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Patented Apr. 24, 1900.

S. W. BUHNER.
CAR COUPLING.

(Application filed Aug. 28, 1899.)

(No Model.)

3 Sheets—Sheet 1.

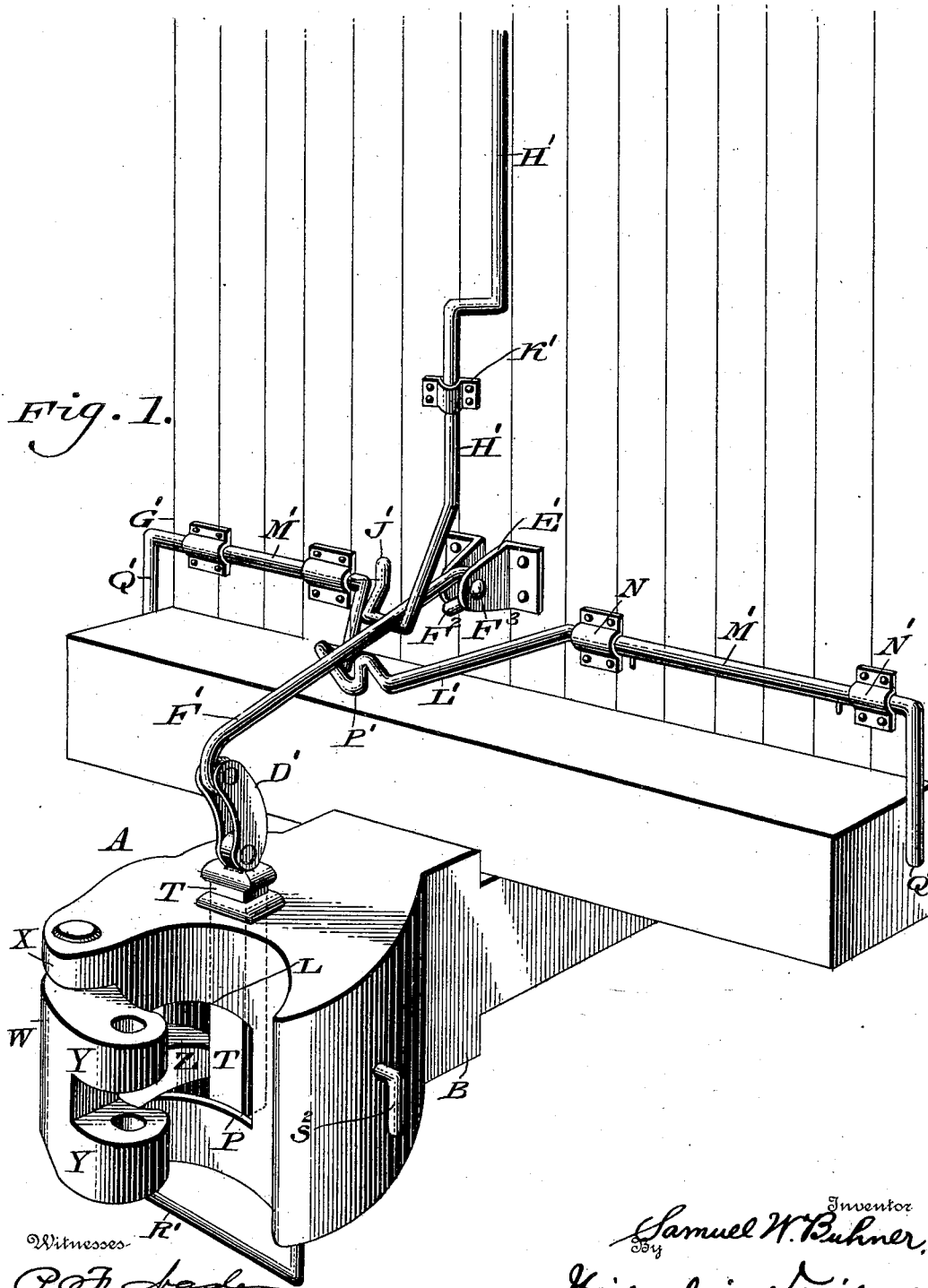


Fig. 1.

