

No. 737,673.

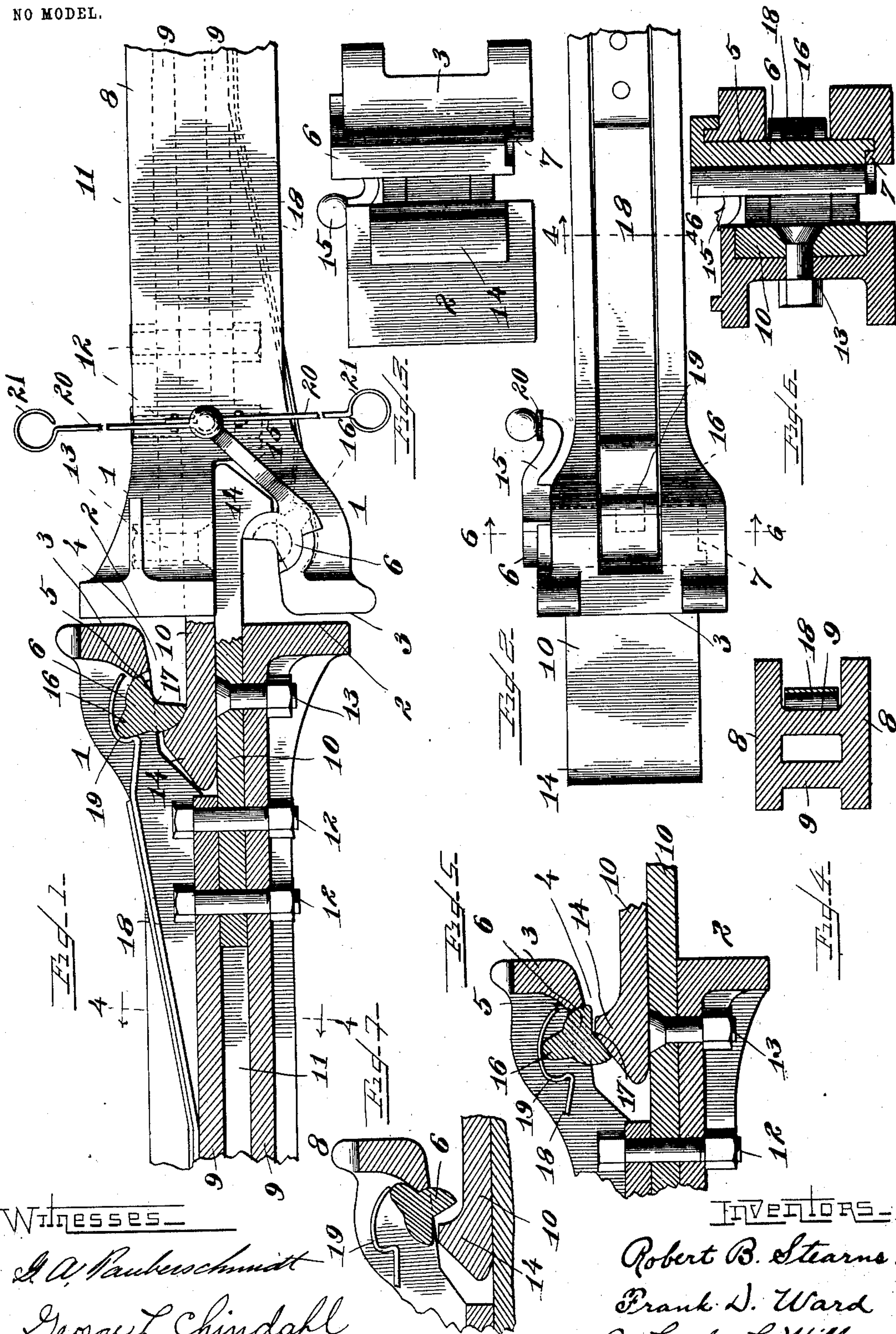
PATENTED SEPT. 1, 1903.

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CAR COUPLING.

APPLICATION FILED APR. 18, 1903.

NO MODEL.



Witnesses

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 737,673, dated September 1, 1903.

Application filed April 18, 1903. Serial No. 153,295. (No model.)

To all whom it may concern:

Be it known that we, ROBERT B. STEARNS and FRANK D. WARD, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to car-couplers, and refers particularly to an improved draw-bar and draw-head for such couplers.

When one car of a train of cars is derailed, it frequently happens that the car leaving the track pulls other cars after it by reason of the connection between said cars.

One of the objects of this invention is the production of a coupler wherein the draw-heads of adjacent cars are freely separable vertically.

A further object of the invention is the production of a simple, strong, and efficient automatic coupler, positive in its action, having no swinging jaws and loose parts, and being entirely safe for the operator in the coupling operation.

The coupler herein shown is particularly applicable to the elevated-railway service, but, as will readily be seen, may be used advantageously upon any railway.

