(No Model.) 2 Sheets—Sheet 1.

T. H. WALSH.

CAR COUPLING.

No. 585,323. Patented June 29, 1897.

Fig. 1.

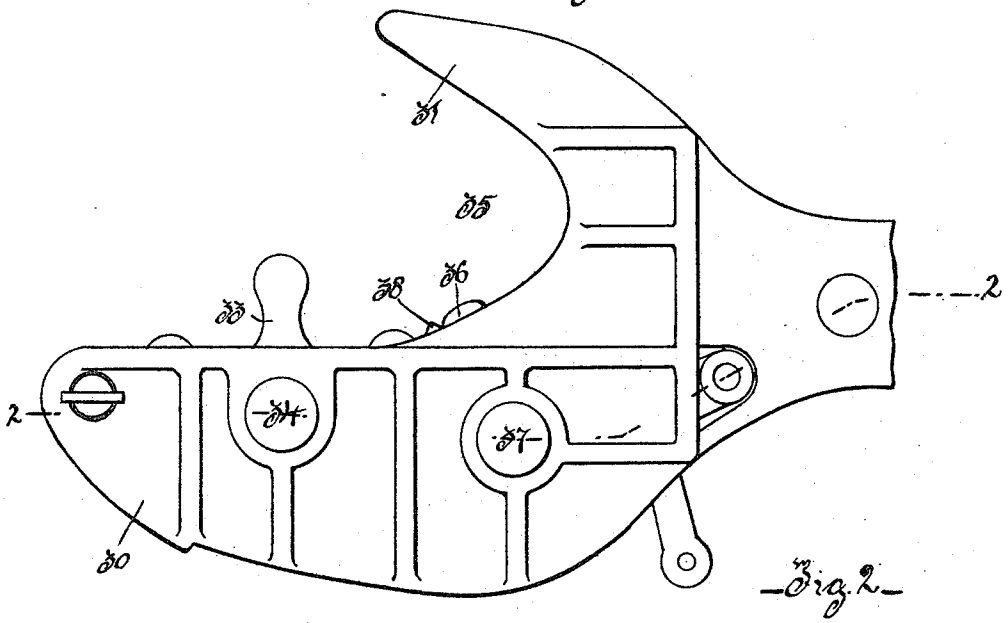
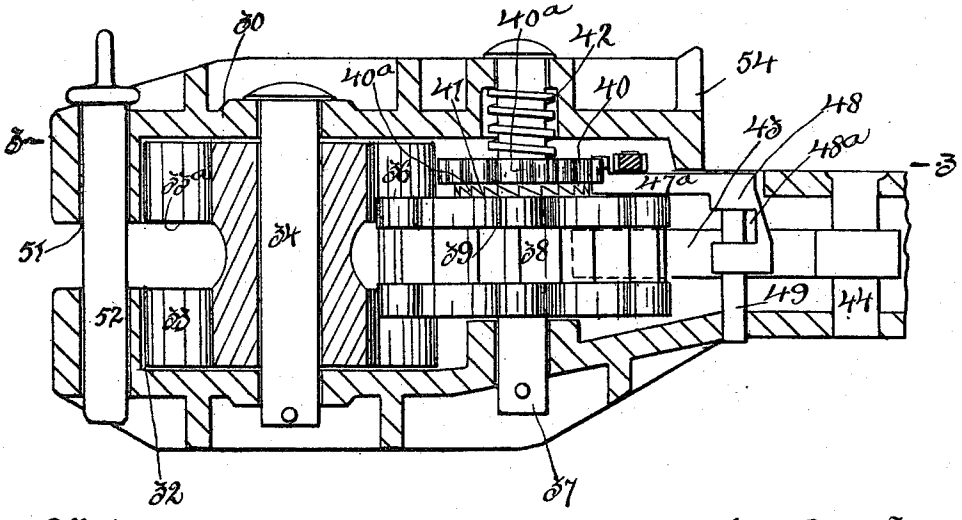


Fig. 2.



