(No Model.) 2 Sheets—Sheet 1.

J. B. THOMAS.

CAR COUPLING.

No. 418,089. Patented Dec. 24, 1889.

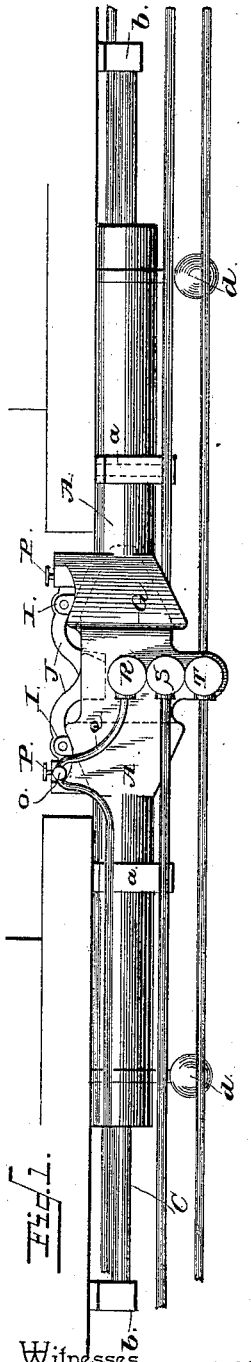


Fig. 1.

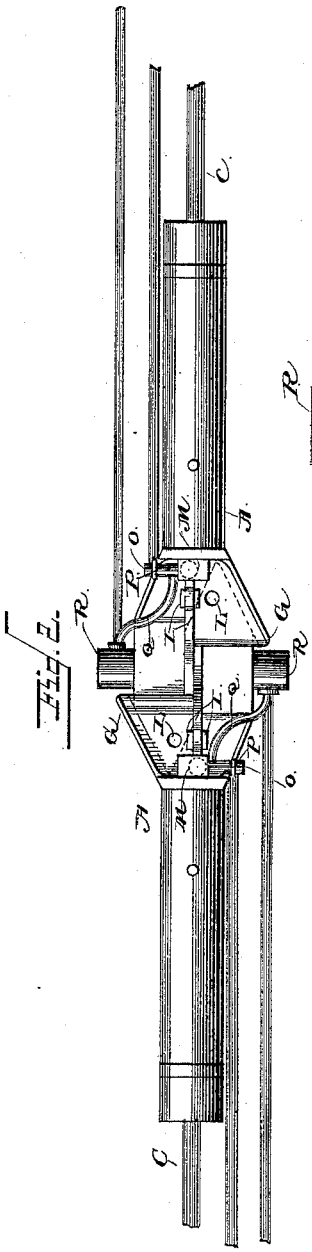


Fig. 2.

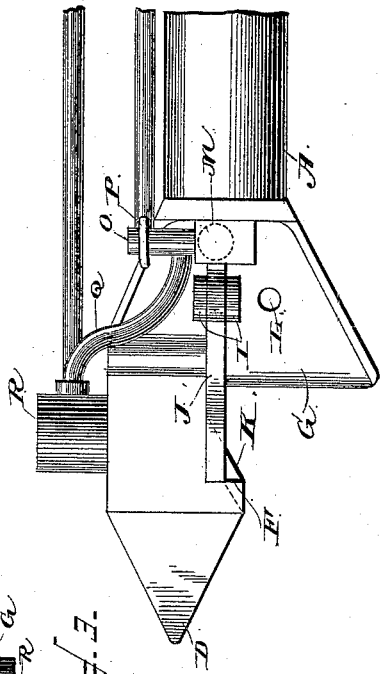
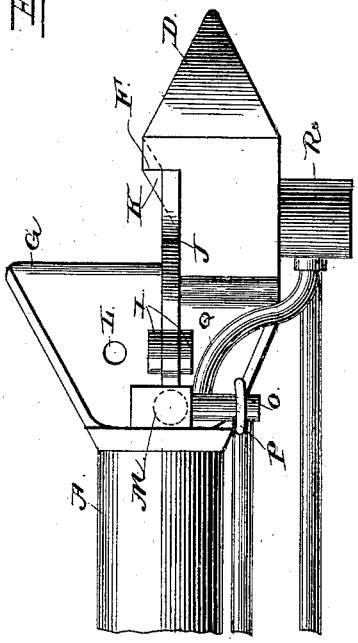


Fig. 3.



