(No Model.)

J. M. STARK.

CAR COUPLING.

No. 522,954. Patented July 10, 1894.

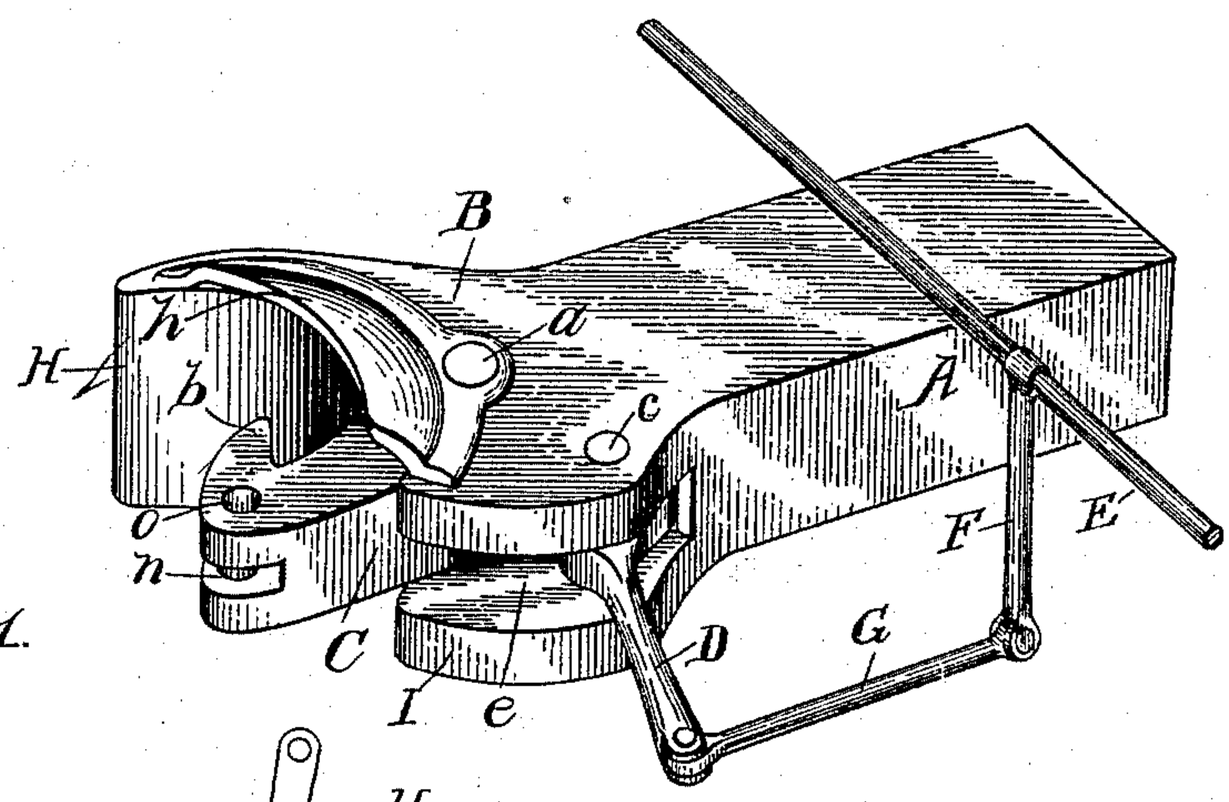

Fig. 1.

