

(No Model.)

2 Sheets—Sheet 1.

E. S. MEALS.
CAR COUPLING.

No. 463,768.

Patented Nov. 24, 1891.

Fig. 6.

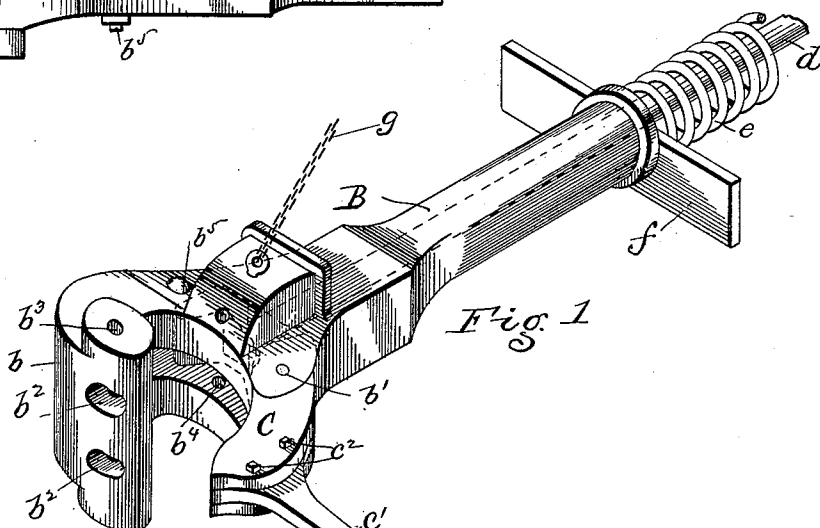
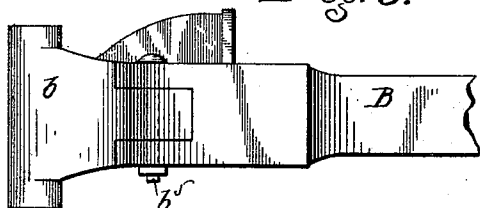


Fig. 1

Fig. 2.

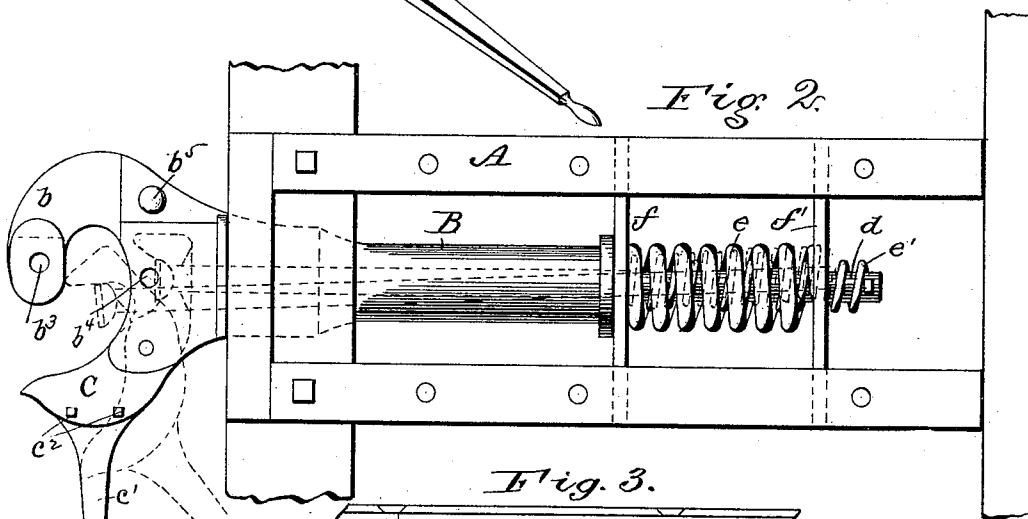
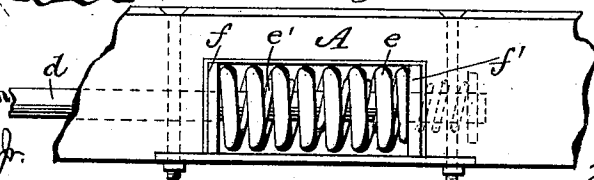


Fig. 3.

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Fig. 4.

