

(No Model.)

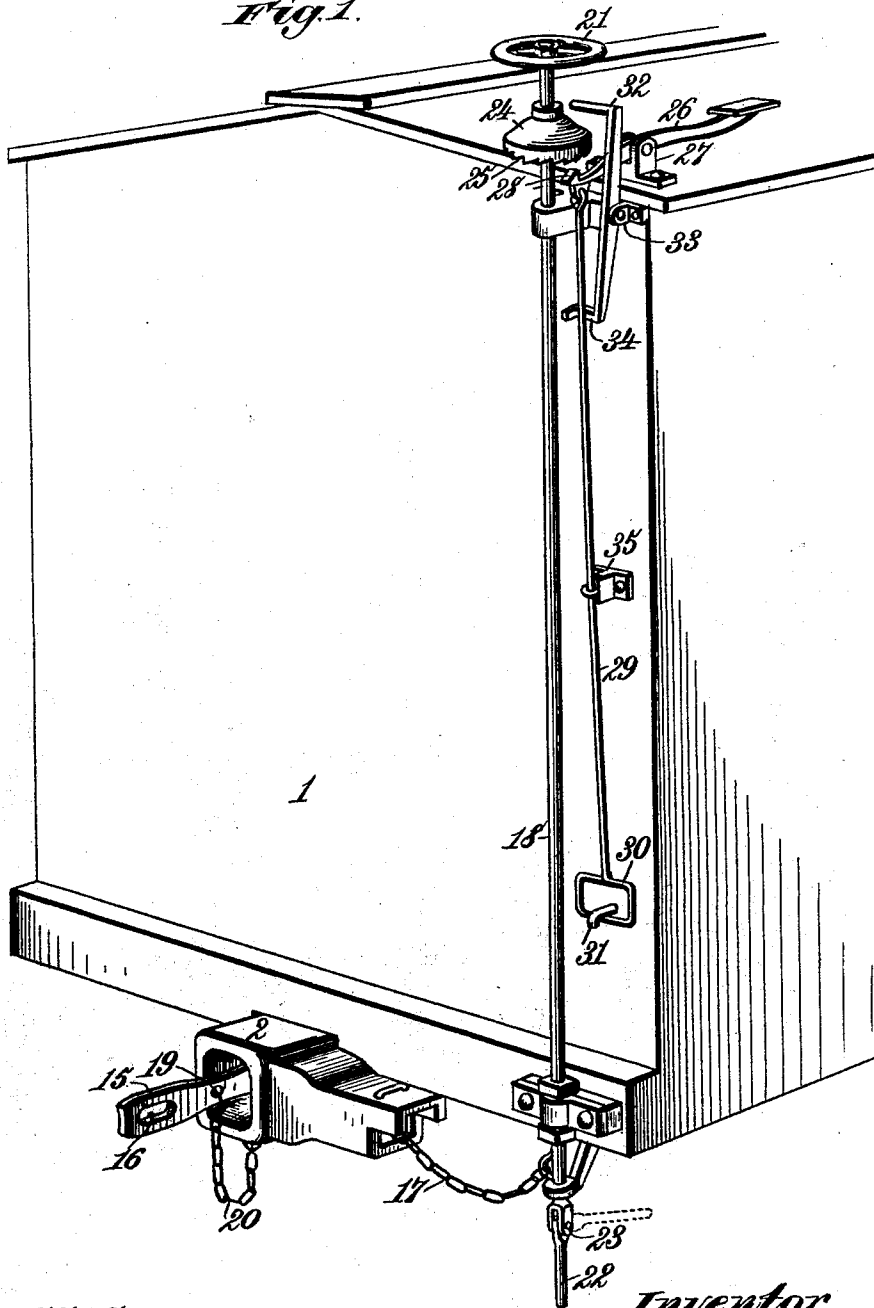
2 Sheets—Sheet 1.

J. LESSARD.
CAR COUPLING.

No. 509,817.

Patented Nov. 28, 1893.

Fig. 1.