In the accompanying drawings, Figure 1 is a combined top plan view and horizontal section showing two draw-heads embodying the features of this invention. Fig. 2 is a side elevation of a single draw-head. Fig. 3 is a front elevation of said draw-head. Fig. 4 is a transverse vertical section on dotted line 4 4 of Fig. 2. Fig. 5 is a fragmental sectional view on the same plane as the sectional portion of Fig. 1, but showing the coupler mechanism in an unlocked or "open" position. Fig. 6 is a transverse vertical section on dotted line 6 6 of Fig. 2. Fig. 7 is a view similar to Fig. 5, save that in Fig. 7 the movable parts are shown in the position into which they are placed preparatory to a separation or uncoupling of the draw-heads.

In the construction of a coupler embodying this invention a draw-head 1 is provided having the two buffer-faces 2 and 3, between which is located a throatway 4, extending entirely through the draw-head from top to bottom thereof. In one of the side walls of the

throatway 4 and rearward of the buffer-face 3 a semicylindrical pocket 5 is formed for receiving a rotative coupling-pin 6, and this pocket has an annular inwardly-extending flange 7 at its lower end for supporting said coupling-pin. The draw-bar 8, integral with the draw-head 1, is formed in this instance with a cross-section in the shape of a letter "H," having two cross-bars 9. A hook-bar 10 lies in the core 11, formed between the cross-bars 9 of the draw-bar 8, being secured in position by the bolts 12 and a bolt 13. The hook-bar 10 projects forwardly from the draw-head 1 and bears at its forward end the hook-head 14. The draw-bars 8 are connected in any suitable manner with the draft-rigging of the cars. The oscillatory coupling-pin 6 at its upper end projects above the draw-head and is provided with an operating-arm 15, by means of which said coupling-pin is rotated. It also has a finger 16, adapted to be engaged by a curved operating-spring to be hereinafter described. One side of the coupling-pin 6 is provided with an angular notch 17, extending throughout the length of said pin. This notch is adapted to receive the hook-head 14 of one of the draw-heads 1. The operating-spring 18 is bent to form a pocket 19 for receiving the finger 16, within which pocket said finger is free to move forward and back as the coupling-pin is oscillated. For convenience in operating the coupler from a position outside the traction-rails each of the draw-heads 1 is provided with a rod 20, having the handles 21 at opposite ends of said rods and pivotally connected with the operating-arm 15 intermediate said ends. As will readily be understood, each of the cars is equipped at each end with a draw-head of the form described herein, and therefore when two cars are brought together the draw-head of each receives the hook-head 14 of the other car.

As will be noted, Fig. 1 illustrates the coupler with its members in the "coupled" position, Fig. 5 with the parts in the act of coupling, and Fig. 7 with the parts disengaged and free to be separated. When cars are brought together, the hook-head 14 of each draw-head 1 enters the throatway 4 of the adjacent draw-head and engaging the rear wall of the notch 17 of each coupling-pin 6 rotates

said pin upon its supporting-rim 7 and moves the finger 16 within the pocket 19 of the spring 18 toward the outer end of said spring, Fig. 5. When the hook-heads 14 pass beyond 5 and clear the coupling-pins 6, the springs 18 immediately restore said pins to their normal position, Fig. 1, acting upon the fingers 16 of the pins to oscillate said pins. In this (the normal) position of the pins the cylindrical 10 portion of their peripheries is brought into engagement with the rear side of said hook-heads, in which position the pull upon the hook-heads exerts no tendency to rotate said pins and uncouple the cars. The coupling-pin is held in this normal position (to wit, 15 the position it assumes both in the coupled and the uncoupled positions) by the action of the operating-spring 18 and is moved into any other position against the tension of said 20 spring. When it is desirable to separate the draw-heads, the operating-arms 15 are moved through an arc of a circle, the operator either grasping said arms directly or oscillating them by means of the rods 20, the handles 21 of 25 which rods project to points near the sides of the car-platforms. The coupler-pins 6 are thereby moved sufficiently to throw the fingers 16 slightly beyond the end of the operating-springs 18, in which position they are 30 held by said springs until the separation of the draw-heads causes the hook-heads 14 to oscillate the coupling-pins, when the fingers 16 are again moved into the pockets 19 of the springs 18 and within the limits of action of 35 said springs, which by their tension immediately restore said pins to their normal position—so fast, at least, as the receding hook-heads permit the coupling-pins to be rotated.

As hereinbefore stated, the throatway 4 of 40 each draw-head is open from top to bottom, and the hook-bars 10, lying therein, being unrestricted in their vertical movement by the coupling-pins 6 said draw-heads and hook-bars would be freed each from the other 45 should one coupling be moved vertically with reference to the other to any considerable extent, thus uncoupling the cars.

It is apparent that many changes may be made in the embodiment herein shown of our 50 invention without departing from the spirit and scope thereof, wherefore we desire to have it understood that we do not limit ourselves to the precise details herein set forth.

We claim as our invention—

55 1. In a car-coupler, in combination, a draw-head comprising a hook; a pin cylindrical in general outline, rotatably supported upon said draw-head and provided with a notch in its periphery; and means for oscillating said pin.

60 2. In a car-coupler, in combination, a draw-head comprising a hook; a pin cylindrical in general outline, rotatably supported upon said draw-head and provided with a notch in its periphery; and an operating-arm fixed with 65 relation to said pin.