Witnesses

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Inventor

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

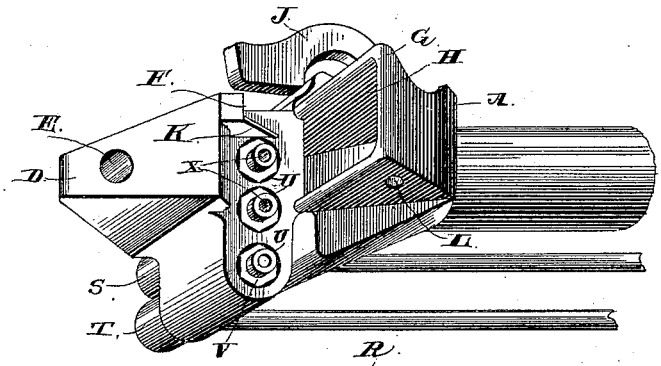


Fig. 5.

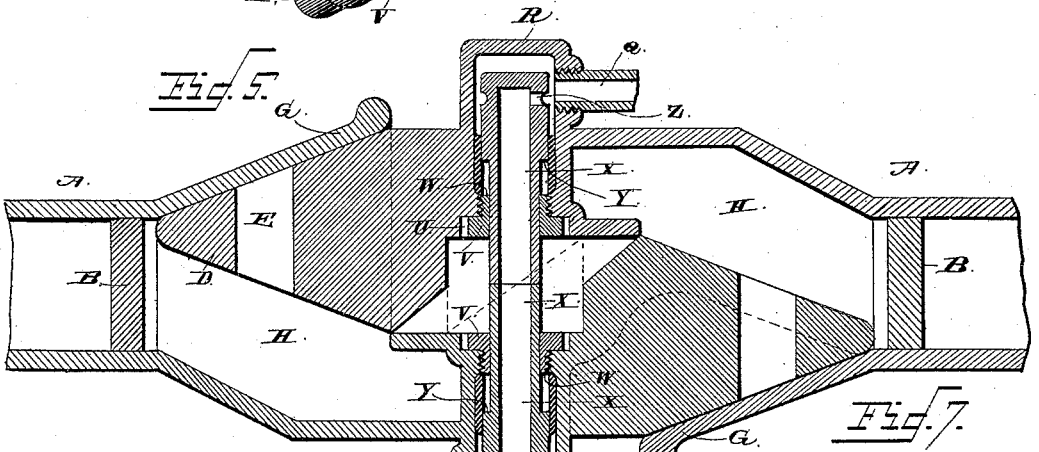


Fig. 7.

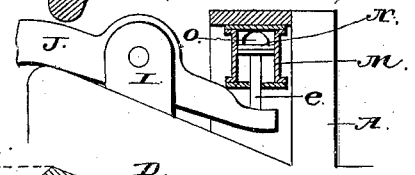
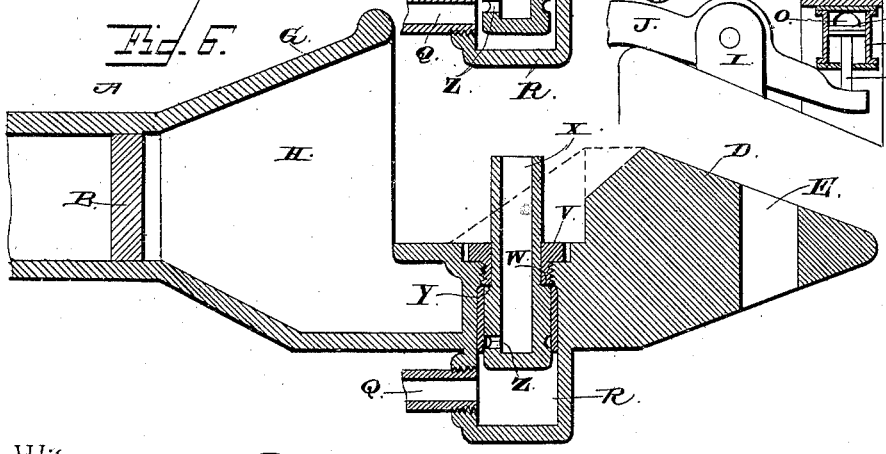


Fig. 6.



Witnesses.
M. E. Fowler

Inventor
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By his Attorneys,
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UNITED STATES PATENT OFFICE.

JAMES BRYANT THOMAS, OF SULPHUR SPRINGS, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 418,089, dated December 24, 1889.

Application filed September 24, 1889. Serial No. 324,878. (No model.)

