(No Model.)

A. RONEY & G. H. LLOYD.

CAR COUPLING.

No. 452,239. Patented May 12, 1891.

Fig. 1.

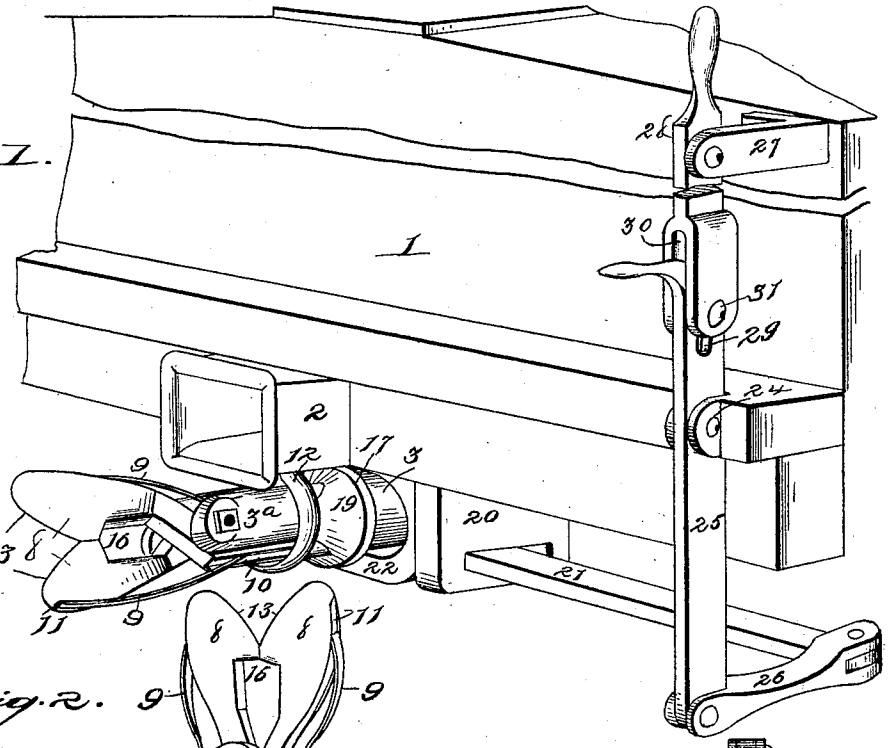


Fig. 2.

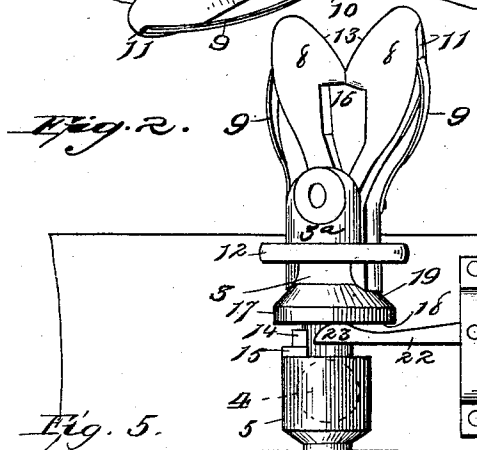


Fig. 5.

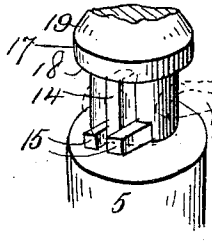


Fig. 3.

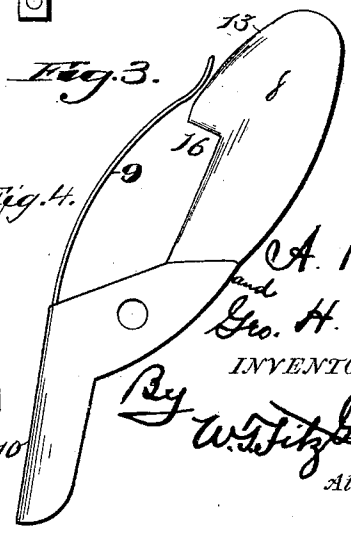
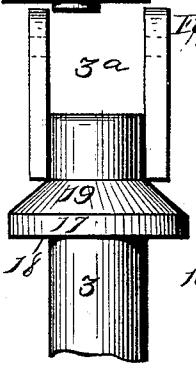


Fig. 4.



WITNESSES

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ALFRED RONEY AND GEORGE H. LLOYD, OF STILLWATER, MINNESOTA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 452,239, dated May 12, 1891.

Application filed December 13, 1890. Serial No. 374,602. (No model.)

To all whom it may concern:

Be it known that we, ALFRED RONEY and GEORGE H. LLOYD, citizens of the United States, residing at Stillwater, in the county of Washington and State of Minnesota, have invented certain new and useful Improvements in Car-Couplers; and we do hereby 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.

Our invention consists in a new and improved automatic car-coupling, by the use of which the cars will automatically couple themselves together, and can be uncoupled from either the side or top of the car without going between the cars; and our invention has the further advantage that it can be applied to any car using the old pin-and-link coupling without removing any part of the same, so that the old coupling can be used again in time of need.

Our invention embodies many new and useful features, which will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view of the end of a car provided with our new and improved coupling. Fig. 2 is a bottom plan view of the same. Fig. 3 illustrates in detail the coup-link-hooks with their adjacent parts. Fig. 4 illustrates in detail the outer end of the coupling-bar 3. Fig. 5 is a detail view on a reduced scale, illustrating the operation of the stop 14, hereinafter described.

The same numerals of reference indicate corresponding parts in all the figures.

Referring to the several parts by their designating numerals, 1 indicates the end of a car to which our invention is shown applied.

