(No Model.) 2 Sheets—Sheet 1.

G. W. DICKEY.

CAR COUPLING.

No. 561,572. Patented June 9, 1896.

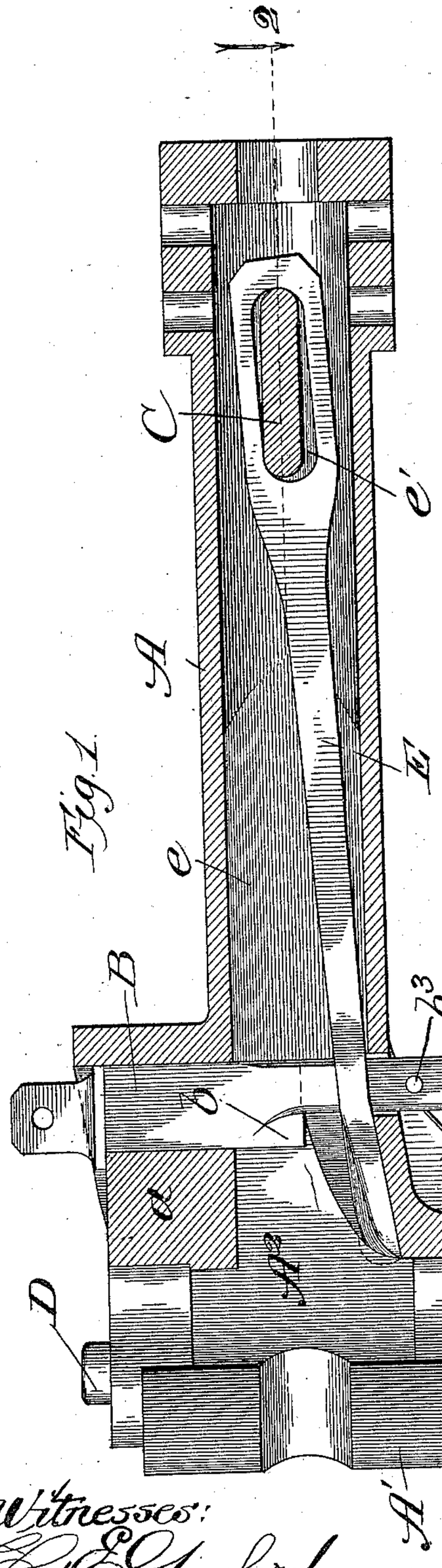

Fig. 1.