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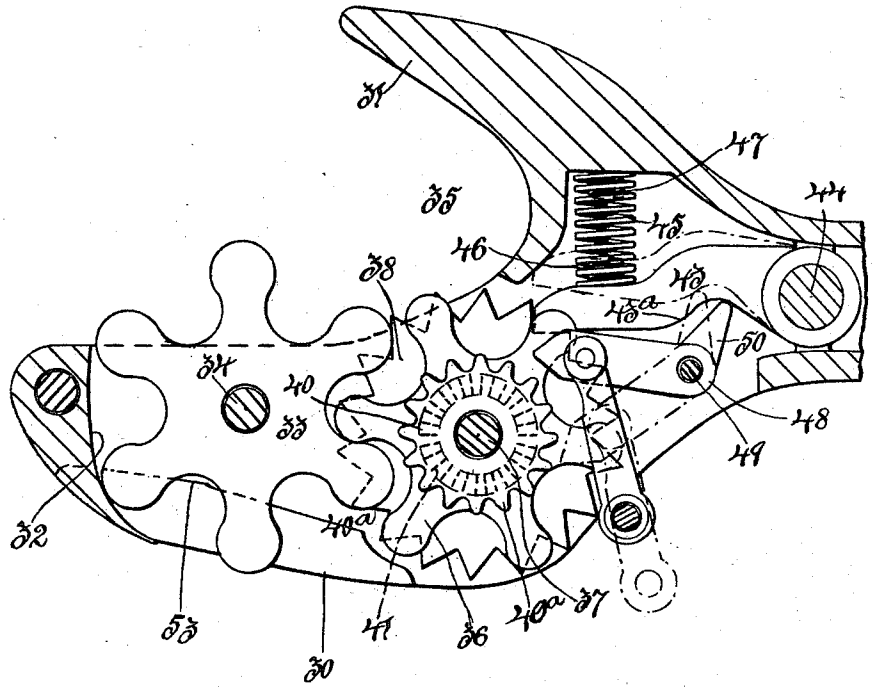
(No Model.) 2 Sheets—Sheet 2.

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CAR COUPLING.

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Fig. 3



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UNITED STATES PATENT OFFICE.

THOMAS HERMAN WALSH, OF MONTREAL, CANADA, ASSIGNOR TO JOSEPH ROWAT FAIR AND WINFIELD M. PERRIN, TRUSTEES, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 585,323, dated June 29, 1897.

Application filed February 16, 1897. Serial No. 623,751. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HERMAN WALSH, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to couplers of the automatically-coupling vertical-plane type illustrated and described in Letters Patent of the United States granted to me under No. 547,747 on the 8th day of October, 1895; and the object thereof is to so improve the construction thereof as to enable the coupler therein illustrated and described to be manufactured at a greatly-reduced cost, and when constructed to be simpler, more efficacious, and more durable than car-couplers heretofore known.

For full comprehension of the invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the same parts, and wherein—

Figure 1 is a plan view of my improved coupler; Fig. 2, a longitudinal vertical sectional view thereof, taken on line 2 2, Fig. 1; Fig. 3, a transverse horizontal sectional view taken on line 3 3, Fig. 2.

The draw-bar will be formed with a head 30 and an arm 31. The head has a horizontal chamber 32, in which and near the forward end thereof a double lug-roll 33, having a space 33^a between its lug-roll sections, is retained by being mounted loosely upon a vertical spindle 34, carried in bearings formed by perforations near the inside edge of the head, in order that the teeth of the lug-roll will project laterally into the recess 35 between such head and arm, which recess receives a corresponding head of a like coupler, and by the intermeshing of the lug-roll in one coupler-head with the lug-roll in the other the coupling is effected, as is hereinafter fully set forth.

