

J. H. WILLIAMS.
Car Brake.

Patented Mar. 12, 1867.

No. 62,912.

Fig. 1.

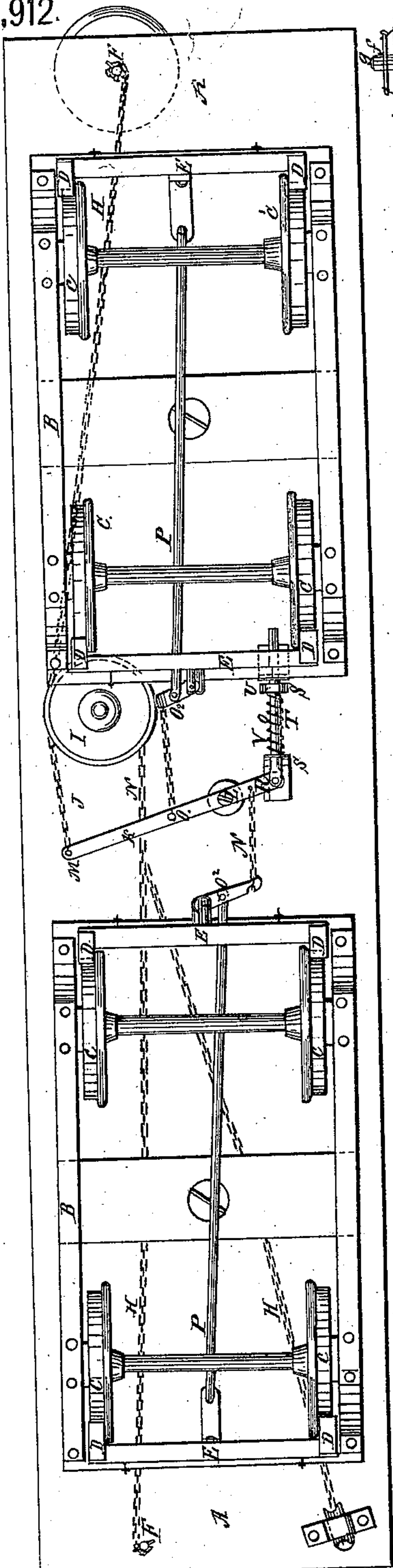


Fig. 2.

