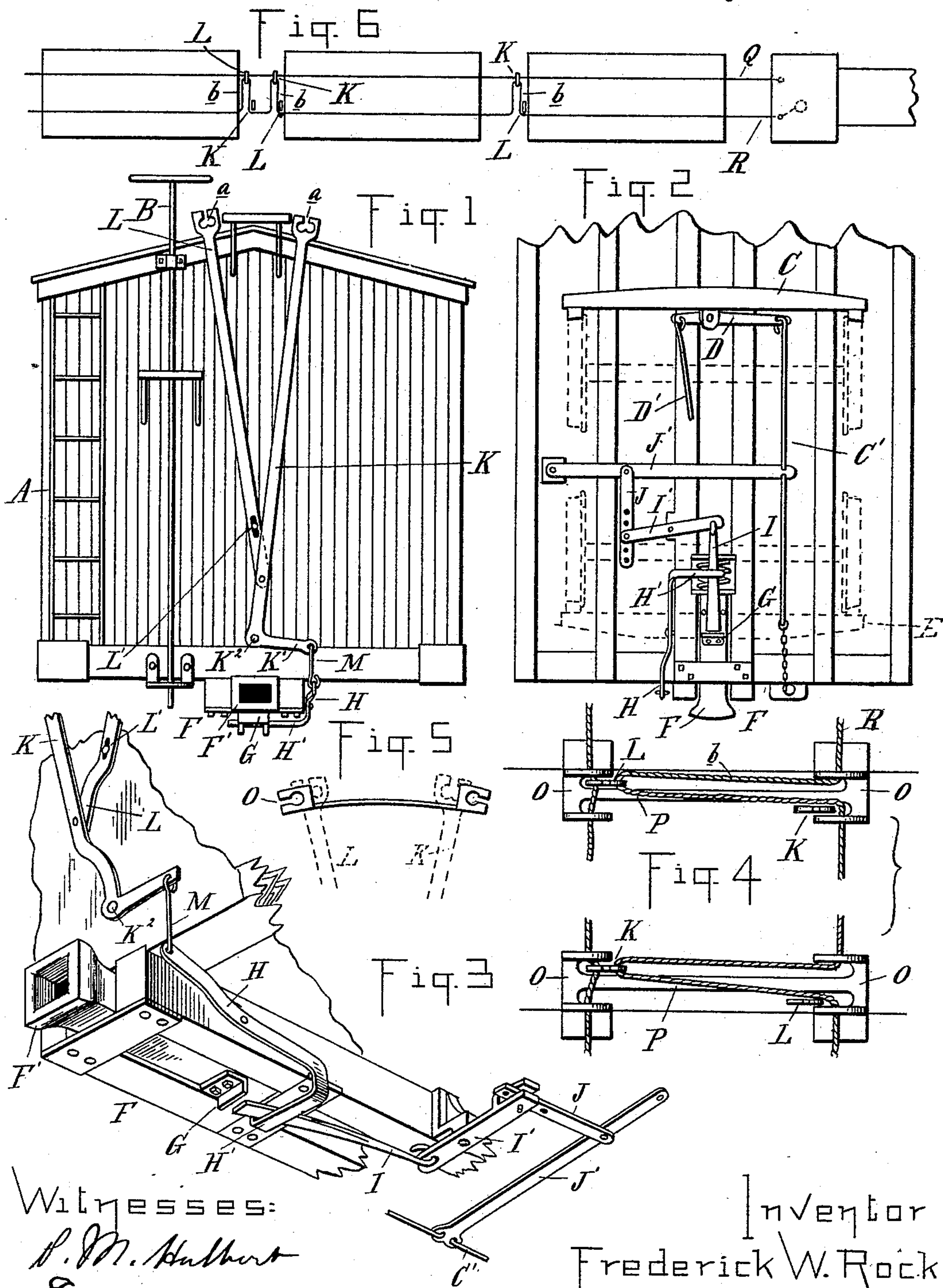


(No Model.)

F. W. ROCK.
CAR BRAKE.

No. 427,910.

Patented May 13, 1890.



Witnesses:
H. M. Hulbert
Samuel B. Burt

Inventor
Frederick W. Rock
By *James Whittemore*
Att'y.

UNITED STATES PATENT OFFICE.

FREDERICK W. ROCK, OF DETROIT, MICHIGAN.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 427,910, dated May 13, 1890.

Application filed October 1, 1889. Serial No. 325,706. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. ROCK, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in car-brakes; and the invention relates to the peculiar construction of an attachment which may be applied to a freight-car equipped with the ordinary hand-brake, whereby all the brakes in a train may be operated from the locomotive or caboose or from any part of the train; and, further, in the peculiar means of operating the brake by throwing the brake mechanism into engagement with the draw-bar of the coupler, whereby when the draw-bar is moved inward by the compression due to applying the locomotive-brakes the brakes upon all the cars are thereby set; and the invention consists, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings which accompany this specification, Figure 1 is an end elevation of a car to which my invention is applied. Fig. 2 is a bottom plan thereof. Fig. 3 is a perspective view of the operating parts, looking from below. Fig. 4 is an enlarged top plan view of the operating-levers, showing manner of applying cord. Fig. 5 is an elevation thereof, showing the guide-loops. Fig. 6 is a plan view of a train of cars, showing manner of cording.

A is a freight-car to which my invention is applied.

B is the rod of the usual hand-brake, having connection with the usual brake-beam C by means of the connecting-rod C' and lever D. The connecting-rod D' joins the lever D with the brake-beam E upon the other pair of wheels, these parts being of the known and usual construction.