The means for holding the interlocking lug-rolls in position against rotation in the direction tending to their uncoupling, after having been coupled, consists of a double gear-wheel 36, located in rear of the lug-roll 33 within the chamber 32, and is adapted to have its teeth intermesh with the teeth of such lug-roll. This gear-wheel is mounted loosely upon a vertical spindle 37, carried in bearings formed by perforations in the head 30, and a circular ratchet-toothed rack 38 is formed intermediate of the sections of such double gear-wheel, integral therewith, and corresponding in circumference with the outside of the teeth thereof, while the upper face of the upper section of this gear-wheel is formed with a circular horizontally-ratchet-toothed section 39.

A clutch-block 40, having a ratchet-toothed periphery 40^a, is mounted loosely above the double gear-wheel 36 upon the spindle 37 and has its under side formed with horizontal ratchet-teeth 41, adapted to engage the ratchet-teeth 39, a coiled spring 42, coiled about the upper portion of spindle 37, keeping the ratchet-teeth of the clutch-block and double gear-wheel normally in engagement.

A pawl 43, having its forward end engaging the ratchet-teeth of rack 38 and its side adjacent to such rack provided with a shoulder 43^a, is mounted upon a spindle 44, mounted near the forward end of the shank of the draw-bar, and such forward end of the pawl is kept normally in engagement with such teeth by means of a coiled spring 45, bearing between the frame of the head and the pawl and taking at one end over a lateral localizing projection 46 from the opposite side of the pawl to that upon which shoulder 43^a is formed and at its other end over a localizing projection 47 upon the frame of the head. A second pawl 47^a, formed with an elongated hub-section 48 (preferably cut away, as at 48^a, to reduce its weight) and mounted loosely upon a spindle 49, carried in the frame of the head, is adapted to engage the ratchet-teeth 40^a of the clutch-block, while the elongated hub-section has an arm 50 formed integrally with the lower end thereof and extending laterally in the direction of the pawl 43 and adjacent to and in position to engage the shoulder 43^a of such pawl. A link 60, whereby this pawl 47^a may be operated, is pivotally connected at one end to said pawl, while the

other end thereof projects through an opening in the adjacent side of the head.

The space 35 between the sections of the lug-roll 33 is adapted to serve the double purpose of accommodating the rack 38 and providing a space to allow of a link (when a link and pin are to be used in coupling) being inserted in an opening 51, formed in the face of the head, where it can be retained by inserting a coupling-pin 52 into vertical perforations formed in the nose of the head, and this recess further accommodates a brace or support in the form of a rib 53, which extends inside of chamber 32 from the nose of the coupler-head rearwardly to a point about midway of the length of such head.

This embodiment of my invention is preferably provided with a vertical buffing portion 54. The operation thereof is as follows: To connect two cars provided with couplers constructed according to my invention, the cars are run together, and the lug-rolls in the coupler-heads will, as before mentioned, intermesh with one another. Each of said lug-rolls is held against rotation in the opposite direction (*i. e.*, in a direction tending to the uncoupling of the cars) by means of the double gear-wheel 36, adapted, as before mentioned, to have its teeth intermesh with the teeth of said lug-roll, this gear-wheel being held against rotation by the pawl 43. In order to disengage these couplers from one another, the pawl 47^a should be moved away from said pawl 43, (preferably by means of the link 60,) thus causing the arm 50 of said pawl to bear upon the shoulder 43^a and move the end of said pawl out of engagement with the teeth of the circular rack 38, thus freeing the lug-roll and allowing same to rotate in a direction to free the lug-roll of the other head, whether said last-mentioned lug-roll rotates or not. While this pawl 47^a is being moved it will engage the teeth 40^a of and rotate the clutch-block 40, which, as is obvious, will slip into operative connection with the upper face of the gear-wheel 36 and said pawl 47^a be caused to bear upon said teeth 40^a by the pressure of the spring 45 through the pawl 43 and the arm 50 of said pawl 47^a, thus adapting said pawls 43 and 47^a to assume their normal positions and the pawl 47^a to engage the gear-wheel and retain same against rotation in a direction tending to the uncoupling of the cars.