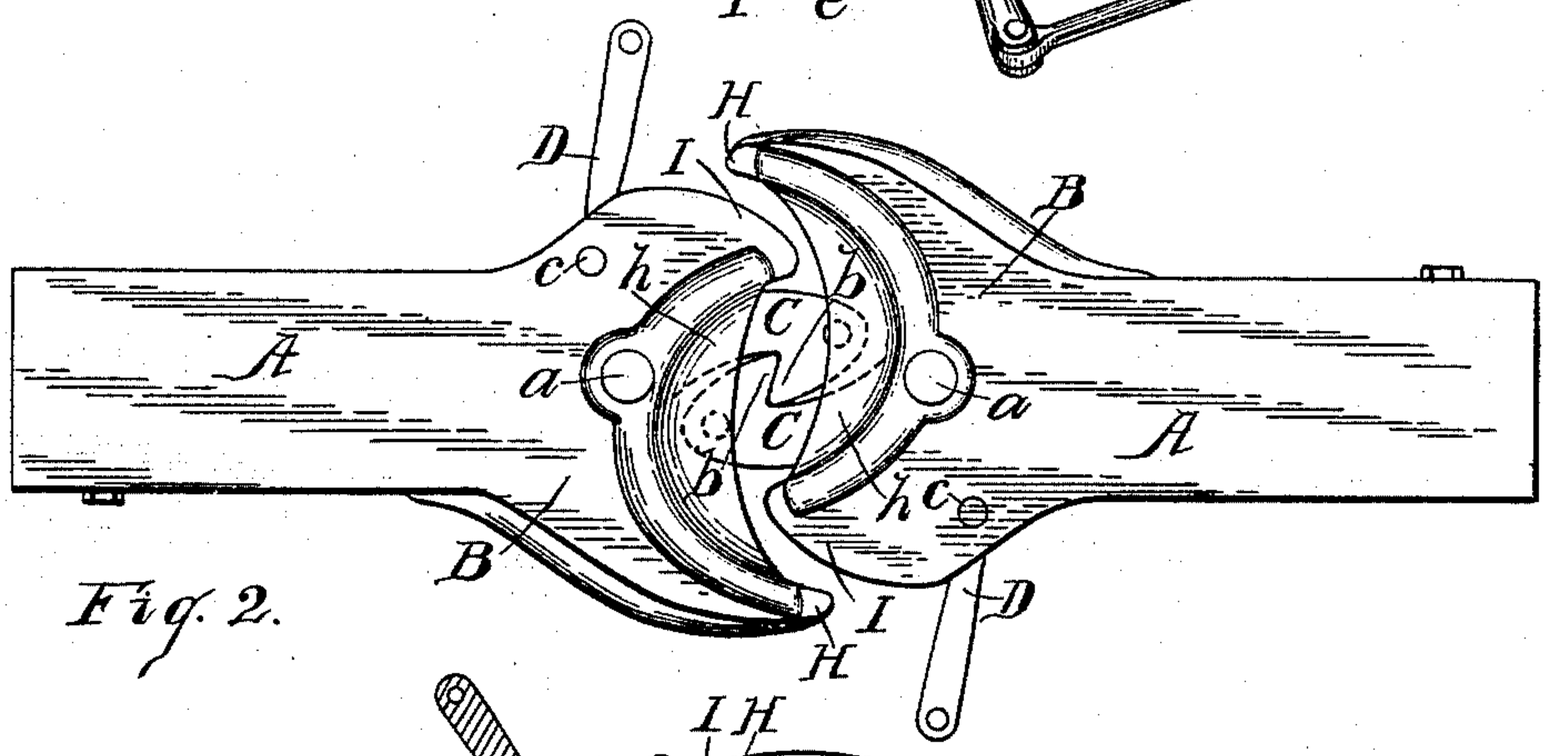

Fig. 2.

