

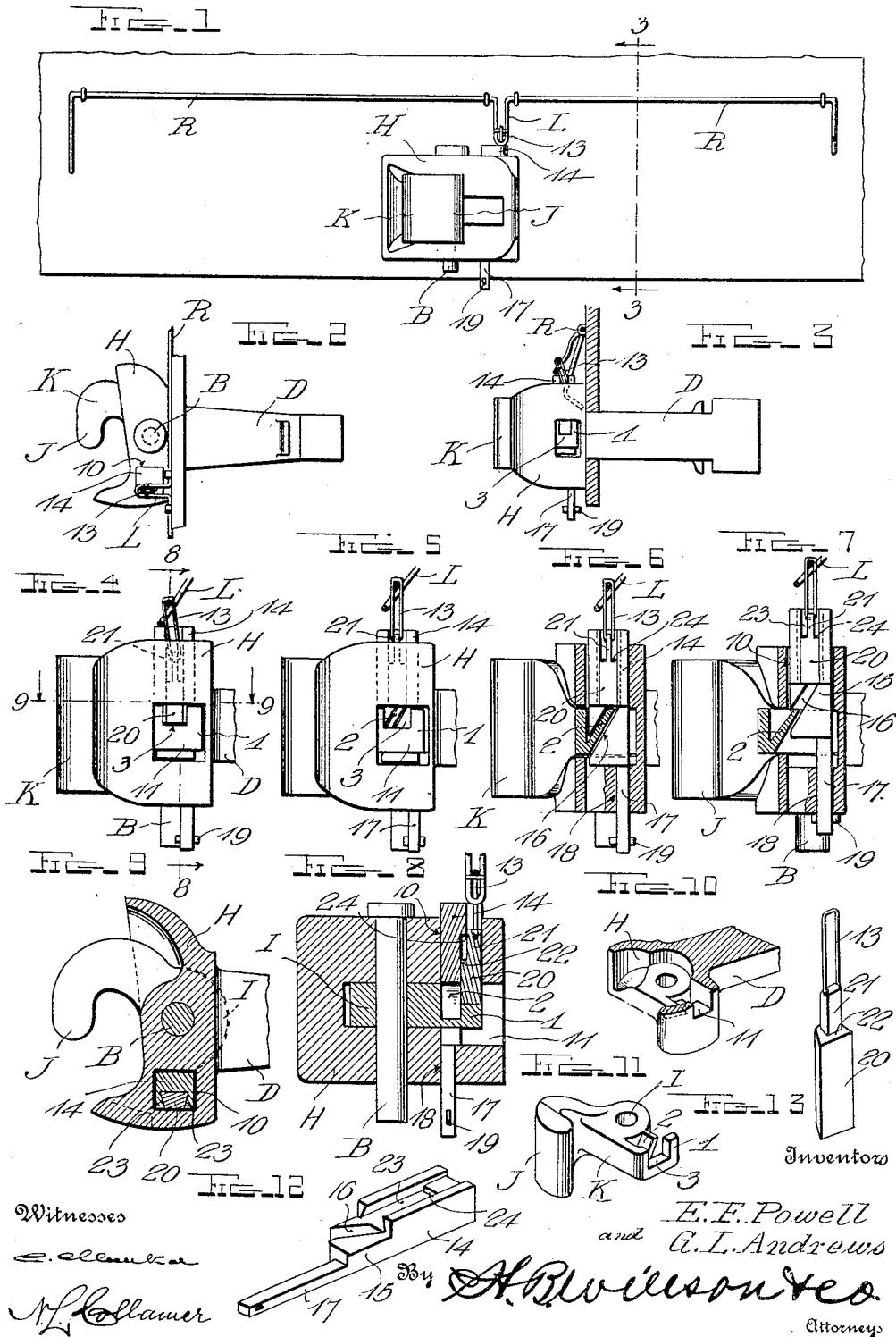
E. F. POWELL & G. L. ANDREWS.

CAR COUPLING.

APPLICATION FILED AUG. 22, 1912.

1,056,298.

Patented Mar. 18, 1913.



UNITED STATES PATENT OFFICE.

EUGENE F. POWELL AND GEORGE L. ANDREWS, OF NEWPORT NEWS, VIRGINIA.

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1,056,298.

Specification of Letters Patent.

Patented Mar. 18, 1913.

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To all whom it may concern:

Be it known that we, EUGENE F. POWELL and GEORGE L. ANDREWS, citizens of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented certain new and useful improvements in Car-Couplers; and we 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.

