J. N. WALKER.

RAILROAD CAR BRAKE.

No. 36,489. Patented Sept. 16, 1862.

Fig: 1

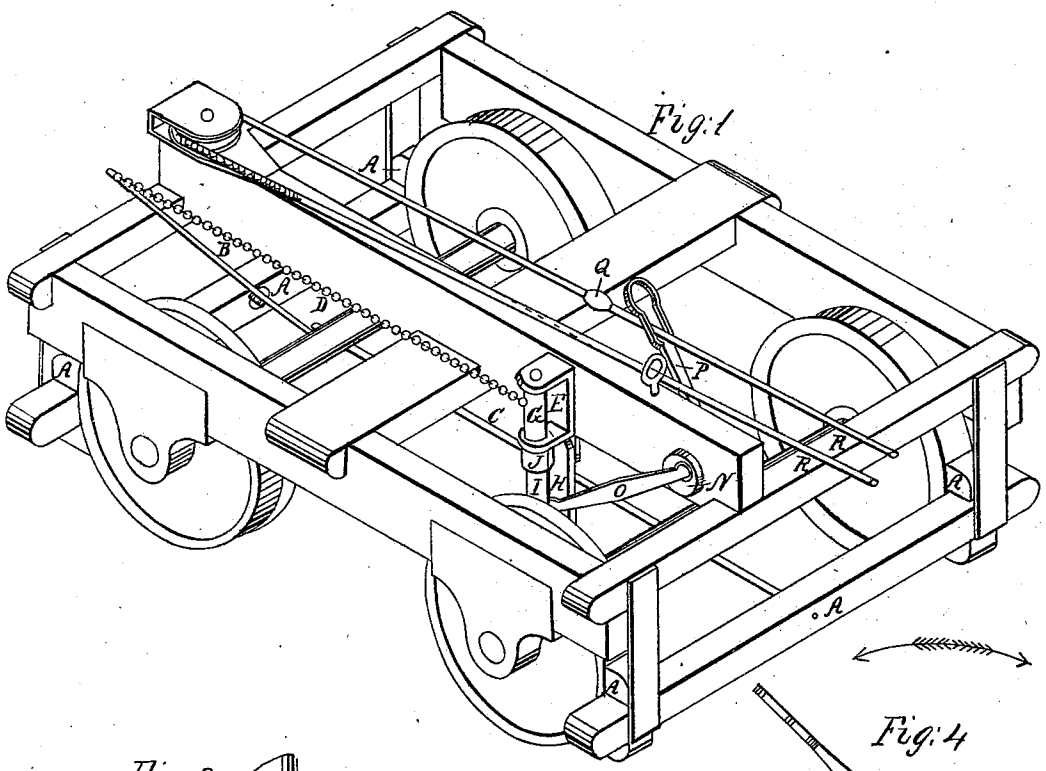


Fig: 4

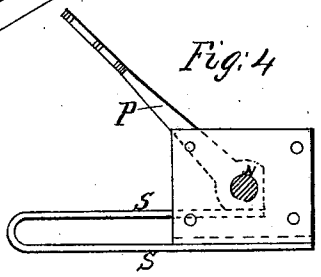


Fig: 3

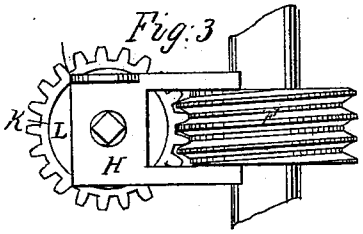
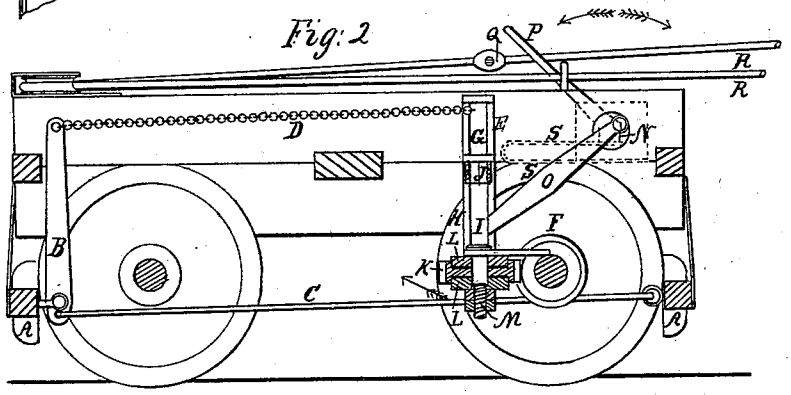


Fig: 2



Witnesses

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JOSEPH N. WALKER, OF CINCINNATI, OHIO.

IMPROVEMENT IN RAILROAD-CAR BRAKES.

Specification forming part of Letters Patent No. **36,489**, dated September 16, 1862.