What I claim is as follows:

1. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device rotatably mounted in said head; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to engage said rotary engaging device; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls.

2. In a car-coupler, a draw-bar terminating in a head a rotary engaging device rotatably mounted in said head; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack, all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to engage said rotary engaging device; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-roll, and means for disengaging said pawl from said rack, for the purpose set forth.

3. In a car-coupler, a draw-bar terminating in a head a rotary engaging device rotatably mounted in said head; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to engage said rotary engaging device; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls; means for disengaging said pawl from said rack, and means for automatically causing the engagement of said pawl and said rack, for the purpose set forth.

4. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device rotatably mounted in said head; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to engage said rotary engaging device; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls; a horizontally-ratchet-toothed section formed integral with the upper surface of said double gear; a vertically-movable clutch-block adapted to engage and be held yieldingly in engagement with said horizontal ratchet-teeth; means for holding said clutch-block yieldingly in engagement with said ratchet-teeth; ratchet-teeth formed upon the periphery of said clutch-block; a pawl adapted to engage the said last-mentioned ratchet-teeth; an elongated hub-section taking loosely over a spindle mounted in the head, said hub being formed integral with said last-mentioned

pawl; an arm formed integral with said hub-section and extending laterally in the direction of and adapted to engage said last-mentioned pawl, for the purpose set forth.

5. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device rotatably mounted in said head, and consisting of a double lug-roll with a space between the lug-roll sections thereof said space being maintained by means of a hub-section connecting said lug-roll sections together; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to intermesh with said double lug-roll; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls.

6. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device rotatably mounted in a chamber in said head and consisting of a double lug-roll with a space between the lug-roll sections thereof, said space being maintained by means of a hub-section connecting said lug-roll sections together; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack, all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to intermesh with said double lug-roll; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls, and means for disengaging said pawl from said rack, for the purpose set forth.

7. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device consisting of a double lug-roll with a space between the lug-roll sections thereof, said space being maintained by means of a hub-section connecting said lug-roll sections together, rotatably mounted in said head; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to intermesh with said double lug-roll; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls, means for disengaging said pawl from said rack and means for automatically causing the engagement of said pawl and said rack, for the purpose set forth.

8. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device rotatably mounted in a chamber in said head and consisting of a double lug-roll with a space between the lug-roll sections thereof, said space being maintained by means of a hub-section connecting said lug-roll sections together, a horizontal brace extending inside of said chamber from the nose of said head rearwardly to a point midway of the length of said head, said brace being accommodated by the space between said lug-roll sections; a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack, all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to intermesh with said double lug-roll; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls, and means for disengaging said pawl from said rack, for the purpose set forth.

9. In a car-coupler, a draw-bar terminating in a head; a rotary engaging device rotatably mounted in said head, and consisting of a double lug-roll with a space between the lug-roll sections thereof, said space being maintained by means of a hub-section connecting said lug-roll sections together, a rotary locking device comprising a double gear-wheel and a circular ratchet-toothed rack, all formed integral with one another, the gear-wheel sections corresponding with one another and being located one on either side of said ratchet-toothed rack and adapted to intermesh with said double lug-roll; a pawl fulcrumed in the head of the coupler and adapted to be held normally in engagement with said ratchet-toothed rack to retain said gear and lug-roll against rotation in a direction tending to the uncoupling of the lug-rolls; a horizontally-ratchet-toothed section formed integral with the upper surface of said double gear; a vertically-movable clutch-block adapted to engage and be held yieldingly in engagement with said horizontal ratchet-teeth; means for holding said clutch-block yieldingly in engagement with said ratchet-teeth; ratchet-teeth formed upon the periphery of said clutch-block; a pawl adapted to engage the said last-mentioned ratchet-teeth; an elongated hub-section taking loosely over a spindle mounted in the head, said hub being formed integral with said last-mentioned pawl; an arm formed integral with said hub-section and extending laterally in the direction of and adapted to engage said last-mentioned pawl, for the purpose set forth.

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