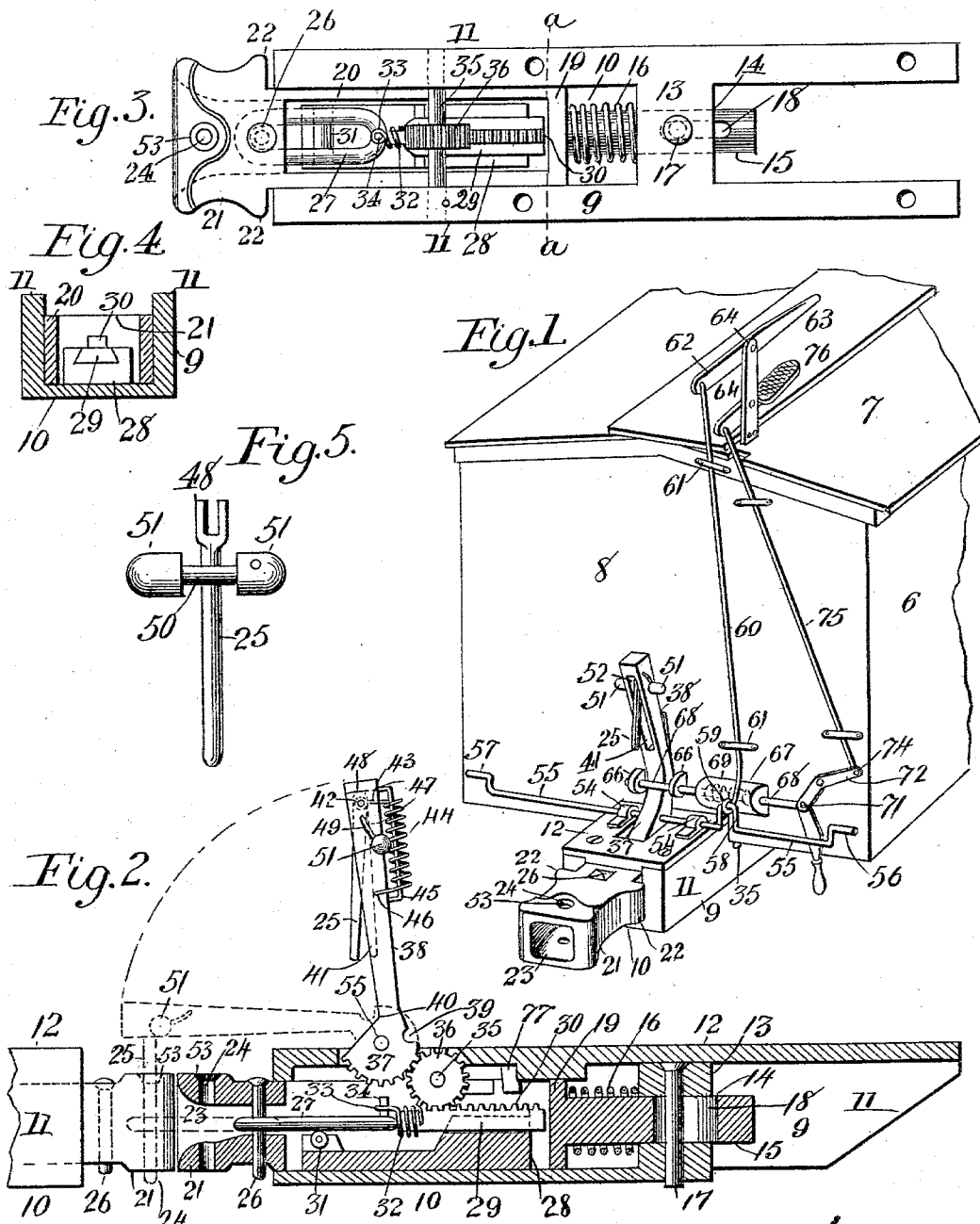


(No Model.)

G. SMEDEMAN.
CAR COUPLING.

No. 559,871.

Patented May 12, 1896.



Witnesses:

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GUSTAF SMEDEMAN, OF WASHBURN, WISCONSIN, ASSIGNOR OF ONE-HALF
TO SIVERT E. SWANSON, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 559,871, dated May 12, 1896.

Application filed January 14, 1896. Serial No. 575,478. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF SMEDEMAN, a subject of the King of Sweden, residing at Washburn, in the county of Bayfield and State of Wisconsin, have invented certain new and useful Improvements in Car-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in car-couplings of the class employed on regular railroad-cars.