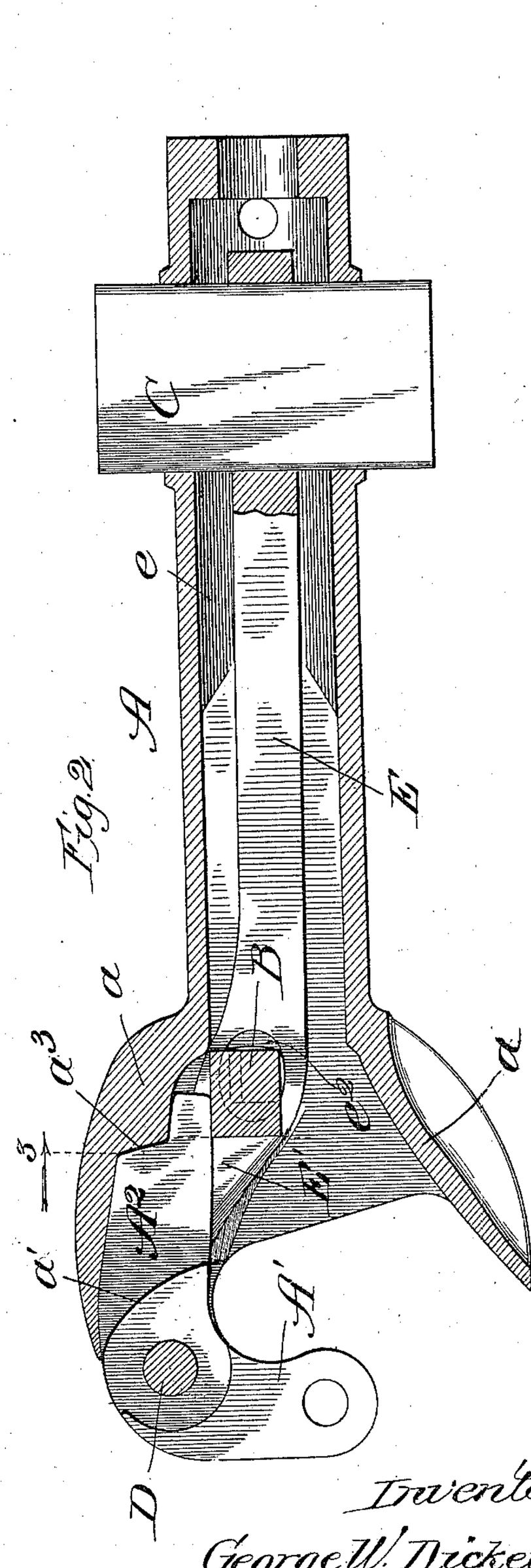

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

G. W. DICKEY.

CAR COUPLING.

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Fig. 3.

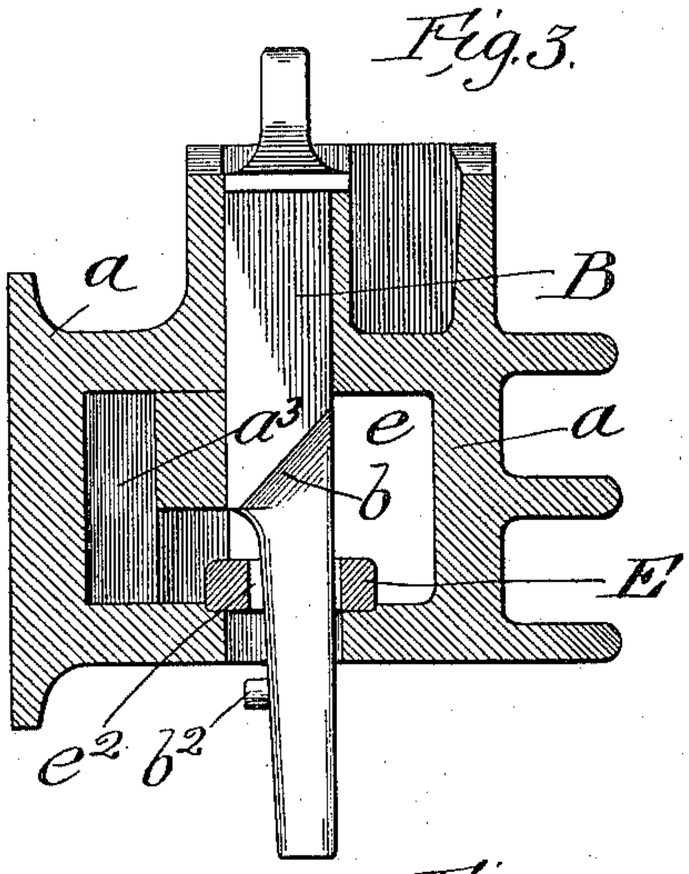


Fig. 5.

