No. 622,674. Patented Apr. 11, 1899.

G. FINDLAY.

CAR COUPLING.

(Application filed July 20, 1898.)

(No Model.)

Fig. 1.

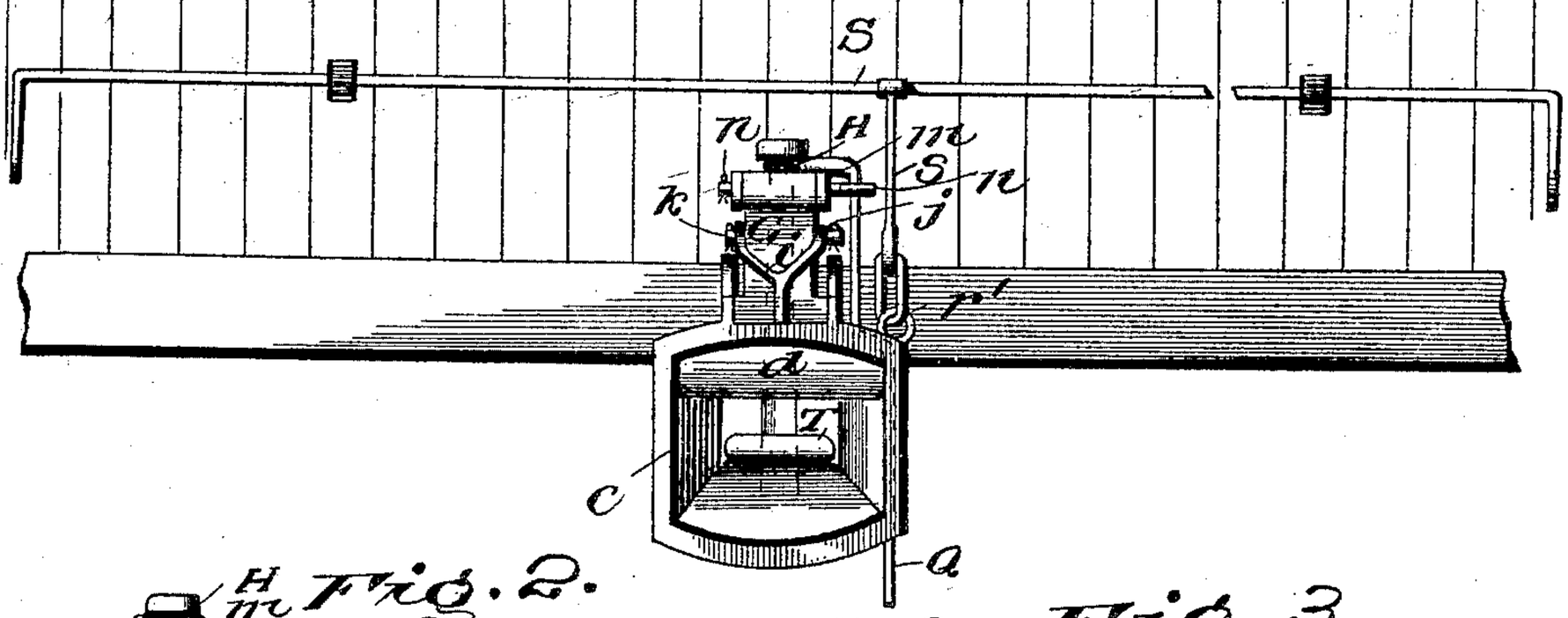

Fig. 2.

