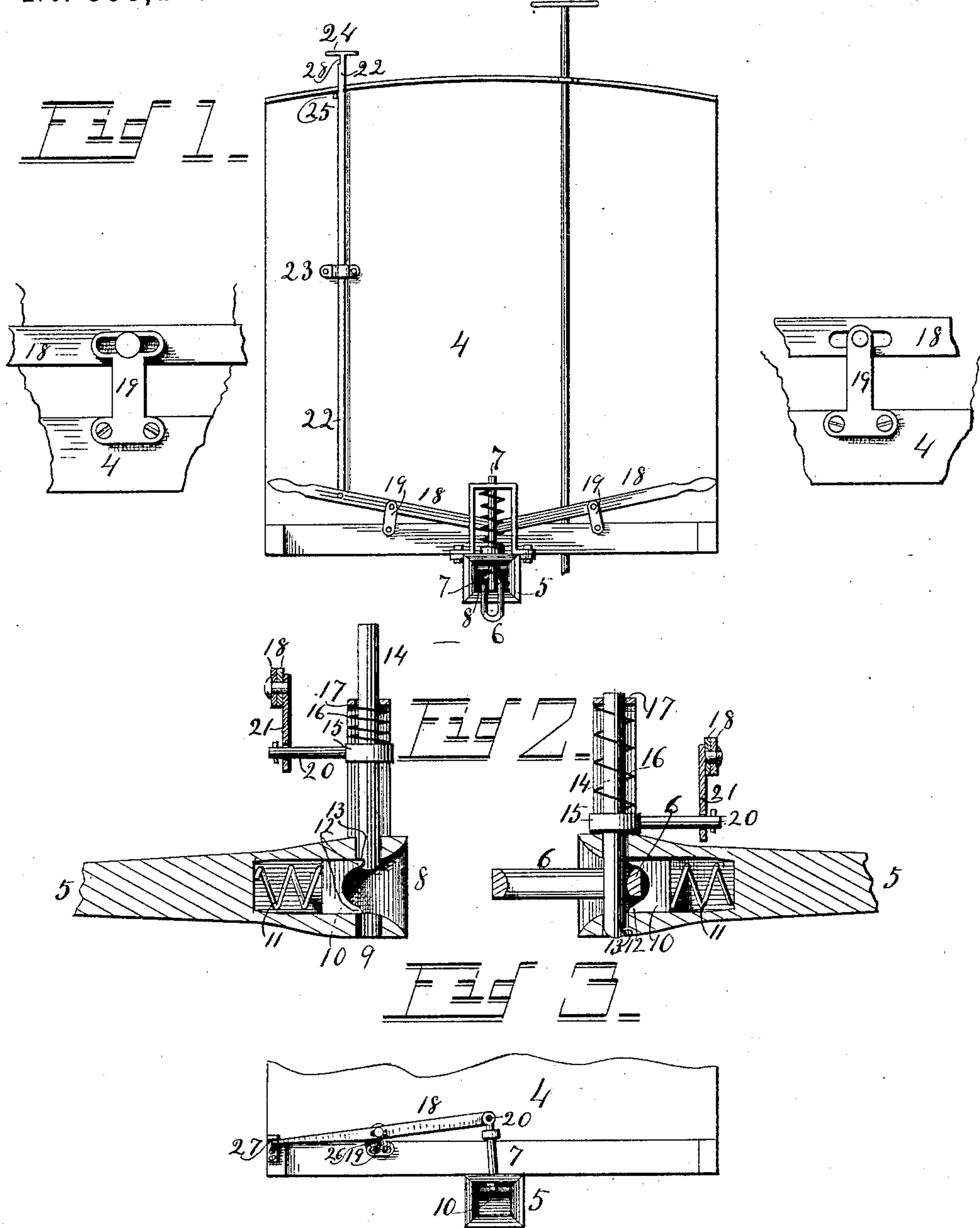


(No Model.)

E. LATHAM.
CAR COUPLING.

No. 353,146.

Patented Nov. 23, 1886.



Witnesses

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UNITED STATES PATENT OFFICE.

EPHRAIM LATHAM, OF WASHINGTON, D. C., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO THOMAS J. POWELL, OF BROOKLYN, N. Y., AND ETHAN A. SAWYERS, OF BROWNSVILLE, OREG., AND LOUIS W. PERKINS, OF NEW ORLEANS, LA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 353,146, dated November 23, 1886.