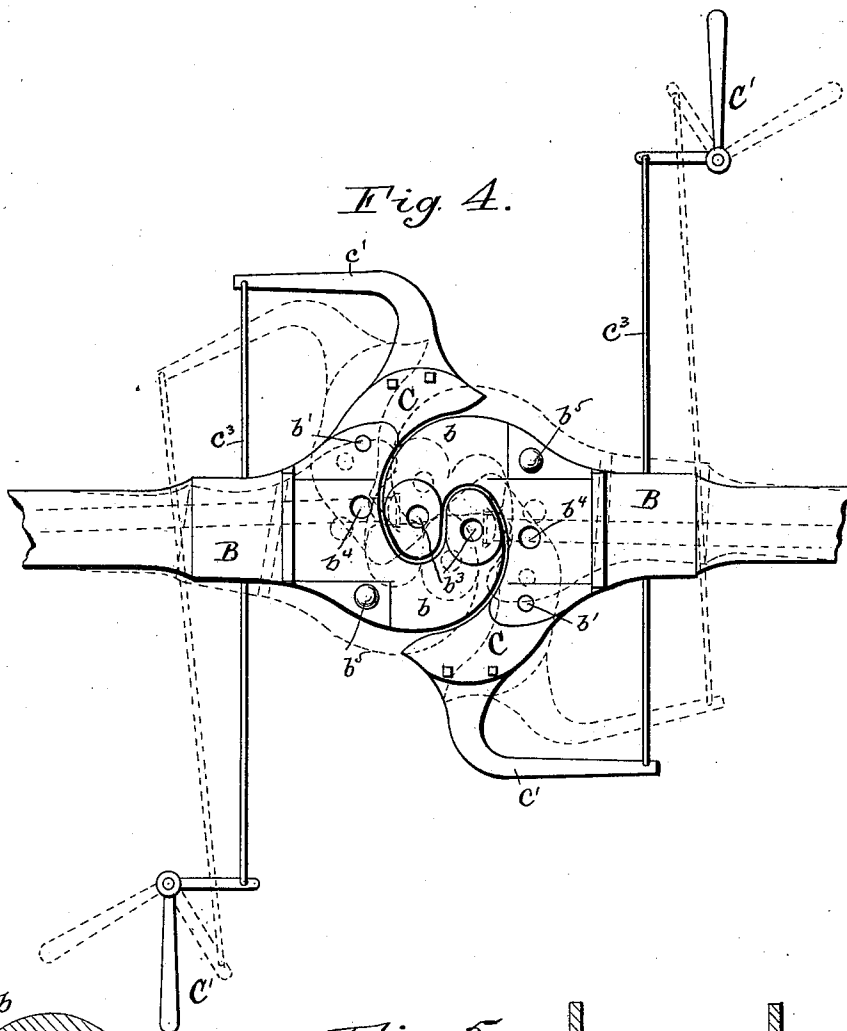
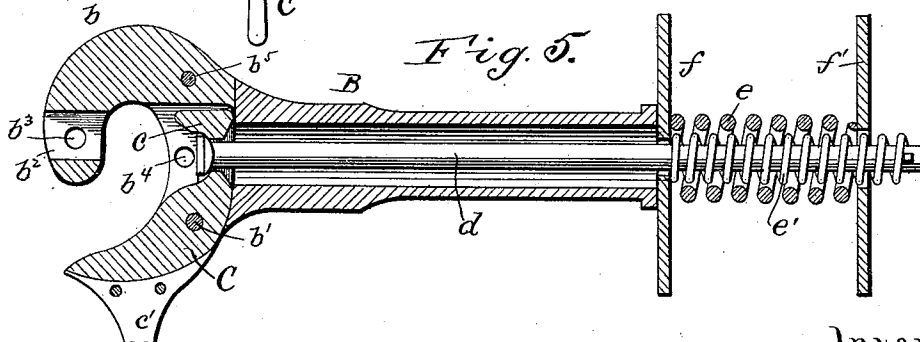


Fig. 5.



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Atty.

UNITED STATES PATENT OFFICE.

EZRA S. MEALS, OF HARRISBURG, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 463,768, dated November 24, 1891.

Application filed February 13, 1891. Serial No. 381,317. (No model.)

To all whom it may concern:

Be it known that I, EZRA S. MEALS, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention has for its object to provide a novel car-coupler of simple construction which will afford an elastic or yielding connection between the cars when the train is started, which will also cushion or soften the jar or impact incidental to coupling, which will afford a reliable connection between two couplers and still be capable of being easily uncoupled, and which is adapted to be used in connection with ordinary link-and-pin 20 couplers, if necessary.

In the accompanying drawings, Figure 1 is a perspective view of one of my improved couplers. Fig. 2 is a bottom view of the same mounted in its frame. Fig. 3 is a partial side 25 view. Fig. 4 is a partial plan view of a pair of couplers represented in coupled and uncoupled positions in full and dotted lines. Fig. 5 is a horizontal sectional view, and Fig. 6 a partial rear side view.

30 A denotes a suitable frame, which may be a part of a car or car-platform, and B the coupler draw-bar, having preferably detachably secured thereto the rigid coupling-hook b. Pivoted to the draw-bar B by a bolt b' is a coupling and uncoupling lever C, having an arm c normally housed in a recess in the head of the draw-bar, said lever C being provided with an operating arm or handle c', rigidly attached thereto in any suitable manner, as 40 by bolts c². To the arm c is loosely-jointed a draw-rod d, passing through a central aperture in the draw-bar and encircled at its rear end by the springs e and e'. The spring e, which is a very heavy one—say a two-ton 45 spring—is inclosed between sliding plates f and f', movable in a suitable recess in the frame A, and the comparatively-light spring e' is interposed between the outer plate f and a pin d' on the draw-rod d. The heavy spring e encircles the light spring e', and the latter, which is longer than the former, passes 50

through the inner plate f', as shown more clearly in Fig. 5.