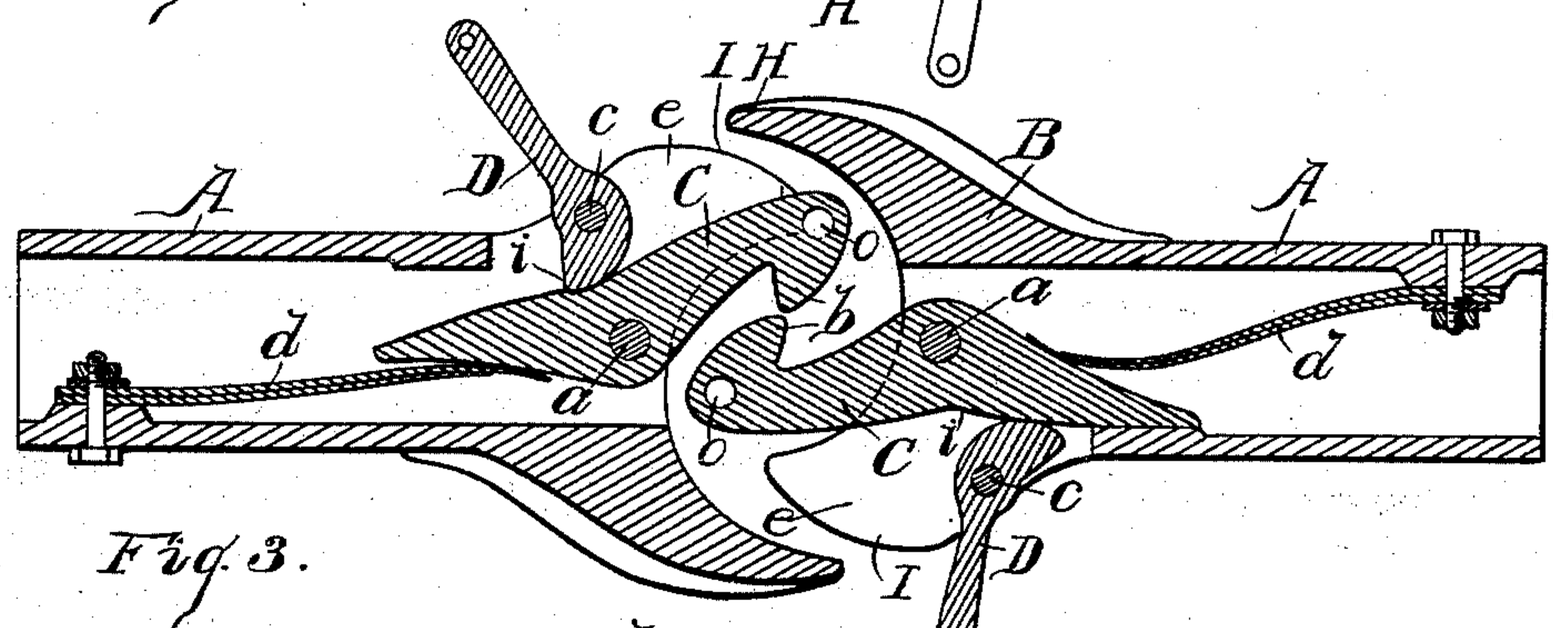

Fig. 3.

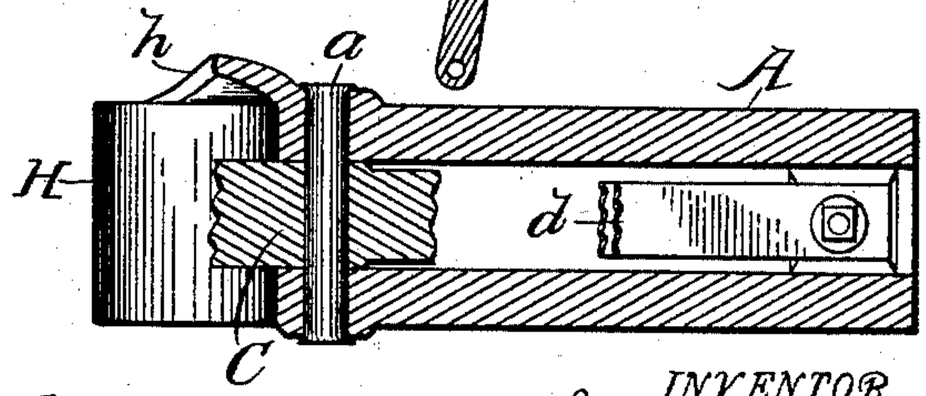

Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 522,954, dated July 10, 1894.

Application filed November 10, 1893. Serial No. 490,522. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. STARK, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in car couplers, and consists in a certain construction and arrangement of parts as hereinafter fully set forth, the essential features of which being pointed out particularly in the claims.

The object of the invention is to provide an automatic coupler of simple construction that will insure a positive coupling of the cars when brought together, and in which the arrangement of parts is such as to enable the cars to be readily uncoupled without the operator entering between the ends thereof. This object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of my improved coupler. Fig. 2 is a plan view of the heads coupled. Fig. 3 is a horizontal section through Fig. 2, showing the jaws uncoupled. Fig. 4 is a vertical longitudinal section through the draw-bar.

Referring to the letters of reference, A designates the hollow draw-bar having the head B provided with a concaved mouth that communicates with the opening through the draw-bar.

