

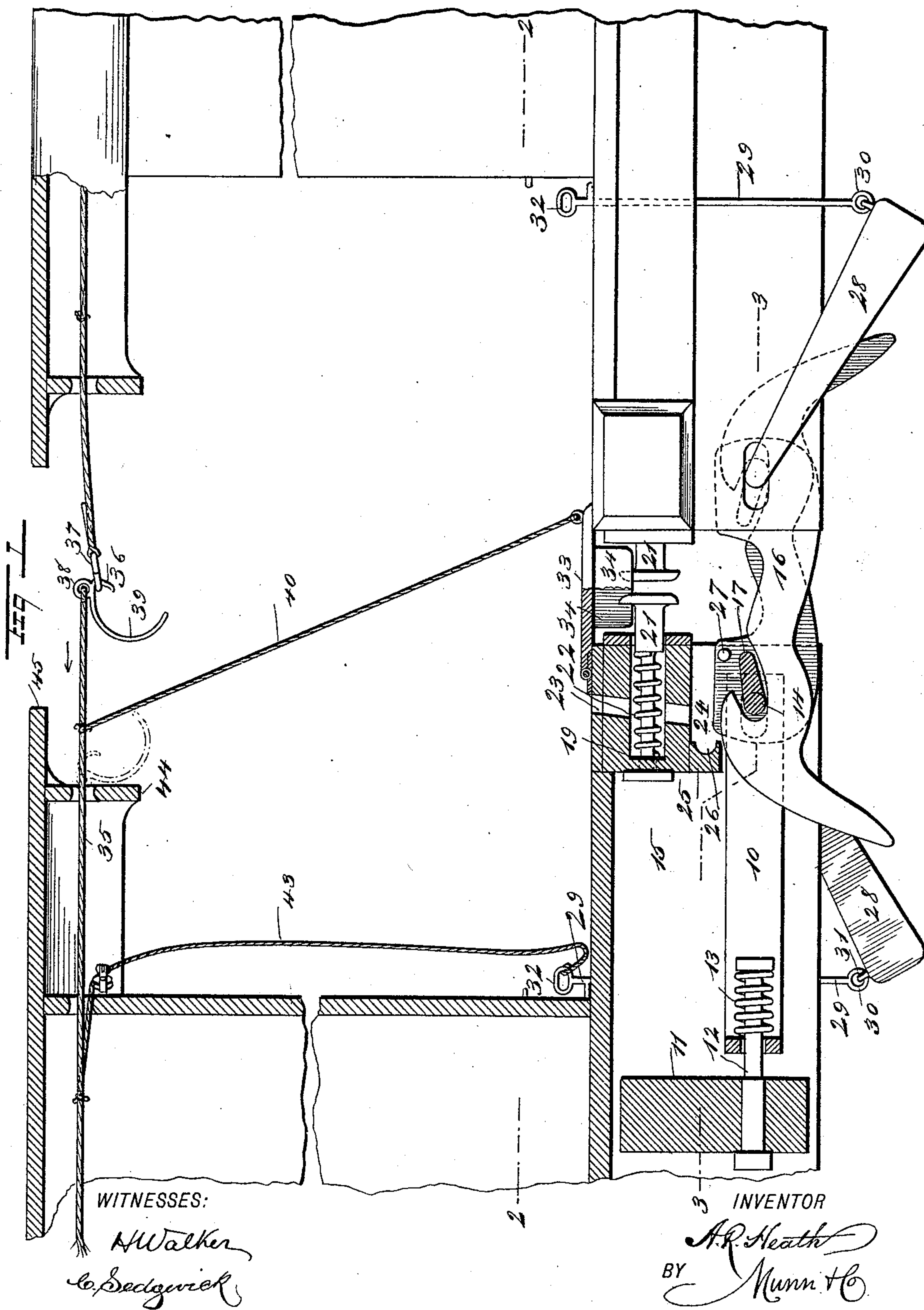
(No Model.)

2 Sheets—Sheet 1.

A. R. HEATH.  
CAR COUPLING.

No. 519,575.

Patented May 8, 1894.



