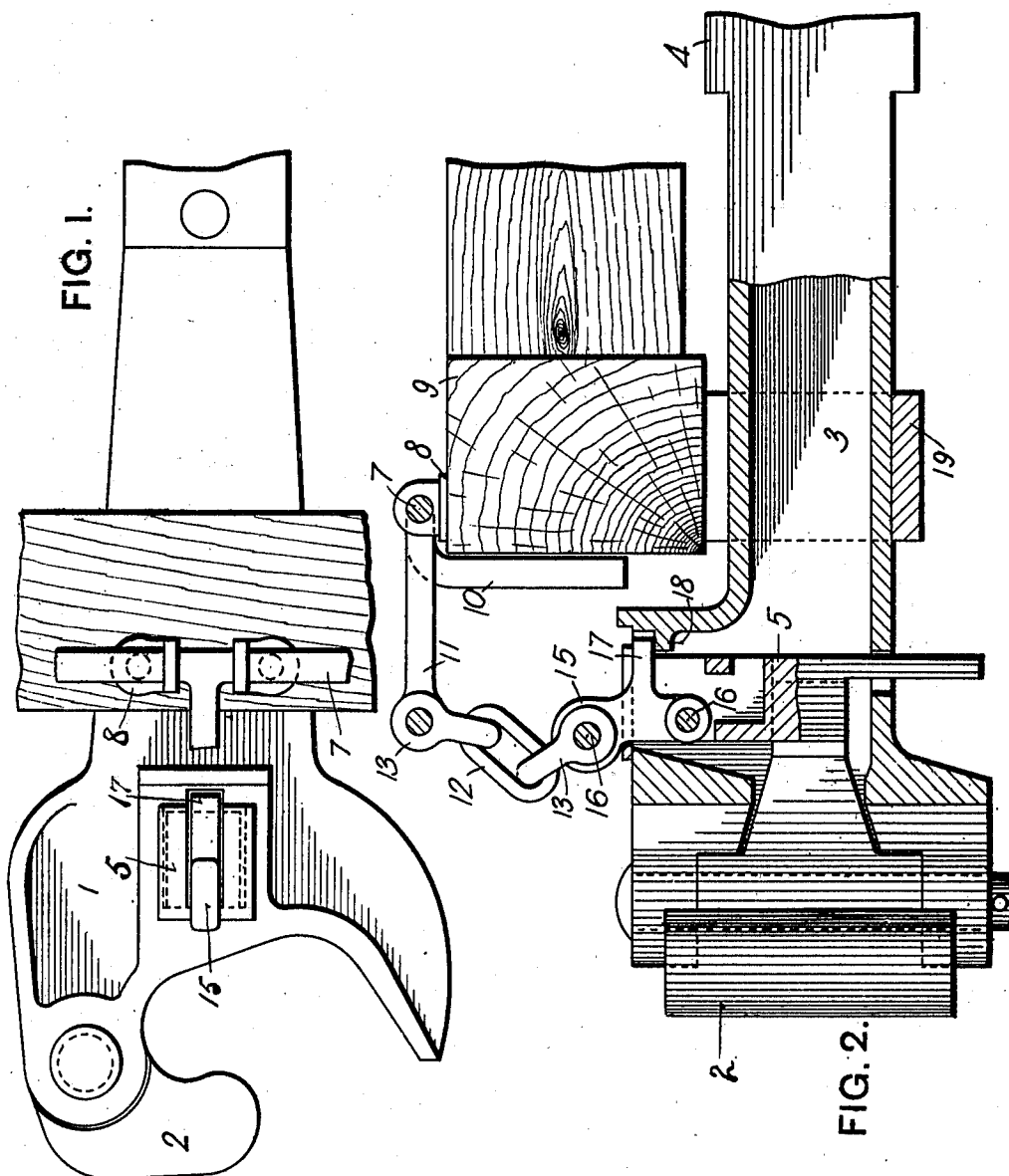


J. F. ROBERTSON.
 AUTOMATIC UNCOUPLING DEVICE FOR CAR COUPLINGS.
 APPLICATION FILED MAR. 29, 1909.

982,532.

Patented Jan. 24, 1911.

