No. 625,895. Patented May 30, 1899.

J. O'BRIEN.

CAR COUPLING LOCK.

(Application filed Jan. 18, 1899.)

(No Model.)

Fig. I.

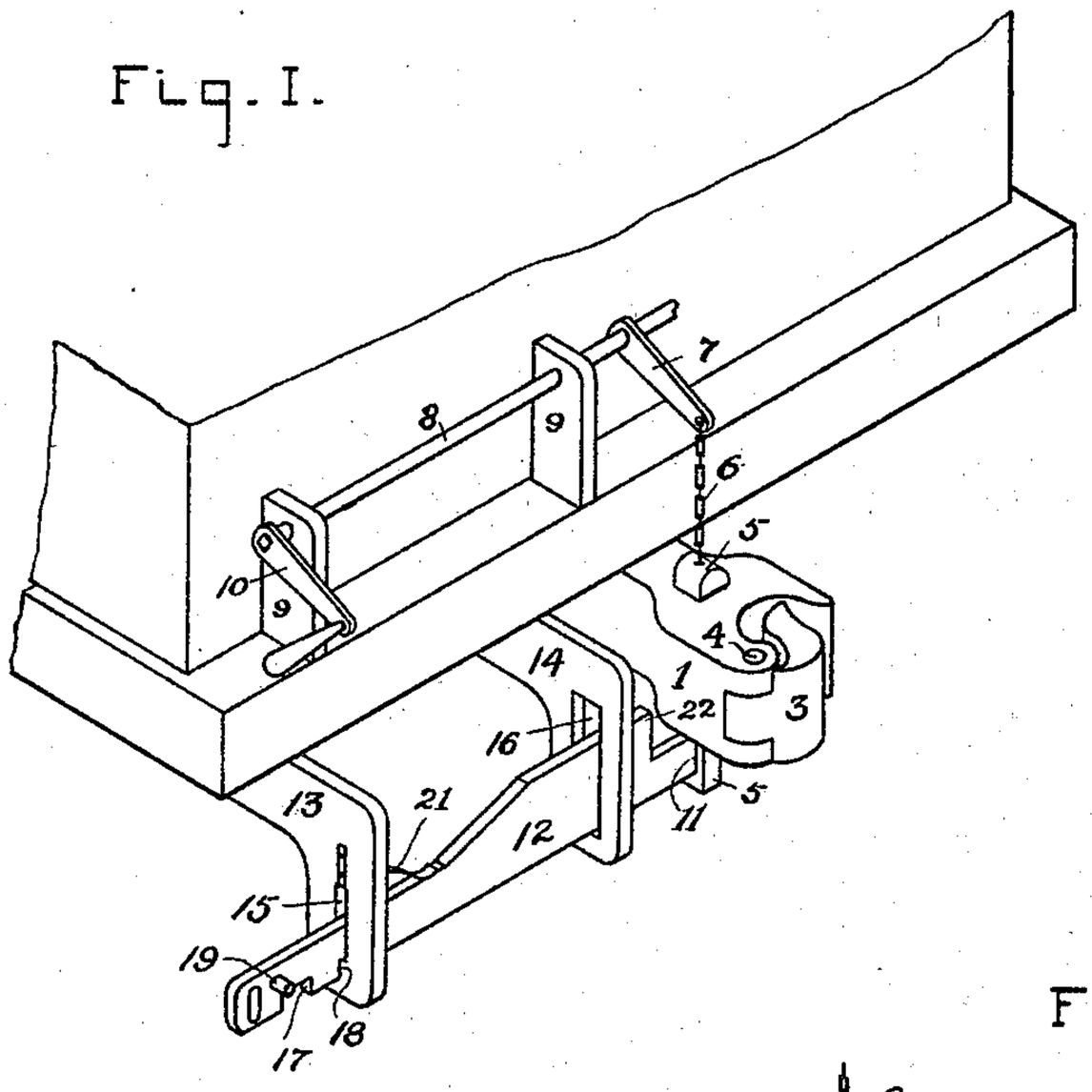

Fig. II.

