

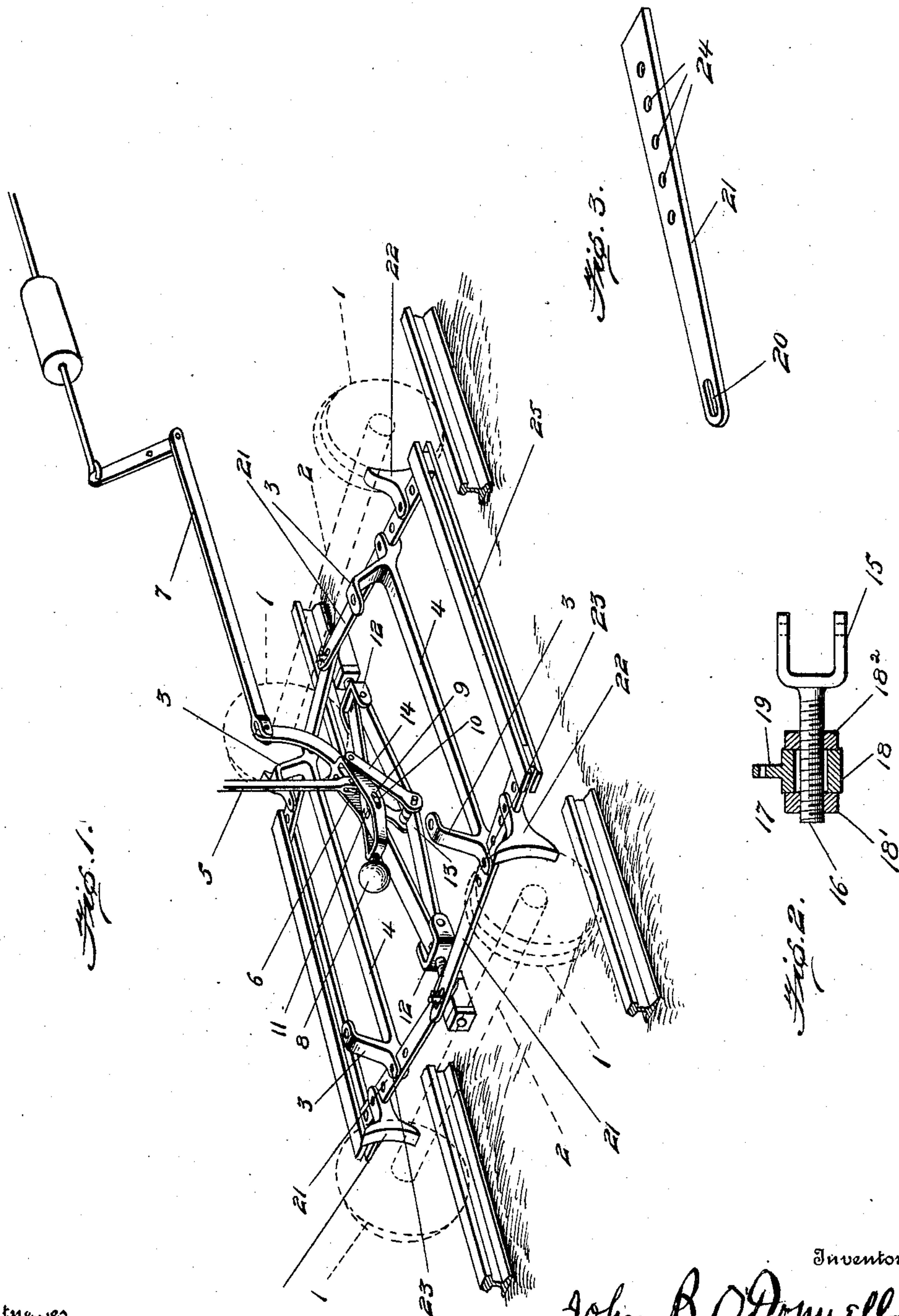
No. 861,604.

PATENTED JULY 30, 1907.

J. B. O'DONNELL.

RAILWAY BRAKE.

APPLICATION FILED MAY 10, 1907.



Witnesses

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JOHN B. O'DONNELL, OF KANSAS CITY, MISSOURI.

RAILWAY-BRAKE.

No. 861,604.

Specification of Letters Patent.

Patented July 30, 1907.

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To all whom it may concern:

Be it known that I, JOHN B. O'DONNELL, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Railway-Brakes, of which the following is a specification.

My invention relates to improvements in railway brakes, especially those operated by compressed air, although my brakes may be operated with equal facility by any other ordinary means.

In addition to producing a generally efficient brake, one special object of my improvements is to make the movements of the parts in applying the brakes to the wheels as slight as is consistent with the proper performance of the work, thereby diminishing the travel of the pistons in the air-cylinders and economizing the compressed air.

In the accompanying drawings Figure 1 is a perspective view of my system of brakes applied to one of the trucks of a railway car, immaterial parts being removed, for greater clearness, and it being understood that the other truck of the car is provided with similar devices. Fig. 2 is a detail of one of the couplings by which the inner ends of the brake-levers are connected with the central operating means. Fig. 3 is a detail of one of the brake-levers.

