic air-brake hose-coupling, of a draw-bar having an enlarged formation on its forward end, a car-coupling device formed on or fixed thereto, a vertical bore extending therethrough, and a horizontal bore intersecting it and extended toward the face thereof which would contact with a like surface on a mating draw-head, an air-conducting pipe or hose inserted in the lower end of the said vertical bore, a valve-stem in the upper end of the said vertical bore, a bore extending upwardly from the lower end of the said valve-stem and terminating at its side in alignment with the said horizontal bore, and a spring-actuated pawl secured to the top of the said valve-stem, whereby its bore is normally retained out of alignment with the said horizontal bore and which is adapted to engage parts of a mating draw-head and bring the said bores into alignment when brought into contact therewith.

3. The combination, in a combined car-coupling and automatic air-brake hose-coupling, of a draw-bar having an enlarged formation on its forward end, a car-coupling device formed on or fixed thereto, a vertical bore extending therethrough, and a horizontal bore intersecting it and extending toward the side face of the draw-head, an air-conducting bore or pipe inserted in the lower end of the said vertical bore, a valve-stem in the upper end of the said vertical bore, a bore extending upwardly from the lower end of the valve-stem and terminating at its side in alignment with the said horizontal bore, means for automatically turning the said valve-stem in the bore, a concentrically-bored connecting-plate in the side face of the draw-head, mounted therein in such a manner as to be capable of a limited lateral movement relative to the draw-head, and yielding pressure devices normally holding the same outwardly from the draw-heads.

4. The combination, in a combined car-coupling and automatic air-brake hose-coupling, of a draw-bar having an enlarged formation on the forward end, a car-coupling device formed on or fixed thereto, a vertical bore extending therethrough, and a horizontal bore intersecting it and extending toward the side face of the draw-head, an air-conducting hose or pipe inserted in the lower end of the said vertical bore, a valve-stem in the upper end of the

said vertical bore, a bore extending upwardly from the lower end of the valve-stem and terminating at its side in alignment with the said horizontal bore, means for automatically turning the said valve-stem in the bore, a concentrically-bored connecting-plate in the side face of the draw-head, mounted therein in such a manner as to be capable of a limited lateral movement relative to the draw-head, and yielding pressure devices normally holding the same outwardly from the draw-heads, and yielding pressure devices normally tending to hold the draw-bar toward the side thereof on which the said connecting-plate is located.

5. The combination, in a combined car-coupling and automatic air-brake hose-coupling, of a draw-bar having an enlarged formation on its forward end, a car-coupling device formed on or fixed thereto, a vertical bore extending therethrough, and a horizontal bore interesecting it and extending toward the side face of the draw-head, an air-conducting pipe or hose inserted in the lower end of the said vertical bore, a valve-stem in the upper end of the said vertical bore, a bore extending upwardly from the lower end of the valve-stem and terminating at its side in alignment with the said horizontal bore, a spring-actuated pawl secured to the top of the said valve-stem, whereby its bore is normally retained out of alignment with said horizontal bore and which is adapted to engage parts of a mating draw-head and bring the said bores into alignment when brought into contact therewith, a concentrically-bored connecting-plate in the side face of the draw-head, mounted therein in such a manner as to be capable of a limited lateral movement relative to the draw-head, and yielding pressure devices normally holding the same outwardly from the draw-head.

6. The combination, in an air-brake hose-coupling, of a draw-bar having an enlarged head, a vertical bore in the said head, a horizontal bore intersecting it and extending toward its side, an air-conducting pipe or hose inserted in the lower end of the said vertical bore, a valve-stem inserted in the upper end of the said vertical bore, a bore extending upwardly from the lower end of the valve-stem and terminating in its side in alignment with the said horizontal bore, and means for turning the said stem so as to cut off or establish a continuity of air-conducting passages from the said hose to the side of the draw-head.

7. The combination, in an air-brake hose-coupling, of a draw-bar having an enlarged head, a vertical bore in the said head, a horizontal bore intersecting it and extending toward its side, an air-conducting pipe or hose inserted in the lower end of the said vertical bore, a valve-stem inserted in the upper end of the said vertical bore, a bore extending upwardly from the lower end of the valve-stem and terminating in its side in alignment with the said horizontal bore, and a spring-actuated pawl secured to the top of the said valve-stem and adapted to normally hold the said bores out of alignment with each other and to engage a portion of the mating draw-head and bring the said bores into alignment when brought in contact with a mating draw-head.

8. The combination, in an automatic air-brake hose-coupling, of a draw-head, an air-conducting pipe or hose inserted in a bore in the said draw-head, which extends to its side, a connection-plate secured to its side, having a concentric bore which communicates with the aforesaid bore, said plate being capable of limited lateral movement relative to the draw-head, and yielding pressure devices normally holding the said plate outwardly from the draw-head.

9. The combination, in an automatic air-brake coupling, of a draw-head, an air-conducting pipe or hose inserted in a bore in the said draw-head, which extends to its side, a connection-plate removably attached to its side and having a concentric bore which communicates with the aforesaid bore, said plates being capable of a limited lateral movement relative to the draw-head, a rubber cushion having a concentric opening placed between the said plate and draw-head, and yielding pressure devices applied to the draw-bar to normally hold it toward its side in which the said connection-plate is located.

10. A combined automatic car-coupling and automatic air-brake hose-coupling comprising a draw-bar, a draw-head divided vertically into two parts, a hook having an inclined forward surface, pivoted in the outer end of one of the ends of the draw-head, and a projection having a wall that extends at right angles to the draw-head, having an inclined forward surface on the other portion of the draw-head, an air-conducting pipe or hose inserted in the said draw-head, and the mechanism, substantially as shown and described, for automatically establishing a continuity of air-conducting passages to a portion thereof which contacts with a like surface on a mating draw-head.

11. A combined automatic car-coupling and automatic air-brake hose-coupling comprising a draw-bar having a draw-head, substantially as described, the coupling device secured therein, as shown, an inclined front surface on the draw-head, extending above the level of the draw-head, a vertical bore in the said draw-head, air-conducting pipe or hose inserted therein, a valve-stem having the spring-actuated pawl adapted to engage the said inclined surface of the draw-head, substantially as shown and described, a connecting-plate secured to the side of the draw-head, as set forth, and the link-cavity and intersecting pin-bore in the forward end of the draw-head, substantially as shown and described, to operate in the manner set forth.

PHINEAS PELTON.

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