(No Model.)

J. STERNS.

CAR COUPLING.

No. 490,128. Patented Jan. 17, 1893.

Fig. 1

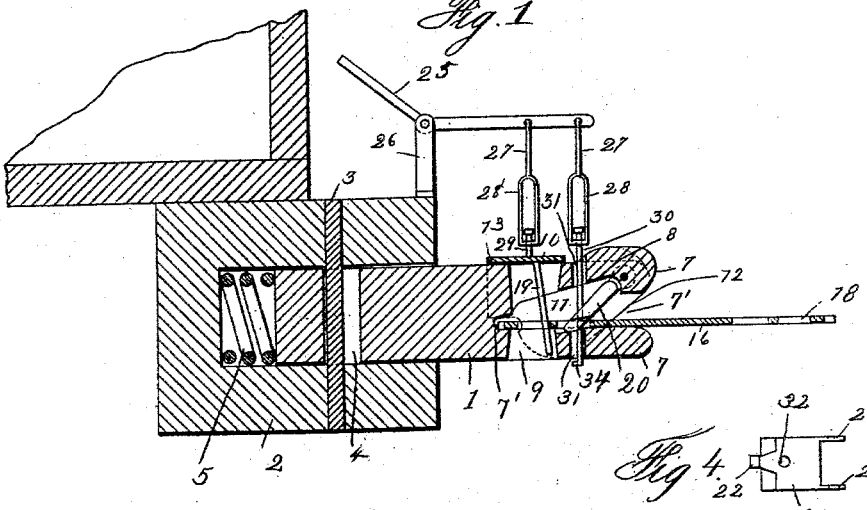


Fig. 4

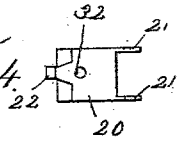


Fig. 2

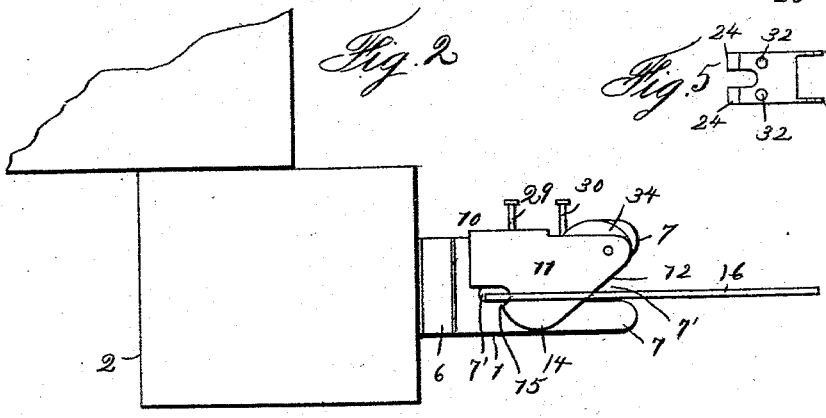


Fig. 5

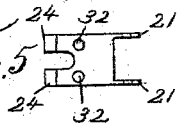
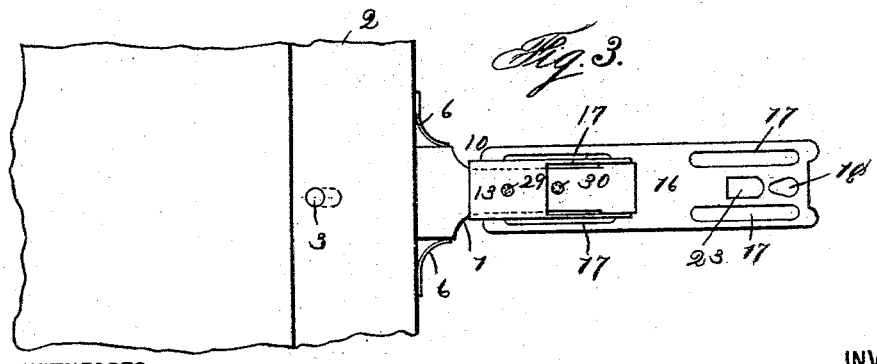


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JACOB STERNS, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 490,128, dated January 17, 1893.

Application filed March 14, 1892. Serial No. 424,870. (No model.)

To all whom it may concern:

Be it known that I, JACOB STERNS, of the city, county, and State of New York, have invented a new and useful improvement in Car-Couplings, of which the following is a specification.

This invention relates to devices for automatically coupling or fastening together the separable parts of an article or structure, as well as to couple together railway cars.

The invention has for its object to provide an automatic coupling or fastening device which will easily and with certainty become automatically coupled when the separable parts are brought together, will not become accidentally uncoupled and may be readily uncoupled.

I have described in the following specification and shown in the accompanying drawings my invention as applied to a car coupler, but I do not limit the invention thereto as it may be adapted to various devices.

