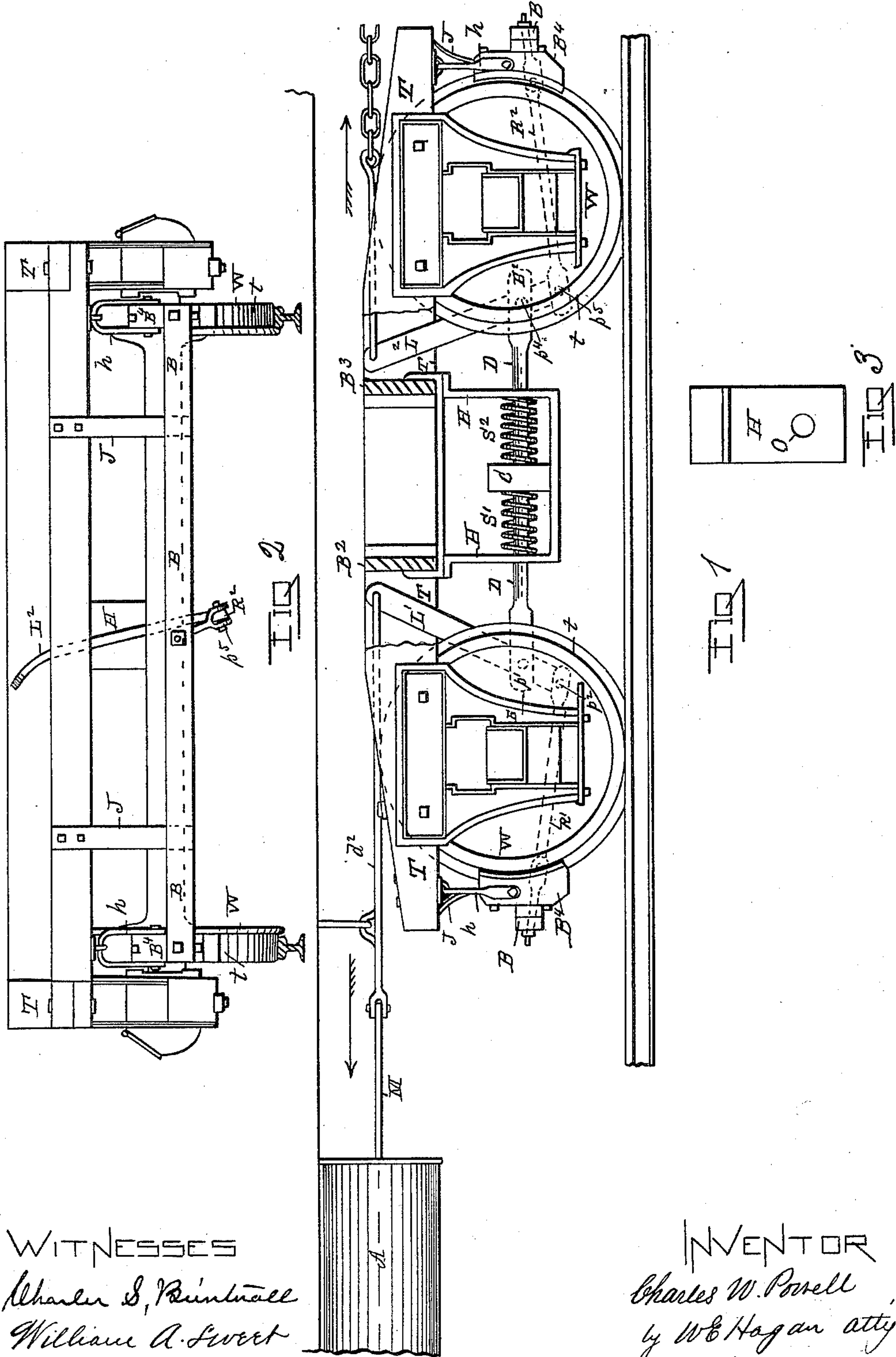


(No Model.)

C. W. POWELL.  
CAR BRAKE.

No. 427,706.

Patented May 13, 1890.





# UNITED STATES PATENT OFFICE.

CHARLES W. POWELL, OF GREEN ISLAND, NEW YORK, ASSIGNOR OF ONE-FOURTH TO WILLIAM H. POWELL, OF SAME PLACE.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 427,706, dated May 13, 1890.

