

UNITED STATES PATENT OFFICE.

JAMES W. ELLIOTT, OF GALVESTON, TEXAS, ASSIGNOR OF ONE-HALF TO
J. L. KANE AND JOHN SWEENEY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 531,522, dated December 25, 1894.

Application filed July 5, 1893. Serial No. 479,602. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. ELLIOTT, of Galveston, in the county of Galveston and State of Texas, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

The object of my invention is to provide a simple, safe and practical coupling for cars, arranged to couple at one time as many cars as may be desired, and to operate automatically so as to avoid all necessity of going between the cars, and adapted to use the ordinary link and to couple with cars having a higher or lower draw bar than itself.

Figure 1 is a vertical central longitudinal section through the draw bar. Fig. 2 is a top or plan view, and Fig. 3 shows a side view in detail of the eccentric.

In the drawings A represents the draw bar which at one end M is chambered out and provided with a vertical key slot L to connect with the draft rod (shown in dotted lines) and secure the draw bar to the frame timbers of the car. Any other means for connecting the draw bar may, however, be employed.

In the middle line of the draw bar and extending throughout the main portion of the length is formed a vertical slot O in which is hung a vertically moving coupling latch 1. This latch is formed with a downwardly and inwardly curved front end which terminates on the lower side in a rearwardly pointing hook H which retains the link in the seat above it, a swell or projection P being formed on the latch just in rear of the link seat to prevent the link when coupled from accidentally moving backward out of its seat. At the rear end of the latch there is formed a short slot S arranged longitudinally to the latch and a little inclined to its axis. Through this slot there passes an axial bolt 9 which is firmly fixed in the draw bar in horizontal transverse position, and forms the axis about which the latch swings and over which it also slides a short distance by reason of the slot.

On the upper part of the rear end of the latch 1 there is formed a seat just behind bolt 9, upon which seat there rides an eccentric 2 fixed fast upon a horizontal rock shaft 4 which plays loosely in the sides of the draw

bar and has at each end a crank arm 5 for rocking it. These crank arms are adjustably connected to the rock shaft by set screws 6 so that their throw may be increased or diminished to give greater or less movement to the eccentric. In the bottom of the main slot O and lying underneath the middle part of the latch is a rest or support F formed with or attached to the draw bar. This sustains the latch and limits its downward movement when in its lowest position, and at the lower side of the mouth of the draw bar there is a raised ridge G upon which the link rests and is tilted to either an upwardly or downwardly inclined position, as shown in dotted lines, according to the adjustment of the latch. This is for the purpose of adapting the coupling to other cars having higher or lower draw bars.

In the operation of my car coupler the cranks 5 are moved by hand, or by any suitable connection under the car, and serve to give the various adjustments to the eccentric.

In coupling with cars having draw bars of the same height, the eccentric 2 is turned so that the portion of the periphery of the eccentric between the lines *ll* bears against the latch, raising the same off its support F slightly as shown in full lines in Fig. 1. The latch now fulcrums on the axial pin 9 and is free to rise at its outer end, so that when the link of the opposite car enters the mouth of the draw bar it slides under the curved forward end of the latch, lifting it until the link passes the hook H, at which time the latch hook falls into the link locking it and coupling the cars. Now when the car starts up and the draft strain is exerted the latch moves forwardly slightly, by reason of its slot S, and the front end of the latch finds a solid abutment against the solid head of the draw bar, so that there is no draft strain on the axial bolt 9. To uncouple the cars, the link is slackened by backing the locomotive, and the eccentric is turned so that its thickest part is made to bear upon the latch. This raises the outer end of the latch and lifts the hook out of the link.

In setting the coupling to couple with cars having a lower draw bar, the eccentric is

turned so that its thickest part bears upon the latch, and the link being held in its seat in the latch this adjustment of the eccentric throws the inner end of the link up and its
 5 outer end down, as in dotted lines at *x*, the link resting upon the ridge *G* in the bottom of the draw bar. To couple with cars having a higher draw bar, the eccentric is adjusted with the thinnest part on the latch. This al-
 10 lows the outer end of the latch and inner end of the link to drop to a lower position than the normal, and the link resting upon ridge *G* has its outer or free end tilted upwardly as indicated at *y* in dotted lines.

15 In order to hold more securely the eccentric to the several positions to which it may be adjusted, I propose to make the eccentric with flat faces on its periphery, as shown in Fig. 3, which lie against corresponding faces
 20 on the latch and produce a slight locking effect, which prevents it from being displaced by jarring.

In making use of my invention, I do not confine myself to the location of the eccentric
 25 above the latch and in rear of its axial bolt 9 for it may as well be located below the latch and in front of the axial bolt, as shown in dotted lines, to produce precisely the same effect, and I may therefore use either ar-
 30 rangement.

One great advantage of my coupler is that a whole train of cars can be coupled at one
 35 backing movement of the engine, by simply having the brakeman pass down the line and set all the cranks 5 for coupling. Then when

the cars come together they will all be automatically coupled.

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

1. The combination with the draw bar, and its axial bolt 9; of the latch 1 having a coupling hook at its front end and a slot *S* and curved eccentric seat at its rear end, said slot
 40 *S* being inclined or diagonal to the longitudinal axis of the latch, and a horizontal rock shaft 4 having a rigidly attached eccentric 2
 45 arranged to bear against the curved seat of the latch to adjust the latch to its several positions, substantially as and for the purpose
 50 described.

2. The combination with the draw bar and its axial bolt 9, and the link of the latch 1 having a rearwardly turned coupling hook *H*
 55 with a ridge *P* immediately in rear of it, and a slot *S* at its rear end inclined to the longitudinal axis of the latch and embracing the bolt 9, and the rock shaft 4 with rigid eccentric 2 bearing against the latch, substantially
 60 as and for the purpose described.

3. The combination of a draw bar, a pivotal coupling latch, and an eccentric arranged to
 65 operate upon said latch, and having flattened stop faces on its periphery to fix the positions of its adjustment substantially as shown and described.

JAMES W. ELLIOTT.

Witnesses:

W. H. VAN HORN,
 P. T. NICHOLS.