2 SHEETS—SHEET 1.



WITNESSES:
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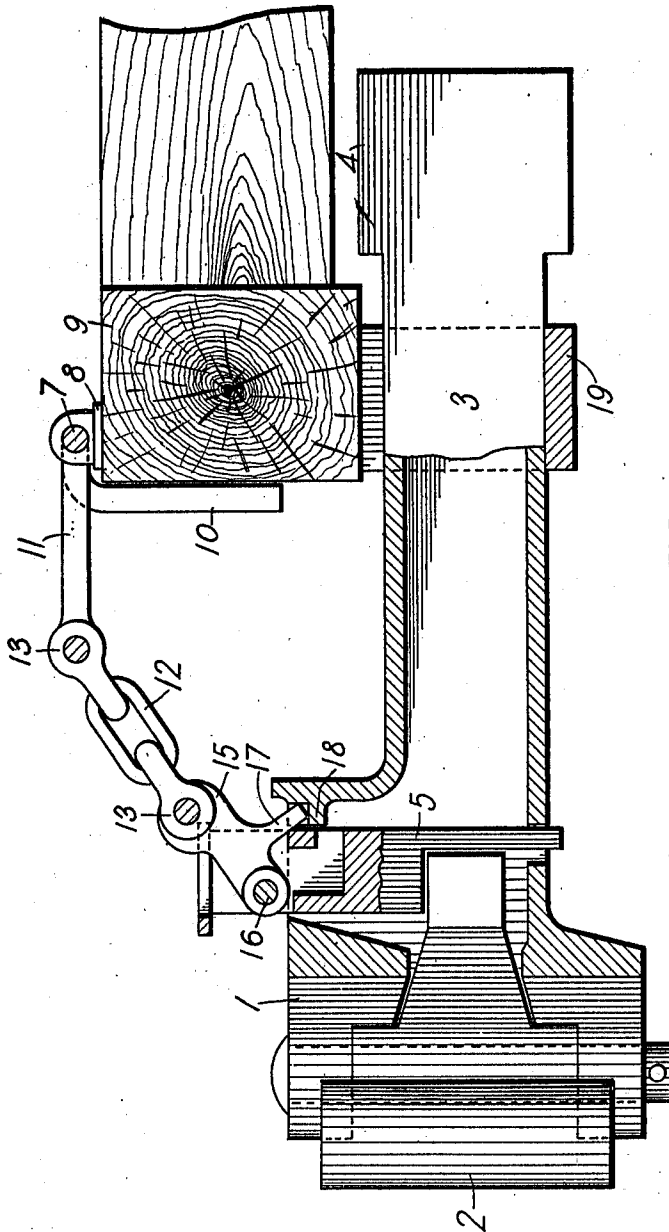


FIG. 3.

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JAMES F. ROBERTSON, OF PITTSBURG, PENNSYLVANIA.

AUTOMATIC UNCOUPLING DEVICE FOR CAR-COUPPLINGS.

982,532.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed March 29, 1909. Serial No. 486,386.

To all whom it may concern:

Be it known that I, JAMES F. ROBERTSON, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have
5 invented a new and useful Improvement in Automatic Uncoupling Devices for Car-Couplers, of which the following is a specification.

This invention relates to car couplers and
10 its object is to provide means for automatically unlocking the coupler whenever the draw bar pulls loose from its fastening means, in order to permit the couplers to separate and prevent pulling the drawbar
15 out entirely and falling on the track.

In the operation of heavy trains it frequently occurs that the draw bar is pulled loose from its fastening means or from the draft gear, and falls down upon the track.
20 It is liable to fall across a rail or to catch the brake beams and derail the train. Many serious accidents have resulted from this cause.

The present invention is designed to automatically unlock the coupler whenever the drawbar is pulled abnormally outwardly so that in case the drawbar is pulled loose from its fastenings the knuckle is unlocked and the drawbar and coupler prevented from
30 being pulled entirely out, but remain hanging on the car and do not fall down on the track and cause an accident such as above referred to.

The invention comprises broadly any
35 means for automatically unlocking the coupler whenever it is pulled outwardly or to an abnormal extent.

In the accompanying drawing Figure 1 is a plan view of a standard form of coupler showing the car end sill and the lock operating means according to the present invention; Fig. 2 is a central vertical section through the coupler and drawbar showing the same in normal position; and Fig. 3 is
45 a similar view showing the parts with the drawbar pulled out abnormally and illustrating the automatic unlocking of the coupler.

The coupler may be of any standard form, that shown being of the Master Car Builders' standard type having the head 1 to which is pivotally mounted the knuckle 2 and having the usual drawbar or shank 3 which at its rear end is provided with a head
50 4 for connecting to the yoke of any of the standard draft gears, either friction or

spring, not illustrated. The lock for the knuckle is shown as a vertically movable block or pin 5 mounted in suitable openings in the coupler head. The operating means
60 for this lock is shown as of a type in quite extensive use and comprising a rocking shaft 7 mounted in bearings 8 secured to the end of the car to end sill 9 and provided with an operating handle 10 and an arm or
65 lever 11 connected by a chain composed of link 12 and clevises 13, or other suitable flexible means, to the locking pin. This type of operating means is one quite extensively used and is well known.

