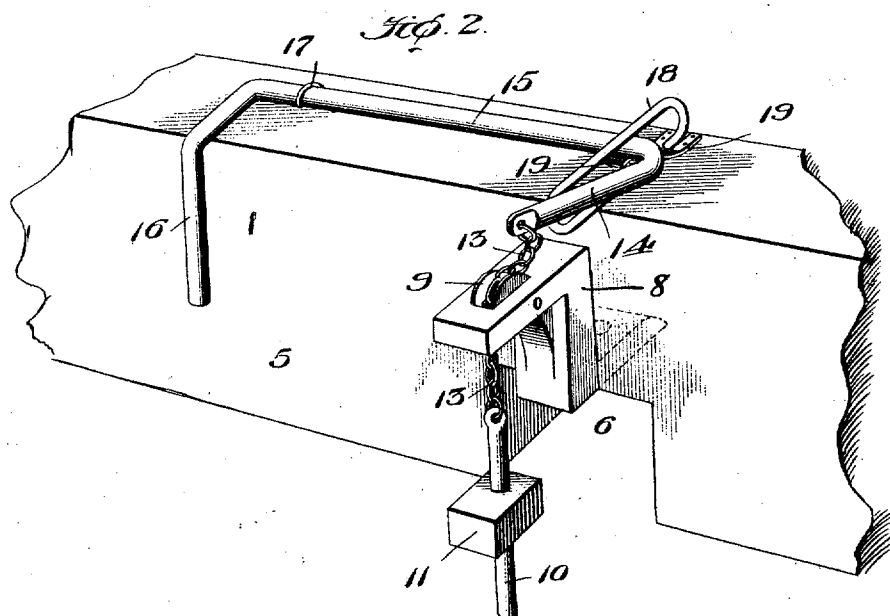
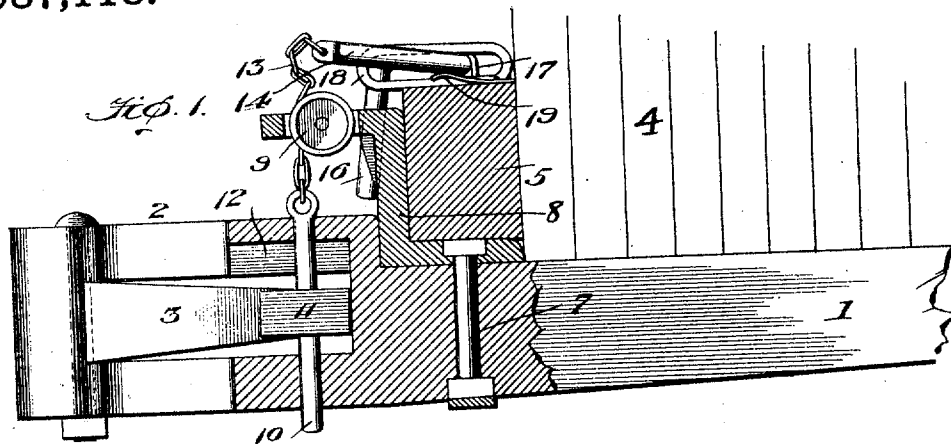


O. DAVIS.
SAFETY COUPLING FOR FREIGHT CARS.
APPLICATION FILED MAR. 30, 1910.

Patented Mar. 21, 1911.

987,118.



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SAFETY-COUPLING FOR FREIGHT-CARS.

987,118.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed March 30, 1910. Serial No. 552,305.

To all whom it may concern:

Be it known that I, OLIVER DAVIS, a citizen of the United States, residing at Salt Lake City, county of Salt Lake, and State of Utah, have invented certain new and useful Improvements in Safety-Couplers for Freight-Cars, of which the following is a specification.

This invention relates to safety couplers for freight cars.

