(No Model.)

W. R. BARTON.

CAR COUPLING.

No. 307,618. Patented Nov. 4, 1884.

Fig. 1.

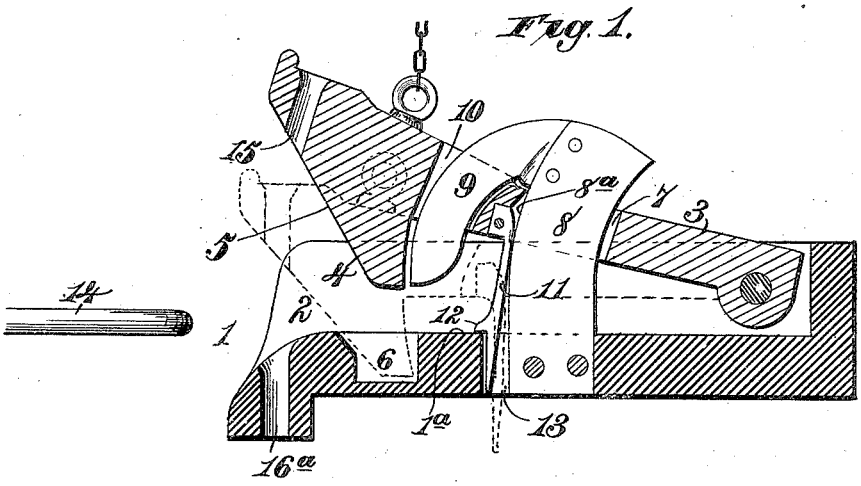


Fig. 2.

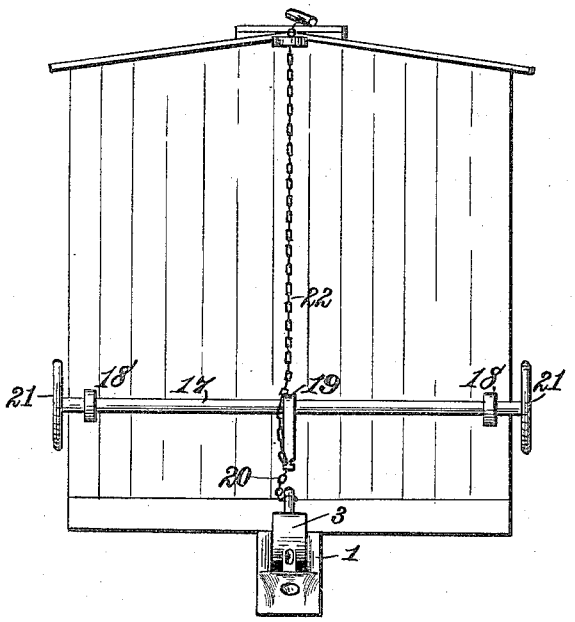
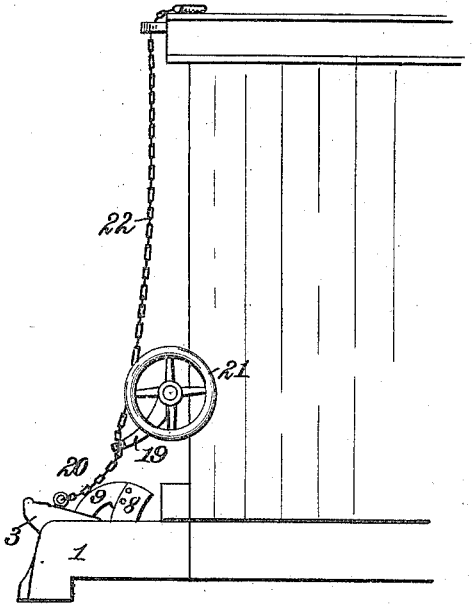


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM RANDAL BARTON, OF BRIDGEWATER, MASSACHUSETTS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 307,618, dated November 4, 1884.

Application filed August 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. BARTON, a citizen of the United States, residing at Bridgewater, Plymouth county, Massachusetts, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car-couplers; and the object is to provide an automatic coupling device which shall be simple in construction and certain in operation, having combined therein the least possible number of parts, and capable of being used as an automatic coupler, or with the ordinary link and pin.

To these ends, therefore, my invention consists in the several novel features of construction and combination of parts hereinafter set forth, and definitely pointed out in the claims.

Referring to the drawings forming part of this specification, Figure 1 is a central longitudinal section illustrating my invention. Fig. 2 is an end elevation. Fig. 3 is a side elevation.

In the said drawings, the reference-numeral 1 denotes the coupler-head, which is so constructed that it may be substituted for the draw-head now in use. The coupler-head is provided with a large, deep, outwardly-flared mouth, 2, and is inclosed upon the sides and below, the top being left open, as shown.

Within the chamber formed by the three walls of the coupler-head, and near the rear end of said chamber, is pivoted a bar, 3, which extends from the pivotal point to the mouth 2, and is provided with a grappling-hook, 4, which lies just within the mouth of the coupler-head, the outer surface, 5, of said hook, together with the end of the bar, being beveled off in the same plane, forming a continuous surface which is inclined downwardly and inwardly toward the point of the hook 4. When the latter is depressed to its lowest point, it lies within a recess, 6, in the lower wall of the coupler-head.