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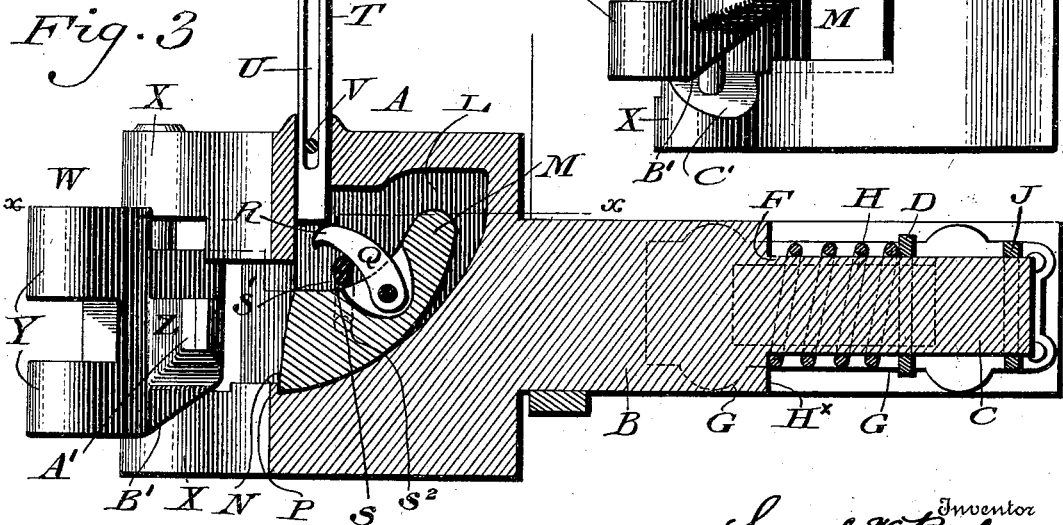
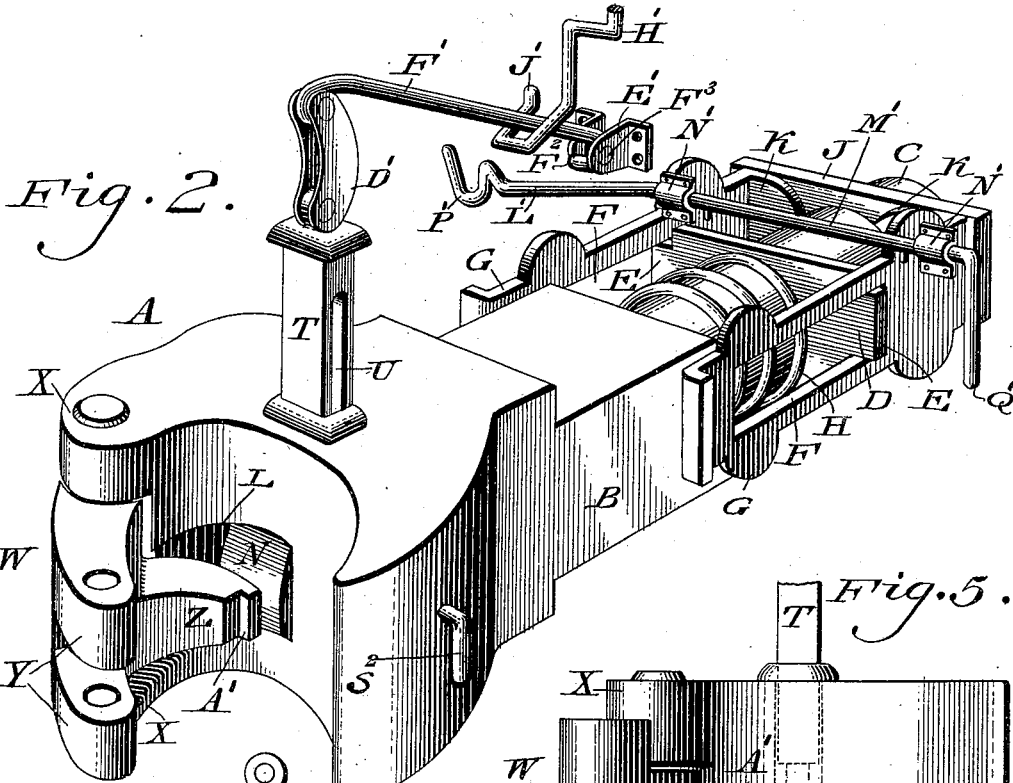
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3 Sheets—Sheet 2.