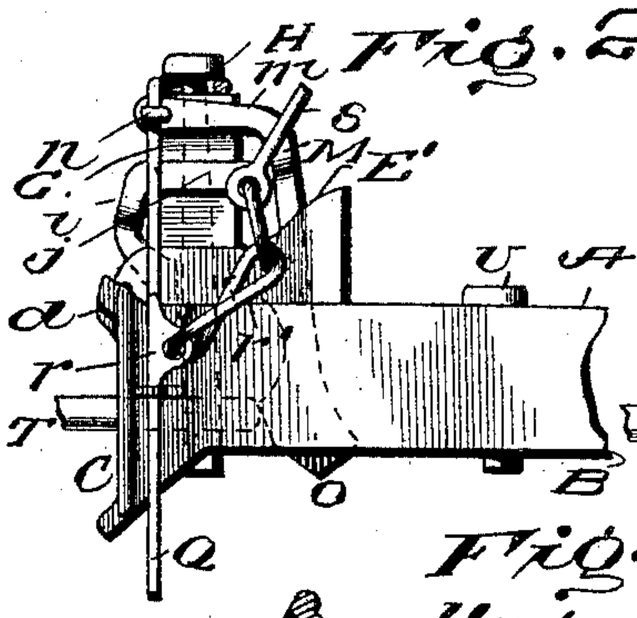

Fig. 3

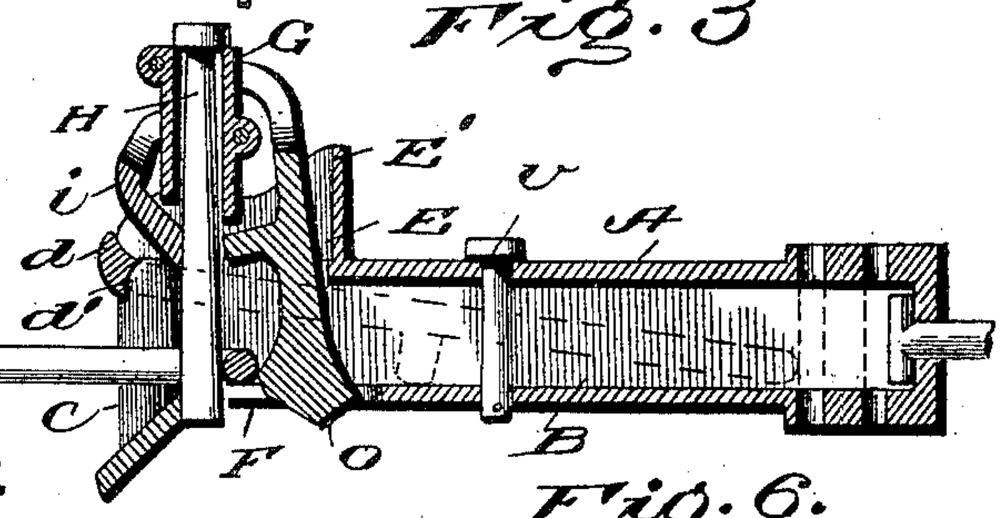

Fig. 4.

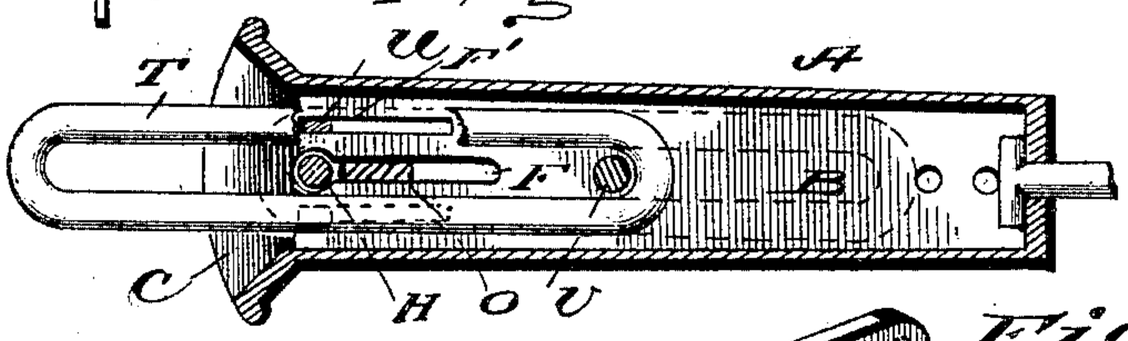

Fig. 6.

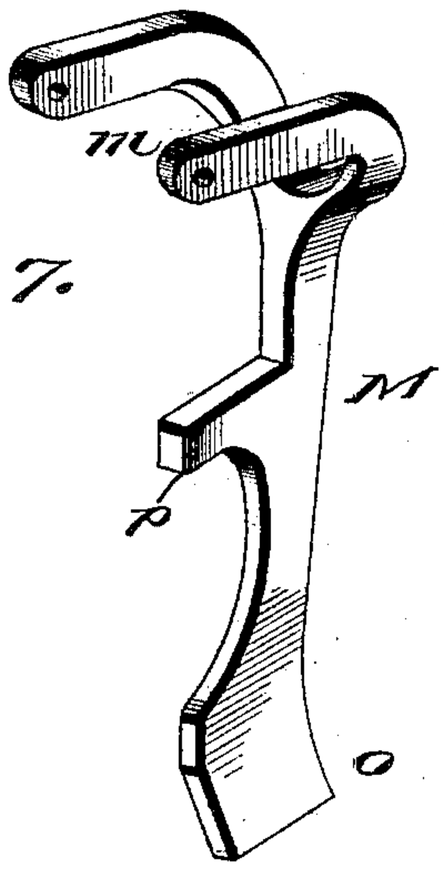

Fig. 7.