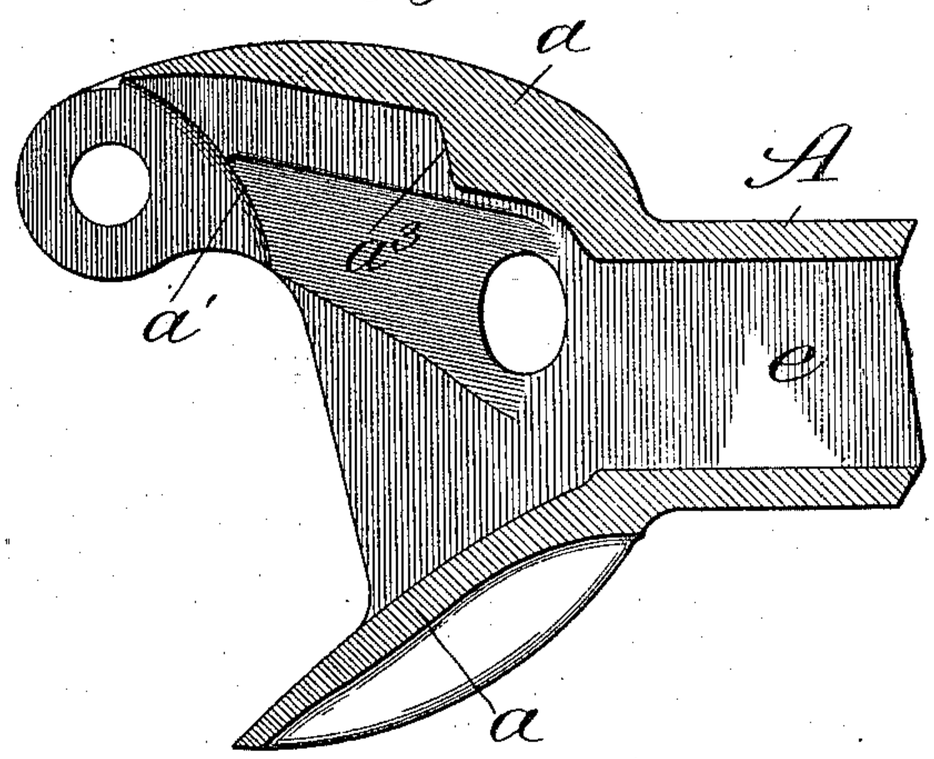


Fig. 4.

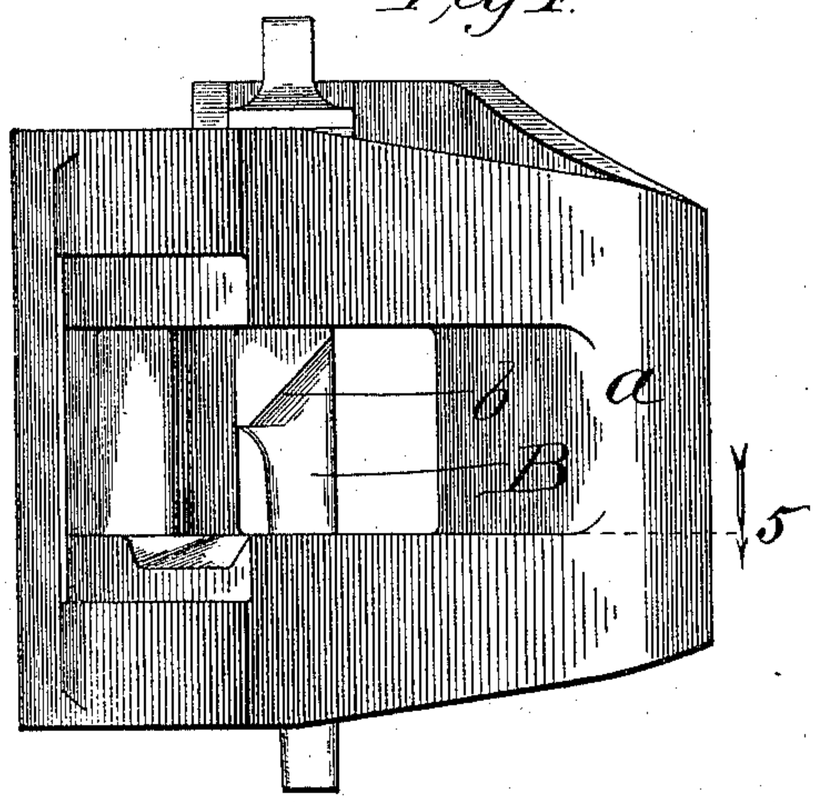


Fig. 6.