The ends of the rigid hooks b of the draw-heads or draw-bars B are rounded off in such a manner that when two couplers are abutted together each will yield laterally somewhat (the draw-bars being somewhat loosely mounted in their supporting-frames) to permit the said hooks to become engaged with each other, 60 the spring-acted levers C opening outward in opposition to the stress of their closing springs e' when they are impinged against by said hooks. The jar caused by the impact of the hooks b, as the latter come together in coupling, is softened by the heavy spring e, which is compressed by said impact, the outer plate f sliding in the frame A to permit the compression of said spring. When the couplers are thus engaged and the train is started, the draft immediately comes on the rod d, first causing the pin d' to entirely compress the spring e' against the inner plate f' (or against the spring e if the plate f' be omitted) and then drawing said plate against the heavy spring e, so that on 75 starting the train the starting-jar as one car moves another is softened by the springs e' and e, but more particularly by the latter. So long as there is any draft on the couplers the levers C are held rigid in the positions 80 denoted by full lines in Figs. 2 and 4, thereby rendering it impossible for the rigid hooks b of the draw-bars or draw-heads to become disengaged from each other, the arms c of the said levers being at this time drawn against 85 abutting walls in the interiors of the said draw-heads.

When the draft on the couplers is relaxed and the springs assume their normal positions, the levers C only receive the stress of the light springs e', so that the said levers may readily be turned to the positions shown in dotted lines in Fig. 2 to uncouple two engaged couplers, the arms c serving in such case to force the hooks b of the opposite couplers out of their coupled positions. In this uncoupling operation the levers C swing out and both couplers are moved somewhat laterally, as denoted by dotted lines in Fig. 4, to permit the hooks thereof to become disengaged. 100

In uncoupling, the levers C may be actu-

ated directly by their rigidly-attached operating arms or handles c' , or they may be actuated indirectly by levers C' , placed on the opposite sides of the cars and suitably connected with said arms or handles, as by rods c^3 , or in any other suitable manner.

To permit my improved coupler to be used in connection with ordinary "bull-nose" pin-and-link couplers, the hooks b are each provided with inclosed slots b^2 , into either of which a link can be entered, and with a hole b^3 for the reception of a coupling-pin. The two slots b^2 , one above the other, are to provide for convenient coupling with cars of different heights. The slots b^2 and hole b^3 are central relative to the longitudinal axis of the draw-bar, or approximately so, so that the coupling-links will be central of the draw-bar to cause the draft to be central. Should a hook b be accidentally broken off from a coupler, provision is made for still connecting the broken coupler with a pin-and-link coupler by making a second coupling-pin hole b^4 in the draw-head back of the hook-receiving recess thereof, the arm c of the lever C being properly shaped, so that it will leave room for the coupling-link to be entered into the draw-head far enough to enable it to be engaged by a coupling-pin inserted in said hole b^4 .

By making the rigid hooks b separate from the coupler-heads and detachably securing them thereto, as by bolts b^5 , it is evident that should one of these hooks become broken it may be readily removed and replaced by another without causing the loss of the whole coupler-head. The coupler-heads may be supported to any suitable parts of the platforms or cars by chains, as g .

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

1. A car-coupler consisting of the combination, with a hollow draw-bar B , provided with a rigid hook b , of a lever C , pivoted to the

head of said draw-bar at the side thereof opposite said hook, said lever having an uncoupling-arm c , arranged to be swung outward into the recess of said hook, a rigid operating arm or handle c' on said lever, a draw-rod d , having a jointed or loose connection with the said arm c , and the heavy and light springs e and e' , encircling said rod, substantially as set forth.

2. A car-coupler consisting of the combination, with a hollow draw-bar B , provided with a rigid hook b , of a lever C , pivoted to the head of said draw-bar at the side thereof opposite said hook, said lever having an uncoupling-arm c , arranged to be swung outward into the recess of said hook, a rigid operating arm or handle c' on said lever, a draw-rod d , having a jointed or loose connection with the said arm c , the sliding plates f and f' , and the heavy and light springs e and e' , encircling said rod, the former thereof being arranged between said plates, substantially as set forth.

3. A coupler draw-bar B , provided with the disengaging-lever C , pivoted thereto, and with the rigidly-secured but removable hook b , whereby should said hook be accidentally broken off it may be replaced by another similar one to co-operate with said lever without loss of the whole draw-bar, substantially as set forth.

4. The coupler draw-bar B , having the rigid hook b , provided with the two hook-receiving slots b^2 at different heights, and the hole b^3 for the reception of a coupling-pin, the head of said draw-bar having also the hole b^4 rearward of its hook-recess, so that a link connection may still be made therewith should the said hook b be broken off, substantially as set forth.

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

E. S. MEALS.

Witnesses:

WM. WOLF,

W. C. TAYLOR.