

(No Model.)

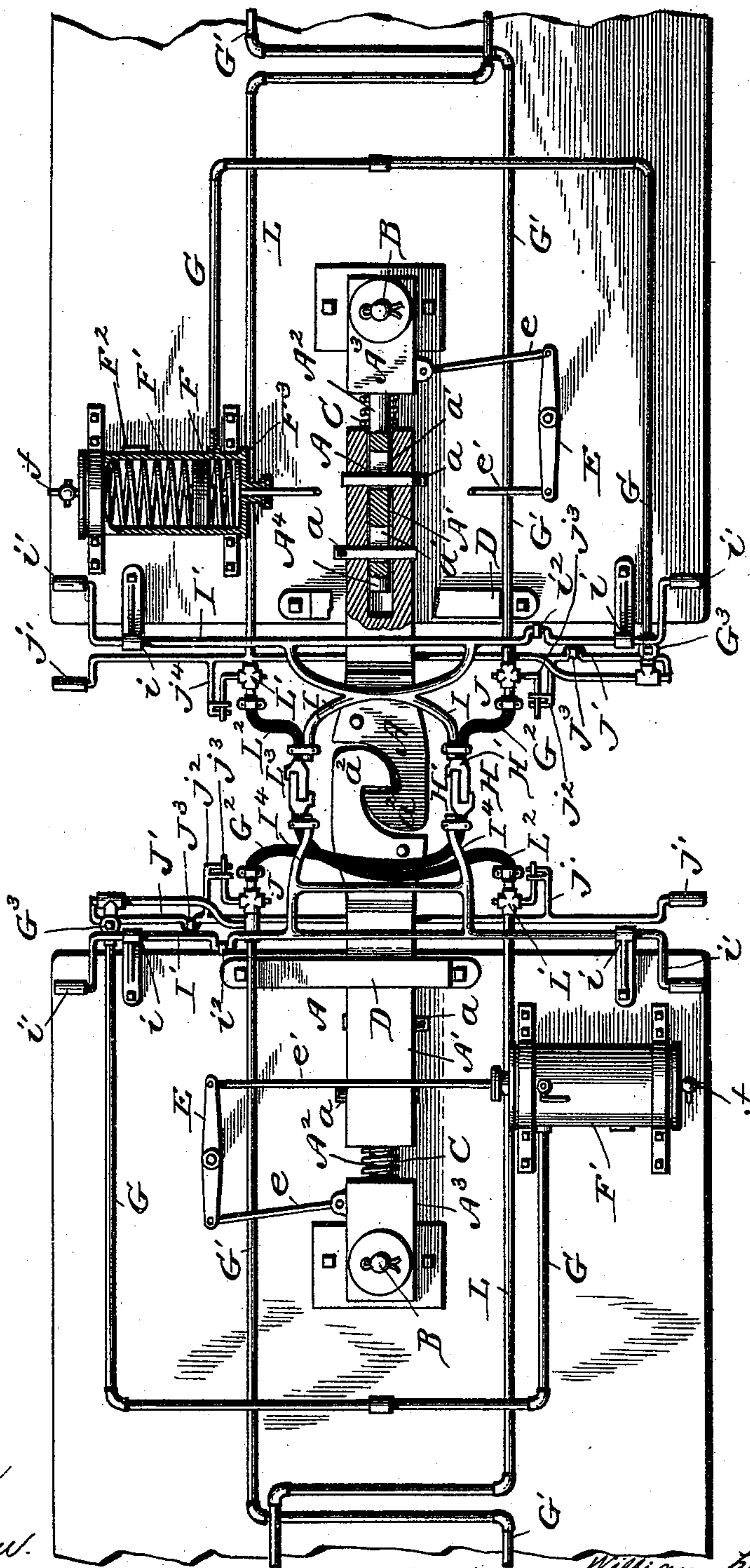
2 Sheets—Sheet 1.

W. C. GEBHARDT.
CAR COUPLING.

No. 496,256.

Patented Apr. 25, 1893.

Fig. 1.