To all whom it may concern:

Be it known that I, JOSEPH N. WALKER, of Cincinnati, in the county of Hamilton, in the State of Ohio, have invented a new and Improved Mode and Machinery for Operating the Brakes of Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical perspective view; Fig. 2, a longitudinal elevation; Fig. 3, a plan of screw and wheel and that part of the vibrating hanger-arms which straddles and embraces the endless screw; and Fig. 4, a side elevation of the spring-lever, the spring and plate holding the same together.

The nature of my invention consists in the use of a vibrating hanger embracing an endless screw working into a wheel embraced between two friction-flanges, regulated by a double set-screw, and thrown in and out of gear by a vibrating spring-lever, with a hole and slit in the upper end of it, worked by an adjustable ball upon a cord, which cord extends to a convenient point within reach of the engineer of the train, and by means of which the brakemen are dispensed with (avoiding the numerous fatal accidents to that class of persons and their wages) and the engineer can have instant control of each and every brake on each and every car of the train, throwing on and off each one separate and independent of each other with any desired amount of friction or strain (and preventing the frightful constantly-recurring accidents by collisions by which so many lives are sacrificed and so much property is being destroyed) by simply pulling a single small cord of the size of the signal-cord.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct the brakes in any of the usual forms, A A being the brakes, B the lever, and C the connecting-rod between the brakes and lever, and D the chain for winding them up to a proper strain or friction; but instead of winding up the chain D by hand I make use of the following device, by means of which the motion of the cars is made to perform the work with much more certainty and efficiency than it can be done by hand or any other arrangement, and free from all jam, jar, or unusual strain.

The hanger E is permanently bolted above and at the proper distance from the endless screw F, which is on one of the axles of the car. In the hanger E works freely the shaft G for winding the chain D upon, (when the brakes are being operated.) Upon a lug at the bottom of the fixed hanger E is suspended another hanger, H, which carries the shaft I, the lower end of both the hanger H and the shaft I vibrating freely together backward and forward at the point where they are united with the fixed hanger E on a wrist and the shaft G by the universal joint J, so that when the chain D is wound up to a strain it will not prevent the wheel and endless screw from being thrown in and out of gear. The vibrating hanger H has projecting arms, which are made to straddle the endless screw F, so as to relieve both the endless screw and the hanger from any side strain, making the endless screw F to operate on the wheel K as if it was an entering wedge, the one side pressed by the teeth of the wheel and the other side by the arms of the hanger, each counterbalancing the other.

On the lower end of the shaft I is placed a wheel, K, (before referred to,) fitted to work in the endless screw F and pressed between two flanges, L L, which flanges are fitted to a square part of the shaft I and have leather or some other elastic substance between them and the wheel to cause uniform friction as the wheel K turns between the flanges L L, which friction is regulated and adjusted (to relieve any undue and cause a proper strain upon the brakes) by the double set-screw M. When the wheel K is thrown into gear of the endless screw F, operating through the shaft I, it is made to wind up the chain D to a full strain on the brakes, at which time the wheel K slips round between the flanges L L, keeping up the strain and friction till the cars are stopped.

For throwing the wheel and endless screw K and F into and out of gear I make use of the following device: On the opposite end of the small crank-shaft N is a lever, P, in the upper end of which lever is a hole or round opening for the cord R R, carrying the adjustable metallic ball, (fastened with a set-screw,) to pass freely through each way. Downward from the hole is a slit or opening large enough

to allow the cord R R to pass freely through, but not large enough to permit the ball Q to pass. The lower end of the lever P is acted upon by the spring S, (see Fig. 4,) so as to force it to assume an angle of forty-five degrees from and after it has passed the central upright point when being moved backward and forward in the direction of the arrow, which movement, operating through the crank-shaft N and the connecting-rod O (which has a wrist at each end) and the vibrating hanger H, throws the wheel and endless screw K and F in and out of gear, as the case may be. To enable the engineer of the train to move the several levers on different cars backward and forward, as before indicated, the cord R R is extended to some convenient point on the locomotive. When the ball Q, by means of the cord R R is pulled in the opposite direction from that toward which the lever P leans, it encounters the slit or narrow opening in the lever before described and cannot be pulled any farther without throwing the lever over past the central upright point, when the spring S forces it to assume the position of an inclined plane at an angle of forty-five degrees, up which the ball Q slides and through the hole at the top, passing on freely and permitting other balls adjusted on the same cord, R R, to operate other levers and their connecting-brakes.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The hanger H, shaft I, operating upon the universal joint J, and wheel K, combined with the endless screw H, in manner and for the purpose herein described.

2. The worm-wheel K, combined with its two flanges, L L, and the double set-screw M, in manner and for the purpose herein described.

3. The combination of the lever P, constructed with a hole and slot in its upper end, with the cord R R, adjustable ball Q, spring S, and connecting-lever O, in the manner herein described.

4. The construction and arrangement of the hanger H, with its projecting arms embracing the screw F upon the axle and in vibration therewith, and with the foregoing claims, in manner and for the purpose herein described.

JOSEPH N. WALKER.

Witnesses:
H. N. CLARK,
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