To all whom it may concern:

Be it known that I, JAMES BRYANT THOMAS, a citizen of the United States, residing at Sulphur Springs, in the county of Hunt and State of Texas, have invented a new and useful Car-Coupling, of which the following is a specification.

My invention relates to improvements in car-couplings; and it consists in certain novel features hereinafter described and claimed.

The especial object of my invention is to provide a single structure in which the air-brake pipes and steam-heating pipes will be coupled together when the cars are coupled, and in which the several parts will be very compactly arranged.

A further object is to provide means whereby the cars may be uncoupled by the use of compressed air.

In the accompanying drawings, Figure 1 is a side view of my improved coupling, showing two draw-heads coupled together. Fig. 2 is a plan view of the same. Fig. 3 is a similar view on a larger scale, showing the draw-heads separated. Fig. 4 is a perspective view of one of the draw-heads. Fig. 5 is a horizontal section of the same. Fig. 6 is a similar view of one draw-head uncoupled. Fig. 7 is a detail view of the piston for releasing the coupling-hook.

The draw-head A is secured on the bottom of the car at the end of the same, and the main portion of the draw-head is cylindrical and provided with an internal cylinder-head B, as shown. The cylinder fits over a piston C, secured on the bottom of the car, and the air contained within the cylindrical draw-head between the cylinder-head B and the piston will be compressed when the draw-heads are brought together, and consequently serve as a cushion to deaden the shock between the draw-heads in the operation of coupling. The draw-head is pivoted within a bracket *a* on the under side of the car, so that it may have a slight lateral motion to facilitate the operation of coupling. The piston is secured to the car by a cup *b* in such a manner that it will be prevented from having any longitudinal motion, but will be permitted to move from side to side, so as to accommodate itself to the position of the draw-heads.

A counterbalancing-weight *d* is attached to the rear portion of the draw-head, so as to prevent the heavier front end of the same drawing it downward out of a horizontal position. The forward extremity of the draw-head is provided with a tapered tongue D, and this tongue is provided with a transverse horizontal opening E, which is adapted to receive a clevis to permit the device to be used in connection with the ordinary pin-and-link coupling. The tongue is also provided on its inner side with the lateral shoulder F, and the shoulder of each draw-head is engaged by a coupling-hook pivoted on the opposite draw-head in the operation of the device. The draw-head is further provided in rear of the shoulder F with an offset G, which is substantially triangular in form and is hollow, thereby providing the chamber H, which is adapted to receive the tapered tongue of the opposite draw-head.

It will be readily understood, of course, that the tapered tongue and the hollow offset are arranged on opposite sides of the median longitudinal lines of the draw-head, so that in the operation of coupling the tongue of each draw-head enters the projection of the opposite draw-head, and the two draw-heads are thus guided toward each other, so as to insure a perfect coupling. On the upper side of the draw-head, and in about the central line of the same, I form the lugs I, between which I pivot the coupling-hook J, the said hook extending forward from the said lug and curving downward therefrom, so that when the draw-heads are brought together the end of the hook will drop into engagement with the shoulder F and rest upon the shelf K at the lower edge of the said shoulder. By this arrangement the strain applied to the coupling-hooks will be exerted directly on the ends of the same and will not be put on the pivot thereof, thereby reducing the strain on the pivot, and consequently increasing the durability of the device. The rear end of the coupling-hook is extended past the pivot, and is adapted to be acted upon by the compressed air in the operation of coupling.

The lateral projection G is provided in its top and bottom with the registering openings

L, so as to permit the device to be used in connection with the push-bar of a locomotive.

On the upper side of the draw-head I provide a small cylinder M, which is arranged directly over the rear end of the coupling-hook, and in the said cylinder I arrange a piston N. The compressed air is admitted to the cylinder through a pipe O, provided near the cylinder with a stop-cock P, so that the flow of compressed air may be regulated at will. From the pipe O a branch pipe Q leads downward around the side of the draw-head and communicates with a pipe R, extending through the draw-head and adapted to register with a similar pipe on the opposite draw-head, so that the coupling-hooks of both draw-heads may be simultaneously disengaged. The piston N is provided with a depending stem or piston-rod *e*, which projects through the lower end of the cylinder and bears on the inner or rear end of the coupling-hook.

The construction and operation of the pipe or pipes R are the same as that of the air-brake pipes S and the steam-heating pipes T, and this construction and operation I will now proceed to describe, particular reference being had to Figs. 5 and 6.