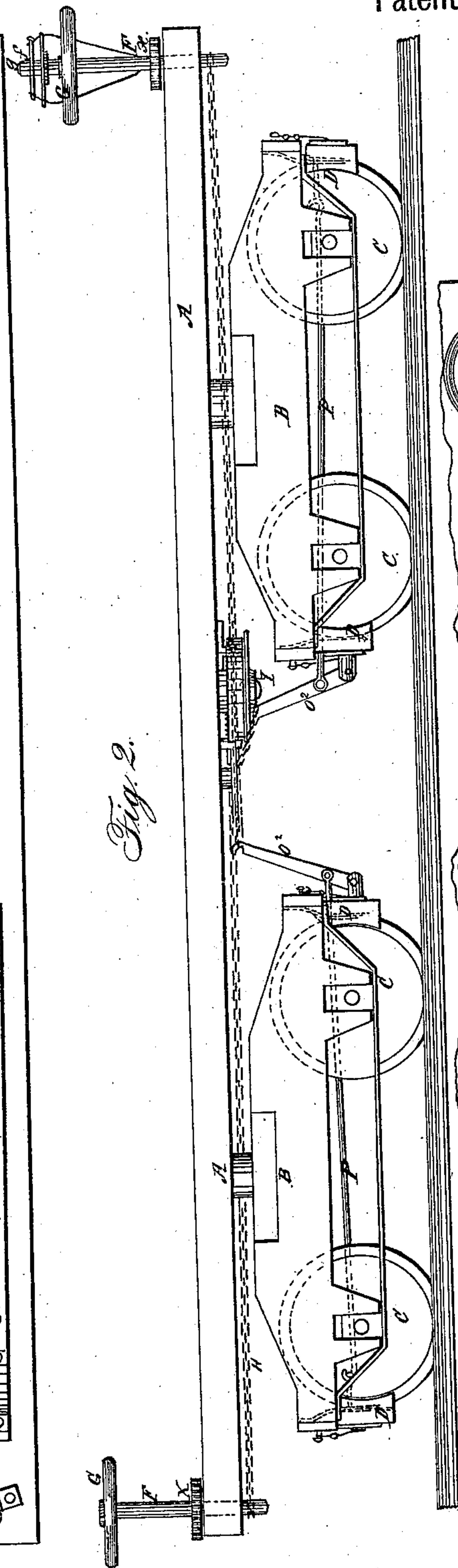


Fig. 3.

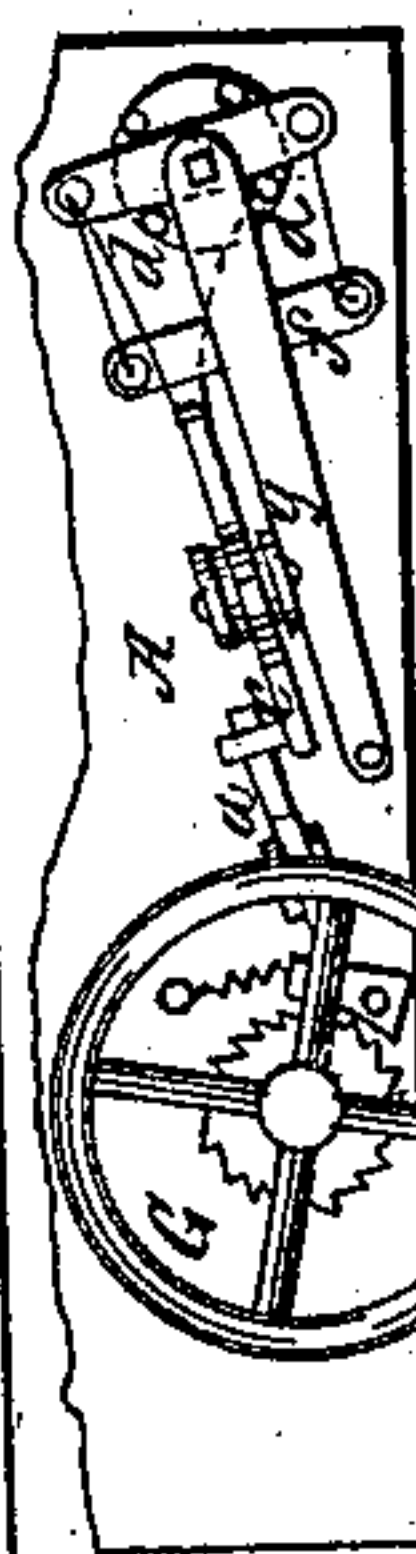


Fig. 4.

