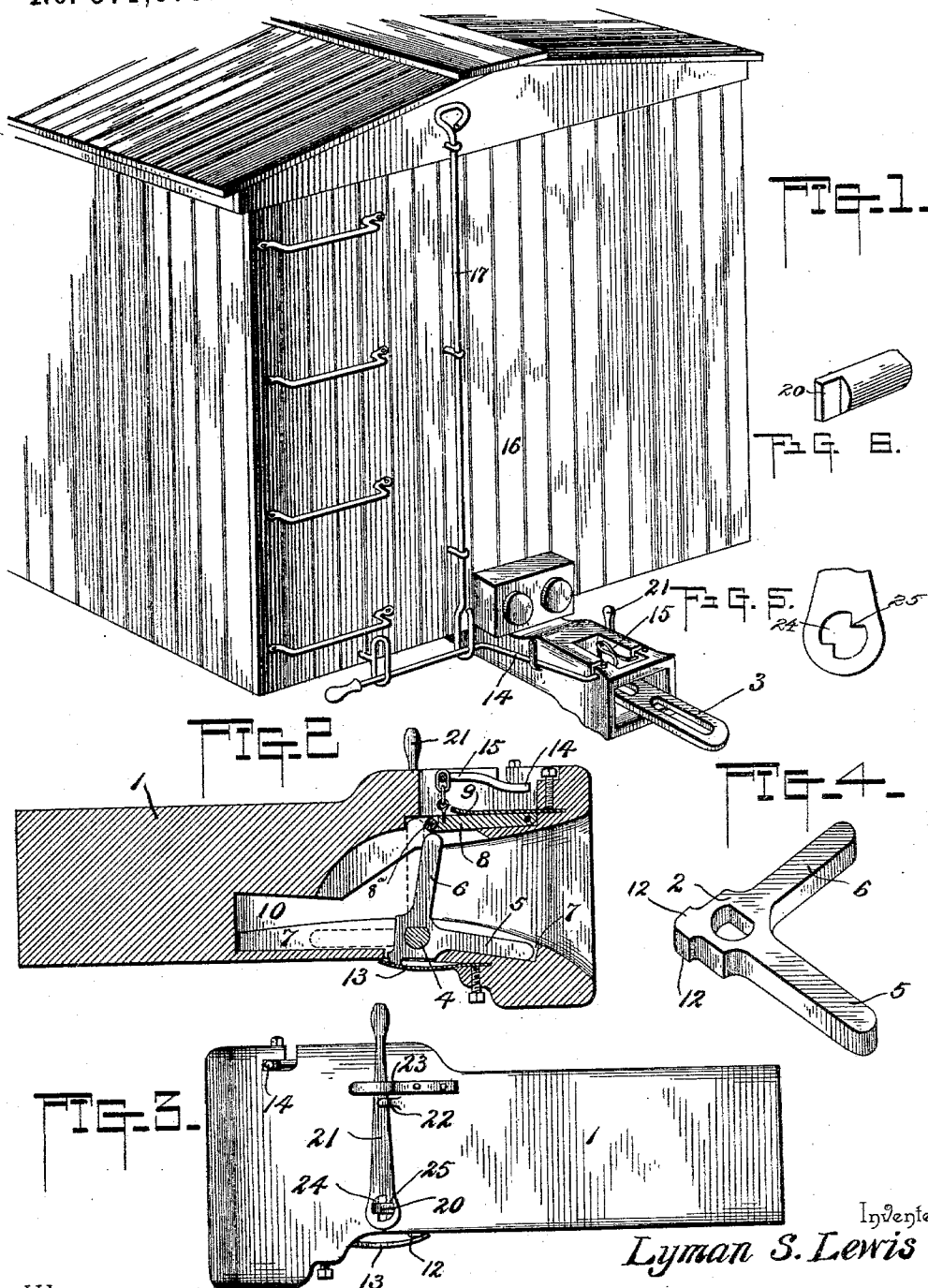


(No Model.)

L. S. LEWIS.
CAR COUPLING.

No. 571,673.