In the front end of the draw-head and between the front end of the hollow lateral projection G and the shoulder F, I form a series of horizontal transverse openings or chambers U, and the inlet-pipe, either S, T, or Q, enters the chamber U near the outer end of the same. The inner end of the chamber U is partially closed by a nut V, screwed thereinto, and thereby providing the shoulder W. Within the chamber U, I mount the sliding tube or cylinder X, which is normally pressed outward by the fluid within the opening, and is provided with an annular shoulder Y, which is adapted to engage the shoulder W, and thereby limit the outward movement of the said tube or cylinder. The tube or cylinder X is provided near its outer end with the diametrical openings or ports Z, through which the fluid passes into the cylinder and then escapes into the cylinder of the opposite draw-head, and so passes on through the train.

The construction and arrangement of the several parts of the device being thus made known, the operation and advantages of the same will, it is thought, be readily understood.

When it is desired to couple two cars together, the cars are made to approach, and the flow of compressed air through the pipe O is cut off, thereby allowing the coupling-hooks to fall. As the draw-heads come together the tongues D will enter the chambers H, and the draw-heads be thereby moved laterally toward each other, so as to bring the coupling-hooks into engagement with the shoulders F and cause the pipes R, the steam-heating pipes, and the air-brake pipes to register. The coupling-hooks will automatically engage the shoulders F, and the cars will thereby be coupled together. In the normal position of the parts, when the cars are uncoupled, the pressure of the air or other fluid within the opening or chamber U, acting on the outer end of the cylinder or tube X, throws the said tube or cylinder outward, so that the ports or openings Z therein will be closed by the walls of the chamber U. When the draw-heads come together, however, the lateral motion given thereto by the tongues and the recesses H will bring the ends of the tubes or cylinders X against each other, thereby throwing the said tubes or cylinders inward, so as to allow the fluid to pass through the ports or openings Z into the cylinders, as will be readily understood. When it is desired to uncouple the cars, the compressed air is again permitted to flow through the pipe O, and will throw the piston N downward, so as to depress the rear end of the coupling-hook, and thereby release the same, as before described, and, the pressure being maintained on the piston N, the coupling-hook will be held raised, so as to facilitate the coupling of the cars. As the cars separate the tubes or cylinders X will be thrown outward, inasmuch as the external pressure therein is greater than the internal pressure, and the flow of the fluid through the same will be consequently automatically cut off.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided a very simple and efficient device in which the parts are compactly arranged, and in which the air-brake pipes and the steam-heating pipes will be automatically coupled when the cars are coupled, and the advantages of the device are thought to be obvious.

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

1. The combination of the draw-head having the shoulders F, and the shelves K, and the coupling-hooks pivoted on the upper sides of the draw-heads and adapted to engage the shoulders F and rest on the shelves K, as set forth.

2. In a car-coupling, the combination, with the draw-head, of the coupling-hook pivotally mounted thereon, a cylinder arranged on the upper side of the draw-head adjacent to the rear end of the coupling-hook, and a piston in said cylinder acting on the rear end of the coupling-hook, as set forth.

3. The improved car-coupling consisting of the draw-head, the coupling-hook mounted pivotally thereon, the cylinder M, arranged on the draw-head, the transverse pipes R within the draw-head, the pipe O, leading into the cylinder M and provided with a stop-cock, and a branch pipe Q between the pipe O and the tube R, all arranged and operating substantially as specified.

4. The combination, with the draw-head having the transverse chamber U, of the inlet-pipe communicating therewith, and the

tube or cylinder mounted in said chamber, as set forth.

5. The combination, with the draw-head having the transverse chamber U, provided with an annular shoulder W, of the inlet-pipe communicating with the said chamber, and the tube or cylinder arranged within said chamber and provided with ports or openings Z and the annular shoulder Y, as set forth.

6. The combination of the draw-heads provided at their front ends with tapered tongues and the hollow lateral projections adapted to receive said tongues, and the coupling-hooks pivotally mounted on the draw-heads and adapted to lock the same together, as set forth.

7. In a car-coupling, the draw-head provided with a series of transverse tubes or cylinders, whereby, when the cars are coupled together, the heating-pipes and the air-brake pipes will be simultaneously coupled, as set forth.

8. The combination, with the car, of the piston secured thereon, and the cylindrical draw-head fitting snugly on said piston and provided with an internal cylinder-head, as set forth.

9. The combination, with the car, of the cylindrical draw-head pivoted thereto, and the piston secured to the car and fitting in the draw-head, as specified.

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

JAMES BRYANT THOMAS.

Witnesses:
J. H. SIGGERS,
R. J. MARSHALL.