

(No Model.)

2 Sheets—Sheet 1.

J. LESSARD.
CAR COUPLING.

No. 529,924.

Patented Nov. 27, 1894.

Fig. 2.

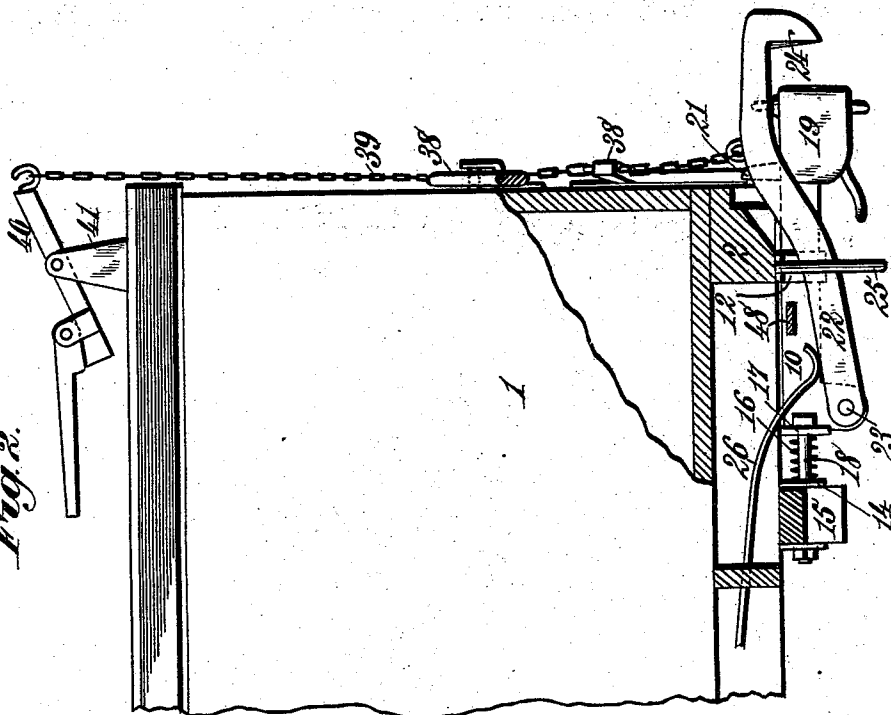
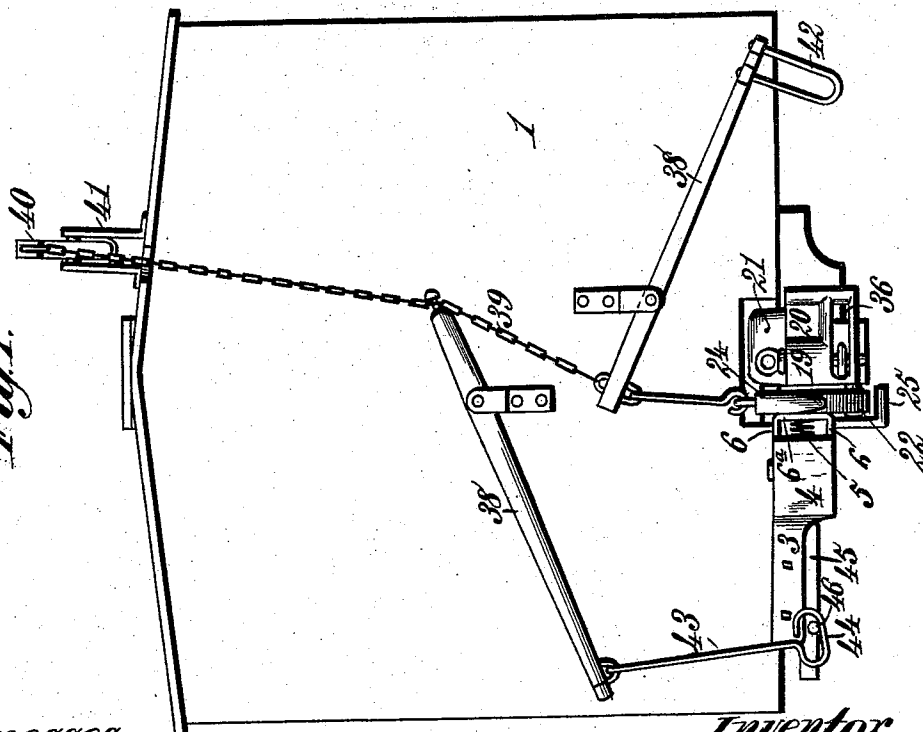