Witnesses.
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

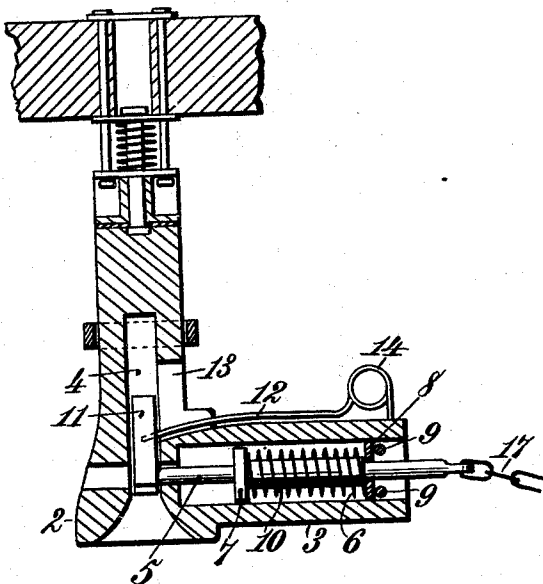


Fig. 3.

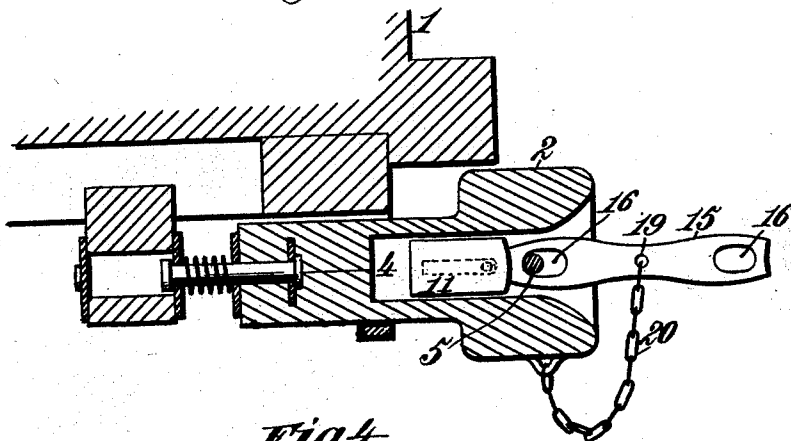
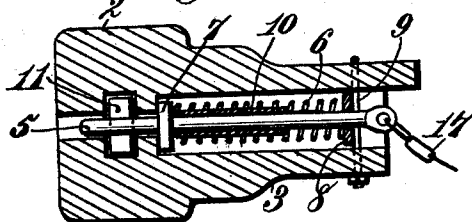


Fig. 4.



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UNITED STATES PATENT OFFICE.

JEREMIE LESSARD, OF COHOES, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 509,817, dated November 28, 1893.

Application filed August 12, 1893. Serial No. 482,971. (No model.)

To all whom it may concern:

Be it known that I, JEREMIE LESSARD, a subject of the Queen of Great Britain, residing at Cohoes, in the county of Albany and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to automatic car couplings, and has for its principal object to improve that class of couplings in which a link is engaged by horizontal spring actuated pins forced transversely into the drawheads after being released by the link pushing back a spring pressed slide block arranged to move in the longitudinal axis of the drawhead at a right angle to the inner end of the coupling pin.

The invention also has for its object to provide a simple mechanism, actuated either from the ground or from the top of a car, whereby the cars can be uncoupled without risk to life or limb from going between the cars, which mechanism is so constructed as to permit the automatic coupling of cars or to so lock the coupling devices as to render them inoperative should it be required to push two or more cars together without any intention of coupling.

My invention consists in the features of construction and novel combination of parts in a car coupling as hereinafter described and claimed.

In the annexed drawings illustrating the invention—Figure 1 is a perspective of one end of a freight car provided with my improved coupling. Fig. 2 is a horizontal section of the drawhead with the coupling pin retracted or in a set position. Fig. 3 is a sectional side elevation of the drawhead showing the coupling pin shot, or forced into engagement with a link. Fig. 4 is a vertical transverse section through the drawhead and coupling pin casing.

Referring to the drawings, the numeral 1 designates a portion of a railway freight car, and 2 a drawhead provided with the usual buffer mechanism.

One side of the outer end of each drawhead is provided with a tubular laterally projecting chamber or casing 3, the inner end of which communicates with the cavity or chamber 4 of the drawhead. In this casing 3 is

inclosed a horizontally arranged coupling pin or bolt 5 surrounded, within the casing, by a strong spiral spring 6 that is adapted to force one end of said bolt or pin into the cavity of the drawhead in the act of coupling. The spring 6 has a bearing at its inner end on a fixed collar 7 with which the coupling pin is provided. At its outer end the spring 6 bears against a plate or collar 8 loosely surrounding the coupling pin and held in place by bolts 9 passed through the casing 3, or by any other suitable means. A sleeve 10 surrounds the bolt or pin 5 under the spring 6, and between the collars 7 and 8, to limit the compression to which the spring is subjected when the coupling bolt or pin is retracted or set. This sleeve 10 being of less length than the distance between the collars 7 and 8 when the coupling pin 5 is projected into the drawhead, it is obvious that on withdrawing the bolt the sleeve will be carried by the collar 7 into contact with the collar 8 and will thus limit the outward movement of the coupling pin and prevent undue compression of its spring.

