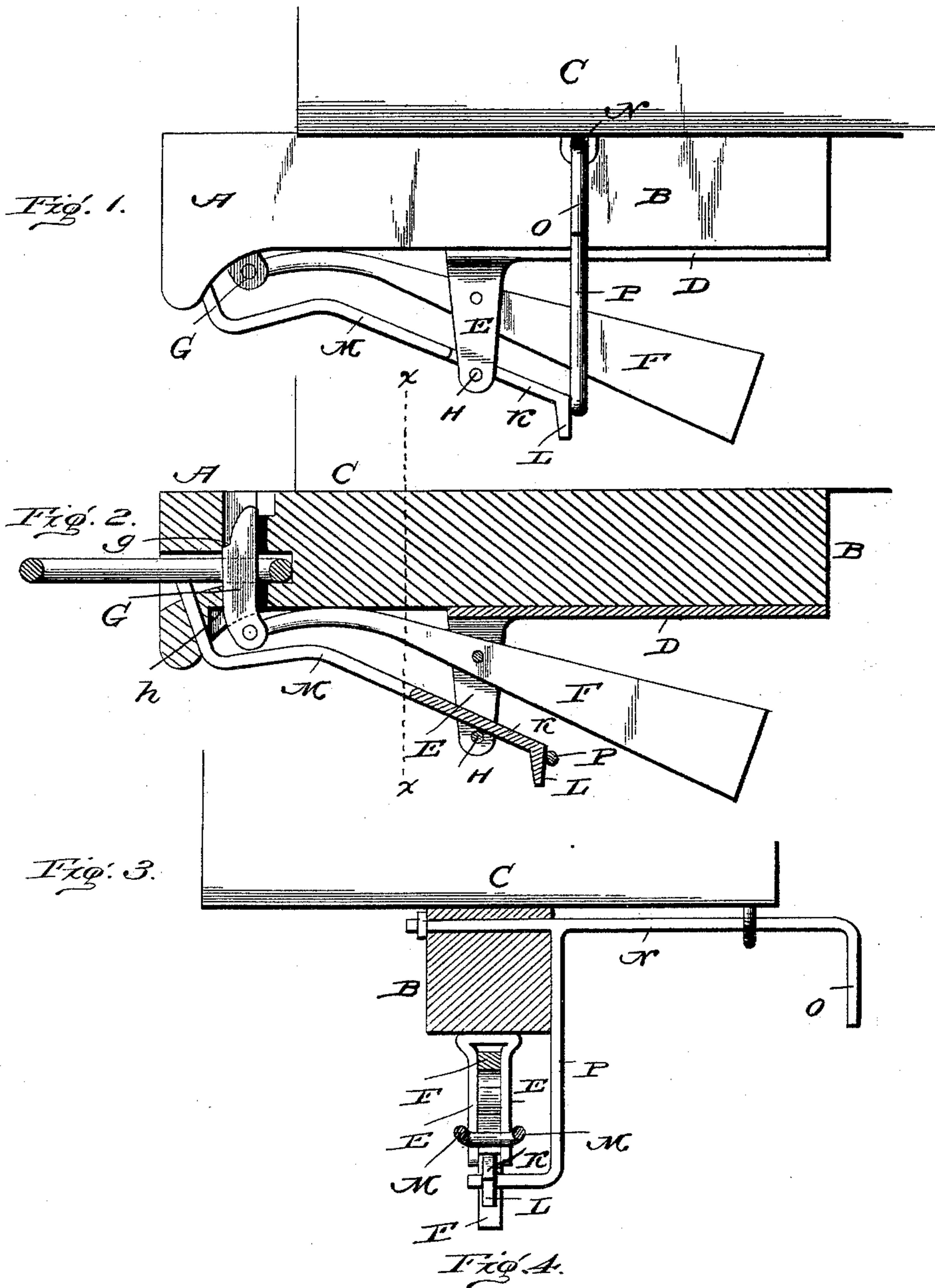


(No Model.)

C. C. DAVISON.
CAR COUPLING.

No. 497,868.

Patented May 23, 1893.



Witnesses:
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CHARLES C. DAVISON, OF MONCTON, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 497,868, dated May 23, 1893.

Application filed August 19, 1892. Serial No. 443,526. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. DAVISON, of the city of Moncton, in the county of Westmoreland, Province of New Brunswick, and Dominion of Canada, have invented a new and useful Improvement in Car-Couplings, of which the following, taken in connection with the accompanying drawings, forms an exact, full, and clear specification thereof.

My invention relates to improvements in car couplings and the primary or main object of the invention is to provide a safe, strong and effective coupling which can be easily applied to the ordinary form of drawhead and which can be operated from either side of the car, thereby doing away with the necessity of the brakeman or attendant passing or standing between the adjacent ends of two cars while employed in coupling them together.