Fig. 1.



Witnesses.
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Fig. 3.

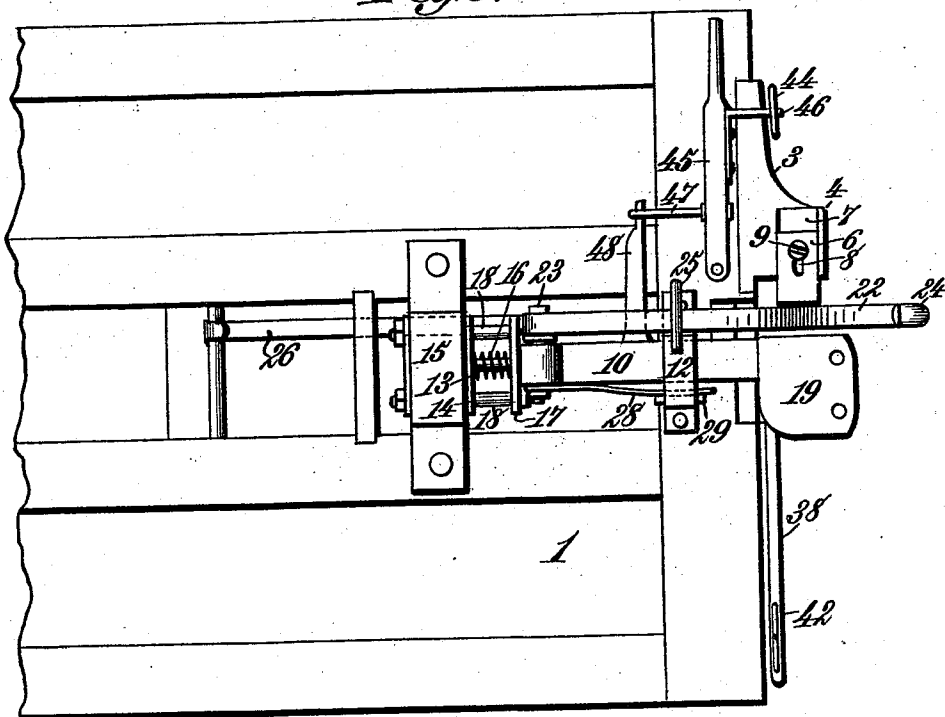


Fig. 4.