Witnesses
Albert Spiden.
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Inventor
By his Attorney *William Charles Gebhardt*
Woodbury Lowery

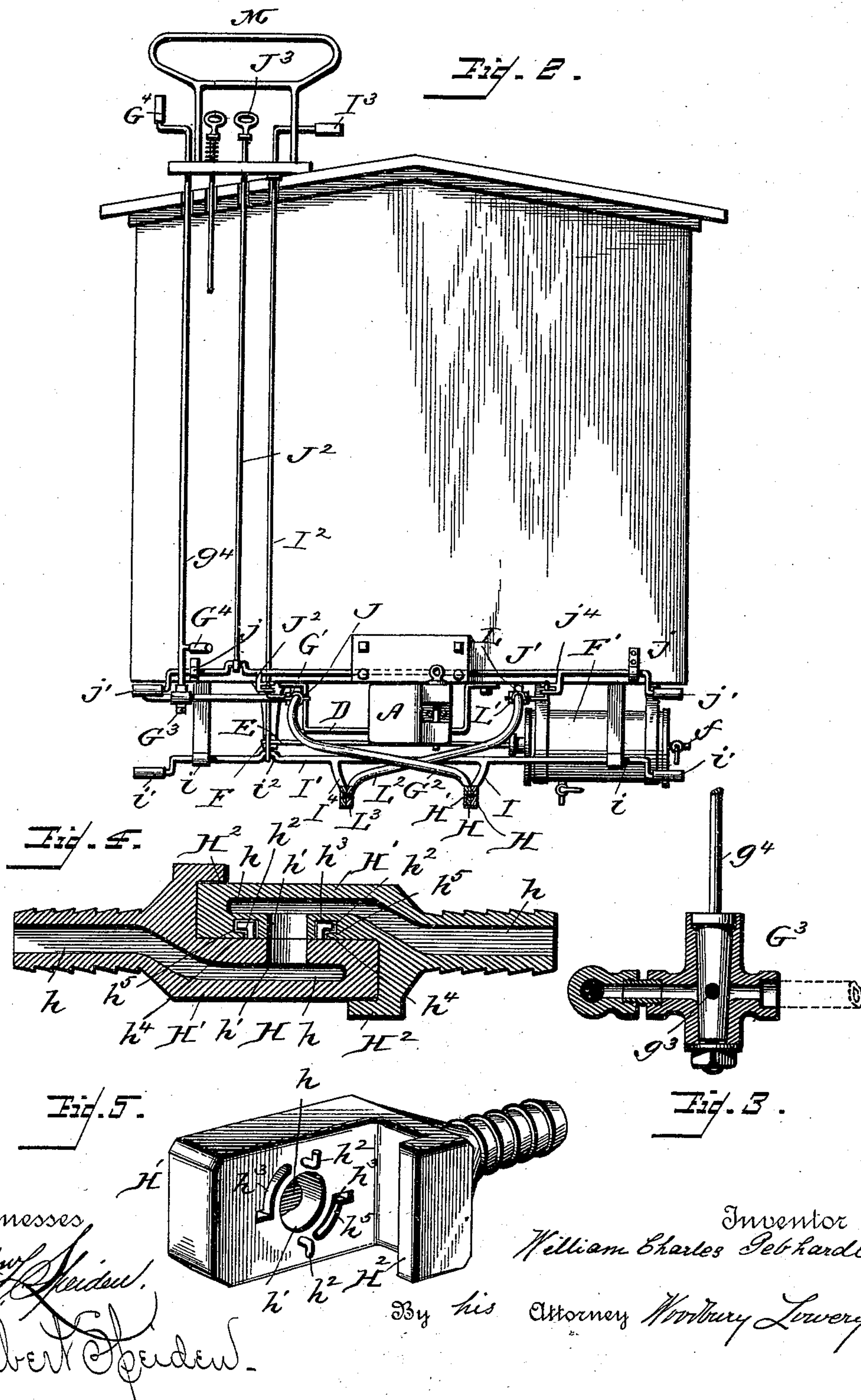
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UNITED STATES PATENT OFFICE.

