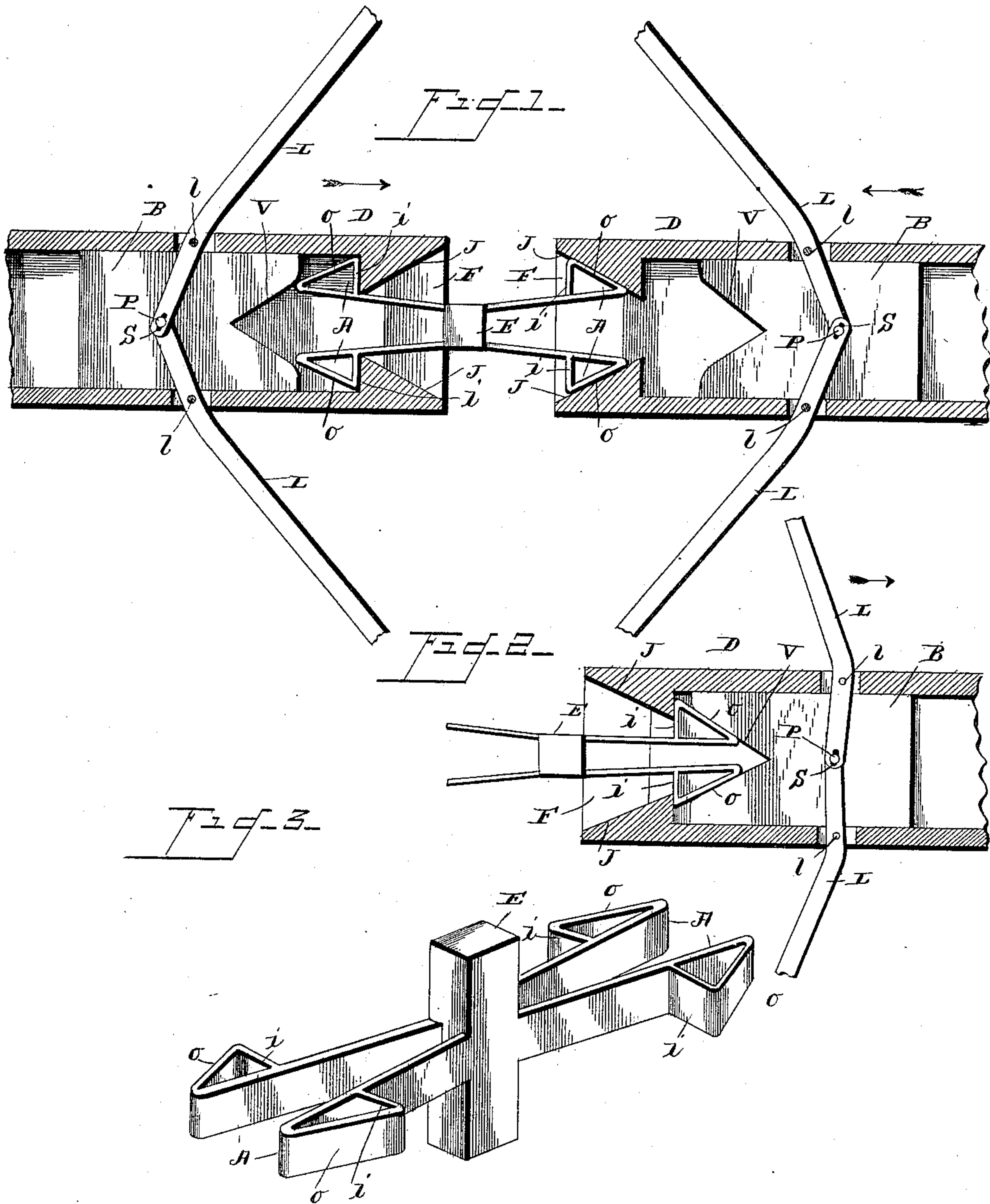


(No Model.)

J. A. RUAN.
CAR COUPLING.

No. 427,913.

Patented May 13, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN A. RUAN, OF BEACON, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 427,913, dated May 13, 1890.

Application filed February 24, 1890. Serial No. 341,535. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. RUAN, a citizen of the United States, residing at Beacon, in the county of Mahaska and State of Iowa, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to car-couplings, more especially to that class known as "arrow-heads and jaws."

The object of the present invention is to provide a car-coupling of this general character which shall be very simple in construction and which shall possess means for uncoupling the cars from either side thereof and from either car without coming between the cars. This object I accomplish by my improved car-coupling, which consists, essentially, of a draw-head having rearwardly-beveled jaws at each side, a block in rear of the jaws moving longitudinally in the draw-head and provided with a V-shaped slot, means for moving this block, and a link composed of a divided and outwardly-springing arrow-head at each end and an enlarged lug between them, as well as of adjunctive and specific details of construction incident thereto, which assist in the operation of said essential features and tend to enhance the value of the completed device, all as hereinafter more fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of two draw-heads with their tops removed, showing the link engaged in the left-hand one and in the act of being engaged in the right-hand one. Fig. 2 is a similar view of one draw-head, showing the link in the act of being disengaged therefrom. Fig. 3 is an enlarged perspective detail view of the link.