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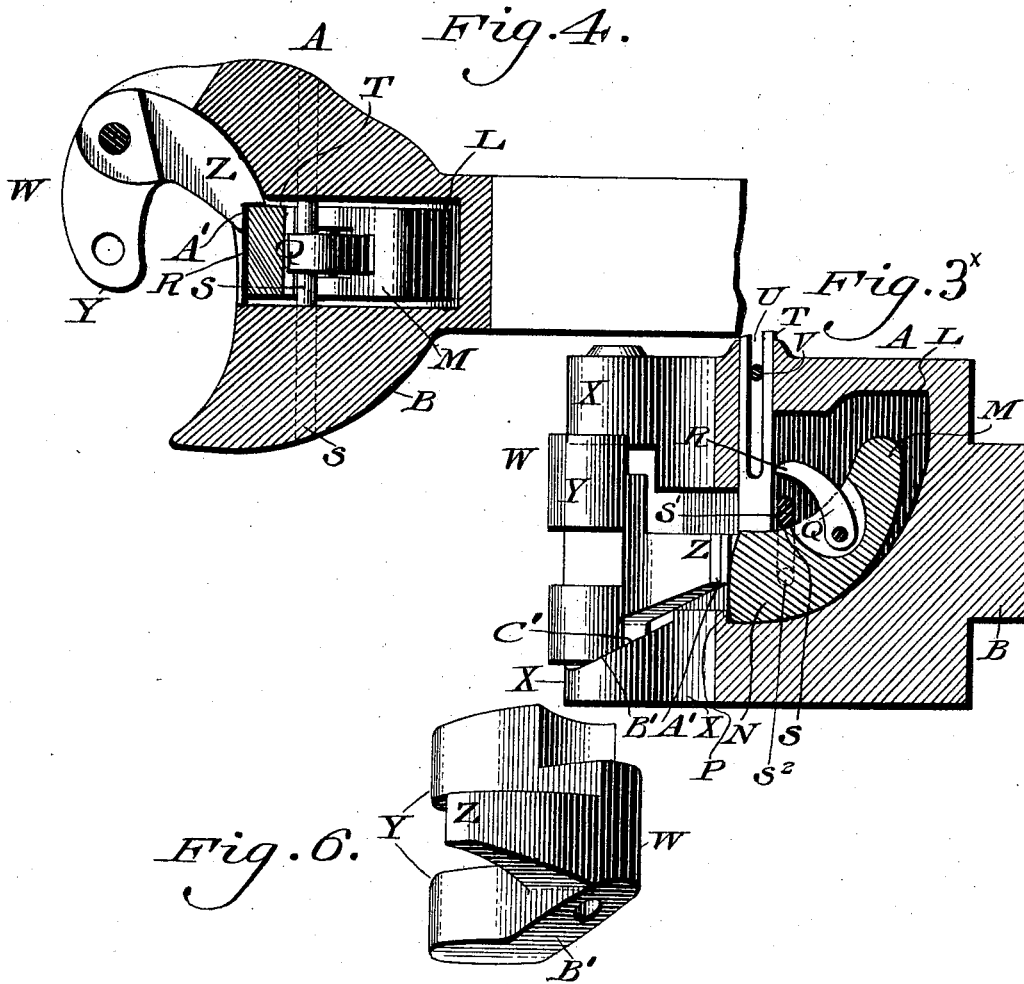
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 648,188, dated April 24, 1900.

Application filed August 28, 1899, Serial No. 728,808. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL W. BUHNER, a citizen of the United States, residing at Seymour, in the county of Jackson, State of Indiana, have invented a new and useful Improvement in Car-Couplers, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an improved construction of a car-coupler which is readily accessible from the sides or top of the cars, is very freely and easily operated, and is not liable to get out of order, the devices for coupling and uncoupling being disconnected from the coupler.

It also consists of an improved construction of knuckle and head, the bottom of the knuckle and the contiguous portion of the head being beveled and constructed so that the knuckle always stands open ready for coupling, whereby the train-hands do not have to follow the cars up to make a coupling when switching or setting out cars, since the knuckle automatically assumes an open position at all times when it is uncoupled.

It further consists of novel means for rendering the operation of the coupling more positive under all conditions and reducing the number of parts to a minimum.

It also consists of a novel construction of yoke which effectively holds the coupler in position and renders the same less liable to be pulled out than heretofore.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a perspective view of a car-coupler embodying my invention, showing the same in closed or locked position, also a portion of a car to which the same is applicable and the means for operating the coupler from the top or side of said car. Fig. 2 represents a perspective view of the car-coupler in detached position, showing the parts in uncoupled position and ready for coupling and also showing a portion of a novel construction of a yoke employed. Fig. 3 represents a longitudinal vertical section of Fig. 2, showing the position of the lug, latch, and coupling-pin when the parts are uncoupled.