The invention consists in an automatic coupling or fastening and in details thereof as hereinafter described and claimed.

In the accompanying drawings in which similar figures of reference refer to like parts: Figure 1 is a vertical longitudinal section of a car coupler constructed in accordance with my invention. Fig. 2 is a side view of the device, shown in Fig. 1 complete. Fig. 3 is a plan view, and Figs. 4 and 5 are details thereof.

In carrying out my invention as applied to a car coupler, I provide a drawhead 1, connected to the framework 2 at the end of a car by means of a vertical pivot pin 3 extending through an enlarged hole or passageway 4 in the rear end of the drawhead 1, to permit of lateral swing of the drawhead when the cars are rounding curves and of longitudinal thrust thereof against a spring 5 mounted in the frame work 2.

To hold the drawhead 1, normally in a straight line, and thereby bring the ends of two meeting drawheads in alignment, when a coupling of the cars is to be effected and also to return the drawhead to its normal position, when it is swung to one side in rounding a curve, suitable springs are provided, projecting from the front of the framework 2 of the car and bearing against the sides of the drawbar 1. In the example shown strong bent springs 6 project from the frame work 2 and bear against the sides of the drawhead 1.

The draw-head 1 is formed at its forward end with jaws 7, opening by means of a slot 7′ into a chamber 8 to receive the coupling link, and with a vertical longitudinal passageway 9, transverse to the chamber 8, and link slot 7′ for receiving the coupling pin. An automatic pivoted catch 10 employed in conjunction with the coupling pin, is pivoted to the upper jaw 7 and is formed in one piece of metal, with the sides 11 extending parallel with the sides of the drawhead 1, and having the front rearwardly inclined edges 12 to permit the coupling link entering between the jaws 7 to lift the pivoted catch 10, and with the top portion 13, extending across the top of the drawhead 1, and covering the upper end of the passageway 9. The sides 11 of the catch 10 are formed with the curved lower ends 14 terminating in the rear with a curved recess 15 forming hooks to engage the links.

The coupling link 16 herein employed consists of a flat metallic strip formed at each end with the side slots 17 with which the sides of the catch 10 engage when the link 16 is pushed into the drawhead 1, and with the hole 18 formed for coupling pin.

19 is the coupling pin mounted on the upper portion of catch 10, so that it moves simultaneously with the catch 10 as is raised and drops, whereby the pin 19 is lifted out of the way of the link 16, when the latter bears against and raises the catch 10, and is dropped into engagement with the link 16 through the hole 18 when the catch 10 drops down to also engage the link 16.

It will be observed that the link 16 is wider than the drawhead 1 to permit the sides 11 of catch 10 to drop into the slots 17 of the link 16.

In order to provide against any accidental release of link 16 from engagement with the catch 10, and coupling pin 19, I provide a supplemental automatic catch which acts independently of the catch 10. Any suitable form of supplemental catch may be employed. As here shown it consists of the tongue 20 hinged to the upper jaw 7 independently of the catch 10 by means of the arms 21 located

on the sides of the upper jaw 7, the tongue 20 normally resting in an inclined position on the floor of the chamber 8. The tongue 20 which is shown detailed in Fig. 4, is formed integral with a central projection 22 which engages a hole or slot 23 in link 16 when the latter is pushed into the drawhead 1. In lieu of the tongue shown in Fig. 4 a modified form thereof shown in Fig. 5 may be employed formed with two side projections 24, which may engage slots or projections formed on the link. By means of the tongue 20, in case the catch 10 and pin 19 are thrown up out of engagement with the link 16 by the jumping or upward movement of the cars, the link 16 will still be held by the tongue 20, which acts independently of pin 19 and catch 10.

When it is desired to uncouple the cars, the catch 10, and tongue 20 are lifted out of engagement with the link 16 by any suitable means. As here shown a crank lever 25 is employed mounted on a support 26 on the car and connected to the tongue 20 and catch 10, by pivoted rods 27. having oblong links 28 with holes in their lower ends through which project headed rods 29 and 30, the rod 29 projecting from catch 10, and the rod 30 projecting through a hole 31 in the drawhead 1 and a hole 32 in the tongue 20. By means of this construction the jumping or lifting of either the catch 10 or tongue 20 does not affect the other, the headed rods 29 and 30 in the links 28 permitting of independent movement. The lower end of rod 30 is formed with a hook 33 which engages tongue 20 to cause it to be raised when the rod 30 is drawn clear up by lever 25. The rod 30 serves also to brace the tongue 20 against longitudinal strain from the drawhead and link and transverse strain on the link and drawhead.

