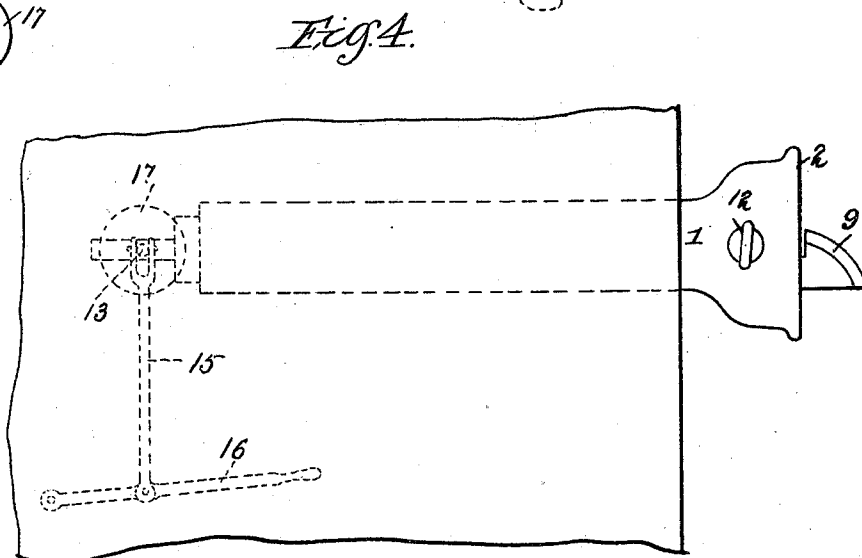
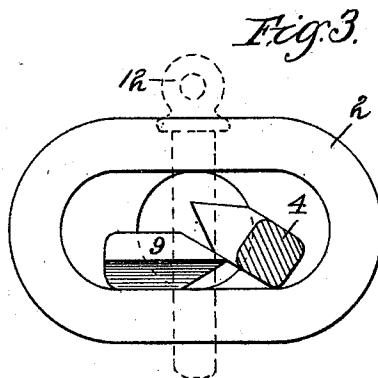
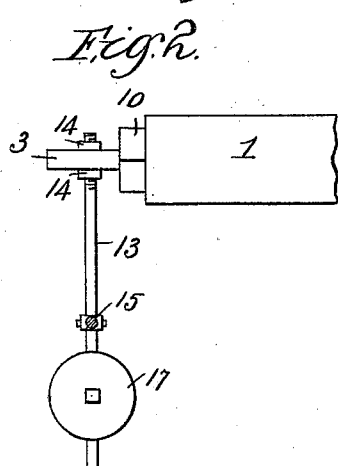
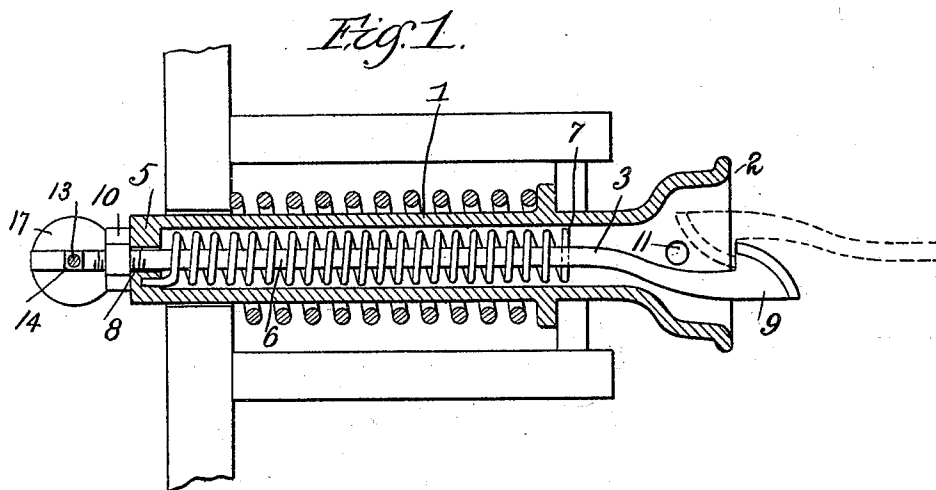


(No Model.)

O. Z. COUTANT.
CAR COUPLING.

No. 554,413.

Patented Feb. 11, 1896.



Witnesses.