The main objects of my invention are to provide a car-coupling that may be coupled and uncoupled from the top and sides of any of the two cars that are to be coupled together and which may be coupled to the old common link-and-pin coupling when so required. These and other objects I attain by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a box-car with my coupling applied to it. Fig. 2 is a longitudinal vertical section of the coupling in Fig. 1 with a portion of the draw-head from the opposite car shown as butting against it. Fig. 3 is a top view of the coupling with its cover removed in order to view the interior. Fig. 4 is a cross-section on the line *a a* in Fig. 3. Fig. 5 is a detail view showing how a weight acts against the side of the coupling-pin.

Referring to the various parts by reference-numerals, 6 designates a box-car, of which 7 is the roof, and 8 the end. Suitably secured up under the end of the car is a box-like contrivance or socket 9, of which 10 is the bottom, 11 the sides, and 12 the top or cover, which may be removably secured by screws or cast integral with the socket. Near the rear end of the socket is provided the heavy partition or cross wall 13, having a central horizontal hole 14, in which slides the round rear end of the draw-bar 15 19 20, which is normally held in a forward position by the

spring 16, and retained by the stationary pin 17, passed through the cross-bar 13 and the slot 18 in the draw-bar, and further by the lug 77 of the cover of the socket, which touches against the wall 19 of the yoke-shaped draw-bar. As already indicated, the draw-bar is in front of the spring 16, formed into a yoke 19 20, having no top or bottom, but the side bars 20, which unite in the draw-head 21. The latter is provided with the stopping-shoulders 22, the regular link-receiving throat 23, and the hole 24 for the coupling-pin 25 to enter. Each draw-head contains permanently a link 27, inside of which is fixed in the draw-head the pin 26 some distance back of the pin-hole 24.

Inside of the yoke 19 20 is secured upon the bottom 10 of the socket 9 a guiding-block 28. (Best shown in Fig. 4.) In the upper side of the rear portion of this block is dovetailed a sliding rack-bar 29, having the teeth 30 at its upper side, while the front end of the block is provided with a friction-roller 31, upon which the link 27 moves. To the front end of the rack-bar 29 is secured a short coil-spring 32, of which the front end 33 is pivotally secured upon the upwardly-projecting pin or stud 34, formed at the rear end of the link 27. In the side walls of the socket 9 is secured a transverse shaft or pin 35, upon which revolves between collars (not shown) the pinion 36, the teeth of which engage the teeth of the rack-bar 27 and of the wheel-section 37, from which extends the pin-lifting arm 38, having the notches 39 and 40, and in its front side a groove 41, in which the coupling-pin 25 is housed when not in use.

44 is a coil-spring, which is carried on a staple-shaped guiding-bar 45 and secured at its rear end 46 to the arm 38, while its front end is extended down through a slotted hole 47 in said arm and pivotally connected in the slotted top end 48 of the pin 25, which is thereby suspended in a manner allowing it to swing back and forth on its pivot and to be moved backward and forward as much as the relative motion of the draw-heads may require after they are coupled together.

49 are oblique slots in the side walls of the arm 38. Through these slots extends the narrow portion 50 (see Fig. 5) of a weight 50 51,

which, when the arm 38 is raised, moves away from the link-pin 25, and when said arm is lowered, as shown in dotted lines in Fig. 2, the weight rolls down the inclined slots and bearing against the rear side of the link-pin 5 holds it against the front end wall 52 of the pin-house 41 in a transverse position to the arm, so as to make its lower end come within the flaring top portion 53 of the hole 24, and be guided down into the hole when the arm 38 descends.

Upon the top of the socket 9 are provided two journal-boxes 54, in which is journaled the rock-shaft 55, which is rigidly secured in the arm 38, and is provided with the end cranks 56 and 57 and the intermediate crank 58, which is connected to the lower end of the rod 60, which slides in the guides 61 and extends to the top of the car, where its upper end is pivotally connected to the front end 62 of a hand-lever 63, pivoted at 64 to the upright 65, secured to the roof of the car.

Upon the front end wall 8 of the car are secured the two brackets 66, through which and through the rigid spring-house 67 extends the sliding locking-bolt 68, which, by means of the coil-spring 69 in the spring-house 67, is normally pushed toward the arm 38, of which it may engage either of the two notches 39 and 40, and thus hold the arm 38 locked in either the raised or lowered position. The locking-bolt 68 may be retracted from the arm 38 either by the hand-lever 69, fulcrumed at 70 and having its upper end pivotally secured at 71 to the outer end of the bolt 68, or by the bell-crank lever 72, pivoted at 73 and having its lower end pivoted at 71 to the bolt 68 and its upper end 74 operated by the rod 75, which is pivotally secured with its upper end to a foot-lever 76, located on the top of the car.