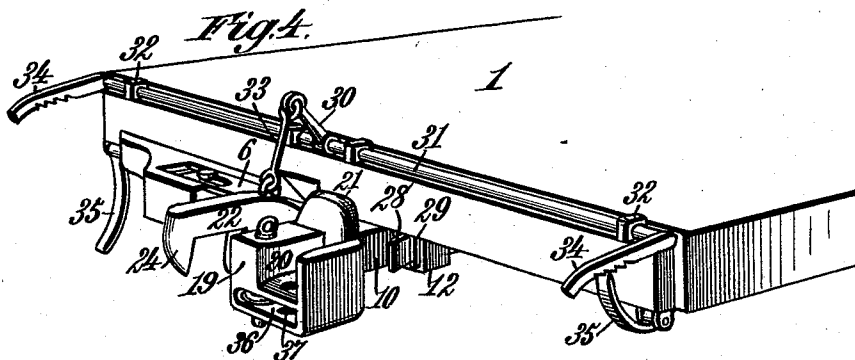
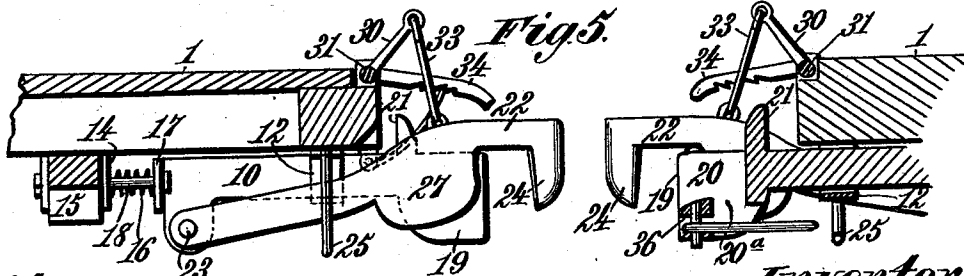


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

JEREMIE LESSARD, OF COHOES, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 529,924, dated November 27, 1894.

Application filed September 10, 1894. Serial No. 522,642. (No model.)

To all whom it may concern:

Be it known that I, JEREMIE LESSARD, a citizen of the United States, 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.

My invention relates to car couplers, and the purpose is to provide an improved and simplified construction and arrangement of parts, whereby the coupling engagement may be maintained without the use of springs, and by which the powerful buffer springs heretofore used in the drawheads of railway cars may be practically dispensed with, their place being supplied by laterally compressible springs which take up the shock of the drawheads, or bumpers.

It is my purpose, also, to provide a simple construction whereby the coupling-heads shall be centered and lateral play thereof permitted to facilitate the passage of a train upon curves.

My invention also aims to provide a coupler suitable for the use of the ordinary link and pin, which may be carried in the coupling-head without obstructing the action of the other parts.

The invention consists, to these ends, in the several novel features of construction and new combinations of parts hereinafter fully described and then particularly pointed out and defined in the claims which conclude this specification.

To enable others to fully understand and to make and use my said invention, I will proceed to describe the same in detail, reference being had, for this purpose, to the accompanying drawings, in which—

Figure 1, is an end elevation of a box car, showing my invention applied thereto. Fig. 2, is a side elevation, partly in central vertical section, of the parts shown in Fig. 1. Fig. 3, is a bottom plan view showing the parts illustrated in Figs. 2 and 3. Fig. 4, is a perspective view of one end of a flat or platform car the coupler being lifted for coupling, showing certain modifications of said invention. Fig. 5, is a detail section, taken vertically and longitudinally, showing the same parts, with a separate car about to couple.

The reference-numeral 1, in said drawings,

indicates the body of a railway-car of ordinary construction. On each of the sills 2, at the ends of the frame, is bolted a casting 3, containing at its inner end a housing 4, which terminates upon one side of the median longitudinal line of the car. In this housing is placed a strong spring 5, the end of which projects from the housing on the side next the center of the car. The spring is maintained under suitable tension by means of a U-shaped keeper, or yoke, the parallel parts 6 of which are lapped upon the upper and lower faces of the housing and lie in counter-sunk recesses 7, so that the surfaces are all flush. Near their ends said parallel parts 6 are provided with slots 8, through which pass screws 9 having their ends tapped into the walls of the housing. The transverse, or middle portion 6^a of the keeper, is substantially parallel with the end of the housing and receives the thrust of the spring 5, by which it is normally held as far from the end of the housing as the length of the slots 8 permits. Lateral pressure will cause the keeper to move in the line of said slots a distance proportioned to the force exerted.