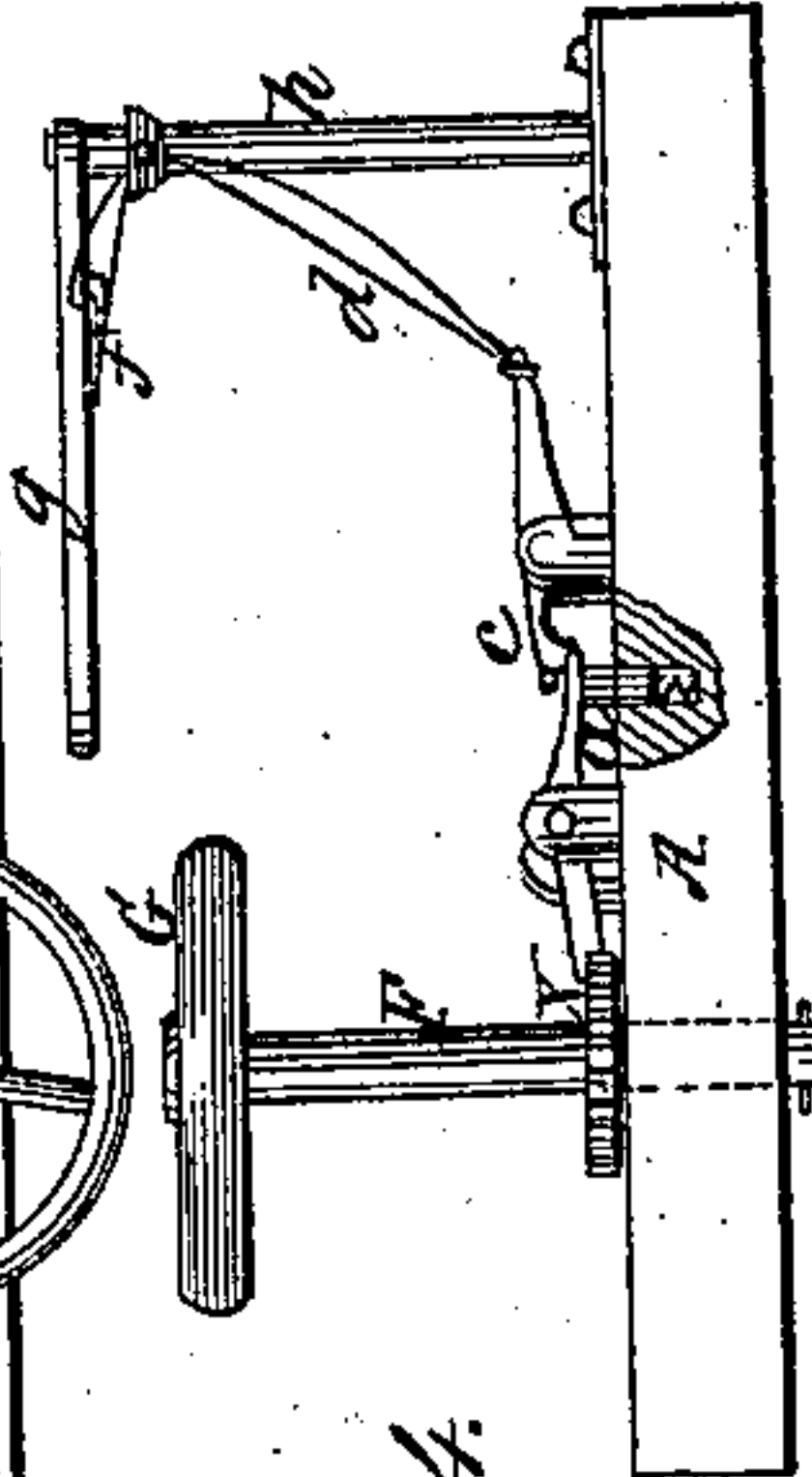


Fig. 5.