3. In a car-coupler, in combination, a draw-head comprising a hook; a pin cylindrical in

general outline, rotatably supported upon said draw-head and provided with a notch in its periphery; an operating-arm fixed with relation to said pin; and a spring for oscillating 70 said pin in one direction.

4. In a car-coupler, in combination, a draw-head comprising a hook; a pin cylindrical in 75 general outline, rotatably supported upon said draw-head, a portion of the cylindrical periphery of which pin may be engaged by a hook upon an adjacent draw-head; and means for oscillating said pin.

5. In a car-coupler, in combination, a draw-head comprising a hook; a pin cylindrical in 80 general outline, rotatably supported upon said draw-head, a portion of the cylindrical periphery of which pin may be engaged by a hook upon an adjacent draw-head; and an operating-arm fixed with relation to said pin. 85

6. In a car-coupler, in combination, a draw-head comprising a hook; a pin cylindrical in 90 general outline, rotatably supported upon said draw-head, a portion of the cylindrical periphery of which pin may be engaged by a hook upon an adjacent draw-head; an operating-arm fixed with relation to said pin; and a spring for oscillating said pin in one direction.

7. In a car-coupler, in combination, a draw-head having a throatway extending vertically 95 therethrough; a pin of angular cross-section rotatably supported upon said draw-head at one side of said throatway; and means for oscillating said pin in one direction. 100

8. In a car-coupler, in combination, a draw-head having a throatway extending vertically 105 therethrough; a pin of angular cross-section rotatably supported upon said draw-head at one side of said throatway; and an operating-arm fixed with relation to said pin.

9. In a car-coupler, in combination, a draw-head having a throatway extending vertically 110 therethrough; a pin of angular cross-section rotatably supported upon said draw-head at one side of said throatway; an operating-arm fixed with relation to said pin; and a spring for oscillating said pin in one direction.

10. In a car-coupler, in combination, a draw-head; a pin cylindrical in general outline, 115 rotatably supported upon said draw-head and provided with a notch in its periphery to permit the movement in one direction past said pin of a hook-head upon an adjacent coupler; and means for oscillating said pin to bring a 120 portion of its cylindrical periphery into contact with the hook-head to prevent the withdrawal of said hook-head.

11. In a car-coupler, in combination, a draw-head; a pin cylindrical in general outline, 125 rotatably supported upon said draw-head and provided with a notch in its periphery to permit the movement in one direction past said pin of a hook-head upon an adjacent coupler; and means for automatically oscillating said 130 pin to bring a portion of its cylindrical periphery into contact with the hook-head when said hook-head has moved past said pin.

12. In a car-coupler, in combination, a draw-

head; a pin cylindrical in general outline, rotatably supported upon said draw-head and provided with a notch in its periphery to permit the movement in one direction past said

5 pin of a hook-head upon an adjacent coupler; and a spring for automatically oscillating said pin to bring a portion of its cylindrical periphery into contact with the hook-head when said hook-head has moved past said pin.

10 13. In a car-coupler, in combination, a draw-head having a throatway extending vertically therethrough; a pin rotatably supported at one side of said throatway, a portion of the periphery of said pin being cut away to permit the movement in one direction past said
15 pin of a hook-head upon an adjacent coupler; and means for oscillating said pin to bring a portion of its cylindrical periphery into contact with the hook-head to prevent the withdrawal of said hook-head.
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14. In a car-coupler, in combination, a draw-head having a throatway extending vertically therethrough; a pin rotatably supported at one side of said throatway, a portion of the
25 periphery of said pin being cut away to permit the movement in one direction past said pin of a hook-head upon an adjacent coupler; and means for automatically oscillating said pin to bring a portion of its cylindrical periphery into contact with the hook-head when said
30 hook-head has moved past said pin.

15. In a car-coupler, in combination, a draw-head having a throatway extending vertically therethrough; a pin rotatably supported at
35 one side of said throatway, a portion of the periphery of said pin being cut away to permit the movement in one direction past said pin of a hook-head upon an adjacent coupler;

and a spring for automatically oscillating said pin to bring a portion of its cylindrical periphery into contact with the hook-head when
40 said hook-head has moved past said pin.

16. In a car-coupler, in combination, a draw-head; a coupling-pin cylindrical in general outline, rotatably supported upon said draw-head and provided with a notch in its periphery for receiving a hook-head; and a spring adapted to oscillate said pin in one direction.
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17. In a car-coupler, in combination, a draw-head; a coupling-pin cylindrical in general outline, rotatably supported upon said draw-head and provided with a notch in its periphery for receiving a hook-head; and a spring for releasably holding said pin in one direction.
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18. In a car-coupler, in combination, a draw-head having a throatway extending vertically therethrough; a coupling-pin rotatably supported at one side of said throatway, said pin having a notch for receiving a hook-head; and a spring adapted to oscillate said pin in one direction.
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19. In a car-coupler, in combination, a draw-head having a throatway extending vertically therethrough; a coupling-pin cylindrical in general outline, rotatably supported upon said draw-head, and provided with a notch in its periphery for receiving a hook-head; and a spring for releasably holding said pin in one position.
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