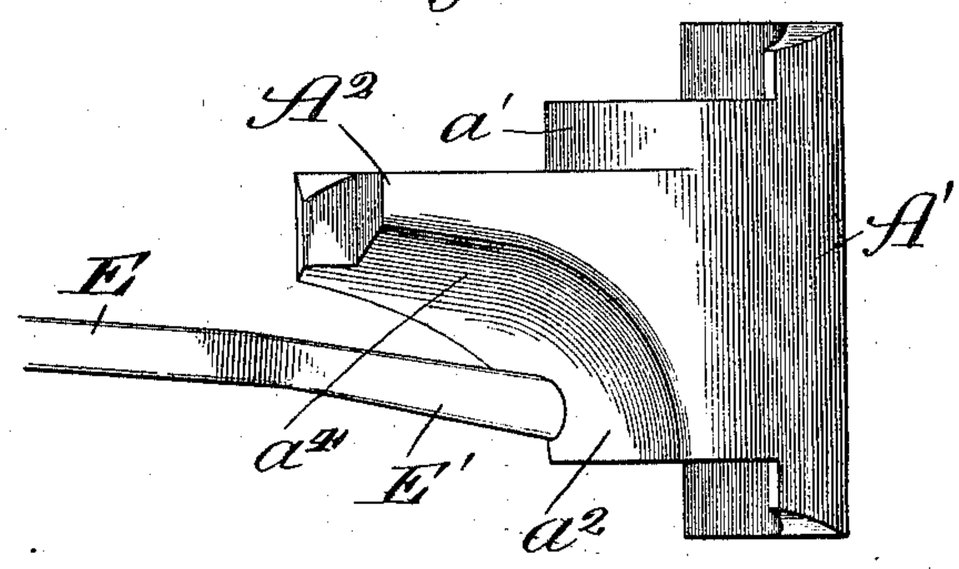


Fig. 7.

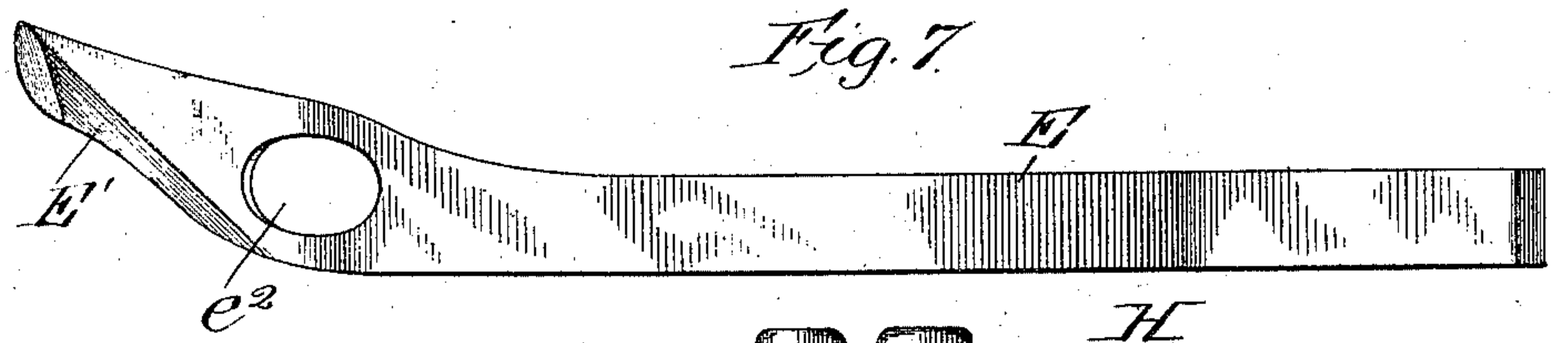
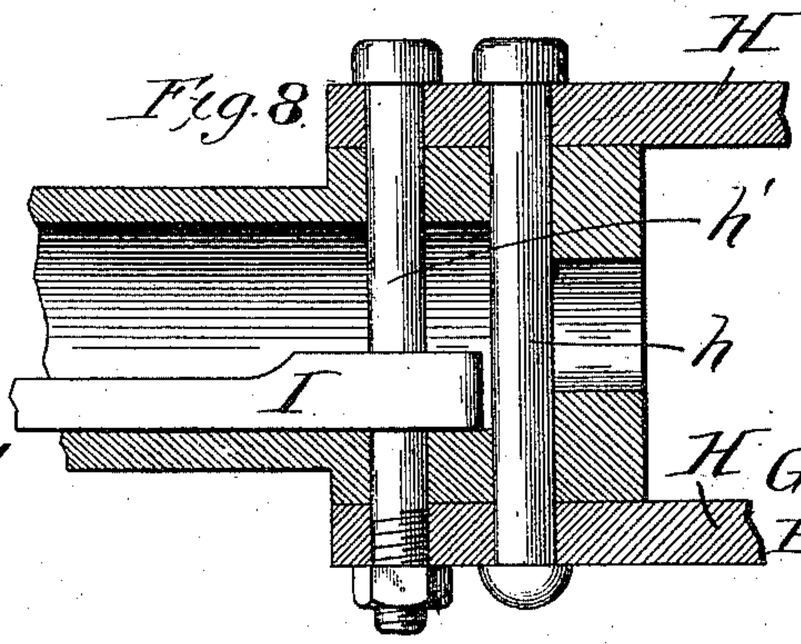


Fig. 8.