WILLIAM CHARLES GEBHARDT, OF LULING, TEXAS, ASSIGNOR OF ONE-HALF
TO OTIS MCGAFFEY, JR., OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 496,256, dated April 25, 1893.

Application filed June 6, 1892. Serial No. 435,679. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CHARLES GEBHARDT, a citizen of the United States, residing at Luling, Caldwell county, Texas, have
5 invented new and useful Improvements in Car-Couplings, of which the following is a specification.

The object of my invention is to provide a car-coupling, which couples automatically and
10 by which a brakeman on a single car can uncouple one or more cars and to provide pipe connections between the cars for this and other purposes. And my invention consists more particularly in a pivoted drawhead
15 having lever connections with a piston head within a cylinder, the drawhead being held in the normal coupling position by a spring pressing against the piston head and released or uncoupled by steam connections with the
20 cylinder having valves operated by the brakeman upon the car.

In the accompanying drawings which illustrate my invention—Figure 1 is a plan view of the two drawheads coupled together with
25 their pipe connections. Fig. 2 is a vertical elevation of one end of a car showing the valve and rod connections operated by the brakeman. Fig. 3 is a cross-section of the uncoupling valve and Fig. 4 is a cross section
30 and Fig. 5 a perspective view of my steam pipe coupling.

A is the draw head consisting of the hollow sleeve A' into which fits the spindle A² of the drawhead base A³ pivoted at B to the bottom
35 of the car. The sleeve A is held to the spindle A' by means of bolts *a a* or other suitable means, passing through the sleeve and through longitudinal slots *a' a'* in the spindle which permits of a longitudinal play of the
40 sleeve upon the latter. A coiled spring C surrounds the spindle A² at its base and abuts against the end of the sleeve A' to take up the slack given the drawhead on coupling.

D is a strap bolted to the bottom of the car
45 and limits the swing of the draw head.

*a*² is the coupling hook which may also be provided with a coupling link as shown in Fig. 2 for use where the link and pin are employed.

50 E is a lever pivoted to the bottom of the car and connected at one extremity by the

rod *e* to the drawhead A, and at the other by the rod *e'* to the piston head F of the cylinder F' bolted to the bottom of the car. A powerful spring F² within the cylinder abuts
55 against the piston head F and holds the drawhead A normally in the coupling position, as shown in Fig. 1, by the pressure exerted against the latter through the lever E and its connecting rods *e e'*. A second spring F³
60 forward of the piston head assists in maintaining the normal position of the drawhead.

f is a steam escape cock communicating with the interior of the cylinder F'.

G is a steam pipe connecting the cylinder
65 F' in front of the piston head F with the main steam supply pipe G' extending the entire length of the train and coupled between cars by means of a flexible pipe G² and coupling
70 H in a manner hereinafter more fully explained. A valve G³ with suitable port *g*³ (see Fig. 3) is located in the cylinder pipe G at any convenient point, shown in the drawings at the end of the car; it is opened and
75 closed by the valve rod *g*⁴ extending to the top of the car where it is provided with a crank handle G⁴ manipulated by the brakeman to turn the steam on and off from the cylinder.

The operation of this part of my invention
80 is as follows: The car being detached from the train or the steam being turned off from the cylinder F' by means of the valve and its rod G³ *g*⁴ the drawheads A A are held in such position by their springs F² that on coming
85 together they automatically engage and remain hooked together whatever the relative position of the car in turning a curve, the force of the springs being sufficient to maintain them in secure and permanent engage-
90 ment, while yielding to the movement of the train. In order to uncouple the cars the brakeman merely turns the valve G³ to admit steam from the main pipe G' which as before stated, is continuous the entire length
95 of the train, through the cylinder pipe G into the cylinder F², pushing back the piston head F, turning the drawhead A on its pivot B by means of the lever and rod connections, and disengaging the hooks *a*².