Patented Nov. 17, 1896.



Witnesses

A. M. Doughton
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UNITED STATES PATENT OFFICE.

LYMAN S. LEWIS, OF GUTTENBERG, IOWA, ASSIGNOR OF ONE-HALF TO
WILLIAM L. KORDS, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 571,673, dated November 17, 1896.

Application filed July 22, 1896. Serial No. 600,143. (No model.)

To all whom it may concern:

Be it known that I, LYMAN S. LEWIS, a citizen of the United States, residing at Guttenberg, in the county of Clayton and State of Iowa, 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 and to provide a simple, inexpensive, and efficient one, capable of coupling automatically and adapted to be readily uncoupled from the tops and sides of cars without going between them.

A further object of the invention is to provide an automatic car-coupling which will be adapted to couple automatically with the various kinds of car-couplings that are capable of coupling with a link and to provide the necessary play to permit two draw-heads to come together and relieve a coupling-link of strain.

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. Fig. 2 is a central longitudinal sectional view, the catch being set for automatic coupling in full lines and swung backward for coupling in dotted lines. Fig. 3 is a side elevation of the draw-head, illustrating the construction of the lever for manipulating the catch to set it for automatic coupling. Fig. 4 is a detail perspective view of the L-shaped catch. Fig. 5 is a detail view of a portion of the catch-setting lever, showing the opening thereof. Fig. 6 is a detail of the end of the shaft or pin which is arranged in the opening of the catch-setting lever.

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

1 designates a draw-head having a longitudinal link-opening and having mounted in it a substantially L-shaped catch 2, adapted

to engage a link 3, and capable of coupling automatically with the same when the link enters the draw-head. The substantially L-shaped catch is pivoted at its angle at the bottom of the draw-head by a transverse pin 4, and it consists of arms 5 and 6. The arm 5, which is arranged in advance of the arm 6, is adapted to couple with the link, and when the catch is set for automatic coupling it is arranged in a groove 7 of the bottom of the draw-head and has its upper face below the upper face of the same in order to afford no obstruction to the link when the latter enters the draw-head. When the arm 5 is arranged horizontally in the groove at the bottom of the draw-head, the other arm, 6, is disposed vertically in position to be engaged by the link, whereby the link in moving inward into the draw-head will swing the catch backward, carrying the arm 5 upward into engagement with the link.

The arm 5, which couples with the link, is locked in a vertical position in engagement with the same by a spring-actuated locking device 8, consisting of a horizontally-disposed bar or body pivoted at its front or outer end in a longitudinal slot of the draw-head and having its rear or inner end arranged to engage the arm 5 of the catch. As the arm 5 swings upward it engages the lower face of the locking device 8 and lifts the same against the action of the spring 9, and as soon as the arm passes in rear of the locking device 8 the latter drops in front of the arm and retains the catch in engagement with the link. The spring 9, which may be mounted in any suitable manner, is located above the bar or body 8 of the locking device, and is preferably secured at its front or outer end to the draw-head by a screw or other suitable fastening device. The locking device 8 has its engaging end bifurcated and provided with an antifricition-roller 8^a to facilitate its engagement with the arm 5 of the L-shaped catch 2 and to enable it to drop readily into such engagement. This antifricition-roller also greatly facilitates the operation of uncoupling, and enables the locking device to be readily swung upward out of engagement with the arm 5 even when there is a strain on the catch, there-

by enabling a car to be readily cut off from a train when the latter is in motion.

When the catch is in engagement with the link, its arm 6 extends rearward or inward from the transverse pin 4 and is received in the rear or inner portion of the groove 7 of the bottom of the draw-head, and has its upper face below the upper face of the latter. The rear or inner portion of the longitudinal opening of the draw-head is reduced and forms a socket 10 for an end of the link, and the socket may be made of any desired length to provide the necessary play to permit two draw-heads to come together to relieve the link of strain.