Application filed September 13, 1886. Serial No. 213,447. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM LATHAM, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

This invention relates to that class of car-couplings which are designed to couple the cars by the act of their coming together, therefore called "automatic car-couplings."

The object of automatic car-couplings is not only to couple and uncouple cars expeditiously, but to avoid the great danger to the operatives consequent to coupling cars by hand in the usual way.

Heretofore the principal objection raised by railroad men against adopting any automatic coupler has been that the link-and-pin coupling is so universally used that the expense of alteration would be very great, and some corporations would not adopt a new style. This would interfere with such uniformity as now enables cars of any and every road to be joined in one train.

The object of my invention is to provide a simple and inexpensive attachment, which may be readily applied to the common draw-bar car, whereby the common shackle and pin may be manipulated or set, either by a person on the cars or by one on the ground beside the cars, to couple or uncouple automatically.

To this end my invention consists in the construction and combination of parts forming an automatic car-coupling, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation of a freight-car, showing my invention. Fig. 2 is a central longitudinal vertical section of two detached draw-bars on a larger scale, showing the portion of my invention which is supported thereby; and Fig. 3 is an end elevation of a draw-bar and a portion of a car, showing a modification of my invention in its simplest form.

4 represents the body of a car, to which a draw-bar, 5, is attached in any usual manner. 50

6 represents the common link, and 7 a pin. The link enters the mouth 8 of the draw-bar, and the pin passes down through the hole 9 and through the link to secure it, as usual.

10 represents a push-plug, which I fit to slide freely within the throat of the draw-bar, and 11 a spring behind the plug pressing it outward. The forward end of the push-plug is notched to receive the link, the notch being nearly equal in depth to the thickness of the body of the link, so that the lips 12 of the plug above and below the notch may extend across the end of the link nearly to the aperture within it. 55 60

When the link and pin are in position for service, (shown at the right in Fig. 2,) the spring 11 and plug 10 push the link 6 outward against the pin 7 and hold it in whatever position it may be set by the attendant, ready to enter the coming draw-bar—that is to say, the link may be set a little out of line, either upward, downward, to the right or left, as may be necessary, to meet the mouth of the next draw-bar, and the notched end of the push-plug bearing it against the pin will hold it so until it enters the mouth of the coming draw-bar. 65 70 75

In each pin at its rear side, near the lower end, I make a notch, 13, to receive the upper lip of the push-plug. By this means the pin is held raised out of the way, as shown at the left, so that the link may enter the mouth of the draw-bar, and is also prevented from being lifted so far out as to set the push-plug free to be ejected by its spring. When the link does enter, it crowds the push-plug in, leaving the pin free to drop into the link. To insure the dropping of the pin I provide it with an upward elongation, 14, above the head 15, and around this elongation I place a spring, 16. 80 85 90

17 is a yoke-shaped bearing attached to the draw-bar to steady the upper end of the pin, to serve as a base against the under side of which the spring 16 may rest while the lower end of the spring pushes downward on the head 15 of the pin. 95

To enable a person at either side of the car to set this coupler ready to be automatically operated, I pivot levers 18 upon posts 19, and connect the levers with pin 7 by a stud, 20, projecting rearward from the head of the pin, and a link, 21, which is pivotally attached to both levers 18 and the stud 20. By pressing the handle of either lever downward the pin will be raised until its notch 13 is caught by the upper lip of the push-plug. Then the pin will remain set, as shown at the left, until an incoming link strikes the push-plug and releases the pin to engage the said link.

To permit the draw-heads, when they come forcibly together, to recede without danger to the connections between the pin 7 and levers 18, I shape the stud 20 with a long body small enough to pass freely through its hole in each lever, thus giving it free play. I am aware that other devices have been shown to connect the pin and levers with a free joint, permitting longitudinal movement between pin and levers, and I do not claim the idea broadly.

To enable a person on top of the car to raise the pin either for the purpose of setting it, as before described, or for the purpose of uncoupling the car, I have connected a rod, 22, with one of the levers, 18, by a pivot, and have secured it to the end of the car by a loosely-fitting staple, 23. The upper end of the rod 22 is provided with a broad pedal, 24, on which the operator may step to push the rod down. The weight of this rod is overbalanced by the spring 16.