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Inventor
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UNITED STATES PATENT OFFICE.

GEORGE W. DICKEY, OF DES MOINES, IOWA, ASSIGNOR OF ONE-HALF TO C. C. DONNELL, OF OTLEY, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 561,572, dated June 9, 1896.

Application filed January 23, 1895. Serial No. 535,926. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DICKEY, a citizen of the United States, residing at Des Moines, Iowa, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

The object of my invention is to provide a simple, economical, and efficient car-coupler; and the invention consists in the features and combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation, partly in section; Fig. 2, a plan view, partly in section, taken on line 2 of Fig. 1; Fig. 3, a transverse vertical section taken on line 3 of Fig. 2; Fig. 4, a front end elevation of the coupler-head with the knuckle removed; Fig. 5, a horizontal section taken on line 5 of Fig. 4 with the locking-pin removed; Fig. 6, a side elevation of a coupler-knuckle and a portion of the connecting-bar, showing their relation to each other; Fig. 7, a plan view of the connecting-bar, and Fig. 8 a vertical sectional elevation of a modification of my improvement.

My invention relates particularly to car-couplers of the twin-jaw type, and especially those made on the lines of the Master Car-Builders' coupler.

In the hauling and switching of railroad-cars the coupler, draw-bars, &c., are subject to hard usage, which often results in the breakage of the draw-bar at a point in the rear of the coupler-head. This leaves that portion of the train in the rear disconnected and liable to derail the first section by impact, especially while going down grade, as well as leaving no provision for safely hauling the train. A further disadvantage in present structures is that the broken parts are liable to fall in the track and derail the cars following. To overcome these objections and provide a simple, economical, and efficient draw-bar and coupler-head which, after breakage of the draw-bar, provides supplementary means to haul the car in the rear of the break is the principal object of my invention.

In Figs. 1 and 2 I have shown my improvement as it may be used in connection with what is known as the "continuous draft-rigging," in which I use a draw-bar A, provided with the usual coupler-head *a* and knuckle A′, made on the lines of the Master Car-Builders' head and knuckle. The head portion is provided with a locking-pin B, having a chamfered or cam portion *b*, against which extreme end of the lever-arm A^2 of the knuckle is adapted to impinge to raise it, thus permitting the knuckle to enter its locked position, as shown in Fig. 2. The rear end of the draw-bar is provided with a key C, adapted to be passed through the draft-arms of the car, such as are used with the well-known continuous draft-rigging system and which I deem it unnecessary to here describe, as it forms no material novel element of my improvement. This key is more properly a portion of the draft-rigging proper, and for the sake of simplicity I will hereinafter speak of it as such both in the specification and claims.

The construction of the coupler knuckle and head are such that the shock received by the knuckle from a contacting car is distributed evenly to the coupler-head at three points—viz., the shoulders a' a^2, above and below the knuckle-lever arm, and the end a^3 of the lever-arm—which bear against the corresponding portions of the coupler-head, thus relieving the pivot-pin D of any danger of strain that might distort it and prevent the usual vibration of the coupler-knuckle.

To prevent the disconnecting of the train should the draw-bar break, I provide a supplementary connecting-bar E, which is inserted in a recess or chamber *e* of the draw-bar, and which is provided at one end with a longitudinal slot e', through which the key of the continuous draft-rigging passes. The front end of the connecting-bar is provided with a perforation e^2, through which the locking-pin is passed, and as this connecting-bar is preferably made of open-hearth steel having a high degree of tensile strength it will be seen that should the draw-bar break the strain from the coupling-head will be transmitted through the locking-pin and will come upon this supplementary connecting-bar,

which is of sufficient strength to pull the train safely along until a stop is made at the usual points for examining the draft-riggings.