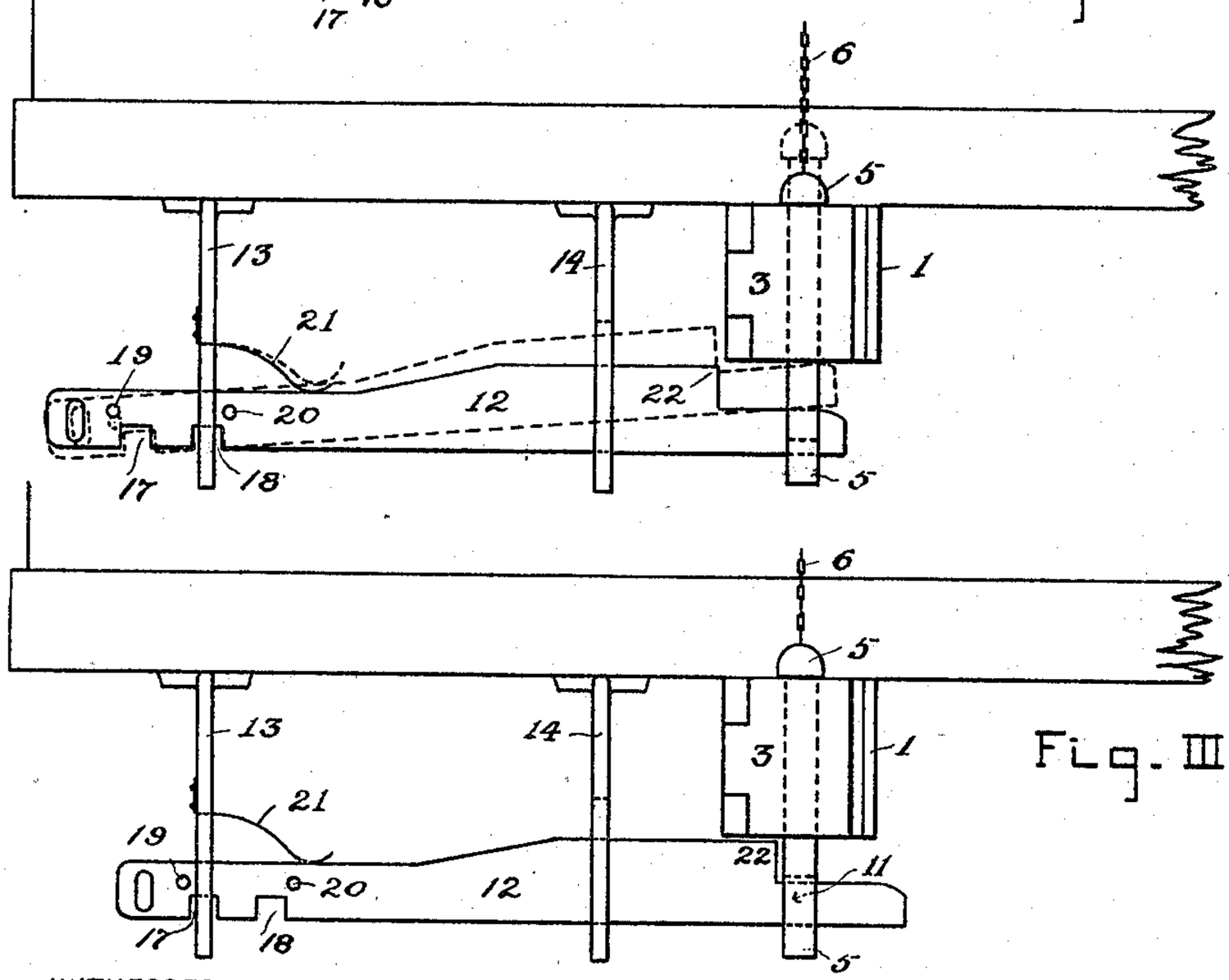

Fig. III.