In preparing a car to be "kicked," as it is termed, out of a train, it is necessary to hold a pin out of connection, while the draw-bars are all pushed in. To do this I provide a stay-notch, 28, in the side of the rod 22, and a stud, 25, projecting from the end of the car to engage it. I also connect the lower ends of the posts 19 with the car by pivots, so that the upper ends of the posts may have a little lateral motion to accommodate the sidewise motion of the rod 22 and the levers 18. To accomplish the same purpose of giving a little lateral motion to the levers 18, the posts 19 may be rigidly fixed to the car and a slot or sliding connection be provided between the post and lever. Then a person at either side or on top of the car may first raise the pin and then push the rod to catch the stud 25. This will hold the rod down and the pin raised until the link is withdrawn; then the rod 22 may be disengaged from the stud 25, and the push-plug will hold the pin ready for another coupling. The modification shown at Fig. 3 operates, so far as it goes, on the same principle. In this case the common pin 7 is provided with the notch 13, and is connected by a link, 21, with a single lever, 18, which is pivoted to a post, 19, and is limited in its motion by any suitable means, such as the shoulder 26, so that the pin 7 cannot be drawn entirely out of the draw-bar without intentionally disconnecting it. 27 is a catch operating in a manner similar to the notched rod 22, to keep the handle of the

lever 18 down when it is desired to hold the pin raised out of the link 6. I do not consider this modification to be so efficient as the complete device shown in Figs. 1 and 2, but it will answer the purpose to some extent in an economical way.

My invention enables a person at either side of the car or on top of it to instantly set the coupler to be automatically coupled to an approaching car, or to set the coupler of any car in a train so that it will not interfere with pushing the train and will leave the said car uncoupled whenever there is force applied in a direction to separate the cars, and in using this coupling the operator need not place himself in a dangerous position.

This invention may be attached to nearly every style of draw-bar now in use at very little cost, and will add but little to the cost of a car when made with it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the draw-bar of a car, of a push-plug, 10, fitted to slide within the draw-bar and provided with lips 12 at its forward end, a push-spring, 11, fitted to enter the draw-bar behind the push-plug, and a coupling-pin, 7, notched in its rear side near its lower end, the said push-plug having a notch between the lips 12, substantially as shown and described, whereby, first, the pin may be held raised, permitting quick insertion of the link, and, secondly, the link will be held in position as set to enter an approaching draw-bar.

2. The combination of the draw-bar 5, the pin 7, provided with the elongation 14 as a portion of the body of the pin, and the head 15 on the middle of the said body, the yoke 17, secured upon the draw-bar and perforated for the passage of the pin's elongation, the spring 16 between the head 15 and the yoke 17, the levers 18, extending across the car, the posts 19, pivotally connected with the said levers and pivotally secured to the car, and a link, 21, and stud 20, connecting the levers 18 with the pin 7, substantially as shown and described.

3. The combination of the draw-bar 5, fitted to slide longitudinally in the car, the yoke 17, secured thereto, the pin 7, fitted to move vertically in the draw-bar and yoke and provided with a stud, 20, fixed rigidly to it to project longitudinally with the car, and the levers 18, pivoted to the car and provided each with a hole through which the said stud may slide freely, substantially as shown and described.

4. The combination of the posts 19, pivoted to the car, the levers 18, crossing the car and pivoted midway upon the said posts and connected at their inner ends with a coupling-pin, the rod 22, pivoted at its lower end near the outer end of one lever, 18, loosely secured midway to the car by a staple, 23, and provided with a side notch, 28, and the stud 25, projecting from the car, substantially as shown and described, whereby the rod 22 may either

be engaged with the stud 25 or disengaged therefrom by a person on top of the car or at either side thereof.

5 5. The combination of the posts 19, secured to the car, the levers 18, having a pivotal and lateral-moving connection with the said posts and pivotally connected with the coupling-pin, and a catch, substantially as shown and described, whereby the pin may be held raised,
10 for the purpose specified.

6. The combination of the pedal-rod 22, loosely secured midway to the car and provided with a side notch, 28, the stud 25, fixed

in the car within reach of the notch 28, and the levers 18, pivotally connected at their inner 15 ends with the coupling-pin, and connected midway to the car with a pivotal and laterally-movable connection, substantially as shown and described.

In testimony whereof I affix my signature in 20 presence of two witnesses.

EPHRAIM LATHAM.

Witnesses:

THO. I. POWELL,
E. A. SAWYERS.