This invention relates to railway draft appliances and more especially to couplings of the Janney type; and the object of the same is to effect improvements in the knuckle-openers and locks thereof. This object is accomplished by providing one side of the knuckle with a peculiar formation of lug having a cam and a notch, and providing the vertically movable pin with a cam slot or groove engaging said cam and with a latch movable with respect to the pin and adapted to engage said notch, so that the whole will operate substantially as herein-after more fully described and claimed, and as shown in the drawings whereina—

Figure 1 is a front elevation of the entire coupling with the jaw closed, and Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of the coupling, and a section through the end of the car on about the line 3—3 of Fig. 1. Figs. 4, 5, 6 and 7 are enlarged side elevations of the head of the draw bar only, Fig. 4 showing the latch down and Fig. 5 showing it up, and Figs. 6 and 7 being partly in section, the former showing the pin down and the latter showing the pin up. Fig. 8 is a vertical section on the line 8—8 of Fig. 4, and Fig. 9 is a horizontal section on the line 9—9 thereof. Fig. 10 is a sectional perspective view of the lower portion of the draw head; and Figs. 11, 12 and 13 are perspective details of parts as will be referred to hereinafter.

In the drawings the letter D designates broadly the draw bar and H the fixed portion of the draw head within which on an upright king bolt B is pivoted the knuckle K as usual in the Janney type of car couplings. No novelty is claimed for this much of our invention, excepting that the king bolt is disposed in the transverse central line of the car coupling complete, and directly in the line of the draft, and the eye I of the knuckle K engaging said king bolt is disposed directly in rear of that portion of the

hook of the knuckle which engages the similar portion of the corresponding hook in the opposite coupling—the obvious intention being to center the draft along the line of the two draw bars and throughout the parts of this improved coupling so that when the train is running on a straight track there is no tendency for the knuckles to disengage each other.

The object of the present invention is to open a closed knuckle and to lock it in open or closed position, and in doing so we employ a vertically movable pin which of course may be actuated by any approved means. However, for purposes of illustration we have shown in the present instance a rock shaft or rod R suitably mounted in proper bearings on the end of the car, and having downturned handles at its extremities, by means of which it may be manipulated from either side of the car, and a lever or loop L formed at an intermediate point within its length and connected with the latch yet to be described so that the latter may be raised or lowered as is necessary. It is to be understood, however, that we do not limit ourselves to the specific form of pin lifter, and the same is shown merely for purposes of illustration.

Coming now more particularly to the details of the present invention, the jaw or hook J of the knuckle K projects forward and turns laterally to one side as usual, and the eye I thereof engages the king bolt B at a point in rear of the bill of said hook as above described; and at one side of said eye the body carries a lug or extension 1 projecting laterally thereof when the hook stands forward of the eye and having a peculiar formation as best seen in Fig. 11, that is to say, the lug 1 is substantially L-shaped in plan view, and within its angle is disposed an oblique cam 2, while its outer end or foot is notched in its upper side as at 3. Through one side of the head H of the draw bar, laterally with respect to the king bolt B, is formed an upright opening 10 intersected by a horizontal opening 11 in which latter moves the lug 1 when the knuckle swings around its pivot. The size and shape of these openings is not essential, but they should be ample to permit the parts to work freely therein without unduly detracting from the strength of the draw head. The upright opening is by preference made square or angular, and the lateral opening

by preference opens through the side of the draw head H so that access to the interior may be had, although if desired this opening might be covered to keep out dust and dirt.

5 Slidably mounted in the upright opening is the pin best shown in Fig. 12, and the pin in turn carries the latch best seen in Fig. 13, the upper end of the latter being flexibly connected as by means of a link or chain 13
10 with the lever or loop L on the rock shaft or rod R above referred to. If the upright opening 11 be square, the body 14 of the pin will be squared accordingly at its upper end 14, but its lower end 15 is cut away on its
15 outer side so that it is thinner in order to permit it to pass behind the hook of the L-shaped lug, and this thinner portion is provided with a cam slot 16 adapted to engage the cam 2 above described. Said lower
20 end is continued downward in an extension 17 which is preferably made yet thinner and smaller than such end, and the projection projects through the reduced lower end 18 of the upright opening 10 and may carry a
25 cotter pin 19 or other suitable device for preventing the accidental displacement of the pin from the draw-head H.