2 indicates the ordinary draw-bar, beneath which our invention is arranged.

3 indicates the coupling-bar, formed with a spherical head 4 at its inner end, which is seated in a bearing 5 in the forward end of a bumper-bar 6, so that the coupling-bar can be turned freely to either side. The bar 6 is encircled by a heavy spiral spring 7, secured at one end, as shown, so that the bar can move backward when the ends of the cars come together, and will be pressed forward by the spiral spring when the inward pressure is removed.

In the head 3^a of the coupling-bar 3 are centrally pivoted on the same bolt the coupling-hooks 8. The inclined points of these hooks are normally held pressed together by the curved springs 9, the inner ends of which are secured in grooves 10 on the rear part of the hooks, while their outer ends slide in deep grooves 11, formed on the outer ends of the hooks, as shown. The outer part of the coupling-bar 3 is loosely supported in a metal ring 12, so that it can play freely therein. The inner faces 13 of the outer ends of the hooks are beveled or inclined, as shown. The two hooks are held in an inclined plane by a stop 14 on the side of the coupling-bar, fitting between lugs 15 on the side of the coupling 5. It will thus be seen that when two cars provided with our coupling come together the pair of hooks, standing at directly-opposite angles, as they meet will be sure to couple together, the inclined edges 13 meeting, so that the outer end of the hooks will be pressed apart and open, so that the two cars can automatically engage. The inner side 16 of the hook-points are squared, so that when the hooks are once coupled it will be impossible for any strain to pull them apart.

The cars are uncoupled from the side or top by the following device: Upon the coupling-bar 3 is loosely mounted a heavy ring 17, having the straight rear face 18 and the beveled or inclined front face 19. 20 indicates a slotted bracket, which is bolted to the inner side of the car, in the slot of which is centrally pivoted a lever 21. The bifurcated inner end 22 of this lever extends on each side of the coupling-bar 3, and its ends are formed with the rounded projections 23, which bear against the flat inner face 18 of the ring 17. In a bearing 24 at the end of the car is centrally pivoted a lever 25, the lower end of which is connected by a link 26 with the outer end of the lever 21. Upon the top of the car is centrally pivoted, in a bearing 27, an upper lever 28, and the upper end of the lever 25 is formed with a longitudinal slot 29 and fits in the slotted lower end 30 of the lever 28, a pivot-bolt 31 coupling the said ends together. It will now be seen that the brakeman can

either draw back the upper end of the lever 28 from the top of the car, or press forward the upper end of the lever 25 when standing at the side of the car, and thus through the link 26 force the outer end of the lever 21 back. The inner end of the lever 21 will be thus pressed forward, carrying with it the beveled ring 17, which is pressed forward between the beveled inner ends of the coupling-hooks 8, forcing their inner ends, and consequently their outer ends, apart, so that the cars can be thus uncoupled. As soon as the hand-levers are released the pressure of the springs 9 force the outer ends of the coupling-hooks together again, thus sliding the ring 17 back into its orignal position.

The coupling on the engine can be operated from the cab by connecting the upper end of the lever 28 by a suitable coupling-rod with a convenient hand-lever arranged within the cab, and the engineer can thus couple or uncouple from the train without any outside assistance.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and great advantages of our invention will be readily understood.

It will be seen that our new and improved coupling can be applied to any cars, the hooks being arranged, as shown, just below the old draw-bar, so that when the cars come together the bumpers of the old draw-bars will receive all the strain and thus lessen the wear on the coupling-hooks. The hooks and coupling-bar being mounted as shown in the coupling 5 and the supporting-ring 12 will give freely to the motion of the car in rounding curves, which is an important feature. The coupling is formed of comparatively few parts, which are all very strong and durable in their construction.

Having thus described our invention, what we claim and desire to secure by Letters Patent, is—

1. In an automatic car-coupler, the combination, with the coupling-bar 3, having the slotted head 3^a, of the curved hooks 8, centrally pivoted in the said head and having the inclined points, and the springs 9, secured at their ends on the inner ends of the hooks and having their outer ends sliding in grooves on the outer ends of the hooks, substantially as set forth.

2. The combination of the coupling 5 and the lugs 15, the coupling-bar 3, formed with a spherical head at its inner end and the slotted head 3^a at its outer end, and having the side stop 14 and curved coupling-hooks 8 centrally pivoted in the head 3^a, and the springs 9, arranged as described, substantially as set forth.

3. The combination of the spring-actuated bumper 6, having the bearing 5 at its forward end and the lugs 15, the coupling-bar 3, having the spherical head at its inner end and the slotted head 3^a at its outer end, and the side stop 14, the curved coupling-hooks 8, centrally pivoted in the head 3^a, the spring 9, arranged as described, the supporting-ring 12, the ring 17, sliding on the coupling-bar and having the beveled or inclined foward side, and means for operating the said ring, substantially as set forth.

4. The combination of the coupling-bar 3, the spring-actuated hooks 8, pivoted in its forward end, the sliding beveled ring 17, the centrally-pivoted lever 21, having the bifurcated inner end, and the hand-levers connected with the outer end of the lever 21 for operating the same from the top or side of the car, substantially as set forth.

5. The combination of the coupling-bar 3, the spring-actuated curved coupling-hooks, pivoted in the outer end of the same, the bevel-ring 17, sliding on the coupling-bar, the centrally-pivoted levers 21, having the bifurcated inner end, the centrally-pivoted lever 25, having the slotted upper end, the connecting-lever 26, and the centrally-pivoted lever 28, having the slotted lower end, and the pivot-bolt 31, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ALFRED RONEY.
GEORGE H. LLOYD.

Witnesses:
NORMAN RONEY,
ADOLPH BURCH.