(No Model.)

2 Sheets—Sheet 2.

A. R. HEATH.  
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Fig 2

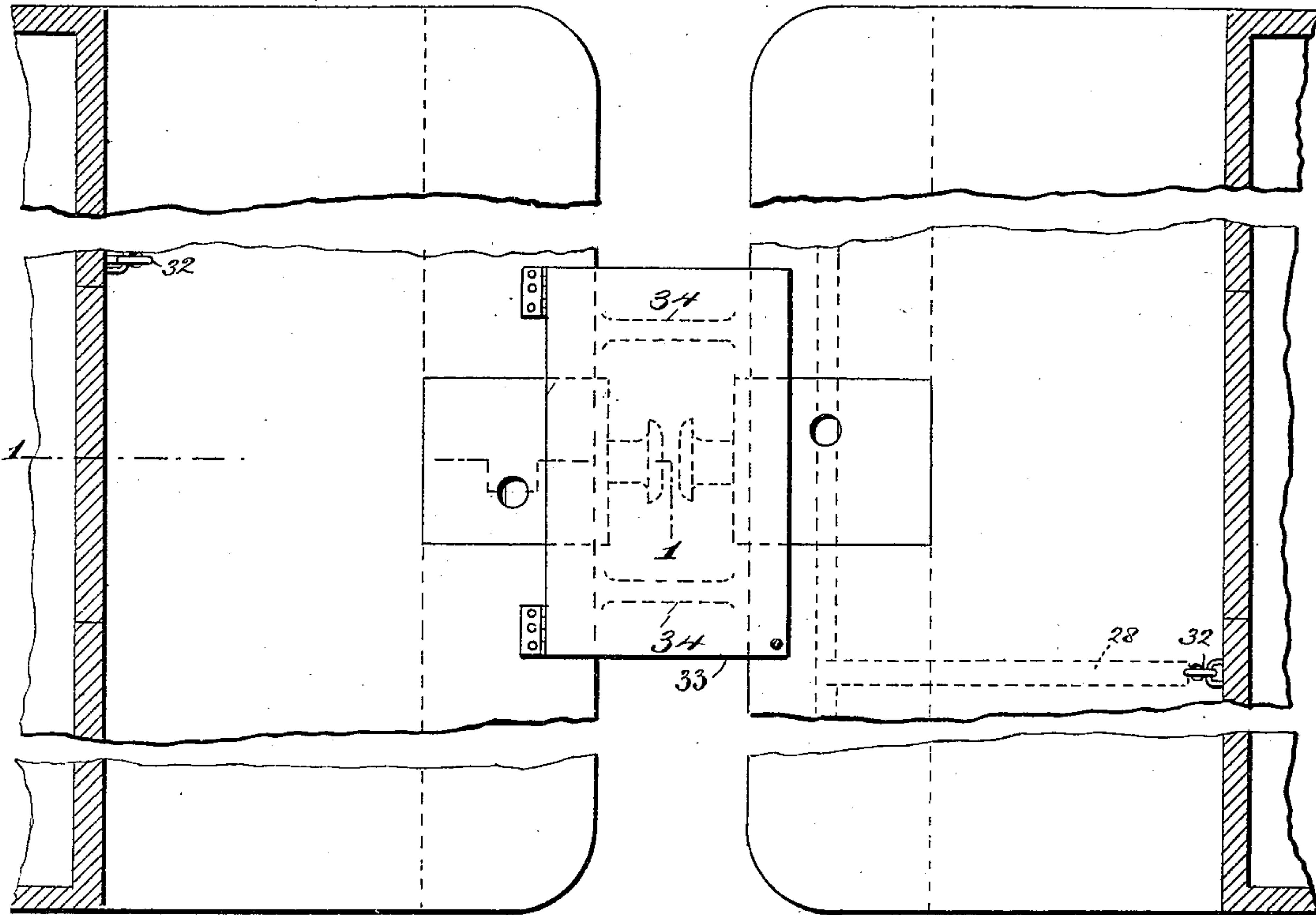


Fig 3

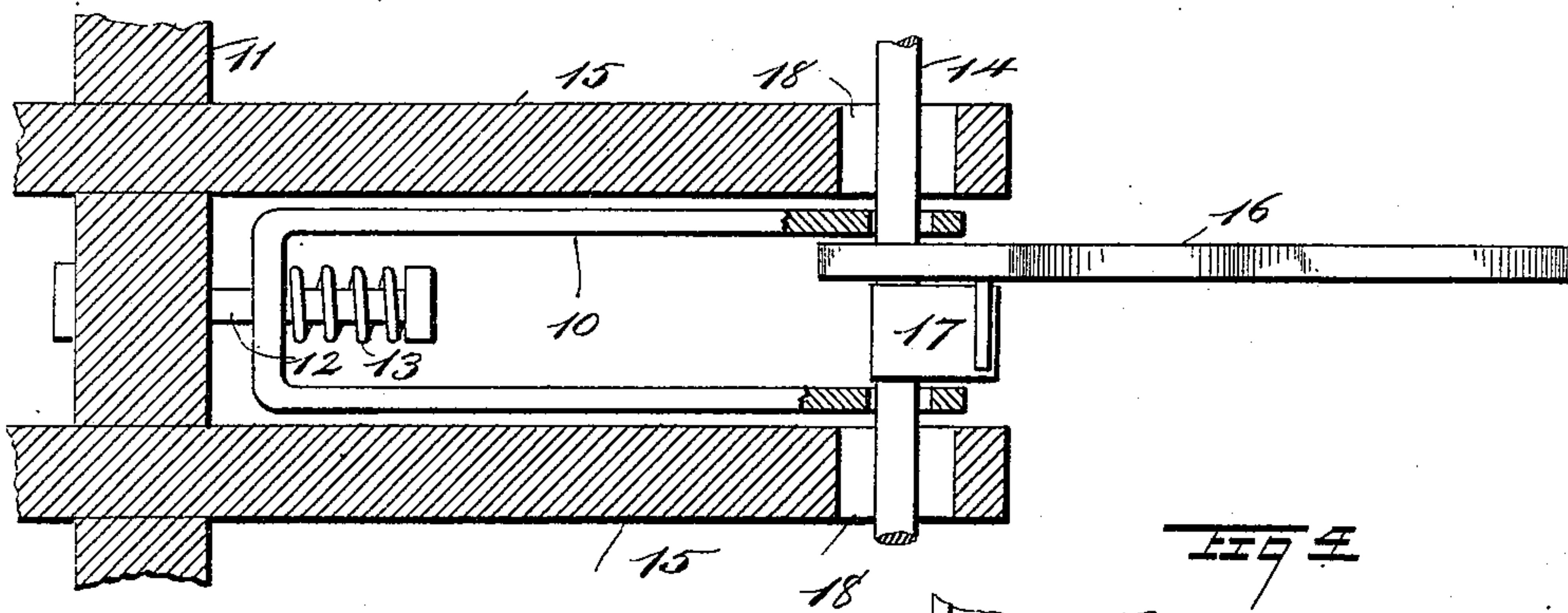


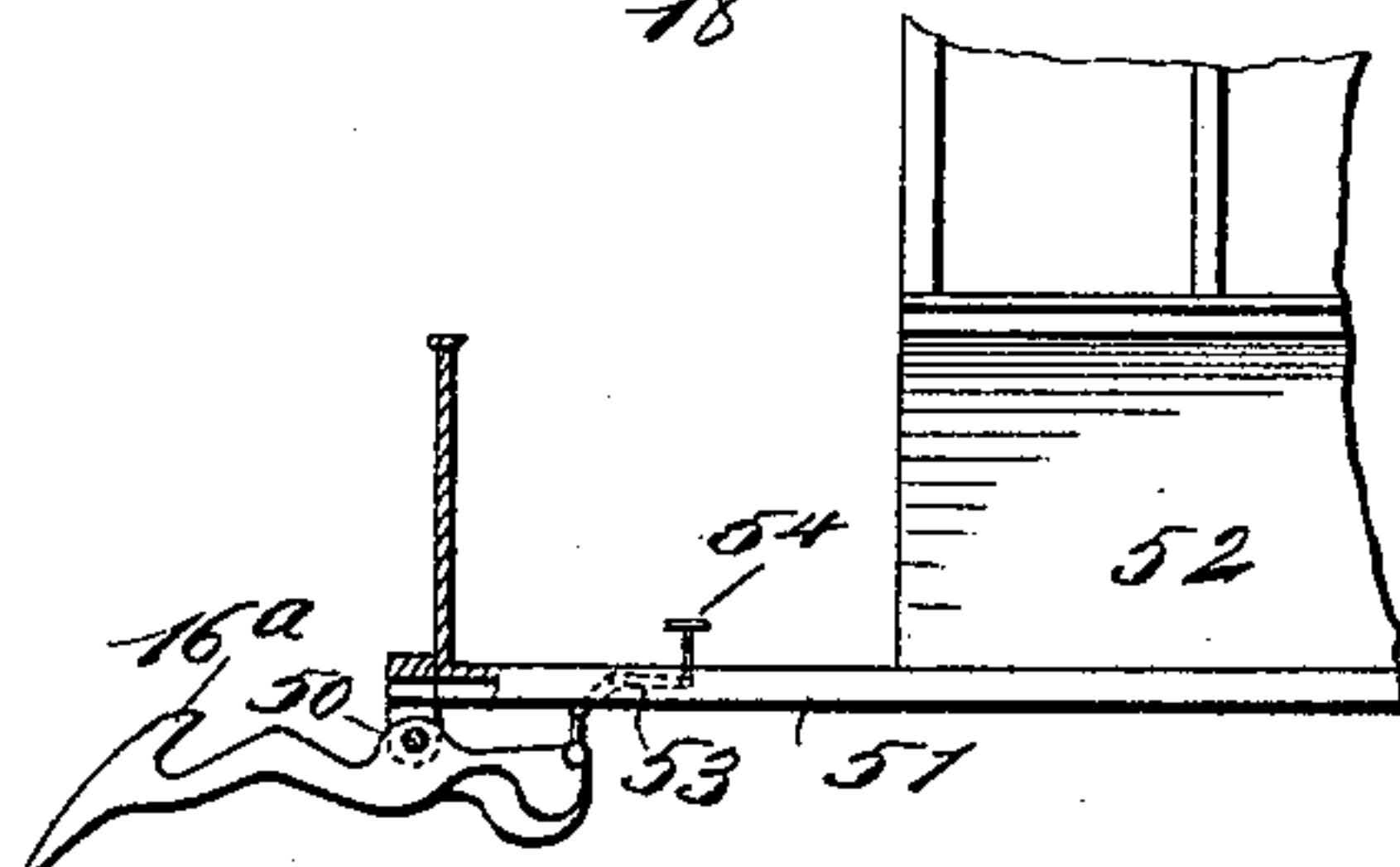
Fig 4

WITNESSES:

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INVENTOR

A. R. Heath  
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# UNITED STATES PATENT OFFICE.

ALFRED R. HEATH, OF COVINGTON, INDIANA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 519,575, dated May 8, 1894.

Application filed January 8, 1894. Serial No. 496,097. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED R. HEATH, of Covington, in the county of Fountain and State of Indiana, have invented a new and  
5 Improved Car-Coupling, of which the following is a full, clear, and exact description.

The invention relates to car couplings in which a coupling hook is employed mounted on a rock shaft provided with a presser arm  
10 or cam, the rocking of the shaft serving to uncouple and depress the hook mounted thereon, and the cam arm on the shaft serving to depress and uncouple the coupling hook of the opposing coupling, an example  
15 of which is seen in United States Patent No. 467,807, granted to me on January 26, 1892.

The object of the present improvement is to shorten and simplify the construction of car couplings of the character outlined, to re-  
20 duce the number of parts, and to provide improved devices for enabling the cars to be uncoupled either from the locomotive or caboose of a train, or from the platform or the sides of the cars, and further to prevent the acci-  
25 dental uncoupling of the cars, or the possible pulling out of the couplers, to provide for holding an old style link for automatic coupling, and finally to provide increased safety devices for preventing the attendants or pas-  
30 sengers from stepping between the platforms.