C designates the coupling jaw which is pivoted in the draw-head by means of the pin *a* and projects from the mouth of said head, its outer end being provided with the grappling hook *b*. Said jaw extends rearwardly into the draw-bar, and is normally held in position by the spring *d* which bears against the inner end thereof. Said spring being bolted to the inner wall of the draw-bar, as shown in Fig. 3. Formed in one side of the draw-head is an open slot *e* in which is pivoted upon a pin *c*, the cam lever D, the cam face of which engages the inner end of the jaw C, and is adapted by the actuation of said lever to swing the inner end of said jaw against the action of the spring *d*, and depress the outer end thereof to disengage it from a companion part, as when uncoupling the cars as shown in Fig. 3. This lever is operated by a rod E crossing the end of the car and having a crank at the end, not shown, by means of which it may be rotated. Depending from said rod is an arm F which is coupled by a link G with the outer end of lever D. Thereby, by the rotation of said rod, said lever is thrown to uncouple the jaw, the outer end of which, as it is actuated swings backward into the open slot in the side of the draw-head. By releasing the lever D, the force of the spring returns said jaw to its former position.

The position of the jaws C is such, that when the opposed draw-heads are brought together, the inclined noses of said jaws strike and force the jaws apart until the grappling hooks *b* slide past one another, when the springs *d* will force said hooks together and make the coupling, which is accomplished entirely automatically.

When it is desired to prevent the coupling of the cars when run together, as in switching, the lever D is thrown so that the long point of the cam will pass the shoulder *i* formed in the side of the jaw, whereby the grappling end of the jaw will be thrown back into the slot in the draw-head and locked in that position, as shown at the left of Fig. 3, in which position it will be held by the springs *d*, until the cam is disengaged from the shoulder *i* in the jaw.

The draw-head is provided with a longer curved extension H on one side than on the other, which, when the heads are coupled, is adapted to partially embrace the shorter curved extensions I on the opposite side of the opposed head, thereby guiding the heads together to insure a perfect coupling, and permitting a free oscillation of said heads in either direction when the cars are rounding a curve, and maintaining the point of draft always from the center of the draw-bar.

Formed integral with the draw-head and extending over the central portion of the mouth thereof, is the raised flange or lip *h*, which projects over the end of the jaw in the opposed head when said heads are coupled, as clearly shown in Fig. 2, and prevents the accidental uncoupling of the jaws by a sudden vertical movement of the end of the car.

The ends of the jaws C are provided with a slot *n* and a vertical aperture *o* passing therethrough, whereby a coupling may be made with a car having the ordinary link and pin.

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

1. In a coupler, the combination of the draw-head having the concaved mouth and a slot in the side thereof opening into said mouth, the spring actuated jaw pivoted in said head and extending from said mouth and adapted to swing backward into said slot, the cam lever pivoted in said slot in the draw-head and adapted to engage the rear end of said jaw, the rod crossing the end of the car, the arm depending therefrom, and the link connecting said arm with said lever.

2. The combination of the draw-head having a concaved mouth, the jaw pivoted in said head and having a shoulder *i* opposite its point of pivot, the rear end of said jaw extending into the draw-head, the spring engaging therewith, the cam lever pivoted in the draw-head and bearing against the rear end of said jaw, the long point of said cam being adapted to engage the shoulder *i* thereon to hold said jaw depressed.

3. The combination of the draw-head having the concaved mouth and the curved side extensions, and provided with the raised flange or lip spanning across the concave of said mouth between said extensions, and the jaw pivoted within said mouth and projecting from under said lip.

4. In a car coupler, the combination of the draw-head having the concaved mouth and the slot in the side thereof opening into said mouth, the spring actuated jaw pivoted in the head and extending from said mouth and adapted to swing back into said slot, the cam lever pivoted in said slot in the draw-head and adapted to engage the rear end of said jaw, substantially as set forth.

5. In a car coupler, the combination of the opposed draw-heads having the concaved mouth and the curved side extensions, the longer of said side extensions embracing the curved face of the shorter side on the opposite head, the jaws pivoted in said heads and extending from the mouths thereof, the springs engaging the inner ends of said jaw, and the cam levers bearing against the same.

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

JAMES M. STARK.

Witnesses:
E. K. ROEMER,
E. S. WHEELER.