Application filed November 8, 1889. Serial No. 329,644. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. POWELL, of the village of Green Island, county of Albany, and State of New York, have invented  
5 a new and useful Improvement in Rail-Car Brakes, of which the following is a specification.

My invention relates to improvements in rail-car brakes; and it has for its object the  
10 better adaptation of this class of devices to perform the functions for which they are designed.

As heretofore made, car-brakes have been arranged to be operated by a series of horizontally-placed pivoted levers that by means  
15 of a chain connected with a brake-wheel shaft put on the brakes against the force of a leaf-spring attached at its upper end to the car-body, with its lower end resting  
20 in the brake-beam. This construction involved the use of a series of working parts connected by long rods, which were liable to become out of order. By my improvement on this older method of arranging car-brakes  
25 I am enabled to reduce the number of working parts, and the contingency of their becoming out of order is in a great degree obviated.

My invention consists (as will be hereinafter  
30 more fully described in connection with its illustration) in the combination, with a hanging brake-beam that is provided with brakes adapted to swing in to come in contact with the treads of the wheels at each end of the  
35 truck and to be actuated to swing out away from such engagement, of a horizontally-arranged center bar provided with slideways in a yoke or hangers downwardly projected from the truck-frame, a lever making a pivoted fulcrum-connection with said sliding  
40 bar at each end thereof, and a brake-beam bar making a pivotal connection between the short-arm end of each of said levers and the adjacent brake-beam, with one of said levers  
45 actuated to pull on the sliding bar and the other lever to engage with one of the cross-beams of the truck.

My invention also consists (as will be more  
50 fully detailed hereinafter in connection with its illustration) in the combination, with a center bar adapted to move horizontally in a yoke

or hangers downwardly projected from the truck-frame, said center bar having a collar or stop arranged thereon where between the  
hangers, and a spring encircling said center  
55 bar between the said collar and one of the hangers, of a lever making a fulcrum-pivot at each end of said center bar with the latter, with the short arm of each of said levers making a pivoted attachment to a bar connecting  
60 with the adjacent brake-beam, the latter being provided with brakes adapted to engage with the car-wheel treads, and one of said levers at the end of its long arm operated by an air-cylinder or brake-shaft wheel  
65 and the other lever at its arm engaging with one of the truck-frame braces.

Accompanying this specification to form a part of it there is a sheet of drawings containing three figures illustrating my invention,  
70 with the same designation of parts by letter reference used in all of them.

Of the illustrations, Figure 1 is a side view of a car-truck with my invention applied thereto, with part of the frame shown as broken  
75 out and the truck-braces in cross-section. Fig. 2 shows an end view of the same truck, both ends being alike; and Fig. 3 shows an end view of the yoke or hanger.

The several parts of the apparatus thus  
80 illustrated are designated by letter reference, and the function of the parts is described as follows:

The letter T designates the truck-frame, and B<sup>2</sup> and B<sup>3</sup> the cross-braces, W the wheels,  
85 B the brake-beams, and B<sup>4</sup> the brakes, all of which are of the ordinary construction. This brake-beam is suspended on hangers h at each end, so as to be swung in to bring the brakes against the wheel-treads t, or to swing  
90 out therefrom in the usual manner, and the letters J designate leaf-springs attached to the end of the truck-frame and downwardly extended to engage with the brake-beam to force the latter and the brakes away from the  
95 wheels.

The letter D designates a center bar made with a stop or collar C, that is attached to the former, and the letters H designate hangers  
100 or a yoke downwardly projected from the truck-braces B<sup>2</sup> and B<sup>3</sup>. These hangers or the yoke they produce is provided with a pas-



sage-way O for the center bar D to be freely moved therein horizontally.

The letters S' S<sup>2</sup> designate spiral springs, one of which encircles the bar D on each side of the collar C between the latter and the adjacent hanger H.

The letter L' designates a lever that is pivoted at p' to the end E of the center bar D, and at its outer end at p<sup>2</sup> is pivoted to the brake-beam bar R', the latter at its outer end connecting with the brake-beam B. The upper end of this lever is shown as making a connection by means of a rod d<sup>2</sup> with the piston-rod M of an air-cylinder A to operate said lever L' to put on the brakes. This application by means of the lever L' adapts my invention to passenger-coaches.