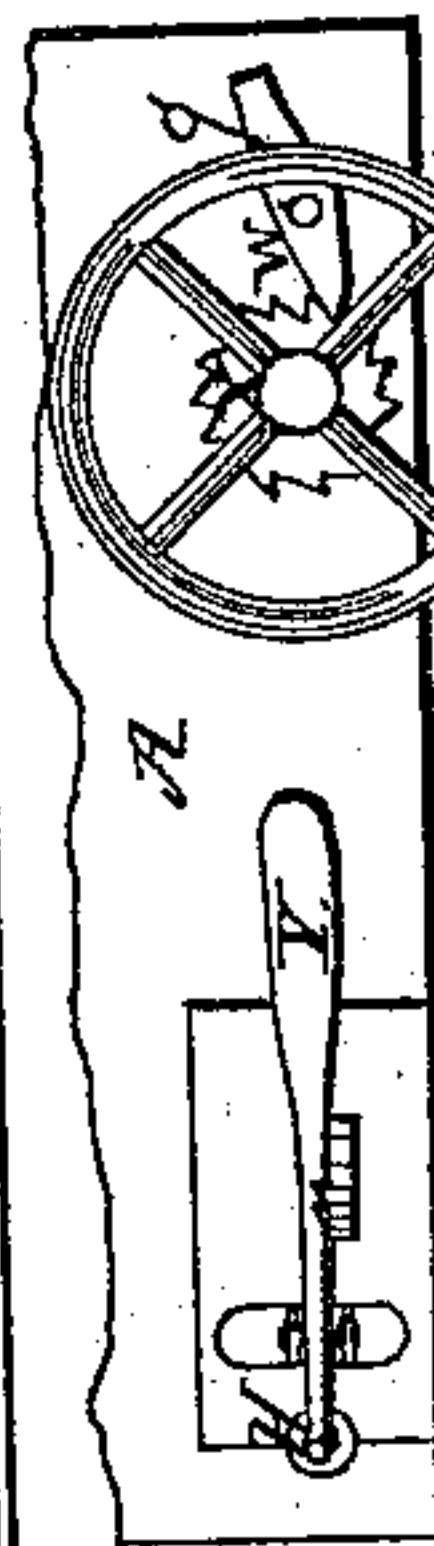
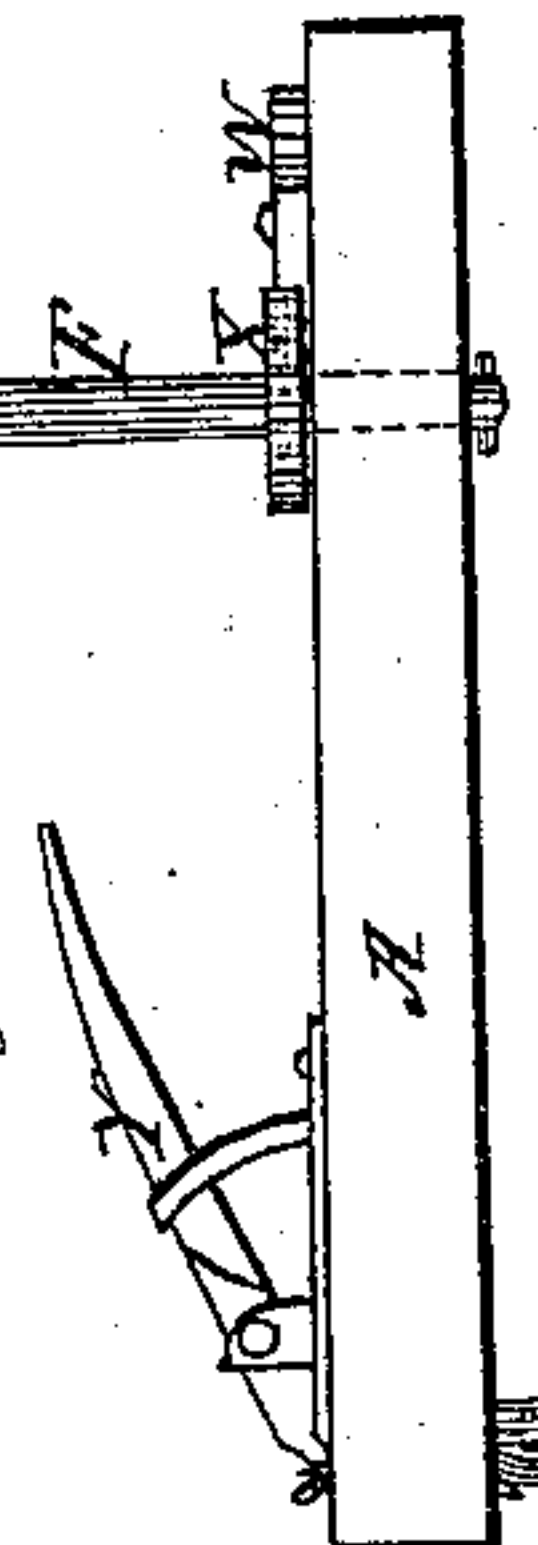


Fig. 6.