The ordinary freight car coupler, particularly where the draft is heavy, has a tendency to cause such compression of the draw-bar spring that, in the course of time, the usual two inch, more or less, play ordinarily possible, soon becomes greater and permits a play of frequently as much as five or six inches, and in ordinary practice until this relatively great play has been attained, the car is continued in use, but when such play becomes possible, the car is put into the shop and new draft springs placed on the draw-bar. With the ordinary car coupler, when more than about three inches of play occurs, the chain which runs to the pin or lock becomes taut and, as at present generally constructed, the coupling and uncoupling device causes sidewise pull to be exerted on the pin, the pin becoming bound, and if sufficient strain ensues, the chain breaks and very often on such occasions the draw-bar is pulled loose and no provision exists for preventing the draw-bar from falling on the track and derailing the car.

The present invention seeks to obviate the possibility of a draw-bar pulling out, as well as to prevent any binding of the coupling pin or device but, on the other hand, to provide a coupling and uncoupling device of novel construction which will permit the usual two inch, more or less, play of the draw-bar without causing pulling of the pin and will also permit a play of the draw-bar up to five or six inches without causing any binding of the pin or uncoupling of the car, but should the strain between the cars tend to cause any greater play, will automatically pull the pin and uncouple the cars, thus preventing the draw-bar from being pulled out and causing automatic setting of the air brakes on the detached car, a condition of which the engineer will at once become apprised.

The invention is set forth fully herein-after and the novel features are recited in the appended claim.

In the accompanying drawings:—Figure 1 is a vertical section; Fig. 2, a detail perspective of the improvements; and Fig. 3, a detail of the spring.

The draw-bar of the coupler is shown at 1 and the head at 2, the knuckle being shown at 3. The end of the car appears at 4 and the cross-beam at 5, the latter having an opening 6 through which the draw-bar 1 passes. Secured by a bolt 7 to the top of the draw-bar 1, just back of the head 2 and abutting the latter is a Z-shaped bracket 8 which overhangs the coupler head and is provided with a pulley 9. The coupling pin 10 which locks the knuckle 3, accomplishes its function by the lock block 11 carried thereby, the latter when the pin is in its lowered position, engaging the knuckle and holding the same in locked position, but when the pin is raised the lock block 11 passes into the space 12 and the knuckle is then free. The lock block 11 is secured firmly to the pin 10 so that if the draw-bar should pull out or the coupler head break they will be suspended on the lock block 11 and prevented from dropping onto the track. The coupling pin 10 has a chain 13 which has about two inches slack and which chain passes over the pulley 9 and is connected to the arm 14 of a rock shaft 15 having a hand lever 16 disposed for convenient operation by the trainman at the side of the car so that he does not have to go between the cars to effect the coupling or uncoupling.

The rock shaft 15 at one end is journaled in a suitable bracket 17, but its inner end lies in an elongated link 18 in which it has a forward and rearward play, but is retained by a leaf-spring 19 which normally keeps it toward the rear part of the link. When in this position, the slack in the chain will permit the ordinary two inch play, more or less, of the draw-bar when the car is in use without causing the coupling pin to be disengaged from the knuckle. Should the draw-bar be put under an unusual strain, the rock shaft 15 is at once drawn past the leaf-spring 19 and the link 18 is of such length that a further play of the draw-bar of about four inches is permitted before the pin 10 is pulled, thus preventing the draw-bar from pulling out or the coupler from becoming disengaged, but if the strain is such that a still further movement of the draw-bar ensues, the pin 10 is pulled and the knuckle 3 released, uncoupling the fol-

lowing car and thus relieving the strain. The application of the air brakes incident to uncoupling of the cars at once notifies the engineer of what has happened. The arrangement of the parts insures the suspension of the draw-bar if it becomes loose or if the coupler head should break and thus the parts are kept from falling on the track.

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

The combination with a draw-bar and a coupler having locking means, of a rock shaft having an operating handle and an arm having a loose flexible connection to the locking means, a bearing for one part of said rock shaft, an elongated link extending lengthwise of the car constituting a

bearing for the inner part of the rock shaft, a spring device normally holding the rock shaft securely in the rear part of said link, said spring device being adapted to permit the rock shaft to pass to the front part of the link when the draw-bar moves beyond its normal limit of play, and an attached Z-shaped bracket on the draw-bar having a guide roller for the flexible connection to insure a substantially straight pull on the locking device.

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

OLIVER DAVIS.

Witnesses:

JUNIUS B. SMITH,
WALKER T. GUNTER.