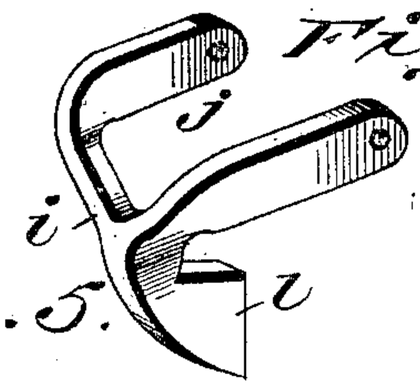

Fig. 5.

Witnesses

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GEORGE FINDLAY, OF SAN ANTONIO, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 622,674, dated April 11, 1899.

Application filed July 20, 1898. Serial No. 686,436. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FINDLAY, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in car-couplers of the link-and-pin type; and its primary object is to provide a coupler of this character which is simple and durable in construction, positive and efficient in action, and capable of uniting with any of the forms of link-couplers now in use.

A further object is to provide an improved construction of draw-head having a guide for insuring the movement of the pin in a direct vertical line, which guide serves in addition as a support for novel pin supporting and operating devices which are adapted to automatically engage the pin when the latter is lifted and allow the same to drop when the link of the opposing coupler engages therewith.

A still further object is to provide an improved construction of link which may be used or not at will in making a coupling and which is adapted when the link on the opposing coupler is employed to be pushed back and to assume a normally inoperative position to allow the link on the other coupler to enter the draw-head.

Further objects and advantages of the invention will appear in the course of the subjoined description.

To these ends the invention consists in certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a fragmentary elevational view of the end of a car having my improved coupling applied thereto. Fig. 2 is a side elevational view of the coupling. Fig. 3 is a longitudinal section through the draw-head of same, showing the position of the parts when the pin is engaged with the link of an opposing coupling. Fig. 4 is a horizontal section through the draw-head. Fig. 5 is a view similar to Fig. 3, but showing the parts in readiness for coupling. Fig. 6 is a perspective view of the gravity pin-support or trip-catch, and Fig. 7 is a similar view of the automatic dog.

Referring now more particularly to the drawings, wherein like letters of reference designate corresponding parts throughout the several views, A represents a draw-head having a comparatively long chamber B, a hopper-shaped mouth C, provided with an upper cross-bar or rib *d*, concaved or recessed on its inner face *d'*, an opening E in its top, surrounded by a three-sided wall E', extending around the back and sides thereof, and slots F and F' in its bottom, just in rear of the inclined bottom wall of said hopper-shaped mouth.

Arranged within the opening E and secured to and projecting upwardly from the wall E' is a box or casing G, in which moves the coupling-pin H. In front of this casing is a gravity-dog *i*, having a forked or yoke-shaped upper end *j*, which straddles the casing and is pivoted thereto by a bolt *k*. The lower end of the dog projects inwardly below the casing and forms a tongue *l*, which is adapted to initially support the pin when the latter is raised to release the link of the opposing coupling, as will appear more fully hereinafter. Located at the rear of the guide-casing is a gravity pin-support or trip-catch M, which is also formed at its upper end with a fork or yoke *m*, pivoted to said casing by an eyebolt *n*. The lower end *o* of this catch projects through the slot F in the bottom of the draw-head, and said catch is provided with a central forwardly-projecting lug *p*, which is adapted to support the pin when the parts are in position for coupling.

The pin-lifting mechanism comprises a rod Q, which moves in the eye of the bolt *n* and is connected at its upper end to the pin, and this rod is provided with an eye *r* for connection with a link *r'*, which engages a ring on the outer end of an arm *s*. This arm *s* is carried by a lifting-lever S, mounted in bearings on the front of the car and provided at each end with a crank-arm, whereby the pin may be lifted without the necessity of the operator passing between the cars.

The link T in accordance with my invention is made several inches longer than usual and provided on its under side and in advance of its center with lugs or feet *u*, (shown in dotted lines,) whereby the rear end of the link will normally tilt down when rested on the bottom of the draw-head. The feet may, however, be arranged at the center of the link and the rear end thereof made heavier than its front end to accomplish the same purpose. This link forms a permanent fixture of the coupler, being retained against withdrawal by a vertical pin V, projecting through the center of the draw-head.