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JOHN O'BRIEN, OF MANCHESTER, VIRGINIA.

CAR-COUPLING LOCK.

SPECIFICATION forming part of Letters Patent No. 625,895, dated May 30, 1899.

Application filed January 18, 1899. Serial No. 702,502. (No model.)

To all whom it may concern:

Be it known that I, JOHN O'BRIEN, a citizen of the United States of America, and a resident of Manchester, in the county of Chesterfield and State of Virginia, have invented certain new and useful Improvements in Car-Coupler Locks, of which the following is a specification.

My invention relates to improvements in car-couplings of the Janney and similar types in which coupling-pins are used to retain in position the coupling-hooks after the coupling operation has been effected and the cars to which the couplers are attached are coupled together; and it consists of a device by means of which the coupling-pins can be securely locked in position and which can also be so set as to leave the coupling-pin free to be raised at will to uncouple cars.

It has been found that when a train coupled together by means of couplers of the above types is in motion the coupling-pins are frequently jarred out of position, thus allowing the train to break in two, an occurrence always attended by great risk and frequently by serious damage to life and property. This danger can be avoided by locking the coupling-pin in position and so preventing its accidental displacement; but it is not advisable to employ an automatically-locking device—that is, one which would operate to lock the coupling-pin at all times—for there are occasions, such as when shifting in a yard, when it is more expedient to leave the coupling-pin free to be operated to unlock the coupler without at the same time having to release the coupling-pin lock. My device fully meets both of these conditions.

In the drawings, in which like numerals indicate like parts, Figure I is a view in perspective showing a coupler-head or draw-bar attached to a car and my coupling-pin-locking device set in position to leave the coupling free to be operated to unlock the coupler. Fig. II is a view showing the coupling-pin after it has been operated to unlock the coupler-hook. Fig. III is a view showing the coupling-pin locked securely in position.

In Fig. I, 1 is a coupler attached to a car 2 and having the coupling-hook 3, which is pivoted at 4 and which is, after coupling has been effected, locked in position in the usual manner by means of the coupling-pin 5.

6, 7, 8, 9, and 10 show one of the existing forms of gear for raising the coupling-pin without its being necessary for the operator to pass between the cars, in which 6 is a chain attached by one end to the head of the coupling-pin and by its other end to the lever 7, which is attached to the rod 8, which is carried in the brackets 9. At the end of the rod 8 there is attached a lever 10, by raising which and so raising the lever 7 the coupling-pin 5 is raised to unlock the coupler.

In applying my locking device to existing couplers I merely change the original coupling-pin for one having at its lower extremity a slot 11. Through this slot or perforation I pass the reduced end of the locking-bar 12, the position of the slot and the depth of the reduced end of the bar being so arranged and designed as to allow the coupling-pin 5 to be raised sufficiently high to release the coupling-hook 3 when the bar 12 is in the "unlocked" position (this is shown clearly in Fig. II) and the depth of that part of the bar which is next to the reduced part—that is, at the shoulder 22—being such as to prevent the coupling-pin 5 from being raised when the said bar is in the "locked" position. (This is shown clearly in Fig. III.)

13 and 14 are brackets which may be attached to the car-sill and which have, respectively, the slots or perforations 15 and 16, through which the locking-bar 12 passes, the slot 16 being somewhat wider than the thickness of the locking-bar 12 to permit the said locking-bar to move laterally when the coupler moves longitudinally, which longitudinal movement of the coupler occurs during the act of coupling and when the coupler is under strain during the motion of the coupled car.

17 and 18 are apertures cut in the under side of the locking-bar 12 and which are adapted to engage the bracket 13 at the bottom of the slot 15 to hold the said locking-bar in position.

19 and 20 are studs which are arranged to

limit the travel of the locking-bar 12 in either direction through the slots 15 and 16 in the brackets 13 and 14.

21 is a light spring attached to any convenient point, such as the bracket 13, and adapted and arranged to operate against the upper side of the locking-bar 12 to prevent the accidental displacement of the latter by the jolting of the car.