Heretofore it has been customary, generally, in car-couplings of this character to provide the link with arrow-heads at each end and to pivot jaws in the draw-heads in such a manner that they may oscillate or separate to permit the heads of the link to pass between them either in the act of coupling or of uncoupling; but such construction necessitated the use of somewhat complicated mechanism for effecting a simultaneous and opposite movement of the two jaws in the draw-head, in order that they would both disengage from the sides of the link. Moreover, a draw-head

is an expensive piece of mechanism to make, is of large size, weighty, and difficult to replace or repair. My present invention is designed to overcome these objections; and to that end it consists in dividing the arrow-heads of the link centrally and in making the jaws in the draw-head stationary, whereby the draw-heads are of much simpler construction, and what complication there is (if my construction can be called complication) occurs in the link, which is easily and cheaply manufactured and can be turned out in great quantities, when desired, to replace other broken or worn-out links.

Referring to the accompanying drawings, the letter D designates a draw-head, having a flaring front end F, and within this draw-head and just in rear of the front end and at each side thereof are rearwardly-beveled jaws J. In the rear of these jaws and sliding loosely in the body on the draw-head is a block B, having in its front end a V-shaped slot V.

My preferred manner of operating the block B is by means of levers L, which are pivoted at l in recesses or slots in the sides of the draw-head, and whose inner ends have short slots S, engaging a pin P in the block, all as shown in the drawings. It will thus be seen that when the outer end of one of these levers is moved the block B will be moved in an opposite direction within the draw-head and the opposite lever will be moved around its pivot at the same time. The ends of these levers extend laterally from the draw-head to within reach of the operator, who need not necessarily stand between any portions of the meeting ends of the cars.

My improved link is constructed, preferably, entirely of metal, the central portion or vertical enlargement E being of cast metal, if desired, and the end portions being of springing metal. The latter are duplicates of each other, and each end is in general contour in the shape of an arrow-head A. Side straps diverge gradually and slightly from the enlargement E, and at their outer ends are turned backwardly and outwardly, as at o, and then inwardly, as at i, and secured at their tips to their bodies, thereby forming half arrow-heads, and both straps

and half-heads forming a complete head A. This link being engaged in the left-hand draw-head, as shown in Fig. 1—that is to say, with the faces *i* standing against the rear flat
 5 faces of the jaws J—if now another car approaches the free end of the link enters the enlarged mouth F of the latter draw-head, its side arms *a* are pressed slightly together, and its inclined faces *o* ride upon the inclined
 10 faces of the jaws in the approaching car, and, finally, when it has passed into the draw-head sufficiently the arms spring apart and it engages therein, as will be readily understood. When in this position the enlargement E at
 15 the center of the link bears against the ends of the two draw-heads and keeps them properly spaced.

When it is desired to disengage the cars by uncoupling them, (see Fig. 2,) one of the four
 20 levers L is moved in the proper direction, whereby the block B is thrown forwardly. This movement brings the V-shaped slot V against the outer ends of the two members of the link which are seated in that draw-head
 25 and presses such ends toward each other, which movement causes their flat rear faces or shoulders *i* to disengage the rear faces of the jaws J. The cars can then be separated in the ordinary manner.

30 Especial stress is laid upon the extreme simplicity of this car-coupling, although no strength is sacrificed, and an automatic coupling and a simple means of uncoupling are furnished.

35 Although I have described and illustrated the levers L for operating the block B, it will be understood that any equivalent means may be used for the same purpose without departing from the spirit of my invention.

40 What I claim as new is—

1. In a car-coupling, the combination, with the draw-head having inwardly-projecting jaws at its sides, of a link having arrow-head ends, each end being divided longitudinally
 45 and the members thereof springing outwardly, substantially as described.

2. In a car-coupling, the combination, with a link having arrow-head ends, each end being divided longitudinally and the members
 50 thereof springing outwardly, of a draw-head having inwardly-extending lugs at its sides, and means, substantially as described, car-

ried by the draw-head for disengaging the members of said arrow-head end from behind said jaws, as set forth.

3. In a car-coupling, the combination, with the double-arrow-headed link, each end thereof being divided longitudinally and its members springing outwardly, of a draw-head having rearwardly-beveled jaws at its opposite sides
 60 near its front end, a block moving longitudinally within said jaw-head in rear of the jaws and provided with a V-shaped slot in its front end, and means, substantially as described, for moving said block forward and back, as
 65 and for the purpose set forth.

4. In a car-coupling, the combination, with the double-arrow-headed link, each end thereof being divided longitudinally and its members springing outwardly, of a draw-head having
 70 rearwardly-beveled jaws at its opposite sides near its front end, a block moving longitudinally within the draw-head in rear of the said jaws and having a V-shaped slot in its front end, and levers pivoted in the sides of the
 75 draw-head and provided at their inner ends with slots engaging a pin in the upper side of said block, the whole constructed substantially as and for the purpose set forth.

5. The two draw-heads having rearwardly-beveled jaws, in combination with a link comprising an arrow-head at each end, adapted to engage said jaws, and a vertical enlargement at its center, larger than the hole in said draw-heads, and adapted to be struck by the meet-
 85 ing ends thereof, substantially as described.

6. A link having arrow-heads at each end divided longitudinally and its members springing outwardly and a vertical enlargement at its center, for the purpose set forth,
 90 in combination with two draw-heads, each having rearwardly-beveled jaws engaging said arrow-heads, and means, substantially as described, for throwing the arrow-heads out of engagement with the jaws, as hereinbefore
 95 specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN A. RUAN.

Witnesses:

D. S. SMITH,
 WM. H. RUAN.