A further object of my invention is to provide a coupling adapted to couple cars whose drawheads are of different heights, and another object is to provide means for operating the pin and adjusting the link by a single lever.

With these and other ends in view my invention consists in the combination of a drawhead, a weighted arm or lever fulcrumed below the draw bar and carrying at its forward end a coupling pin which is adapted to project up into the drawhead; a link lifter arranged below the weighted pin-lever and adapted to enter the drawhead, and a rock-shaft journaled in bearings on the car and provided at its inner end with a depending arm adapted to operate both the link-lifter and the pin carrying arm.

My invention further consists in the peculiar construction and arrangement of the parts as will be hereinafter more fully pointed out and claimed.

In the accompanying drawings:—Figure 1. is a side elevation of a drawhead and portion of a car provided with my improved coupling. Fig. 2. is a vertical longitudinal sectional view of the same. Fig. 3. is a vertical transverse sectional view on the line $x-x$ of Fig. 2. Fig. 4. is a detailed view of the coupling-pin.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which—

A, designates a drawhead and B a draw-

bar which may be of any well known or desired form, size, &c., and which are securely attached to the body of a car C in any suitable manner. To the under side of the draw bar B is rigidly attached a plate D which is provided at or near its forward end with two parallel downwardly extending arms or lugs E and between these lugs E is fulcrumed a lever F to the forward end of which is attached a coupling pin G.

The lower end of the pin G, is preferably bifurcated so as to extend on opposite sides of the lever F, to which it is movably attached by a bolt, rivet or other suitable means, or said pin and lever may be formed integral or connected together by any desired means, or in any desired manner. The pin "G" normally extends up through an aperture or passage formed in the bottom of the drawhead and has its free upper end fitted in a socket or recess formed in the top of the drawhead. The pin is maintained or kept in this position by the lever F, which lever is much larger and heavier in rear of its pivot or fulcrum point than it is in advance of said point, so as to normally hold its forward end elevated and against the under side of the drawbar and head.

The coupling pin "G" is preferably curved slightly in the direction of its length so as to pass freely up through the aperture in the bottom of the draw-head and also to securely hold the coupling link in position.

The upper free end of the pin "G" is made of less thickness than the body thereof to provide a shoulder "g" on the front face thereof, which shoulder takes into a notch or recess "h" formed in the front wall of the passage in the bottom of the draw-head A through which the pin G passes downward when the rear end of the lever F is raised; and the pin is thus held in its lowered position until the upper end thereof is stuck by the link entering the draw head where the shoulder "g" is disengaged from the notch "h" and the pin returned to its normal position by gravity.

Near their lower ends the lugs "E" are connected by a transverse bolt "H" and between said lugs above said bolt "H" is passed the stem K of my improved link adjusting mechanism. At its rear end, the stem or rod K is

provided with an integral depending portion L, and at its front or forward end said stem or rod is rigidly attached to two parallel arms M which extend forward on opposite sides of the lever F and are curved upward near their outer ends to enter suitable apertures in the bottom of the drawhead A in advance of, and on opposite sides of the aperture through which the coupling pin G passes.

10 The arms M and stem K are preferably cast in one piece and said arms are spaced apart sufficiently to allow the side bars or members of an ordinary coupling link to rest on the outer ends thereof when such a link is inserted in the drawhead "A."

15 A transverse rock shaft N is journaled in suitable bearings attached to the body of the car C and in the draw bar B and said shaft extends or projects beyond either side of the car and is provided at its outer ends with suitable handles "O." At or near its center said rock shaft is provided with a downwardly extending arm P, the lower end of which is bent to extend at right angles to the length of the body thereof and passes between the rear depending portion of the link lifting stem K and below the weighted lever F.

20 The operation of my invention may be briefly stated as follows: When it is desired to couple two cars provided with my improvements the brakeman or attendant by turning the rock-shaft "N," so that the lower laterally projecting portion of the arm P will bear against the under side of the lever F in rear of its fulcrum or pivot point, can withdraw or depress the coupling pin G so that its upper end will extend but a slight distance above the bottom of the drawhead, and the shoulder "g" thereon take into the recess "h" in the drawhead. When the two cars come together the link carried by one will enter the drawhead of the other in which the pin G has been previously depressed as above described, and by contact with the upper end of the pin G, disengage the shoulder "g" from the notch "h," and the gravity lever F will force the pin G up through the opening in the link and hold it firmly in such position. In case the drawheads of the two cars, which it is desired to couple are of different heights or for any other reason it is desirable to elevate the outer projecting portion of the coupling link, the attendant or brakeman simply turns the rock shaft "N" in its bearings so as to throw the arm P forward, and the laterally projecting portion thereof contacts with and forces the stem "K" forward, the arms M being forced up into the draw-head A as shown in Fig. 2, and as said arms are spaced apart sufficiently to contact at their outer ends with the side portions of the link as hereinbefore described, the outer projecting portion of the link will be raised to the desired height. When the cars are coupled and the rock shaft "N" is allowed to resume its normal position the link lifting

arms M will resume their normal positions by gravity.