At a little distance from the keeper 6, and adjacent to the central longitudinal line of the car, is the draw-head, consisting of a rectangular beam 10, supported by a hanger 12, bolted to the end-sill 2. The beam extends beneath the body of the car and is provided, at its end, with a reduced portion 13, which passes through an opening in a wear-plate 14 and enters a recess in a strong transverse beam 15, to which the wear-plate is bolted. Upon the reduced portion 13 is coiled a spring 16, one end abutting on the wear-plate 14, and the other on a second wear-plate 17, rigidly mounted on the spindle and lying against the end of the beam proper. Guide-bars 18 project from the beam 15 and pass into opening in the ends of the wear-plate 17, which moves on the guide-bars as the spring is compressed and expanded. The outer end of the beam 10 is provided with a lateral extension 19, in which is formed a recess 20, in rear of which is an opening 20^a passing entirely through the lower face of the beam and extension. Immediately in rear of this opening a lug 21 rises from the upper face of the draw-head, in such position as to abut against the end-

sill when the drawhead is pushed into its limit of movement. Upon the side of the latter which is adjacent to the housing 4, and which is flush from end to end, is mounted
 5 the coupling-bar 22, which lies flat against the flat, vertical face of the beam 10. The end of the coupler is pivotally attached to the end of the beam 10 by a pin 23, which is tapped into projection on the lower face of the beam.
 10 The portion projecting beyond the end of the car lies between the face of the beam 10 and the part 6^a of the keeper, the space between the two being sufficient to allow the coupler to rise and fall therein freely. Its outer end,
 15 which projects beyond the end of the beam is provided with a hook, the downwardly projecting lug 24 forming the same being curved upon its outer, or forward edge in such manner that upon striking the end of the drawhead on another car it will ride upward to a limited extent for a purpose which will be explained hereinafter. When the car is uncoupled and the coupler drops, it is arrested by a hanger 25, which drops from the sill and
 25 has an angular extremity lying beneath the coupler.

I may employ a spring 26 to throw the coupler downward, but in certain cases it is preferable to dispense with a spring and rely on
 30 gravity. In such instances the coupler will be weighted by forming, or attaching, a mass of metal 27 in rear of its hooked extremity.

The draw-head is capable of a limited lateral movement in the hanger 12, but is constantly pressed against the side of the hanger which is adjacent to the coupler. This position is normally maintained by an elastic plate 28, having one end rigidly attached to the end of the beam 10 on the side opposite that
 40 on which the coupler is mounted. This plate diverges from the beam and passes through the hanger 12, a spring 29, of rubber or other suitable material, being interposed between it and said hanger and supplements the force
 45 of the spring plate 28. By these devices the drawhead and coupler are allowed to have lateral play in rounding curves, the spring 5 acting on one side and the plate 28 and spring 29 on the other, permitting the necessary play
 50 and restoring the draw-head and coupler to proper position.

Upon a platform car the coupler 22 is lifted by a lever-arm 30, rigidly mounted on a rock-shaft 31 which is mounted in eye-bearings 32
 55 on the end of the car. The lever-arm is connected to the coupler by a link 33. The ends of the rock-shaft 31 are provided with arms 34, which hang by the sides of the car. By raising either of these arms the coupler will be lifted into position of automatically engaging the drawhead on another car. When raised it is sustained by a prop 35 hanging at the side, the end of which is adapted to enter a notch on the under side of the arm 34. In
 60 this position the curved edge of the hook-lug 24 will engage the end of the other drawhead and the coupler will be raised somewhat in

order to enter the recess 20 and pass to the opening 20^a, into which the lug 24 drops. This slight lift disengages the end of the prop
 70 35, which immediately drops, leaving the coupler free to effect its engagement automatically.

As it may, at times, be necessary to use the well known coupling link and pin, provision
 75 is made for carrying both by providing the drawhead with a chamber 36, on its lower side. The link is placed in this chamber and secured by the link-pin, which is placed in an opening in the end of the drawhead on one
 80 side of the recess 20. When the link is used, the pin is inserted in an opening 37, formed in the lower wall of the recess 20, a little in front of the recess 20^a.

