

(No Model.)

O. C. BILLMAN.
CAR COUPLING.

No. 539,606.

Patented May 21, 1895.

Fig. 1.

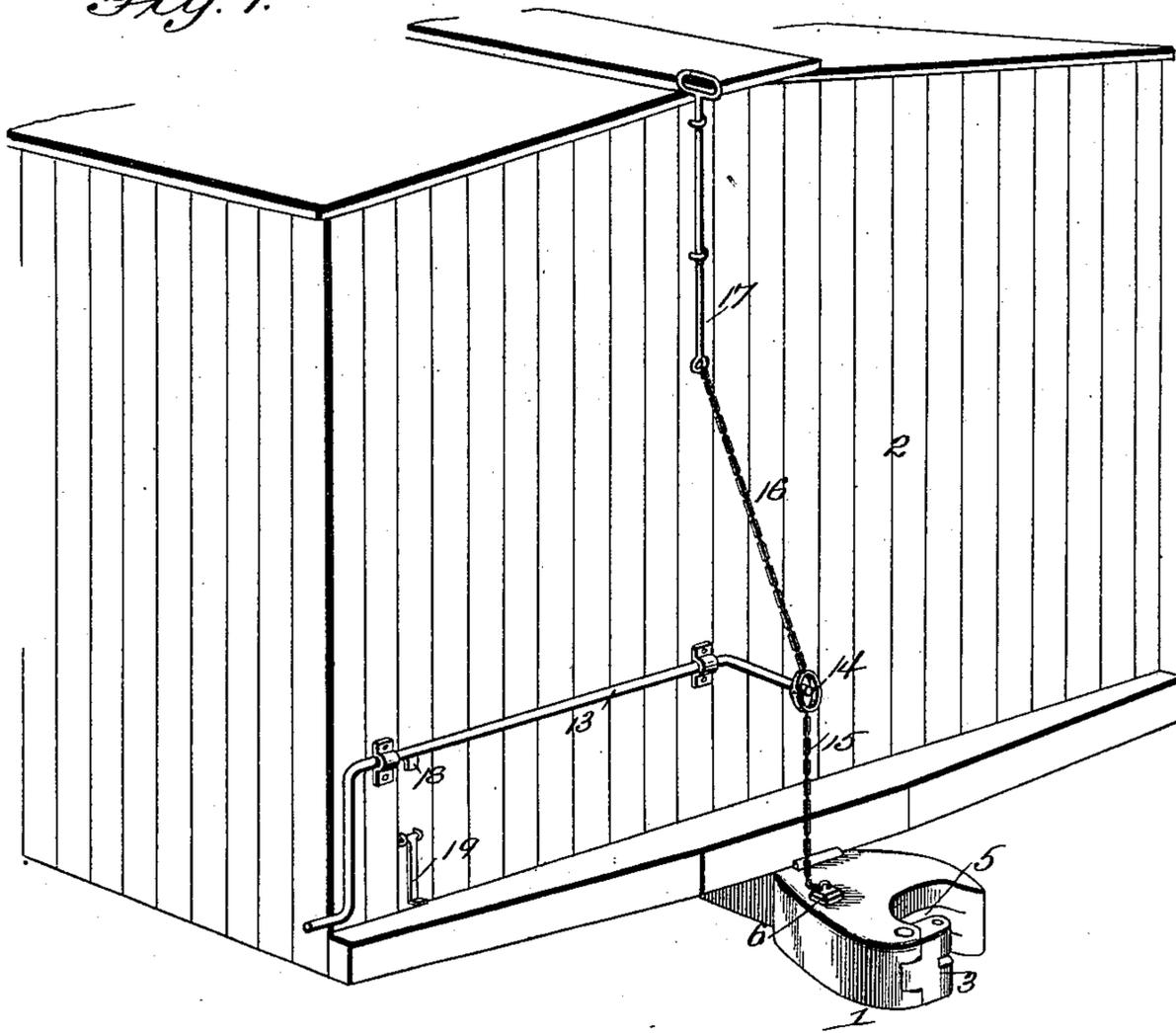


Fig. 2.