Witnesses:

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JOHN H. WILLIAMS, OF SOMERVILLE, NEW JERSEY.

Letters Patent No. 62,912, dated March 12, 1867.

IMPROVED CAR BRAKE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN H. WILLIAMS, of Somerville, in the county of Somerset, and State of New Jersey, have invented certain new and useful Improvements in Car Brakes, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

The present invention consists principally in interposing between the ordinary brake-shaft, or any equivalent device therefor, and the parts by which the brake-shoes are brought to bear upon the car-wheels, a spring or springs, in such a manner that they will act to hold the brake-shoes against the car-wheels, and if relieved therefrom, to bring them to bear upon the same; the said spring or springs, when the brake-shoes are released from the wheels, being compressed and so held in any proper manner, when being relieved, by their reaction the brake-shoes are brought to bear upon the car-wheels. In the accompanying plate of drawings my improvements in car-brakes are illustrated---

Figure 1 being a plan view of the under side of a car, having them applied thereto.

Figure 2 is a side elevation of the same; and

Figure 3 a plan view of a portion of one end of the car platform.

Figure 4 a side elevation of the same; and

Figures 5 and 6 similar views to figs. 3 and 4 respectively, but showing a foot-lever as substituted for the brake-shaft.

A, in the drawings, represents the platform of the car, supported upon two trucks, B B, one at each end, having wheels, C, as in ordinary railroad car-trucks. D D the brake-shoes, attached to cross-bars, E, and arranged with regard to the wheels C so as to bear against their peripheries in a manner similar to the car brakes now in common use. F the brake-rods, provided with a hand-wheel, G, at their upper ends for convenience in turning them; these brake-rods being located one at each end of the platform, through the thickness of which they extend, projecting on the under side. H chains, secured to the lower end of the brake-rods, one to each of the same, from which they extend under the car platform toward the centre of the same, where they are both hung or connected to a common wheel or drum, I, arranged and hung upon the under side of the car platform, so as to turn thereon, the points of connection of the two chains H to the drum I being diametrically opposite to each other, or nearly so. J a chain, connected with wheel at one point of the same where one of the chains H is hung to it, which chain J forms a continuation of the said chain H, and may be a part of the same or made separate therefrom. K a lever-arm, hung upon a fulcrum-pin at L, to the under side of the car platform, across which it extends, and has connected or hung to it at one end, M, the chain J, hereinbefore referred to. N two chains, hung to lever-arm K, the one at a point, O, between the fulcrum-pin L and end M, and the other upon the opposite side of the fulcrum-pin L, at a distance therefrom equal, or nearly so, to the point O. These chains N extend from the lever K in opposite directions, and are both connected to the upper ends of similar vertical lever-arms, O², which, at their lower ends, are hung to the inner cross-bars E, provided with brake-shoes, as has been hereinbefore described, and through connecting-rods, P, with the similar cross-bars at the two ends of the car-platform, as in ordinary car brakes, and therefore needing no further particular description herein. Q a rod, pivoted to the end R of lever K, which rod extends and plays through guide-brackets, S, secured to the under side of the car platform, moving in a line corresponding with the length of the car. T a spring, coiled around the rod O between the two guide-brackets S. This spring is confined between the screw-nut V, upon one portion of the said rod Q and the loose collar V of the same, and through its arrangement and connection with the lever K and the connection of the latter with the cross-bars carrying the brake-shoes, acts to so throw, swing, or turn the said lever K as to bring the brake-shoes against and to bear upon the peripheries of the car-wheels.