The operation of my device is as follows: When it is desired to leave the coupling-pin free to be raised to release the coupling-hook 3, the locking-bar 12 is drawn outward until the stud 20 strikes the bracket 13. The aperture 18 will then be in position to engage the bracket 13 at the bottom of the slot 15. The shoulder 22 of the locking-bar will then be free of the side of the coupler 1, as is clearly shown by the full lines in Fig. II, and the coupling-pin 5 is free to be raised to release the coupling-hook 3, as is clearly shown by the dotted lines in the same figure. Now suppose that it is desired to lock the coupling-pin 5, so that it cannot be raised accidentally or otherwise to release the coupling-hook 3. That end of the locking-bar 12 which has the apertures 17 and 18 is raised to disengage the aperture 18 from the bottom of the slot 15 in the bracket 13. The locking-bar 12 is then moved in a longitudinal direction until the stud 19 strikes the bracket 13. The aperture 17 will now be in a position to engage the lower part of the bracket 13, and upon lowering the end of the bar the said aperture 17 will engage the lower part of the bracket 13 to prevent the accidental displacement of the said locking-bar. (See Fig. III.) It will now be seen that the shoulder 22 of the locking-bar 12 is underneath the coupler and that should the coupling-pin 5 tend to jump in its socket or should it be attempted to raise the said coupling-pin by force any movement of the said coupling-pin 5 would be effectually prevented by the striking of the shoulder 22 of the locking-bar 12 against the under side of the coupler.

The locking-bar 12 can be arranged to be operated from either side of the car by simply lengthening it on that side of the coupler which is opposite to the side on which are the brackets 13 and 14.

The advantages of my locking device are as follows: It can be used or not at will, it is easy to operate, it is simple in construction and has no complicated or hidden parts which could possibly get out of order, it can be easily attached to any car, and it can be easily adapted to any existing coupler.

While I prefer a construction of the various parts of my locking device similar to that indicated in the drawings, I do not confine myself to that construction, for it is manifestly possible to so alter the details of construction as to meet varying circumstances without changing the principle of the device.

Having now described my invention, what I claim, and desire to secure by United States Letters Patent, is—

1. In a coupler, the combination with a draw-head of a coupling-pin having a perforation adapted and arranged to receive a locking-bar, a locking-bar independent of the draw-head and arranged to operate independently of the operation of the coupler, and adapted and arranged to enter the perforation in the coupling-pin, and having a shoulder adapted to abut against the draw-head to lock the coupling-pin in position, substantially as described.

2. In a coupler, the combination with a draw-head of a coupling-pin having a perforation adapted and arranged to receive a locking-bar, a locking-bar independent of the draw-head and arranged to operate independently of the operation of the coupler, and having a part adapted to enter the perforation in the coupling-pin, and having a shoulder adapted and arranged to abut against the draw-head to lock the coupling-pin when the locking-bar is in one position, and adapted and arranged to clear the draw-head and so leave the coupling-pin free to be raised when the locking-bar is in another position, substantially as described.

3. In a coupler, the combination with a draw-head of a coupling-pin having in its lower end a perforation adapted and arranged to receive a locking-bar, the said perforation having a length only slightly in excess of the depth of that part of the locking-bar which engages in the perforation, a locking-bar having a part adapted to enter the perforation in the coupling-pin, and having a shoulder adapted and arranged to abut against the draw-head to lock the coupling-pin when the locking-bar is in one position, and adapted and arranged to clear the draw-head and so leave the coupling-pin free to be raised when the locking-bar is in another position, the said locking-bar also having apertures adapted and arranged to engage in perforations or apertures in a support to hold the locking-bar in place when it is in either that position in which it is when it operates to lock the coupling-pin, or that position in which it is when it leaves the coupling-pin free to be raised, substantially as described.

Signed by me, at Richmond city, Virginia, this 16th day of January, 1899.

JOHN O'BRIEN.

Witnesses:
H. W. STAMPER, Jr.,
ARTHUR SCRIVENOR.