Fig. 3^x represents a sectional view similar to Fig. 3, showing the position of the parts just prior to the engagement of the knuckle-arm with the coupling-pin. Fig. 4 represents a section on line *x x*, Fig. 3, showing the knuckle in coupled position. Fig. 5 represents a side elevation of Fig. 3, showing especially the beveled surface of the draw-head which coacts with the contiguous beveled surface of the knuckle. Fig. 6 represents a perspective view of the knuckle in detached position.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a car-coupler, the same consisting of a draw-bar B, which has a reduced rear portion or extension C, which passes through the plate D, the ends *e* of said plate being narrowed and fitting in the ways F, which are formed in the side plates G, which latter are bolted to the draw-bar timbers, (not shown,) against which plate D abuts one end of the coil-spring H, the other end of the latter abutting against the shoulder H^x on the draw-bar.

J designates a plate having an opening through which the portion C of the draw-bar extends, said plate J being bolted or otherwise secured to the end flanges K of the side plates G, both said end plate and side plates being bolted to the draw-bar timbers, (not shown,) whereby said timbers are prevented from spreading. It will thus be seen that all the strain on the draw-bar is close to the latter and not on the ends, whereby the liability of breakage is prevented, it being further apparent that the side and end plates, which are rigidly secured to the draw-bar timbers, cannot be pulled out under ordinary conditions, and it being also evident that the spring H takes the jar from the draw-bar, and when the cars are started there is no excessive strain thereupon. It also will be seen that by having the ends E of the plate D guided in the ways F a regular and uniform movement will be imparted to the draw-bar under all conditions. L designates a recess in the head of the draw-bar in which is contained the lug M, the outer end N of said lug being adapted to contact with the abutment P, whereby said lug is pivotally held in position.

Q designates a latch which is pivotally attached to the lug N and is provided with the hook R, adapted at certain times to overhang the pin or bolt S, which is located in the recess L, said latch leaning against the pin T, as indicated in Fig. 3^x, when the cars are uncoupled and just prior to coupling, said latch supporting said coupling-pin, however, when the cars are being coupled, as will be explained.

The coupling-pin T is provided with a slot U, through which passes the stationary pin V, whereby said coupling-pin is always guided in its movement. The knuckle W, which is pivoted in the head of the draw-bar, consists of a body portion which is pivotally mounted in the ears X and has the members Y, whereby the coupling is effected, said knuckle being provided with the arm Z, which has the recess or seat A' therein, which is adapted to be engaged by the contiguous portion of the coupling-pin T, the lower edge of said knuckle being beveled, as indicated at B' in Fig. 6, so as to coact with the contiguous beveled face C' of the lower ear X, wherefrom it will be apparent that said knuckle when the cars are uncoupled will always swing into open position, as indicated in Figs. 2 and 5, the weight of the arm Z and the manner in which said knuckle is pivotally secured causing it to automatically swing outward without necessitating any attention from the trainmen.

D' designates a link which has one end pivotally connected with the top of the coupling-pin T, while its other end is attached to the lever F', which has one end suitably pivoted in the bearings E', attached to a suitable portion of the car G'.

H' designates an operating-rod which is provided with the U-shaped member J', adapted to engage the lever F', said rod or member H' being movable in a suitable guide or guides K'.

L' designates an arm projecting from the rod M', which is mounted in suitable bearings N', said arm being provided with a U-shaped portion P', which is adapted to engage the lever F', said rod M' being provided with a handle Q', whereby it can be operated from both sides of the car.

When the cars are uncoupled, the latch Q leans against the coupling-pin T, as seen in Fig. 3^x, and it will be apparent that when the arm Z is hit by the proper portion of a juxtaposed coupler said arm will contact with the lug N and move the same inwardly and the coupling-pin will fall into the position seen in Fig. 1, said pin engaging the recess A', and thus holding the knuckle rigidly in position. To uncouple, the coupling-pin is raised and the latch Q drops beneath it and rests on the bolt S, whereby said coupling-pin is supported, and when the cars part the lug N drops down or moves outwardly and pulls the latch back and lets the coupling-pin drop and rest on the lug N, as seen in Fig. 3^x, ready for coupling, said latch now resting

against the pin T, which latter falls, when the lug N moves inwardly, as is evident.

The knuckle W, by reason of its beveled lower portion B' and its contact with the contiguous beveled face C', will automatically always assume the open position seen in Figs. 2 and 3 when the cars are uncoupled, which is a feature of great importance in practice.