To uncouple the cars it is only necessary to turn the rock-shaft so as to raise the rear enlarged end of the lever F, and thus withdraw the pin from engagement with the link.

It will thus be seen that I have provided an automatic coupler which can be easily applied to any car having the ordinary or common form of drawhead, and which can be operated by a person standing out of line with the cars being coupled.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of the same; for instance instead of making the pin carrying lever in the form shown I might make such lever of uniform size throughout its length and attach a weight thereto in rear of its fulcrum or pivot point in any suitable manner. The pin could be moved or disengaged from its socket or notch by an appliance placed in the rear of the mouth of the drawhead permitting the link to pass entirely over the head of the pin and to contact with a small hanging lever in the roof of the drawhead. There are also other methods of throwing the pin head out of engagement which would differ slightly from mine but which would not materially depart from the object of my improvement. My attachment is also capable of being easily removed and in its absence the ordinary pin may be inserted from the top and I may also observe that my apparatus can be easily worked from the top of a car by a suitable connecting rod adapted to move the rock shaft for either shackling or elevating the link.

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

1. The combination of a drawhead, a coupling pin extending through a vertical passage in the bottom of the drawhead and having its upper end reduced to form a shoulder on one face thereof and means for raising and lowering the pin, substantially as described.

2. The combination of a drawhead provided with a vertical passage in its bottom, a weighted lever fulcrumed below the drawhead, a coupling pin connected to the forward end of said lever and extending through the vertical passage in the bottom of the drawhead, a transverse rock shaft journaled in bearings above the weighted lever and an arm attached to said rock shaft and bent near its free end to pass under the rear end of the weighted lever, substantially as and for the purpose described.

3. The combination with a drawhead, a

coupling pin and coupling link, of a longitudinally movable link lifter having its forward end bifurcated and bent to extend into the drawhead on opposite sides of the coupling pin, substantially as described.

4. The combination with a drawhead, a coupling pin and coupling link, of a link lifter supported below the drawhead and having its forward end bifurcated and bent upwardly to extend into the drawhead on opposite sides of the pin therein and means for moving said lever longitudinally, substantially as described.

5. The combination of a drawhead, a coupling pin, a coupling link, a link lifter loosely supported below the drawhead and having its outer end bifurcated and bent upwardly to extend into the drawhead and a rock shaft mounted in suitable bearings and adapted to move the link lifter longitudinally, substantially as described.

6. The combination of a drawhead, a weighted lever fulcrumed below the drawhead, a coupling pin attached to the forward end of said lever and extending into the drawhead, a coupling link fitted in the drawhead, means for elevating said link and a single rock shaft journaled in suitable bearings and adapted to operate the link lifting mechanism and also raise the rear end of the weighted lever, substantially as described.

7. The combination with a drawhead, of a lever fulcrumed in lugs attached to the drawbar and having its rear end weighted, a coupling-pin attached to the lever in advance of its pivot, and entering the drawhead, a coupling link fitted in the drawhead, a link-lifter loosely supported below the lever and having its forward end extending into the drawhead, a rock-shaft journaled below and extending beyond either side of the car, and an arm attached to said shaft and extending between the rear end of the link-lifter and the weighted

end of the pin carrying lever, substantially as and for the purpose described.

8. The combination of a drawhead, a lever fulcrumed below the drawhead and having its rear end weighted, a longitudinally curved coupling pin attached to said lever in advance of its fulcrum, and extending into the drawhead, the upper end of said pin being reduced to form a shoulder on one face, and means for raising the rear weighted end of the pin-carrying lever, substantially as described.

9. In a car coupling having a drawhead provided with a vertical passage in its bottom, and an automatic pin slightly curved in the direction of its length adapted to pass freely upward through said passage, said pin being provided with a shoulder or cap at its top of less thickness than the body thereof rounded toward the rear and adapted to fall forward by its own gravity when lowered and catch into a notch or cavity in the front wall of said passage to rest therein out of action until disengaged therefrom in the manner herein described and for the purposes set forth.

10. As an improvement in car-couplings, the combination of the drawbar provided with two holes or passages at the bottom of the drawhead, and vertical lugs or brackets E on the under side secured thereto, bolt H, the longitudinal forked rod or stem K passing through said lugs, and over said bolt rock-shaft P', for operating said stem forward to contact with the sides of a link introduced into the drawhead to elevate and depress the link in the manner herein stated and for the purposes described.

In testimony that I claim the foregoing I hereto set my hand.

CHARLES C. DAVISON.

In presence of—

A. E. WILKINSON,
WATSON LUTZ.