In the usual car couplers the chain 12 is connected directly to the upper end of the locking member 5. With the present invention the chain is connected to a vertically
70 extending member 15 pivotally connected to the locking member at 16 and provided between its ends with a rearwardly projecting arm 17 lying normally above a shoulder or ledge 18 on the drawhead. The member 15
75 is in effect a three armed lever, the arm 17 being a fulcrum member when the drawbar is pulled out abnormally. The drawbar is supported by the usual strap or yoke 19 from the end sill.

The normal operation of the coupler is
85 exactly the same as that of all standard automatic couplers of the Master Car Builders' standard type. The rock shaft 7 through chain 12 lifts the locking member 5 to release the knuckle and permit the latter to
90 open. The chain 12 has a sufficient amount of slack so that the coupler may have the usual amount of back and forward movement due to the yielding of the friction or spring draft gear, without affecting the pivoted member 15. Should the drawbar however pull loose from the draft gear, or the draft gear fail, the drawbar will move abnormally outwardly, as shown in Fig. 3. As soon as the slack in chain 12 is taken
100 up the member 15 is rocked on its pivot 16 allowing the arm 17 to contact with the shoulder 18 on the head, the arm forming a fulcrum around which the member 15 pivots, so that the member 15 acts as an angle lever
105 or cam member to lift the locking member 5, as shown in Fig. 3. This releases the knuckle, allowing the latter to open and prevents pulling the drawbar entirely out of its bearings in the car, said drawbar remaining
110 hanging by the chain 12 and yoke 19. Consequently there is no liability of derailling

the rear part of the train as with prior constructions in which the drawbar is pulled entirely loose from the car and then falls down on the track as heretofore described.

- 5 The lock it will be observed is provided with a recess in its upper end in which the connecting member 15 is pivoted, so that only the upper end of the connecting member projects above the locking member, substantially the same as the usual eye formed on locking pins. This houses and protects the connecting member 15. It will also be observed that said connecting member is pivoted eccentrically to the locking member, 15 that is, near its forward edge. Consequently when said locking member is lifted its lower end will swing forwardly and bring it into the usual lock-set position. The arm 17 projects from the suspending member 15 substantially midway between the ends of said member. Consequently when the member 15 is rocked as described the arm 17 not only acts as a fulcrum, but on account of being located substantially midway between 25 the ends of the suspending member 15 causes the locking pin to be guided almost in a straight vertical line, so that said pin cannot bind as would be the case if a strong rearward pull were exerted on its upper end.
- 30 My invention can be applied to any type of coupler and having any form of coupling member or knuckle, and form of lock therefor, and actuated and operated by any means. The particular coupler illustrated, 35 and the particular means shown and described for locking the knuckle, and for lifting the locking means, have been selected merely for purposes of illustration and merely as one type of said means.
- 40 My improvement does not interfere in the least with the usual normal operation of the coupler and acts entirely automatically, requiring no attention whatsoever, and absolutely prevents the drawbar from being 45 pulled entirely out and falling onto the track.

What I claim is:

1. In car coupling mechanism, the combination of a draw head, a coupling member carried thereby, a lock for said coupling member, a vertical lever pivotally connected to the lock near the forward edge of the latter and being provided with a rearwardly extending arm intermediate its ends and arranged to contact with the draw head 55 when the lever is swung on its pivot and form a fulcrum, and means connecting the upper end of said lever to the car body.

2. In a car coupling mechanism, the combination of a draw head, a coupling member carried thereby, a lock for said coupling member provided in its upper end with a recess, a lifting member housed within said recess and pivotally connected at its lower end to the lock and having a projection extending slightly beyond the body of the lock and arranged to contact with the draw head and form a fulcrum, and means connecting the upper end of said member to the car body. 70

3. In car coupling mechanism, the combination of a draw-head provided with a vertical lock receiving recess and a horizontal fulcrum seat at the rear of said recess near the top, a coupling member carried by said head, a lock for said coupling member movable in the vertical recess in the head, a vertical lever hinged at its lower end to the lock and provided between its ends with a rearwardly extending arm arranged to contact with and slide upon the fulcrum seat on the drawhead when said lever is rocked, thereby lifting the lock in a substantially straight vertical line to release the coupling member, and means connecting the upper end of said vertical lever to the car body. 85

In testimony whereof, I have hereunto set my hand.

JAMES F. ROBERTSON.

Witnesses:

WILLIAM I. KING,
F. W. WINTER.