Wm. M. Rheem
Wm. J. Fleming

Inventor
O. Z. Coutant
by Elliott & Hooper Attys

UNITED STATES PATENT OFFICE.

OSCAR ZERAH COUTANT, OF CHICAGO, ASSIGNOR TO D. R. ARMSTRONG,
OF EVANSTON, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 554,413, dated February 11, 1896.

Application filed August 23, 1895. Serial No. 560,201. (No model.)

To all whom it may concern:

Be it known that I, OSCAR ZERAH COUTANT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplers, of which the following is a full, clear, and exact specification.

My invention relates to automatic couplers for railway-cars and other uses, and it has more especial reference to that class which employ hook-shaped members which slip past and spring into engagement with each other when the cars are run together.

One of the great objections to prior devices of this character is the great liability of the couplers becoming disengaged during relative lateral movement of the cars when rounding curves, switching, &c.; and another equally serious objection is that the hooks are so located as to preclude the employment of the ordinary link-and-pin coupling should the automatic coupler become disabled or the contiguous car be equipped with a coupler of a different type or for some reason be incapable of engagement with the hook of the adjacent coupler.

The primary object of my invention is to avoid these objections and to so arrange the engaging members or hooks of the coupler as to prevent their disengagement, and also to provide for the employment of the ordinary link-and-pin coupler when desired without interfering with the automatic coupler.

With these ends in view my invention consists in certain features of novelty by which the said objects and certain other objects hereinafter disclosed are attained, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a plan section of a buffer and a portion of the car equipped with my improved coupler, parts of the contiguous coupler being shown in dotted lines. Fig. 2 is a side section thereof. Fig. 3 is an enlarged detail view looking into the mouth of the buffer, showing the two hooks or couplers in the act of passing one another;

and Fig. 4 is a plan view of one end of the car on a small scale.

In carrying out my invention I provide each of the cars or things to be coupled together with a hooked draw-bar, which is capable of rotating on its longitudinal axis and which is normally arranged with its hook projecting laterally or in a horizontal plane as contradistinguished from the hooks heretofore arranged in a vertical plane, the hooks of the adjacent cars in my coupler being arranged in the same or substantially the same horizontal plane and side by side instead of one upon the other, as heretofore; and the contiguous faces of these hooks at the points where they come together are rounded, beveled or otherwise so formed that their engagement with one another will cause one at least to rotate on its longitudinal axis and thus rise out of the plane of the other as it passes the latter, and so remain until the barbs or shoulders of the two meet, when suitable spring-pressure, gravity or other means with which the draw-bars are provided for yieldingly or elastically holding them against rotation causes the tilted hook to fall into the same plane with the other. These hooked draw-bars are so disposed with reference to the buffer as to at all times leave a free passage for the coupler-pin through such buffer, whereby the pin-and-link form of coupling may be used when desired.

In carrying out my invention I prefer to employ a hollow or channeled buffer 1, whose mouth 2 is bell-shaped, as usual, but in my invention is elongated laterally, as shown in Fig. 3, and has its lower side at least more or less flattened, so as to form a level support for the hooked draw-bars 3 4; but this feature is desirable rather than essential. The draw-bar 3 or 4 is arranged within the buffer 1 and passes at its rear end through a perforation in the end of the buffer, surrounded by a shoulder or flange 5, which forms an abutment for a spiral or other suitable spring 6 coiled upon the draw-bar 3. The other end of the spring 6 is connected or attached in any suitable manner to the draw-bar, so as to cushion the

draw-bar in one direction and hold it normally projected from the mouth of the buffer, thus providing for the compression of the draw-bar into the buffer in the event the buffer is jammed against a stop-block or other object. The spring, however, is preferably attached to the draw-bar 3 by passing it through a suitable perforation in the draw-bar, as shown at 7, or in any other suitable manner, while the opposite end of the spring is secured to the buffer by passing its end 8 through a perforation in the shoulder 5 or in any other suitable way, whereby the same spring will also serve as a means for yieldingly or elastically holding the draw-bar against rotation, and thus normally maintain the hook 9 of the draw-bar in a horizontal plane, as shown on the left in Fig. 3. The draw-bar may be held from pulling out of the buffer by any suitable means, such as a key or nut, a nut 10 being shown in the drawings, which takes its abutment against the end of the buffer.