The main pipe G' is coupled throughout the train in the following manner: A flexible
100

steam pipe G^2 is secured to the extremity of the main pipe G' and is carried on the projecting arm I of a rock shaft I' extending across the end of the car both rocking and having a limited sliding movement in bearings $i i$ secured to the same. Crank handles $i' i'$ at each end of the rock shaft I' allow the latter to be rocked so as to raise its arm I with its flexible pipe attachment G^2 into position for engagement and coupling with a similar pipe on the similar lifting device of the opposite car. A rod I^2 forming a crank connection at i^2 with the rock shaft I' also extends to the top of the car, where it is provided with a handle I^3 by means of which the rock shaft may be rocked by the brakeman from the top of the car, sufficient play being allowed for the sliding movement of the rock shaft. The pipe coupler H consists of the twin couplers $H' H'$, Figs. 4 and 5, having a longitudinal steam passage way h , with a central aperture h' on the inner face of each coupler which register when the faces are locked together. A projecting L-shaped shoulder H^2 at the base of each coupler forms a guide way into which fits the head of the other coupler, when they are swung into engagement by first sliding the rock shaft laterally by means of its crank handles $i' i'$ to bring them face to face. On the inner face of each coupler are projecting hook shaped lugs $h^2 h^2$ which fit into countersunk recesses $h^3 h^3$ on the inner face of the opposite coupler when they are first brought together, and engage with a flange $h^4 h^4$ formed by the undercut groove $h^5 h^5$ forming a species of bayonet joint locking the twin couplers together as their inner faces turn upon each other when the rock shaft I' is dropped. It is obvious that this interlocking of the twin couplers $H' H'$ may be accomplished by a lateral as well as by a vertical swing of the rock shaft I' , but I prefer a vertical swing of the couplers as it allows of an adjustment for cars of different heights. In order to uncouple the connecting hose the rock shaft I' is raised and the steam pressure remaining in the hose forces the faces apart. It follows that the uncoupling can be done by the brakeman from the top by means of the rod I^2 .

J is a valve in the main steam pipe G' through which the steam may be turned on and off from the rest of the train through the rock shaft J' mounted in bearings $j j$ across the end of the car and having crank handles $j' j'$ at each end and a crank rod connection J^2 with a handle J^3 extending to the top of the car to be manipulated by the brakeman. In the drawings, Figs. 1 and 2 I have shown the valve actuated by a clutch arm j^2 engaging with the lever arm j^3 of the valve, but do not limit myself to the specific device.

It is evident that the pipe coupling rock shaft and rod connections, the main pipe valve operating rock shaft and rod connections and the pipe coupling may be used either singly or jointly with other pipe connections on a car or train of cars, without departing from

the spirit of my invention. In the drawings I have shown them adapted to operate the pipe connection of a Westinghouse air brake while at the same time serving to actuate my car coupling.

L is the Westinghouse air brake pipe; L' is the valve in the pipe opened and closed by the clutch arm j^4 extending from the rock shaft J^2 . L^2 is the flexible pipe connection supported on the arm I^4 of the rock shaft I' , and L^3 is the air brake pipe coupler consisting of the twin couplers $H' H'$ as already described. M is a guard rail located on the top of the car where the valve, and rock shaft rods are collected to protect the brakeman when using the same. It is thus seen that I provide an automatic car coupler which can be released by the brakeman at any time from the side or top of the car without passing between the cars, and a pipe adjustment and coupling which may be made in the same way from the side of the train and released by the brakeman from the side or top of the car without passing between the cars.

While I have shown the drawhead as consisting of a sleeve and spindle, I do not limit myself to the particular construction, as any form of drawhead may be used in which the coupling and uncoupling is accomplished by the swing of the drawhead, neither do I limit myself to the particular form of coupling hook shown, providing that the engaging parts proper be adapted to be locked and disengaged by the swing of the drawhead. Neither do I limit myself to the piston head rod attachments forward of the pivoted end of the drawhead as they may be attached to the projecting rear end without departing from the spirit of my invention, in which case the location of the springs and steam pipe would be reversed in the cylinder. It is also obvious that the drawhead may be held in the normal locking position by other means than that shown, and the cylinder and its rod and pipe attachments be used for uncoupling alone, and that the valve and its rod attachment may be greatly varied provided always it is so constructed as to be operated by the brakeman without passing between the cars.