Behind the pivotal point of the hook 4 is formed in the bar 3 a slot, 7, through which projects a curved arm, 8, rigidly attached to the lower part of the coupler-head. To the upper and projecting end of this bar is attached an arm, 9, which lies in the same vertical plane with its support, but is extended forward and curved downward to pass through a slot, 10, in the bar 3, the end of said arm projecting below the bar just behind the hook 4. Both the arms 8 and 9 are so curved and mounted that they lie in substantially parallel arcs of circles which have the pivotal point of the bar 3 for their center, whereby the said bar may be raised and dropped without obstruction. The end of the arm 9 which projects below the bar is rounded off posteriorly, for a purpose presently to be shown.

In the forward end of the slot 7 is pivoted one end of a spring, 11, which drops from the pivotal point down through the lower wall of the coupler-head, the construction being such that the back of said spring lies against the curved face of the arm 8, as shown in Fig. 1. At a suitable point below its pivot this spring is provided with a shoulder-catch, 12, which is so located that when it engages with the wall 1^a of the head the bar carrying the hook 4 will be sustained in such a position that the coupling-link may enter beneath the hook.

The spring 11 passes through an opening, 13, in the wall 1^a, said opening being just in front of the base of the arm 8, and of such dimensions that it will permit the shoulder-catch 12 to pass downward when the spring is pushed against the arm. On the other hand, when the bar 3 is raised, the spring 11, being drawn upward over the curved face 8^a of the arm 8, is bent to correspond with the curvature of the latter, thereby throwing the shoulder-catch 12 toward the front and causing it, after it has passed upward through the opening 13, to spring into engagement with the wall 1^a, as shown in Fig. 1.

The operation of the parts is as follows: In coupling, the link 14, which is upon the opposite car, enters the mouth of the coupler-head beneath the hook 4, and, striking the spring 11, throws the catch 12 out of engagement, thereby dropping the bar 3 and hook 4 by their own gravity, and engaging the latter with the entering end of the link. In uncoupling, it is only necessary to raise the bar 3 until the catch 12 engages, when the link may be withdrawn, the rounded point of the arm 9 preventing it from catching upon

the hook 4. It should be noted, however, that in coupling it is not essential that the bar 3 be raised, since the end of the link striking upon the beveled face of the hook 4 will lift the latter and enter the coupling-head without difficulty. An aperture, 15, may be formed in the end of the bar 3 to receive the ordinary link-pin, a registering opening, 16^a, being formed in the wall 1^a beneath said aperture. When the link is placed in the coupler-head and the bar 3 is dropped, the weight of the latter will hold said link in proper position to couple with any ordinary car, the flaring mouth 2 guiding the projecting end of the link into engagement with the adjacent coupling. The coupler-head 1 may be substituted for the ordinary draw-head, having suitable springs combined with it to take up the shock of stopping and starting. In order to raise the bar 3, and thereby uncouple without entering between the cars, a transverse shaft, 17, may be mounted in any suitable bearings, 18, upon the end of each car, over the coupler-head. Upon the central part of this shaft is mounted rigidly an arm, 19, to the end of which is attached a chain, cord, or equivalent device, 20, which is connected with the end of the bar 3. Upon the outer ends of the shaft 17, which project beyond the sides of the car, are mounted hand-pulleys 21, by which the shaft may be actuated. A chain or cord, 22, may also be carried from the end of the arm 19 to the top of the car, whereby the brakeman may uncouple without descending.

By my invention I provide a coupler which is of the requisite strength, is durable in use, simple in construction, and extremely efficient, which may be used for coupling without previous adjustment, and uncoupled by a a single movement, the coupling-hook being capable of actuation from any one of three different points.

Having thus described my invention, what I claim is—

1. In a car-coupler, the combination, with a coupler-head, of a bar pivoted therein and carrying a grappling-hook, a spring having a shoulder-catch pivoted to said bar, and a curved arm over which said spring is drawn when the bar is raised, substantially as described.

2. In a car-coupler, the combination, with a coupler-head and a bar pivoted therein and carrying a coupling-hook, of a curved arm mounted upon a rigid support and projecting through a slot in the bar just behind the hook, the end of said bar being rounded posteriorly, substantially as described.

3. In a car-coupler, the combination, with a coupler-head, of a bar pivoted therein, a coupling-hook upon the outer end of said bar, a rigid curved arm rising through a slot in the bar, a sustaining-spring pivoted to the latter and resting against the curved face of the arm, and a curved arm projecting through the bar behind the hook and having the end rounded, substantially as described.

4. In a car-coupler, the combination, with a coupler-head, of a bar pivoted therein, a coupling-hook mounted upon said bar, and a sustaining-spring lying against a rigid curved arm, by which it is bent as the bar is raised, the outer end of the bar being beveled downward and inward to the point of the hook, substantially as described.

5. The combination, with the coupler-head 1, of the bar 3, having hook 4, the curved arm 8, and spring 11, having a catch, 12, substantially as described.

6. The combination, with the coupler-head 1, of the bar 3, having hook 4, the arm 8, arm 9, spring 11, shaft 17, having arm 19, and hand-wheels 21, substantially as described.

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

WILLIAM RANDAL BARTON.

Witnesses:
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