The invention consists in the novel construction hereinafter pointed out and defined in the claims.

Reference is to be had to the accompanying  
35 drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a vertical sectional view on the line 1—1 in Fig. 2, showing portions of two  
40 cars provided with my improved couplings. Fig. 2 is a broken sectional plan view on the line 2—2 in Fig. 1. Fig. 3 is a detail sectional plan view, on the line 3—3 in Fig. 1, of the coupling devices of one car; and Fig. 4 is a  
45 sectional side elevation of a portion of a street car, with coupling devices thereon.

In the present coupling the usual draw-head is omitted. The draw-bar 10 is secured at its inner end to the sill 11. The draw-bar  
50 may in practice, be made to suit the draft spring and tail bolt or yoke connections of cars now in use. As shown, it is held by a

bolt or bar 12 around which is the usual draft spring 13, and at its front end the draw-bar is supported on a horizontal rock shaft 14, 55 which passes through said draw-bar and through the draft timbers 15.

On the rock shaft 14 is mounted the coupling hook 16, and the said shaft adjacent to the coupling hook is adapted to be engaged 60 by the coupling hook on the opposing car, and at the point of such engagement the shaft is provided with a presser arm or cam 17, the arrangement being such that when the shaft is rocked to depress the coupling hook car- 65 ried thereby, the cam will depress the opposing coupling hook substantially in the manner described in my patent above referred to. The draft timbers 15 are slotted transversely, as at 18, through which slots the rock shaft 14 70 passes, the latter thus being permitted a movement longitudinally of the draft timbers.

Buffers 21 are fitted in the deadwood 19 for longitudinal movement in response to the impact of the cars, said buffers having springs 75 22 thereon. The deadwood is bored, as at 23, in a direction slightly inclined to the vertical, for receiving the old style coupling pin, and at the bottom of the deadwood is a recess 24, opening from the front, below the deadwood, 80 for receiving the old style link, a stop block 25 having a concaved face 26 being provided at the rear of such recess. Such old style link is supported in the horizontal position by the stop block and by a pin 27, which projects 85 laterally from one side face of the coupling hook 16.

On the shaft 14, at its ends, weighted operating arms 28 are secured, said arms in practice having the shape of a crank handle if de- 90 sired, and to the free ends of each arm 28, the lower end of an operating rod 29 is loosely connected, the connection generally being effected by forming an eye 30 on said operating rod, which eye is engaged by a staple 31 95 on the arm 28. The rods 29 may extend vertically to the top of the car or above the car platform, and at their upper ends each is provided with a hand hold 32, by which it may be raised by an attendant. 100

To the platform of the car, near its front edge, a guard plate 33 is pivotally hinged, and this plate is adapted, when in the lowered position, to extend to the platform of an opposed



car and bridge the space between two coupled cars, as shown clearly in the drawings. On the under side of the guard plate 33, depending lugs 34 are formed, the same ranging transversely of said plate and serving to prevent the cars from coming so close together as to uncouple.

In order that the cars may be uncoupled from the engineer's cab or from the conductor's caboose, or other portion of the train, a cord 35 is provided, ranging longitudinally through the cars near the roof, and a novel coupling device is provided consisting of a hook 36 on one of the meeting ends of the cord and an eye 37 on the other. The hook 36 is a novel form, having an eye 38 formed on its shank, for permanently connecting the hook to the rope, and the shank of the hook extends downward in a sweeping curve, as at 39. From the cord or rope 35, a branch cord 40 extends and is of a length to permit a connection of the same with the guard plate 33 before mentioned. A second branch cord 43, of a greater length than the branch 40, connects the main cord 35 with the hand hold 32 of the operating rod 29 of the rock shaft arm 28. Thus in practice, when the cord 35 is pulled by the engineer or other attendant, the tension on the branch cord 40 will cause the guard plate 33 to be raised, and on the continued movement of the cord 35, the curved shank 39 of the cord coupling will be brought into contact with the front 44 of the car hood 45, which will cause the hook 36 to be disengaged from the eye 37, and the further movement of the cord 35 will exert a pull on the branch cord 40 and lift the rod 29 and arm 28, and thus rock the shaft and uncouple the cars.