It is evident that my invention can be used on cars of any description, without essentially varying the arrangement shown and that it is equally well adapted for use with compressed air as with steam.

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

1. In a car coupling, the combination, with a car, of a pivoted drawhead, a pivoted lever, a rod connection between one arm of the lever and the drawhead, a spring and a suitable rod connection between the spring and the other arm of the lever, substantially as described.

2. In a car coupling, the combination, with a car, of a pivoted drawhead, a pivoted lever, a rod connection between one arm of the lever and the drawhead a cylinder having a piston

head, a suitable rod connection between the piston head and the other arm of the lever, a steam pipe connection for the cylinder, and a valve in said pipe, whereby when steam is admitted to the cylinder the drawhead is swung on its pivot, substantially as described.

3. In a car coupling, the combination, of a pivoted drawhead, a pivoted lever, a rod connection between one arm of the lever and the drawhead, a cylinder, a piston head within said cylinder, a suitable rod connection between the piston head and the other arm of said lever, a spring located within said cylinder on one side of the piston head, a steam pipe connection with the cylinder on the other side of said piston head, and a valve in said pipe, substantially as described.

4. In a car coupling, the combination, with a car, of a steam actuated drawhead, a steam pipe connection for the same, a valve for controlling the drawhead, and a suitable valve connection extending above the bottom of the car, whereby the valve and drawhead can be operated, substantially as described.

5. In a car coupling, the combination, with a car, of a pivoted drawhead, a pivoted lever, a rod connection between one arm of the lever and the drawhead, a cylinder having a piston head, a suitable rod connection between the piston head and the other arm of the lever, a steam pipe connection for said cylinder, a valve in said pipe and a suitable valve connection extending above the bottom of the car whereby the valve and drawhead can be operated, substantially as described.

6. The combination with a car, of a steam actuated drawhead a system of steam or air pipe connections for the same extending beneath the car, a valve controlling said pipes, and a suitable valve connection extending above the bottom of the car and accessible to the brakeman on the car substantially as described.

7. The combination, in a drawhead, of the sleeve A', the base A³ adapted to be pivoted to the bottom of a car, and having the slotted spindle A² adapted to fit into the sleeve, the

bolts *a* securing the spindle and sleeve together and the coiled spring C surrounding the spindle and located between the adjacent ends of the sleeve A' and the base A³, substantially as described.

8. In a car coupling the combination, with a car, of the drawhead A pivoted at B, the lever E pivoted to the bottom of the car, the rod *e* connecting one arm of the lever and the drawhead, the cylinder F' secured to the bottom of the car and having the piston head F, the rod *e'* connecting the piston head with the other arm of the lever E, the springs F² and F³ located within the cylinder on each side of the piston head, the escape cock *f* in the cylinder, the pipe G for supplying steam to the cylinder, the valve G³ located in said pipe and the valve rod *g*⁴ extending to the top of the car, substantially as described.

9. The combination, with a steam actuated car coupling having a system of tubing extending the length of the train of cars, of the rock shaft I' located across the end of the car having the crank handles *i' i'* at each end and rocking in bearings *i i*, the projecting arm I, the flexible connecting pipe G² secured to said arm and provided with a pipe coupler, and the rod I² forming a crank connecting with the rock shaft at *i*² and extending to the top of the car, substantially as described.

10. The combination with a steam actuated car coupling having a system of tubing G' and L having the valves J and L', of a rock shaft located across the end of the car and rocking in suitable bearings, having crank handles at each extremity, a crank rod connection with the top of the car, and provided with clutch arms to engage the valves J and L', whereby the valves can be simultaneously operated from the top of the car, as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM CHARLES GEBHARDT.

Witnesses:

C. J. BUTFIELD,
ARMAT STODDART.