As shown the sides of the chamber 8 are formed by the sides of the catch 10, but if desired, sides independent of the sides of the catch 10 may be employed. As for example the draw 1 may be formed with solid sides thereby forming a strong construction and if desired, with this construction the internal catch may be used only, the external catch being dispensed with. To prevent the catch 10 from being lifted too high the side portion of the upper jaw 7 of drawhead 1 is formed with a curved shoulder 34 so arranged in front of the pivoted ends of the catch 10 as to serve as stops when the catch 10 is raised sufficiently.

In lieu of the construction of catch 10 and tongue 20, any suitable form of drop catch may be substituted for each either inside or outside of the drawhead.

From the foregoing description the operation of the coupler will be obvious.

The coupler may by the construction herein described be readily fastened and unfastened, danger of uncoupling is avoided and provision is made for lateral movement and endwise thrust.

By a proper adaptation of the parts the principle of coupling herein involved may be employed in other devices for fastening doors, gates, satchels, articles of wearing apparel, &c.

Having described my invention—what I claim is:—

1. In an automatic coupler, a slotted and chambered receiving member having an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link, a supplemental automatically lifting drop catch to also engage the link and operating independently of the main drop catch, a link member to enter the receiving member and to separately engage the drop catches, and a common detaching mechanism independently connected to the drop catches.

2. In an automatic car coupler, a slotted and chambered receiving member having an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link, a supplemental automatically lifting drop catch to also engage the link and operating independently of the main drop catch, and a link member to enter the receiving member and to separately engage the drop catches.

3. In an automatic car coupler, a slotted and chambered receiving member having an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link, and a supplemental automatically lifting drop catch to also engage the link and operating independently of the main drop catch.

4. In an automatic car coupler, a slotted and chambered receiving member having an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link, a supplemental automatically lifting drop catch to also engage the link and operating independently of the main drop catch; and a common detaching mechanism independently connected to the drop catches.

5. The automatically lifting drop catch consisting of an integral top or cover and depending sides, provided with rearwardly inclined forward portions and depending portions to receive, be lifted by and engage a link.

6. In an automatic car coupler a drawhead having an automatically lifting drop catch with rearwardly inclined forward portion and depending portions to receive, be lifted by and engage a link.

7. In an automatic car coupler a drawhead having an automatically lifting drop catch with rearwardly inclined forward portion, and depending portions to receive, be lifted by and engage a link in combination with a supplemental automatically lifting drop catch to engage the link and operating independently of the main drop catch.

8. In an automatic car coupler, a draw-head having an automatically lifting main drop catch with a rearwardly inclined forward portion, and depending portions to receive, be lifted by and engage a link, and a supplemen-

tal automatically lifting drop catch to engage the link and operating independently of the main drop catch and a coupling pin to also engage the link.

9. In an automatic car coupler, a draw-head having an automatically lifting main drop catch with a rearwardly inclined forward portion and depending portions to receive, be lifted by and engage a link, and a supplemental automatically lifting drop catch to engage the link and operating independently of the main drop catch, in combination with a coupling pin and detaching mechanism for disengaging the drop catches and coupling pin from the link.

10. In an automatic car coupler a drawhead having an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link, the said catch being also provided with a coupling pin to separately engage the link and a link to enter the drawhead and to separately to engage the said drop catch and coupling pin.

11. In an automatic car coupler a draw-head having an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link, and a supplemental autotomatically lifting drop catch to also engage the link, in combination with a mechanism to detach the catches from the link having a loosely jointed connection with the catches permitting of a limited independent vertical movement of the catches.

12. In an automatic car coupler a draw-head formed with a stop in combination with an automatically lifting drop catch constructed and arranged to be lifted up by and engage a link a supplemental automatically lifting drop catch to engage the link and operating independently of the main drop catch, the vertical movement of the catches being limited by the stop.

13. In an automatic car coupler the drawhead 1, having the curved shoulder 34 on its sides at its forward upper end in combination with the drop catch 10 having rearwardly inclined front portions, curved depending side ends and rearwardly hooks, and its pivoted ends adjacent to and acted upon by the stops on the draw-head.

14. In an automatic car coupler, the draw head 1, in combination with a coupling pin and with the automatically lifting drop catch 20 having a tongue 22 to engage a slot 23 in a coupling link 16, and with said coupling link 16 provided with slots 18 and 23.

15. The coupling link formed at its ends with lateral oblong slots, the central slot and pin hole.

16. In an automatic car coupler the draw-head 1, having the automatically lifting drop catches 10 and 20, in combination with the lifting lever 25, headed rod 29, projecting from catch 10, headed rod 30 projecting through draw-head 1, and catch 20, and having a hooked end 34 and rod 27 pivoted to lever 25 and having links 28 with holes loosely engaging the headed rods 29 and 30.

In testimony whereof I have affixed my signature in presence of two witnesses.

JACOB STERNS.

Witnesses:
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E. W. CODY.