In Fig. 4, the coupling hook 16<sup>a</sup> is pivoted to depending lugs 50 on the platform 51 of a street car 52, and the inner end of the hook has a loose pivotal connection with one arm of a bell crank lever 53, the other arm of which is connected with the lower end of a vertical foot bar or rod 54, which extends above the car platform. Thus when the driver or motorman presses the rod 54 downward, the coupling hook will be depressed.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a car coupling, the combination, with a car, of a draw-bar, a rock shaft passing transversely through the said draw-bar and through the draft timbers, the latter having transverse slots, a coupling hook on the shaft, and a cam or presser on the shaft adjacent to such hook, substantially as described.

2. In a car coupling, the combination with the car and its deadwood, of a draw-bar below the deadwood, and a rock shaft passing transversely through the draw-bar and spaced from the deadwood sufficiently to permit entrance therebetween of an ordinary link, the deadwood having a bore or passage extend-

ing from the link-receiving space to the top of the platform, for receiving a coupling pin, substantially as described.

3. In a car coupling, the combination with the car and its deadwood, of a drawbar below the deadwood, a rock shaft passing transversely through the draw-bar, a coupling hook on the shaft, the hook being spaced from the deadwood, forming a recess between itself and the deadwood, and a stop block on the deadwood at the rear of the recess, the deadwood having a bore or passage extending from the top of the platform through the deadwood to said recess, for receiving a coupling pin, substantially as described.

4. In a car coupling, the combination with a car and its deadwood, of a rock shaft below the latter, and a coupling hook on the rock shaft, spaced from the draft timbers and deadwood a sufficient distance to permit entrance of a coupling link, and provided with a transversely-disposed pin for supporting such link, substantially as described.

5. In a car coupling, the combination with the car and its deadwood, of a draw-bar below the deadwood, a rock shaft passing transversely through the draw-bar, a coupling hook on the rock shaft, the shaft having also a presser arm or cam adjacent to the coupling hook, for disengaging the coupling hook of an opposing car, the coupling hook and draft timbers forming a recess, and a stop block at the rear of the recess and having a concaved front face, the said hook having a laterally-projecting pin, and the deadwood having an inclined passage or bore for receiving a coupling pin, substantially as described.

6. In a car coupling, the combination with a car, of a rock shaft, a coupling hook thereon, arms on the shaft, an operating rod connected at one end to one of said arms, a guard plate hinged to the car platform, a rope or cord ranging longitudinally of the car, and branch cords connected with said plate and with the said operating rod, substantially as described.

7. The combination with a car, of a rock shaft, a coupling hook thereon, arms also on the shaft for rocking the same, an operating rod connected with one arm, a guard plate hinged to the car platform, a cord or rope extending longitudinally of the car and having branch cords connected respectively to the guard plate and with the said operating rod, and a coupling on the cord for connecting with the cord of an adjacent car, the coupling being movable into contact with the car hook, for disconnecting the cord from that of the adjacent car, substantially as described.

8. In a car coupling, the combination with a pivoted coupling hook, a cord ranging longitudinally through the cars, and a branch cord for operating the coupling hook, of a coupling for the main cord consisting of a hook having a curved shank and an eye at the back of the shank, to which eye one part



of the cord is attached, and a second eye to which the other part of the cord is attached, substantially as described.

5 9. The combination with a car, of a guard plate hinged to the platform of the car, and adapted to bridge the space between two coupled cars, a rope or cord ranging longitudinally of the car, and a branch rope leading from the main rope and connected with  
10 the guard, substantially as described.

10. The combination with a car, of a guard plate hinged to the car platform near the front edge thereof, and formed with depending lugs disposed in direction of the length of the car, substantially as described.

ALFRED R. HEATH.

Witnesses:

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JOHN G. KEEFER.