To assist in the unlocking and vibrate the coupler-knuckle into its open position, I provide the supplementary connecting-bar with a projecting tongue E′, which normally rests under the knuckle-lever arm, as shown in dotted outline in Fig. 2 and in full lines in Fig. 6. The adjacent portion of the knuckle-lever arm is cam-shaped or concaved, as at a^4, so that as the supplementary bar is raised its projecting tongue will contact this cam-surface on the lever-arm and vibrate the knuckle into its open position. To raise the supplementary connecting-bar and its projecting tongue, I provide the locking-pin with a projecting lug or pin b^3 near its lower end, so that as the locking-pin is raised to or near its unlocking position its projecting lug portion will contact the supplementary bar and raise it. A further raising motion of the locking-pin causes the tongue of the supplementary bar to contact the cam portion of the lever-arm, as above described. This construction has a further advantage in that the weight of this supplementary bar materially assists, with the weight of the locking-pin, to return the locking-pin to its normal locked position, in a large measure preventing the failure of the parts to operate properly, as is now often the case. This will be appreciated by those who have charge of the coupling and uncoupling of cars, from the fact that as the knuckle is vibrated into its closed position there is a quick recoil, which uncouples the knuckle before the locking-pin can resume its locked position.

In Fig. 8 I have shown a modification of my improvement, illustrating the structure employed when using a draw-bar with a yoke or follower-strap that incloses the follower-plates, &c. I will not describe or illustrate the follower-plates or draft-rigging, as they are well known in the art.

G is the rear portion of the draw-bar. (Shown in section with the coupler-head, knuckle, &c., removed.)

H is the yoke or follower-strap, which is secured to the draw-bar by means of the pins h h'. This yoke or strap is properly a portion of the draft-rigging, which, for the sake of simplicity, I will treat as such.

I is the supplementary connecting-bar, which is made substantially in the shape shown in Fig. 7, through which the pin h' is passed in substantially the same manner as the key of the continuous draft-rigging is passed, so that should the draw-bar become broken the train or portion of it back of the break may be pulled along safely by the supplementary bar.

While I have described my invention with more or less minuteness as regards details, I do not desire to be limited thereto unduly, any more than is pointed out in the claims. On the contrary I contemplate all proper changes in form, construction, and arrangement, the omission of parts and substitution of equivalents, as circumstances may suggest or render expedient.

I claim—

1. In a car-coupler, the combination of a draw-bar provided with a coupler-head, and intermediate connecting and locking mechanism interposed between the coupling-head and adapted to be connected to the draft-rigging to form supplementary safety connecting mechanism and hold the knuckles connected with each other, substantially as described.

2. In a car-coupler, the combination of a draw-bar provided with a coupler-head, a locking-pin, and a connecting-bar engaged with the locking-pin and adapted to be connected with the draft-rigging to form supplementary connecting mechanism and hold the knuckles connected with each other, substantially as described.

3. In a car-coupler, the combination of a draw-bar provided with a coupler-head and knuckle, a locking-pin for such knuckle, and a connecting-bar engaged with the locking-pin and adapted to be engaged with the draft-rigging to form supplementary connecting mechanism, substantially as described.

4. In a car-coupler, the combination of a draw-bar provided with a coupler-head and knuckle, a locking-pin for such knuckle, a supplementary connecting-bar engaged with the locking-pin and adapted to be engaged with the draft-rigging provided with a projecting portion adapted to contact a cam-surface of the coupling-knuckle to vibrate such coupling-knuckle into its open position as the connecting-bar is raised, substantially as described.

5. In a car-coupler, the combination of a draw-bar provided with a coupler-head and knuckle and a portion of the draft-rigging, a locking-pin for such knuckle provided with a projecting portion to raise the forward end of a connecting-bar, and a supplementary connecting-bar arranged in an interior chamber of the draw-bar and engaged with the locking-pin and draft-rigging and provided with a forward-projecting tongue adapted to impinge against the cam-surface on the knuckle lever-arm when it is raised and vibrate the knuckle into its open position, substantially as described.

6. In a car-coupler, the combination of a draw-bar provided with an interior chamber, coupler-head and knuckle, a locking-pin in such coupler-head, a draft-rigging key or pin in the rear of such draw-bar, and a supplementary connecting-bar in the recess of the draw-bar engaged with the locking-pin and draft-rigging key to form supplementary connecting mechanism, substantially as described.

7. In a car-coupler, the combination of a draw-bar provided with a coupler-head and knuckle, a locking-pin for such knuckle in

the coupler-head provided with a projecting portion to raise a supplemental connecting-bar after the pin has been raised to substantially its unlocked position, and a supplementary connecting-bar connected with the locking-pin and adapted to be connected with the draft-rigging to assist in returning the locking-pin to its locked position and form a supplementary connecting mechanism between the coupler-head and draft-rigging, substantially as described.

GEORGE W. DICKEY.

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THOMAS B. MCGREGOR.