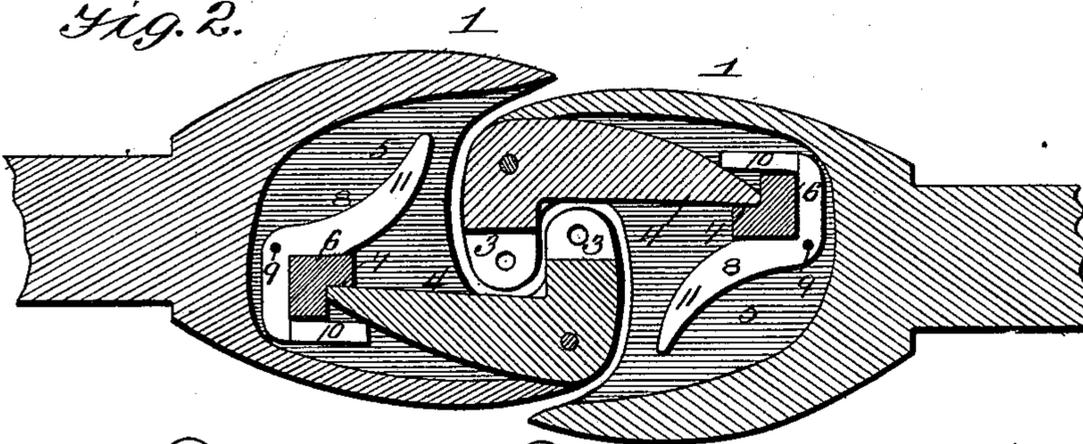


Fig. 4.

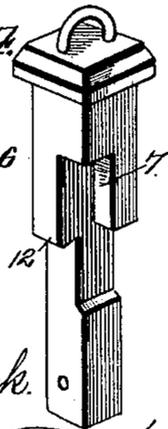


Fig. 3.

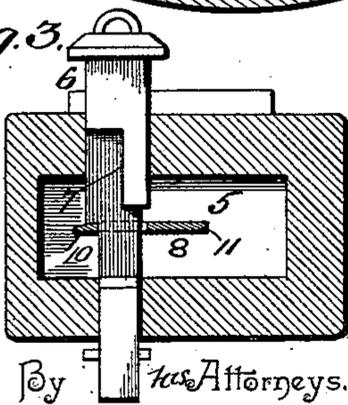
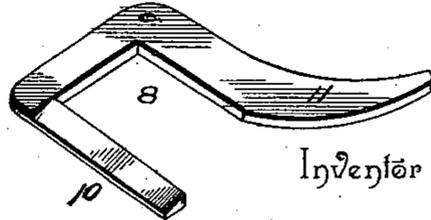


Fig. 5.



Witnesses

Joseph Stack.

J. H. Riley

By *[Signature]* his Attorneys.

Obed C. Billman

[Signature]

UNITED STATES PATENT OFFICE.

OBED C. BILLMAN, OF SMITHVILLE, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 539,606, dated May 21, 1895.

Application filed January 16, 1895. Serial No. 535,126. (No model.)

To all whom it may concern:

Be it known that I, OBED C. BILLMAN, a citizen of the United States, residing at Smithville, in the county of Wayne and State of Ohio, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car couplings.

The object of the present invention is to improve the construction of car couplings having a pivoted knuckle, and to provide an exceedingly simple and inexpensive one, which will possess great strength and durability, and which will be automatic both in the operation of coupling and in setting the parts for recoupling when uncoupled.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention and shown applied to a car. Fig. 2 is a horizontal sectional view, the parts being shown in the position they occupy when coupled. Fig. 3 is a transverse sectional view. Fig. 4 is a detail perspective view of the locking-pin. Fig. 5 is a similar view of the pin-support.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a draw-head, provided with a draw-bar and designed to be connected to a car 2 in the ordinary manner, and having pivoted to it a knuckle 3, which is provided with an arm 4 arranged to swing in a horizontal recess or cavity 5 of the draw-head. The knuckle operates similar to the knuckle of an ordinary Janney car coupling, and is provided with a perforation and slot, to enable it to be coupled to cars having the ordinary pin and link car coupling.

The knuckle is locked in its connected position, which it occupies when coupled, by a vertically movable locking pin 6, mounted in suitable openings in the top and bottom of the draw-head. The locking pin is provided at its front with a vertical shoulder 7, arranged to engage the end of the arm of the knuckle

and formed by a substantially L-shaped recess in the front face of the head. The pin is arranged within the opening of a substantially U-shaped pin support 8, pivoted horizontally in the draw-head by means of a vertical pin 9, and having its sides 10 and 11, which extend forward from the pivot, located at opposite sides or straddling the locking pin.