The letter L<sup>2</sup> designates another lever, which at p<sup>4</sup> is pivoted to the end E<sup>2</sup> of the center bar D and at its short arm at p<sup>5</sup> to the brake-beam bar R<sup>2</sup>, the latter connecting with the brake-beam B, having thereon the brakes B<sup>4</sup>, which lever L<sup>2</sup> is operated by the usual brake-wheel shaft (not shown) and adapts my invention to freight-cars.

The function of the center bar D as operated by either of the levers L' and L<sup>2</sup> is to draw the brake-beams toward the wheels, so that the brakes on the latter will engage with the treads of the wheels at each end of the truck and against the force of a spring, by which latter, when the brakes are thrown off, the brake-beam and brakes are swung out away from the wheels, and this center rod and its levers may be used in connection with either of the springs S' S<sup>2</sup>, or the ordinary leaf-springs J, as a modification thereof, in view of the fact that either of the said springs S' or S<sup>2</sup> perform the same function. As the said center bar D by means of the levers L' L<sup>2</sup> and the connection the latter makes with the brake-beams performs the function of putting on the brakes, I do not limit my invention of these factors, as I arrange them to operate, to their combination with the springs which throw off the brakes.

When the spring shown as placed at S' is used, then power is applied to the lever L', and the operation of the parts thus constructed is as follows: The air-cylinder A, being operated to draw the piston in the direction of the indicating-arrow, pulls the lever L' in the same direction, which, being at its lower end pivoted to the brake-beam rod R' and intermediately pivoted to the center bar D, pulls the brake-beam and brakes toward the wheels and moves outwardly the center bar D against the force of the spring S', while the lever L<sup>2</sup>, at its long arm engaging with the cross-brace B<sup>3</sup>, operates to move the other end of the center bar D, so as to draw the brake-beam brace R<sup>2</sup> and its connecting-brakes toward the tread of the wheels at the other end of the truck, and when power is applied to the lever L<sup>2</sup> then the center bar D moves to draw adjacent the brake-beam and brakes to engage

with the wheel-treads against the force of the spring S<sup>2</sup>, while the lever L', at its long arm end engaging with the truck-brace B<sup>3</sup>, operates to draw the other brake-beam and brakes to engage with the treads of the other wheels.

As thus made and arranged, a prompt and efficient operation of the brakes is obtained, and by the use of but few working-pieces.

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

1. The combination, with a car-truck frame constructed with pendent brake-beams having thereon brakes adapted to engage with the truck-wheel treads at each end of the truck, substantially as described, of a center bar arranged to move horizontally in a yoke or hangers downwardly projected from the truck-frame, a lever pivoted to each end of said center bar where extending beyond said yoke or hangers, and a bar connecting with each of said brake-beams at its outer end and at its inner end pivoted to the short-arm end of the adjacent one of said levers, substantially in the manner as and for the purposes set forth.

2. The combination, with a car-truck frame having cross-braces and constructed with pendent brake-beams having thereon brakes adapted to engage with the truck-wheel treads at each end of the truck, substantially as described, of a center bar arranged to move horizontally in a yoke or hangers, a lever pivoted to each end of said center bar, and a bar connecting with each of said brake-beams at its outer end and at its inner end pivoted to the short-arm end of the adjacent one of said levers, with one of the latter arranged to receive power and the other one of said levers to engage with the adjacent cross-brace of the truck-frame, substantially in the manner as and for the purposes set forth.

3. The combination, with a car-truck frame constructed with pendent brake-beams having thereon brakes adapted to engage with the truck-wheel treads at each end of the truck, substantially as described, of a center bar arranged to move horizontally in a yoke or hangers, a lever pivoted to each end of said center bar, a bar connecting with each of said brake-beams at its outer end and at its inner end pivoted to the short-arm end of the adjacent one of said levers, and springs arranged to force said brake-beams and brakes away from their contact with said wheel-treads, substantially in the manner as and for the purposes set forth.

Signed at Troy, New York, this 17th day of August, 1889, and in the presence of the two witnesses whose names are hereto written.

CHARLES W. POWELL.

Witnesses:

W. E. HAGAN,

CHARLES S. BRINTNALL.