When used upon a box-car, the coupler will
 85 be lifted by independent levers 38, fulcrumed on the end of the car, their ends being connected to a chain 39 which is linked to the coupler at its lower end and to a lever 40, fulcrumed on a bracket 41 on the top of the
 90 car. One of the levers 38 is provided with a yoke 42 and the other with a rod 43 having an eye 44 at its end, the function in each case being the same and the difference in construction being due merely to the different height
 95 of the respective levers. The yoke and rod not only serve as convenient means for operating the levers from the sides of the car, but they also enable the coupler to be sustained until it engages the drawhead on the other
 100 car. This latter function is accomplished by a single lever 45, which is fulcrumed beneath the car, on the end-sill 2, its free end terminating at, or slightly projecting beyond the side. On this lever is a horizontal arm 46, of
 105 such length that its end may be caused to project somewhat beyond the end of the car by swinging the lever 45, the movement of the latter being limited by a loop, or yoke 47, projecting in a direction opposite to the horizontal arm 46. In this loop lies the end of a rigid arm 48, projecting from the side of the drawhead. When thrown out in the manner described, the yoke 42, or the eye 44 on the end of the rod 43, may be engaged with the
 110 projecting end of the horizontal arm 46, and the coupler will be sustained thereby in position for coupling. When the cars are brought together the impact of the drawheads forces them back far enough to cause
 120 the rigid arm 48 to draw the lever 45 back and withdraw the end of the arm 46 from its engagement, thereby leaving the coupler free to drop and engage the opening 20^a with its hook-lug 24.

I prefer to make the lever 40 in two parts, one being jointed to the other by a lap, or rule-joint, so that it can be folded over on the piece to which it is attached.

What I claim is—

1. A car-coupler comprising a casting having a housing containing a spring, a keeper pressed toward the coupler by said spring, a draw-head to which the coupler is pivotally

connected at one end, to lie between said drawhead and the keeper, and a spring plate rigidly attached at one end to the outer side of the drawhead and diverging from the latter to pass through a hanger in which the drawhead has lateral play, substantially as described.

2. In a car-coupler, the combination with a drawhead and a spring-pressed keeper, of a coupler pivoted to the side of the drawhead and lying between the latter and the keeper, a spring-plate having one end rigidly attached to the other side of the drawhead and its free end lying in a hanger in which the drawhead has lateral play, the end of said spring plate pressing against the outer side of said hanger, substantially as described.

3. In a car-coupler, the combination with a spring-pressed keeper and a drawhead, of a coupler lying between and pivotally attached at its rear end to the side of the drawhead, a spring-plate having its rear end rigidly secured to the opposite side of the drawhead and its free end lying and pressing against the other side of a hanger in which the drawhead has lateral play, and a supplemental spring interposed between said plate and the outer side of the hanger, substantially as described.

4. In a car-coupler, the combination with a drawhead of a coupler having its end pivotally connected to the side of the drawhead, means for lifting the coupler to coupling po-

sition, and a lever sustaining it in such position and released by the impact and retrograde movement of the drawhead, substantially as described.

5. In a car-coupler, the combination with a drawhead of a coupler having its end pivotally connected to the side of the drawhead, a lever fulcrumed on the end of the car for lifting the same into coupling position, and a holding lever having a horizontal arm capable of being projected beyond the end of the car to engage a device on the lifting lever, said draw-head being provided with a rigid, laterally projecting arm the end of which lies in a loop on the holding lever, substantially as described.

6. In a car-coupler, the combination with a drawhead of a coupler pivotally connected to one side of said drawhead, a lifting lever fulcrumed on the end of the car and linked to the coupler and a holding lever fulcrumed beneath the end of the car and having a forwardly projecting horizontal arm and a rearwardly projecting loop receiving the end of a rigid arm on the drawhead, substantially as described.

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

JEREMIE LESSARD.

Witnesses:

JOHN JAMESON,
ISRAEL BELANGER.