In order that there may be no danger of the draw-head dropping to the ground and derailling the cars, I employ the support R', which is U-shaped and has its upper ends attached to a suitable portion of the draw-head, whereupon it will be seen that the draw-head is supported under all conditions. It will thus be seen that by attaching the support R' to the draw-head beneath the knuckle of the opposite draw-head in the event that the opposite coupler pulls out it will drop onto said support and not to the ground. It will be apparent that the support R' can be mounted on the head in any suitable manner, according to requirements, and in addition to its utility, as above named, said support may also serve for carrying the air-brake hose, and thus prevent the same from dragging on the ground. In practice I extend the rod M' clear across the car, as seen in Fig. 1, whereby the coupling-pin can be operated from either side of the car. I also prefer to provide the lever F' with an open eye F², so that if the coupler should pull out of the car it spreads open and will not break, and by taking the pin or pivot F³ out it can be replaced. In case it is desired to couple to a link-and-pin coupler the knuckle can be turned to one side of the head, and when the link enters said head the pin T will drop and engage said link. In practice I provide the bolt S on its underside with a lip S' and an outer handle S², wherefrom it will be seen that when the bolt S is turned about half-way around the coupling-pin T will drop back in its place without pulling the cars apart. This device is used only if the wrong car should happen to be uncoupled and it was desired for the coupling-pin T to drop back into its place, as is evident.

It will be apparent that changes may be made by those skilled in the art which will come within the scope of my invention, and I do not therefore desire to be limited in every instance to the exact construction I have herein shown and described.

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

1. In a car-coupler, a draw-head having a knuckle pivoted thereto, the lower face of said knuckle being beveled, and the contiguous surface of said head being also beveled, whereby said knuckle normally stands in an open position, in combination with a movable lug in the rear of said knuckle, a coupling-pin, and a latch attached to said lug and adapted to support said pin.

2. In a car-coupler, the combination of a draw-head having a recess therein, a lug hav-

ing a pivoted latch and movably mounted in said recess, a coupling-pin movable above said lug and latch, and a knuckle having an arm, said arm being adapted to contact with said lug in the act of coupling.

3. In a car-coupler, a draw-bar provided with a head having a recess therein, ears in which the knuckle is movably mounted, said knuckle having a lower beveled surface which is adapted to coact with a contiguous beveled surface of said head, a bolt located in said recess, a lug movably mounted in the latter below said bolt, an abutment for limiting the movement of said lug, a latch pivoted to said lug and having its end overhanging said bolt, a coupling-pin movable in said head and a knuckle having an arm adapted to contact with said lug.

4. In a car-coupler, a draw-head having a laterally-swinging knuckle pivoted in a recess therein, a lug movably mounted in said recess, a latch pivotally attached to said lug, a bolt having a lip S' for supporting said latch, means for actuating said bolt, and a coupling-pin movable above said lug and latch.

5. In a car-coupler, a draw-head having a knuckle, a movable lug in the rear thereof, a latch pivoted to said lug, a coupling-pin located above said latch, a bolt having a lip S' supporting said latch, and means for actuating said bolt from the exterior of said draw-head.

6. In a car-coupler, a draw-head having a laterally-swinging knuckle pivoted thereto, the lower face of said knuckle being beveled and the surface of said head juxtaposed thereto being also beveled, whereby said knuckle normally stands in an open position, a coupling-pin, a movable lug in the rear of said knuckle, and a latch attached to said lug, said latch being adapted to support said pin.

7. The combination of a draw-head, a laterally-swinging knuckle pivoted in a recess therein, a lug movably mounted in said recess, a latch pivotally attached to said lug,

means for supporting said latch and a coupling-pin movable above said lug and latch.

8. The combination of a draw-head, a laterally-swinging knuckle pivoted in a recess therein, a lug movably mounted in said recess, a latch pivotally attached to said lug, means for supporting said latch, said knuckle being adapted to contact with said lug, and the juxtaposed surfaces of said knuckle and draw-head being beveled, whereby said knuckle always tends to stand in an open position.

9. In a car-coupling, a draw-head having a recess, a laterally-swinging knuckle mounted therein, and having a beveled under surface, adapted to coact with the juxtaposed beveled surface of said draw-head, an arm on said knuckle, a movable lug mounted in said recess, a latch pivoted to said lug, and a coupling-pin adapted to be supported upon said latch.

10. In a car-coupler, a draw-head having a coupling-pin mounted therein, a link pivoted to said pin, a lever having one end pivoted to said pin and its other end supported upon the car by an open eye F², an operating-rod, having a U-shaped portion J' engaging said lever and extending to the top of the car, and a laterally-extending shaft having a portion engaging said lever but disconnected therefrom and operative from the side of the car.

11. The combination of a draw-head, a laterally-swinging knuckle pivoted in a recess therein, a lug movably mounted in said recess, a latch pivotally attached to said lug, means for supporting said latch, a coupling-pin above said lug and latch, and a support R' having its upper ends attached to a suitable portion of said draw-head, whereby the opposite coupler, in case of accident, is prevented from dropping to the ground.

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