The operation is as follows: To uncouple, the lifting-lever is turned to raise the rod Q, which lifts the coupling-pin and releases the link engaged thereby. When the pin passes the dog *i*, the tongue *l* of the latter will drop by gravity beneath the pin and suspend it. When the link is withdrawn, the lever portion of the pin-support or trip-catch M which is normally held retracted thereby will swing forward by its own gravity and the lug *p* thereon will force the dog back and take beneath the pin and thus support it ready for coupling. The brakeman therefore has simply to operate the lever *s* to lift the pin, and the operation of suspending and setting the pin for coupling is automatically effected. Upon the link of the opposing coupler coming in contact with said catch the latter will be forced back, releasing the pin, which drops down and confines the link. This is the operation when the link of the opposing car-coupler on a moving car is employed. If said opposing coupler has no link, the link of the coupler on the stationary car is pulled forward by hand until the feet *u* thereon drop into the short slots F′ in the bottom of the draw-head on opposite sides of the slot F, as shown in Fig. 4. The link will then resist the force of the impact and operate the trip-catch on the other coupler. When it is desired to use the link on the approaching car, the link on the stationary car is pushed back into the draw-head until its feet rest on the bottom thereof in the rear of said slots, whereupon the rear end of the link tilts down, as shown in dotted lines in Figs. 3 and 5, throwing its rear end up and out of the way of the entering link and so that it will be held by the rib *d* against longitudinal movement. It will thus be seen that the coupler is provided with a link which can be used or not at will and which when not employed offers no impediment to the operation of the coupler.

In case the brakeman should neglect to remove the link on either one of the cars to be coupled the links will pass each other, one going beneath the other, and the coupling will nevertheless take place. To this end the edges of the front ends of the links are beveled or made thinner, so that when they come together there will be little or no surface for resistance, and they will readily pass one another. The feet to the link are also made shorter than the thickness of the link, so that when the two cars approach one another, as above, the link which goes beneath the other, being thicker than the length of the feet, will lift the feet of the other link above the slots in the bottom of the draw-head, and thus allow the link to be pushed back by the link in the approaching car. The draw-head is, furthermore, made of sufficient width to enable the stationary link to have some play and at the same time to prevent it when shoved backward from touching or displacing the tongue of the trip-catch M.

Changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed as new is—

1. In a car-coupler, the combination of a draw-head having a chamber of sufficient size to receive and completely inclose the link, a link forming a permanent fixture of the draw-head and adapted to be pushed back into said chamber when not in use, means for holding the outer end of the link raised to avoid interference with the entering link of an opposing coupling, a coupling-pin, and means independent of said pin for retaining the link in position when pushed back, substantially as described.

2. In a car-coupler, the combination of a draw-head having a chamber of sufficient size to receive and completely inclose the link and provided with a cross-bar or rib in the upper portion of its mouth and slots in its bottom adjacent to said mouth, a link provided with feet adapted to enter said slots when the link is drawn outward for coupling and weighted at its rear end so that the front end thereof will tilt up and abut against the rib when the link is pushed back into the draw-head, a coupling-pin, and a retaining-pin for limiting the outward movement of the link, substantially as described.

3. In a car-coupler, the combination of a draw-head provided in its bottom adjacent to its mouth with slots or recesses, and a link provided at or about its center with feet to enter the slots or recesses and adapted to normally tilt down at its rear end when said feet are rested on the bottom of the draw-head in rear of said slots or recesses, substantially as described.

4. In a car-coupler, the combination of a draw-head having an opening in its top and a guide located in said opening, a pin moving in the guide, a gravity-dog arranged in front of the guide and pivoted at its upper end thereto, said dog being provided with a tongue to support the pin when the latter is raised to release the link, a gravity support or trip-latch arranged in rear of the guide and also pivoted at its upper end thereto and adapted to retract the dog and support the pin when the link on the opposing coupling

is withdrawn, a lifting-rod movable in guides on the draw-head and pin-guide and connected with the pin, and a lifting-lever connected with said rod, substantially as described.

5. In a car-coupler, the combination of a draw-head having an opening in the top thereof, slots in its bottom and a guide for the pin located in said opening, a gravity-dog arranged in front of the guide and provided with a tongue adapted to support the pin when the latter is lifted to release the link, a gravity support or trip-latch arranged in rear of the guide and adapted to retract the dog and support the pin when the link of the opposing coupler is withdrawn, and a link provided on its under side with supporting-feet adapted to enter said slots and weighted at its rear end, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE FINDLAY.

Witnesses:

MARSHALL HICKS,

YALE HICKS.