F is the car-coupler, having the draw-bar F', on which latter I form the downwardly-projecting lug G.

H is a lever pivoted to the side of the coupler and having a lateral arm H' extending beneath the same, upon which rests the free

end of the gravity-latch I, which at the other end connects with the lever I', which is connected by the link J to the lever J', which at one end is connected to the connecting-rod C', connecting to the brake-beams, which, as usual, are provided with the proper brake-shoes.

K is a vertical lever having a lateral arm K' at its lower end. This lever is pivoted at K'' to the car and extends upwardly to a short distance above the roof of the car, being provided at its upper end with a slotted guide-loop *a*.

L is a second vertical lever pivoted at its lower end to the lever K above the pivotal point of the latter with the car, and also pivoted to the end of the car at L', a slot being formed in the lever to allow of the proper rocking movement thereof. At its upper end the lever L is provided with a slotted guide-loop *a*, the same as the lever K. The end of the arm K' is connected by a link M with the end of the lever H.

The parts being thus constructed, they are intended to operate as follows: The lever K being at the left hand, the latch I will be in its lowered position out of engagement with the lug G. By throwing the lever K to the right, as shown in Fig. 1, the latch will be thrown behind the lug G. If the engineer applies brakes to the locomotive, the cars in the train will be impelled one against the other, moving inward the draw-bar on each car, thereby moving the lug G against the latch I, which in turn transmits motion through the lever I', link J, and lever J', and rod C' to the brake-beams, thus applying the brakes. As soon as the brake on the first car is applied, the compressing effect on the draw-bars will be increased, and thus the braking effect will be increased until the train stops.

A train of cars being provided with my brakes, to operate them from the locomotive I place upon each car the double guide-brackets O, slotted upon the sides, and having suitable apertures which will be in line with the guide-bearings in the top of the levers K L when in either extreme of their throw. These brackets are connected by a guide-bar P, between each pair of brackets O, forming a guide for each of the levers K and L. The levers K L being thrown so that the latch I is out of

engagement with the lug G on each car, and the train being made up, the brakeman takes the ends of two cords Q R, which are reeled up in the caboose, and, passing over the train
 5 to the locomotive, makes one cord—say the right-hand cord R—fast to the signal-bell of the locomotive, and the left-hand cord he se-
 cures to a ring or hook. He then moves back to the caboose, placing the left-hand cord in
 10 each of the guide-loops and through the loop *a* in the top of the left-hand lever on each car. The right-hand cord he passes through one of the double guide-loops, and then forms a loop *b*, engaging the cord in the eye of the
 15 left-hand lever and back through the guide-loops. The train being started, the brakeman draws upon the cord R, which will straighten the loops and loop the cord P, moving the lever L to the right and the lever K to the left,
 20 as shown in Figs. 1 and 8, and thereby raising the latch *l* into engagement with the lug G. The cord R is now a straight cord connected with the signal-bell in the cab of the locomotive, and may be used to signal without oper-
 25 ating the brake. The brakes are in position to be automatically operated by the inward motion of the draw-bar, either by the momentum of the train on a downgrade or when the brakes are applied upon the locomotive. To
 30 release the connection with the brakes, the cord P is pulled, throwing the levers to their unlocking position.

It will be seen that the usual hand-brake may be operated, when desired, independent
 35 of my improvement. When the train reaches its destination, the cords may be reeled up, the cars uncoupled, and the hand-brakes operated when required, or my device may be operated by hand, if desired. The levers K and L are
 40 thrown to one side of the center, and being connected together any jarring of the train will tend to throw them from their adjusted position. The lever L is used in place of the lever K whenever the cars are reversed end
 45 for end. Thus in Fig. 6 the first two cars use the levers K, while in the third the lever L is used. I preferably make the link J with adjusting-holes to regulate the length thereof, according to the strength of buffer-springs
 50 and draw-head.

What I claim as my invention is—

1. In combination with a car-brake, the levers K and L, pivoted to the car and pivotally connected together, substantially as described. 55

2. The combination, with a car-brake, the levers K and L, pivoted to the car and pivotally connected together, of two cords connected with one of said levers, substantially as described. 60

3. In combination with a car-brake, the levers K and L, pivoted to the car and pivotally connected together, guide-loops on the car, and two cords connected with one of said levers and passing through the guide-loops, substantially as described. 65

4. In combination with a car-brake, the levers K and L, having eyes at the upper ends, double guide-loops on the cars connected by a guide-bar, and two cords passing through the
 70 guide-loops and through the eye of one of the levers, substantially as described.

5. In a car-brake adapted to be set by the inward movement of the draw-bar, levers K and L, connected with a latch adapted to be
 75 moved in and out of engagement with the draw-bar and connected with the brake mechanism, substantially as described.

6. In a car-brake adapted to be set by the inward movement of the draw-bar, the combination of the following elements: the levers K and L, the arm K', the link M, the lever H, having the lateral arm H', the latch I, the lever I', the link J, lever J', and connections with the brake-rod, substantially as described. 85

7. In combination with a car-brake adapted to be set by the inward movement of the draw-bar, the levers K and L, and two cords passing over each car, one in a straight line, connecting with the signal-bell on the locomotive, and one in a looped line, both cords engaging with the same lever of the brake-operating mechanism, substantially as described. 90

In testimony whereof I affix my signature, in presence of two witnesses, this 16th day of
 September, 1889. 95

FREDERICK W. ROCK.

Witnesses:

ED MCBREARTY,
 A. HAMILTON.