The catch is provided at its angle with straight faces or heels 12, which are engaged by a spring 13, whereby the catch is held against accidental movement and is retained in position for automatic coupling. The spring 13 is secured to the bottom of the draw-head in a slot or opening thereof. The locking device 8 is lifted to release the catch and effect the operation of uncoupling by a rock-shaft 14, journaled on the top of the draw-head and provided with an arm 15, arranged in a recess or seat thereof and connected with the locking device by a chain. The rock-shaft is provided at one side of the draw-head with an L-shaped arm which extends inward or rearward a short distance and then extends to one side of a car 16, forming a handle to enable the locking device to be readily lifted.

The operation of uncoupling is performed from the top of the car by an operating-rod 17, arranged in suitable guides, provided at its upper end with a handle and having at its lower end a loop 18, receiving the laterally-disposed portion of the L-shaped arm of the rock-shaft. The longitudinally-disposed portion of the L-shaped arm of the rock-shaft is arranged adjacent to the side of the draw-head, and the latter is provided with a support 19 to receive the same.

The link 3 is provided with a solid central portion, and it has a longitudinal opening at each end adapted to be engaged by the L-shaped catch.

In order to enable the L-shaped catch to be set for automatic coupling in event of it being swung rearward by persons tampering with the car-coupling, the pin 4 is provided with a flat head 20, and a catch-setting lever 21 is arranged at one side of the draw-head and is adapted to engage the head of the pin 4. The lever, which is retained in a keeper 22 by a spring 23, is provided with an opening 24 to receive the head 20 of the pin 4, and it has shoulders 25 at opposite sides of the opening. The opening, which is composed of two substantially quadrant-shaped portions, permits the pin to have a free quarter-turn necessary for the operation of the catch, and when the latter is swung rearward the head 20 is arranged vertically, as illustrated in dotted lines in Fig. 3 of the accompanying

drawings. When the head is in this position, the catch can be set for automatic coupling by swinging the lever 21 downward, and the lever may then be returned to a vertical position without moving the pin 4.

The keeper 22, which is disposed horizontally, is substantially L-shaped, and the spring 23 has its outer portion curved to embrace the lever, and its outer terminal is bent laterally to enable the spring to be readily engaged by the lever.

It will be seen that the car-coupling is exceedingly simple and inexpensive in construction, that it is positive and reliable in operation, and that it is capable of automatic coupling and of being readily uncoupled from the tops and sides of cars without going between them. It will also be apparent that it is capable of coupling with the ordinary pin-and-link coupling and with all kinds of car-couplings which makes provision for coupling with the ordinary pin-and-link car-coupling.

Changes in the form, proportion, and 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 substantially L-shaped catch pivoted at its angle to the draw-head at the bottom thereof and having one arm arranged to couple with the link, and its other arm adapted to be engaged by the link, whereby the said arm is swung upward automatically, a spring-actuated locking device located at the top of the draw-head, pivoted at its front or outer end to the same and adapted to engage the catch automatically, a rock-shaft mounted on the draw-head and having an arm connected with the locking device, said rock-shaft being provided at the side of the draw-head with an L-shaped arm forming a handle, and an operating-rod designed to extend to the top of the car and provided at its lower end with a loop receiving the outer portion of the L-shaped portion of the rock-shaft, substantially as described.

2. In a car-coupling, the combination of a draw-head, a transverse pin passing through the draw-head at the bottom thereof and provided at one end with a flat head, an L-shaped catch pivoted at its angle to the draw-head at the bottom thereof by the said pin, and fixed to the latter, a lever arranged on the exterior of the draw-head and provided with an opening receiving the head of the pin and having opposite shoulders adapted to engage the same, and means for holding the lever in position on the draw-head, substantially as described.

3. In a car-coupling, the combination of a draw-head, a transverse pin passing through the draw-head, a catch mounted on the transverse pin, and an operating-lever having an

opening receiving the pin, said opening being
composed of two substantially quadrant-
shaped portions adapted to permit the pin to
have a free quarter-turn independent of the
5 lever, substantially as and for the purpose
described.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature
in the presence of two witnesses.

LYMAN S. LEWIS.

Witnesses:

JOHN H. SIGGERS,
WILLIAM C. LEWIS.