1 indicates the wheels of the truck, 2 the axles, and 3 brackets depending from timbers of the frame, to serve as fulcrums for the brake-levers. The two brackets upon each side are connected by braces 4. A rigid hanger 5 depends from the frame, to the bottom of which hanger is pivoted a forked rocking-lever 6. Said rocking-lever is preferably of curved form and has its upper end connected with a pull-rod 7 extending, with suitable connections, to an air-brake cylinder or other source of power. The opposite end of said rocking-lever carries, preferably, a weight 8, the function of which is to release the brake-shoes from the wheels by gravity when the power ceases to be applied. The forks of said rocking-lever are each provided with slots 9, which engage the projecting ends of the pintles 10 of the hinge, or toggle-joint, 11. The outer ends of said hinge are pivoted to the couplings 12. The hinge 11 is also preferably provided with lower leaves 13, connected at their outer ends to the couplings 12, in like manner. I also provide pivoted connecting-links 14, extending downward from suitable points on the rocking-lever 6 to the hinge joint of the lower member 13, said links being slotted at their lower ends, and engaging the extending pintles of said lower hinge. My hinge device therefore is duplex, in its preferred form, consisting of upper leaves 11 and lower leaves 13, the former being actuated directly by lever 6, and the latter by the links 14. It is obvious that either the upper or lower leaves might possibly

be dispensed with, but greater certainty of action is secured by the duplex construction shown.

The couplings 12 each consist of a forked member 15, Fig. 2, adapted to receive the ends of the hinges 11 13, and having a threaded shank 16, adapted to pass through a head 17. The head 17 consists, preferably, of a collar 18 which surrounds the shank 16 without being threaded to it, and two nuts 18¹ 18², threaded on shank 16 on each side of collar 18. Said collar 18 carries a pin 19 adapted to engage slots 20 in the inner ends of the brake-levers 21, which ends preferably overlap one another. The adjustment of collar 18 on shank 16 may be varied by moving nuts 18¹ 18² in either direction. Said brake-levers 21 carry at their outer ends brake-shoes 22, and are pivotally fulcrumed at 23 on the brackets 3. A series of pivot-holes 24 in the levers permits varying the adjustment when desired. I also extend the ends of my brake-levers beyond the shoes and provide suitable guides 25 to engage the outer ends of the levers. Said guides are secured to the car or truck frame and serve to counteract the tendency of the brake-shoes to slide upward or downward on the wheels when in contact with them. As shown said guides consist of two rigid members separated at their ends by an intermediate space, within which space the ends of the brake-levers are included.

It will be seen that when power is applied to pull-rod 7 the lever 6 is rocked and the hinges 11 13 opened, retracting couplings 12 and the inner ends of brake-levers 19, thus forcing the shoes into contact with the wheels. When the tension on the pull-rod ceases the influence of weight 8 rocks lever 6 in the opposite direction, extends hinges 11 13, and the brake-shoes are released. The weight 8 should be heavy enough to release the brakes promptly as soon as the power is taken off.

It is obvious that the stress of a spring, interposed between the hinges 11 13, or otherwise adjusted, might be substituted for the weight 8 as a means for automatically reextending the hinges after they have been contracted in applying the brakes; and I therefore do not limit my invention to the employment of a weight for that purpose.

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

1. In a railway brake device, the combination of the car or truck frame, the wheels, the brake-shoes, the pivoted brake-levers carrying said shoes, each pair of said levers extending inwardly toward each other, couplings adapted to engage loosely the inner ends of each pair of levers, a hinged connection between said couplings, means for holding said hinge normally extended, a rocking-lever pivoted on the frame and connected to said hinge, and adapted, when actuated, to contract the hinge, against the stress of said extending means, to apply the brakes, a pull-rod connected with said rocking-lever, and means for actuating said pull-rod.

2. In a railway brake device, the combination of the frame, the wheels, the brake-shoes, pivoted levers carrying said shoes, said levers arranged in pairs extending inwardly toward each other, a coupling adapted to engage
5 loosely the inner ends of each pair of levers, a duplex hinge connection disposed between said couplings and pivoted thereto, means for holding the leaves of said hinge normally extended and the brakes released, a rocking-lever pivoted on the frame and connected to said hinge, and
10 adapted, when actuated, to contract the hinge to apply the brakes, a pull-rod connected with said rocking-lever, and means for actuating said pull-rod.
3. In a railway brake structure, the combination of the frame, the wheels, the brake-shoes, a pair of horizontally
15 acting brake-levers for each pair of wheels, horizontal guides for the outer ends of said levers, said levers extending inwardly toward each other, couplings adapted to engage loosely the inner ends of each pair of levers, a duplex hinge connecting said couplings, means for holding
20 the leaves of said hinge normally extended and the brakes thereby released, a rocking-lever pivoted on the frame and connected to the leaves of said hinge, and adapted, when

actuated, to contract said hinge to apply the brakes, a pull-rod connected with said rocking lever, and means for actuating said pull-rod. 25

4. In a railway brake structure, the combination of the frame, the wheels, the brake-shoes, a pair of horizontally acting brake-levers for each pair of wheels, said levers extending inwardly toward each other, couplings adapted to engage the inner ends of each pair of levers, a duplex
30 hinge connecting said couplings, a rocking-lever pivoted on the frame and connected to the leaves of said hinge, and adapted, when actuated, to contract the hinge, thereby applying the brakes, a counterweight carried by said rocking-lever, adapted normally to hold the hinge ex- 35 tended and the brakes released, a pull-rod connected to said rocking-lever, and means for actuating said pull-rod.

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

JOHN B. O'DONNELL.

Witnesses:

WILL O'DONNELL,
CLOID E. KEPNER.