The side 10 of the substantially U-shaped pin support is arranged to engage a shoulder 12 of the adjacent side of the locking pin, to support the latter in an elevated position preparatory to automatic coupling; and the side 10 extends forward beyond the locking pin, and when the arm of the knuckle swings into the recess or cavity of the draw-head incident to coupling, it engages the side 10 and carries it out of engagement with the locking pin, thereby withdrawing the support from the locking pin and causing the same to fall, and the shoulder 7 to engage the arm of the knuckle to lock the latter rigidly in its closed position.

When it is desired to uncouple or open the knuckle, the coupling pin or locking pin is raised, and the knuckle is free to swing open, and in opening its arm engages the side 11 of the substantially U-shaped pin support, swinging the latter and causing the other side 10 to assume a position beneath the shoulder 12, whereby the operation of opening the knuckle automatically sets the parts for automatic coupling.

The side 11 of the pin support has its inner end slightly curved, and diverges from the other side forming a slight bevel, and permitting the arm of the knuckle to swing past it when the knuckle closes, in order to avoid any liability of the locking pin being accidentally released, and allowed to fall.

The shoulder 12 is inclined, and the side 10 of the pin support is set at a slight inclination transversely, to permit it to interlock partially with the inclined shoulder, to prevent the locking pin from falling accidentally, or of being released by any other means than the action of the arm of the knuckle.

The arrangement of the arm of the knuckle and the disposition of the substantially U-shaped pin support, causes the latter to receive its motion from, and be entirely actuated by the movement of the knuckle.

The operation of uncoupling is performed from the side of the car, by means of a transverse rock-shaft 13, disposed horizontally on one end of the car and journaled in suitable bearings thereof, and provided at its outer end with a depending crank handle, and at its inner end with an outward or forward extending arm, the handle being arranged to engage the end of the car, and to support the arm in its substantially horizontal position. The arm has its outer end arranged within and pivotally connected to a link 14, which is connected at the bottom by a chain 15, with the locking pin, and at its top by a chain 16 with a vertically movable operating rod 17, slidingly mounted in suitable guides of the car, and terminating at the top thereof in a handle loop. The chains provide a flexible connection between the arm of the rock-shaft and the locking pin and the operating rod; and the operation of uncoupling may be readily performed from the top or sides of the car.

If desired, the transverse rock-shaft may be extended entirely across the car, and any suitable means may be provided, whereby the operation of uncoupling may be performed from the platform of a coach, or the like.

The horizontal rock-shaft is provided near its outer end with a shoulder 18, arranged to be engaged by an upwardly swinging prop or brace 19, hingedly mounted below the rock-shaft and adapted to be swung upward to engage the shoulder, to support the locking pin in an elevated position to prevent coupling.

It will be seen that the car coupling is exceedingly simple and inexpensive in construction, that it possesses great strength and durability, and that it is doubly automatic in its operation. It will also be apparent that the pin support is unaffected by the weather, and does not depend upon the spring or an equivalent, in order to be actuated to perform its function, but that it receives all its motion from the knuckle, and is entirely dependent on the latter and responds to the opening and closing movement of the same. Furthermore, the parts are arranged so as to be protected from injury, and in event of the breakage of any part, it may be readily removed, and a new piece may be quickly substituted.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. In a car coupling, the combination of a draw-head, a knuckle pivoted to the draw-head and having an arm, a locking pin arranged to engage the arm and retain the knuckle in its closed position, and a pivotally mounted pin support having opposite sides straddling the locking pin, and arranged to be engaged alternately by the arm of the knuckle, one of the arms being arranged to support the locking pin in an elevated position, substantially as described.

2. In a car coupling, the combination of a draw-head, a pivoted knuckle having an arm, a locking pin arranged to engage the arm of the knuckle and provided with a shoulder, and a pin support pivotally mounted in the draw-head and having opposite sides straddling the locking pin, one of the sides being arranged to be engaged by the arm of the knuckle to throw it out of engagement with the locking pin, and the other arm being arranged to be engaged by the arm of the knuckle, whereby the pin support is carried in position to engage the locking pin when the knuckle is open, substantially as described.

3. In a car coupling, the combination of a draw-head, a knuckle pivoted thereto and having an arm, a vertically movable locking pin mounted on the draw-head and provided at its front with a shoulder to engage the arm of the knuckle and having at its side an inclined shoulder, and an approximately U-shaped pin support pivotally mounted in the draw-head and arranged horizontally and straddling the locking pin and having one side inclined to interlock with the inclined shoulder, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OBED C. BILLMAN.

Witnesses:

HAMILTON R. BLACKBURN,
JAMES D. MCKEE.