The cavity or chamber 4 of the drawhead is so constructed as to provide a guide-way for a slide block 11 attached to the inner end of a spring arm 12 that is supported on the rear side of the casing or chamber 3 in which the horizontally movable coupling pin 5 is inclosed. The inner end of the spring arm 12 projects into the drawhead through a slotted opening 13 in one side and connects with a suitable opening in the slide block 11, while the outer end of said arm 12 is formed with a coil spring 14 which tends to normally throw the arm 12 and attached slide block 11 forward. In its normal forward position the slide block 11 affords on one side a bearing for the inner end of the retracted horizontally movable coupling pin 5 and thus holds it in readiness to be forced into the drawhead by the compressed spring 6, when the slide block is forced back by an entering link 15 attached to the drawhead of another car. The link 15 is provided at its opposite ends with openings 16 to receive the horizontal laterally acting coupling pins. When attached to a drawhead the link has its parallel flat sides in a vertical direction.

For the purpose of retracting the horizontally movable coupling pin 5 to disengage it

from the link 15 in uncoupling, a chain 17 has one end secured to the outer end of the coupling pin 5 and its other end fastened to a vertically arranged rotary shaft 18 that is supported in suitable bearings on the end of the car. By rotating this shaft 18 so as to wind the chain 17 thereon, the coupling pin 5 will be retracted and disengaged from the link 15, which will then be forced out of the drawhead by the forward automatic movement of the slide block 11 and under the action of its spring.

Each car should be provided at each end with a link having an opening 19 for attachment of a chain 20, the other end of which is secured to the car so that the link will not drop to the ground and be lost when the cars are uncoupled.

The vertical shaft 18 may be retracted either by means of a hand wheel 21 on its upper end or by means of a crank handle 22 attached to its lower end, and the said crank handle is preferably pivoted to the shaft 18, as shown at 23, so as to be capable of dropping or assuming a vertical position, out of the way, when not in use.

On an upper portion of the rotary shaft 18, at a point, say, slightly above the deck of a platform car or above the top of a box car, is secured a boss or sleeve 24 having a horizontally arranged circular ratchet 25 on its under surface.

A suitably weighted foot lever 26 is fulcrumed to a support 27 on the car top, and is provided at the end of its shorter arm with a pawl or catch projection 28 that is normally engaged with the circular ratchet 25 on the shaft 18. The teeth of the ratchet wheel 25 are so disposed or arranged as to ride freely over the catch 28 while the shaft 18 is being rotated in the proper direction to retract the coupling pin 5 in uncoupling; and the catch projection 28 will click into the ratchet teeth and prevent backward rotation of the shaft 18 under the action of the spring 6, after the coupling pin has been withdrawn from the link. It will thus be seen that the ratchet wheel 25 and catch 28 form an automatic lock that will prevent premature or undesired coupling of two adjacent cars should the link attached to one car enter the drawhead and push back the slide block 11 of another car while shifting cars in a yard, or under other circumstances where cars are brought into contact with each other but without any intention of coupling them together.

When it is desired to render the ratchet wheel 25 and catch 28 inoperative so that they will not lock the shaft 18 from rotation, the catch 28 may be drawn down by means of a depending spring metal rod 29 having its lower end formed into a loop 30 that can be engaged under a hooked projection 31 on the end of the car. So long as the loop 30 remains engaged with the hook 31 the catch 28 will be held out of the path of the ratchet wheel 25, and the shaft 18 will thus be free to