In operation, when the rock-shaft 55 is rocked or turned by the cranks 56 or by the crank 58, rod 60, and hand-lever 63, the arm 38 and link-pin 25 are raised and the cars uncoupled. The arm 38 is retained in its raised position by allowing the slide or locking bolt 68 to be moved by its spring 59 in front of the arm, as shown in Fig. 1. The raising of the arm 38 causes the gear-section 37 to revolve the pinion 36, whereby the rack 29 and the link 27 are retracted so that the throat of the draw-head is ready to receive a link from the opposite draw-head if the operator should happen to be on that car when the next coupling is to take place. To couple the cars together, the operator, if standing on the ground, pushes on the lever 69, so as to retract the bolt 68, then he lowers the arm 38 and pin 25 by means of the crank 56, and finally lets go of the lever 69, so that the spring-pushed bolt 68 slips into the notch 39 and prevents the arm 38 from swinging up and down when the cars move over joints and other unevenness of the tracks. If the operator is on the top of the car, the bolt 68 and rock-shaft 55 are similarly operated by the rods 60 and 75,

and the levers 63 and 76, arranged as shown upon the top of the car, within easy reach of the hand and foot of the operator. The lowering of the arm 38 causes the pinion 36 to revolve and move the rack 29, so that the link 27 is thereby pushed partly over into the opposite draw-head and receives the pin 25, as shown in dotted lines in Fig. 1. It will thus be understood that the cars are drawn by one of the rigid pins 26 and one of the coupling-pins 25, and that the draw-bar pulls on the pin 17 and partly on the lug 77, which projects downwardly from the cover or upper side of the socket 9 and engages the front side of the cross-bar 19 of the draw-bar. The arm 38, link 27, and all their intermediate mechanism always remain idle on one of the cars when the same parts of the adjacent car are in use. The crank 57 may be dispensed with, as the operator appearing near it may use the crank 56 and lever 69 of the next car. It will also be understood that the entire mechanism of my coupling may couple to an ordinary old-style draw-head by using my link and pin, or, if so desired, the old link and pin may be used and mine left in the idle position.

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

1. A car-coupling comprising a socket as 9, adapted to be secured up under the end of the car; a draw-head having shoulders as 22, butting against the front end of the socket, the pin-hole 24, near its front end, and the rigid pin 26, a short distance back of said hole, and a yoke-shaped draw-bar extending from said draw-head through the socket and being yieldingly retained therein, against the force of a coil-spring as 16, placed upon the rear portion of the draw-bar, by a rigid pin as 17, passed through a cross-wall in the pocket and an elongated hole in the draw-bar, and further by a projection of the socket extending into the yoke-shaped part of the draw-bar, the rack 29, sliding in a guide projecting from the bottom of the socket, within the yoke of the draw-bar, the sliding link 27, spring connected to the front end of the rack; the pinion 36, engaging the rack, and the wheel-section 37, meshing with the pinion, and the pin-lifting arm 38, extending from said wheel-section, and having the coupling-pin 25 suspended from near its free end by a spring connection; the weight 50, 51, moving in an oblique slot in the bar 38, and serving to steady the pin when it approaches the hole in the coupling, said arm 38, being of sufficient length to place the pin 25, in the pin-hole 24, of the draw-head of the next car, and the link 27, being long enough to embrace said pin in said place, and the rigid pin 26 in the draw-head where the link permanently belongs, and means for operating and locking said arm 38, both in a raised and a lowered position, all constructed and arranged, substantially as shown and described.

2. In a car-coupling the combination of the
rock-shaft 55, journaled across the coupling
and having hand-cranks at its ends and the
intermediate crank 58, and the pin-lifting arm
5 38, secured upon it, the rod 60, extending
from the crank 58, to above the roof of the
car; the hand-lever 62, pivoted to a post as
64, fixed upon the top of the car, and operat-
ing the rod 60; the foot-lever 76 also pivoted
10 to the post 64, the rod 75 extending down-
wardly therefrom, the bell-crank lever 72, op-
erated by said rod 75, the spring-pushed lock-

ing-bolt 68, pivoted thereto, and engaging the
arm 38, so as to lock it in either its raised or
lowered position, and the hand-lever 69, ful- 15
crumed to the car near its corner and oper-
ating the locking-bolt, substantially as and
for the purpose set forth.

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

GUSTAF SMEDEMAN.

Witnesses:

L. N. CLAUSEN,
S. E. SWANSEN.