The inner edge of each of the hooks 9 of the draw-bars is beveled or rounded on its upper and lower sides, preferably from the point of the hook back to the barb or shoulder thereof, so that when the cars are run together the beveled edge of one hook in engaging with the beveled edge of the other will either pass under or over such edge of the other, and in either event cause one of the draw-bars to rotate on its longitudinal axis against the inertia of the spring 6, and thus enable the hooks to pass by each other and bring their barbs or shoulders into engagement, as shown in Fig. 1, the hooks assuming the position shown in Fig. 3 while passing each other.

The buffer, if desired, may be provided with the ordinary hole 11 for the insertion of the coupler-pin 12 when it is desired to couple the cars together by means of the ordinary link, and in order that the draw-bars 3 4 and their hooks may not obstruct the passage of the pin 12 the draw-bars are slightly offset, as shown in Fig. 1, so as to pass around the hole 11; but their hooks are in line with the central line of the buffer, so that this offset in the draw-bar will not result in torsional strain on the buffer or on the draw-bar. The beveled edges of the hooks are also so formed that the hook of the adjacent car will not cover the hole 11 when it projects into the companion buffer, and hence it will not be necessary to compress the draw-bar into the buffer in order to insert the pin through a buffer having the hook 9 of an opposite car projecting into it.

In order that the cars may be readily uncoupled when desired I provide the rear extremity of the draw-bar 3 4 with a crank-arm 13, secured thereto in any suitable manner, as by means of nuts 14, and this crank-arm, for greater convenience, is provided with a rod 15, extending to a point near the outer side of the car, where, if desired, it may be attached to a pivoted lever 16, which serves as a con-

venient means of rocking the draw-bar on its longitudinal axis and thereby tilting one of the hooks 9 out of the plane of the other and permitting the cars to be separated. I also prefer to provide the crank-arm 13 with a pendulum or weight 17, which may be used either as a substitute for or an auxiliary to the spring 6 in its function of retaining the hook 9 in a horizontal plane.

With a coupler thus constructed it will be seen that the lower side of the mouth of the buffer serves as a support for the hooks 9 and holds them in engagement, while the hook 9, projecting from the mouth of the buffer, as it does, serves as a guide for the ordinary link while being inserted into the buffer and presents a flat smooth surface for the link to slide along either in being inserted or withdrawn, whereas should the hooks be arranged in a vertical plane they would engage with the link when being withdrawn, and, furthermore, would be liable to disengage with each other when rounding curves or switching, unless the vertical walls of the buffer are narrowed or contracted, and this can only be done at the expense of liability of injury to the hooks when rounding sharp curves and at the sacrifice of the ordinary link and pin as a coupling, for it is readily seen that when the mouth of the buffer is narrowed vertically the link can no longer be inserted.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A car-coupler having in combination a buffer, a hook-shaped draw-bar rotatable on its longitudinal axis, located in said buffer, means for holding said draw-bar with its hook projected horizontally, said buffer having sufficient space or opening above said hook to admit of a coupling-link above said hook and being provided with a coupling-pin hole, and a coupling-pin in said hole, substantially as set forth.

2. A car-coupler having in combination the buffers, the beveled hook-shaped draw-bars rotatable on their longitudinal axes and having their hooked ends projecting toward each other and arranged horizontally and in the same plane in said buffers respectively, said buffers being provided with coupling-pin holes and having sufficient space above said hooked draw-bars to admit of a coupling-link above said hooked ends, substantially as set forth.

3. A car-coupler having in combination a buffer having its mouth flattened or elongated laterally, a rotatable draw-bar having a hooked end arranged in said buffer at or near the bottom thereof, said buffer having sufficient opening or space above said draw-bar to admit of a coupling-link above said hooked end and being provided with a coupling-pin hole or perforation and the hook on said draw-bar being projected transversely of said pin-

hole or perforation and in a horizontal plane and beveled or rounded on its inner side or edge, and a coupling-pin in said pin-hole, substantially as set forth.

- 5 4. A car-coupler having in combination a buffer, a hooked draw-bar arranged in said buffer, a spring located in said buffer and serving to cushion said draw-bar against lon-

gitudinal movement, a crank-arm secured to said draw-bar and an operating connection 10 extending from said crank-arm, substantially as set forth.

OSCAR ZERAH COUTANT.

Witnesses:

JNO. G. ELLIOTT,
F. A. HOPKINS.