rotate in both directions and permit coupling and uncoupling of the cars. If a car is at rest and the brakeman standing on the ground he can disengage the catch 28 from the ratchet wheel 25 by drawing down the rod 29 and pushing the loop 30 under the hooked projection 31; and if the brakeman is on the top of the car he may accomplish the same result by kicking up the long arm of the foot lever 26 so as to force down the catch 28 away from the ratchet wheel 25, and then by drawing on the upper end of a lever 32 fulcrumed at 33, he can force a lateral projection 34 on the lower end of said lever against the spring metal rod 29 in such manner as to slightly bend the rod and cause the loop 30 to spring under the hooked projection 31, the said rod 29 being made of spring metal and confined about midway its length in a guide 35 that serves as a bearing or fulcrum for the rod in springing its loop into locking engagement with the hook. Thus the brakeman, while standing either on the car top or on the ground, can readily and quickly control engagement of the ratchet wheel 25 and catch 28, or prevent them from engaging, so that adjoining cars may be permitted to couple automatically or prevented from coupling according as circumstances may require. It will also be seen that by means of the hand wheel 21 at the top of the shaft 18 or the crank handle 22 at the lower end, the brakeman can uncouple either from the top of a car or while standing on the ground, and in either case does not have to go between the cars and incur the consequent risk of being killed or injured.

What I claim as my invention is—

1. In a car coupling, the combination of a drawhead having at one side a longitudinal slot and a laterally projecting tubular casing, a coupling pin supported in a horizontal position in said casing and provided with a spring adapted to force the pin into the drawhead in a transversely horizontal direction, means for retracting the spring actuated coupling pin, a slide block supported in the drawhead in position to have a forward and backward movement in line with the longitudinal axis of the drawhead, and a spring arm mounted at one end on the laterally projecting tubular casing and having its opposite end extending through the longitudinal slot in the drawhead and engaged with the slide-block to normally force it forward, whereby the slide block in its forward position is adapted to afford a bearing for the inner end of the retracted or set coupling pin and be forced back by an entering link to permit engagement of the pin and link, substantially as described.

2. In a car coupling, the combination of a drawhead having a laterally projecting tubular casing, a horizontally movable coupling pin supported in said casing, a spring surrounding said pin and adapted to force it into the drawhead in a transversely horizontal di-

retraction, means for retracting the spring actuated coupling pin, a sleeve surrounding the coupling pin beneath its spring and adapted to serve as a stop to limit compression of the spring, a slide block supported in the drawhead and adapted to afford a bearing for the inner end of the retracted horizontally movable coupling pin, a spring arm to support the slide block and normally force it forward across the end of the retracted coupling pin, and a coupling link having lateral openings and adapted to force back the slide block and become engaged with the pin, substantially as described.

3. In a car coupling, the combination of a drawhead having at one side a longitudinal slot and a spring actuated horizontally movable coupling pin adapted to be forced into the drawhead in a transversely horizontal direction, a slide block supported in the drawhead, and a spring arm having one end extending through the longitudinal slot in the drawhead and engaged with the slide-block to force the latter forward, a rotary vertically supported shaft, a chain connecting the coupling pin and shaft and adapted to be wound on said rotary shaft and thereby retract the pin, and means for locking and releasing the shaft, substantially as described.

4. In a car coupling, the combination of a drawhead provided with a spring actuated horizontally movable coupling pin adapted to be forced transversely into the drawhead to engage an entering link, a rotary vertically supported shaft connected with the coupling pin and adapted to retract the same, a ratchet wheel on the rotary shaft, a lever having a catch adapted to engage the ratchet wheel and lock the shaft from backward rotation, and means for holding the catch from engagement with the ratchet wheel to permit

rotation of said shaft in either direction for coupling and uncoupling, substantially as described.

5. In a car coupling, the combination of a drawhead provided with a spring actuated horizontally movable coupling pin and having a slide block adapted to hold the retracted pin in a set position for coupling, a rotary vertically supported shaft connected with the coupling pin and adapted to retract the same, a ratchet wheel on said rotary shaft, a lever mounted on the top of a car and having a catch adapted to engage the ratchet wheel and lock the shaft from backward rotation thereby rendering the retracted coupling pin inoperative, a depending rod connected with said lever and having its lower end formed into a loop to engage a hooked projection and hold the catch away from the ratchet wheel to permit rotation of the vertical shaft in either direction for coupling and uncoupling, substantially as described.

6. In a car coupling, the combination of the drawhead having the spring actuated coupling pin 5 and spring actuated slide block 11, the rotary vertically supported shaft 18 connected with the coupling pin and adapted to retract the same, the ratchet wheel 25 on said shaft, the lever 26 having catch 28, the depending spring rod 29 having its upper end connected to the lever 26 and provided at its lower end with the loop 30, the hook 31, the lever 32 and the guide or bearing 35 for the spring rod 29, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JEREMIE LESSARD.

Witnesses:

ALPHONSE BESSETTE,
ISRAEL BELANGER.