The latch has a body 20 which is by preference dove-tailed in cross section and an
30 extension 21 at its upper end which is smaller than the body so as to leave a shoulder 22 between them; and the chain or link 13 is loosely connected to the upper end of said extension 21. This latch lies preferably in a dove-tailed groove 23 formed in
35 the thicker portion or body 14 of the pin, the upper end of said groove being shallower and shouldered as shown at 24 to engage the shoulder 22 on the latch when the latter is raised with its lower end substantially flush with the lower end of the body
40 14 of the pin. Thus it will be seen that the latch has a slight movement independent of the movement of the pin; that when it rises until the shoulders 22 and 24 engage, if it
45 be further lifted by means of the link 13 it will lift the pin with it; and that in its descent its first movement is to permit the descent of the pin, and its second movement
50 is to move downward within the groove 23 so that its lower end engages the notch 3 in the lug 1 of the knuckle. All parts are by preference made of metal, and the sizes, shapes, proportions and details other than
55 set forth are unimportant.

The operation of the device with the parts properly assembled is as follows: With the knuckle in its closed or locked position, when it is desired to uncouple the cars the
60 pin-lifting mechanism is actuated to draw upward on the link 13; this first raises the two latches 20 so that their lower ends are lifted out of the notches 2 in the lugs 1; and continued manipulation of the lifting
65 mechanism causes the further rise of the

latches until their shoulders engage those in the bottom of the grooves in the pins, and the latter are raised within the upright openings 10. As the pins rise, their cam
70 grooves or slots 16 cause the forward movement of the cams 2 on the knuckles so that the latter are turned around the king bolt B to a sufficient degree to disengage the
75 bills of their hooks, and the cars are uncoupled. At this time the cotter pin or other device 19 strikes the lower side of the head H, and the further rise of the pin is checked. When now it is desired to again
80 close the knuckle, it is only necessary to move downward on the mechanism herein typified by the rock shaft R and the lever L; this permits the latch 20 to descend within the groove 23, and, the support for the pin being thus removed, the latter falls or is
85 pushed down by the lever, and its cam slot or groove 16 engaging the cam 2 will cause the knuckle to turn around the king bolt B so that its hook is engaged with the hook of the companion draw head.

What is claimed as new is:

1. In a car coupling, the combination
90 with the draw bar and head, the latter having an upright opening at one side of its central line, a king bolt, and the knuckle having an eye pivotally mounted on said
95 bolt and a laterally projecting lug movable across said opening as the knuckle swings on its pivot; of a vertically movable pin mounted in said opening and having an
100 oblique cam slot, an L-shaped projection at the outer end of said lug provided with a notch in its upper side, an oblique cam within said projection engaging said slot, and a latch movably mounted on said pin and
105 adapted to engage said notch after the pin has been moved downward to swing the cam to the rear.

2. In a car coupling, the combination with the head, a knuckle pivoted therein and having a lateral projection provided with a
110 notch, and an oblique cam carried by said projection; of a pin having a square body movable vertically in an opening through said head and reduced in thickness below
115 said body and slotted obliquely so as to engage said cam, the lower end of the pin projecting through a reduced opening in the bottom of the body and carrying a cotter
120 pin, the upper end of said body having a dove-tailed groove reduced and internally shouldered at its upper extremity, and a latch having a dove-tailed body slidably fitting said groove and a reduced and shouldered extension at its upper end, the length
125 of the latch being such that when it is raised so that its lower end disengages said notch, said shoulders contact and the further lifting of the latch will raise the pin, for the purpose set forth.

3. In a car coupling, the combination with 137

the head, a knuckle pivoted therein and having a lateral projection provided with a notch, and an oblique cam carried by said projection; of a pin movable vertically in
5 an opening through said head and reduced in thickness at its lower part and slotted obliquely so as to engage said cam, the upper end of said pin having a dove-tailed groove reduced and internally shouldered at
10 its upper extremity, a latch having a dove-tailed body slidably fitting said groove and a reduced and shouldered extension at its upper end, the length of the latch being

such that when it is raised so that its lower end disengages said notch said shoulders 15 contact and the further lifting of the latch will raise the pin, and means for raising said latch.

In testimony whereof we have hereunto set our hands in presence of two subscrib- 20 ing witnesses.

EUGENE F. POWELL.

GEORGE L. ANDREWS.

Witnesses:

W. B. VEST,

GEO. B. WEST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents.
Washington, D. C."