Thus, from the above description, it is plain to be understood that, first, through the action of the spring T the brake-shoes are brought to bear upon the car-wheels, where it also serves to hold them, with a pressure or force corresponding to the strength of the spring employed or to the tension of the same, to which it may have

been adjusted through the screw-nut U, and that, second, to release the brake-shoes from the car-wheels it is necessary to wind up either one or both of the chains H, upon the brake-shafts to which they are hung, sufficiently to so turn the lever K that, through the chains O connecting it with the brake-shoe bars E, it will swing the said bars in the proper direction to carry the brake-shoes away from the car-wheels and thus leave them free to turn.

By the winding up the chains H, as above described, the spring T is compressed in a degree proportionate thereto, in which condition it is held, in the present instance, by holding the brake-shafts, either one or both, as the case may be, so that they cannot turn to unwind the chains H, through the pawls W, upon the upper side of the car platform, and engaged with the teeth of the ratchet-wheels X, attached to the brake-shafts, one to each of the same, as plainly shown in the drawings, more especially in figs. 3 and 5. With the spring T compressed and held as above described, it is plainly apparent that if the pawls are released the spring is thus set free, when, by the force accumulated in the same through its compression, the brake-shoes are automatically brought to bear upon the car-wheels with a force proportionate thereto, and there maintained until relieved by the winding up of the chains H, as before.

It may be here observed, that in my improved car brakes, when the chains are unwound from the brake-rods, the brakes are on, and *vice versa*, the brakes being put on by the spring in lieu of the brake-rods, as heretofore.

In lieu of using brake-rods, as above described, for taking off the brakes, foot-levers, Y, may be used, one arrangement of which is shown in figs. 5 and 6, foot-levers being preferable for street cars drawn by horses, as with them both hands of the driver are free to be used for driving the horses, which, as is evident to all, is an advantage of great importance in the safe running of street cars.

If desired to place the brakes of each and every car under the control of the engineer or any person upon the train, whether he is in one or the other of the cars composing it, an arrangement of parts to be now described, and which forms a part of the present invention, may be applied to the pawl for holding the brake-shaft, and connected, through a cord, chain, or any other suitable connection, the one with the other, extending to the locomotive-cab; one arrangement of such parts being shown in figs. 3 and 4, to which special reference is now had. The pawl W is hung so as to swing in a vertical plane or direction, resting by its outer end, *a*, upon an elastic or spring top, *b*, arranged to play up and down in a suitable-shaped socket or recess thereof, formed in the car platform. On this end of the pawl, one end of a lever, *c*, rests, which is hung so as to swing up and down in a vertical plane, the other end of said lever being connected through wires *d*, with the cross-arm *f* of an arm, *g*, hung to the upper end of a post, *h*, so as to swing in a horizontal plane thereon. To the outer end of horizontal swinging arm *g*, the operating cord or chain, etc., extending through the cars, is to be hung, by the pulling of which the said arm will be swung, either to the right or left, as the case may be, and thus through its connection with the pawl, raising and disconnecting it from the teeth of the ratchet-wheel on the brake-shaft, which is then free to turn from the action of the spring for putting on the brakes. Although I have herein particularly described my improvements as applied to the brake of a railway car, it is obvious that they can be readily adapted to other land conveyance, such as, for instance, street cars, omnibuses, coaches, carriages, wagons, etc., and therefore I do not intend to limit myself to any one particular application of them. In lieu of using a coiled spring, as has been explained, a rubber cushion may be employed, as well also as various other forms of springs. If desired at any time to put the brakes on without the full force of the spring at once, by simply holding the brake-shaft wheel with the hands, the force with which the brakes are put on by the spring can be restrained at pleasure, and thus regulated in their action. In lieu of only one spring being employed, more than one can be arranged upon each car.

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

1. The drum I, lever K, spring T, chains H J and N, when all are constructed and arranged as herein set forth for the purpose specified.
2. The arrangement of the lever *c*, connecting-chains or wires *d*, and horizontal swinging-arm *g*, in combination with the pawl W, substantially as described for the purpose specified.
3. The foot-lever *y*, connected with the brake chain, and arranged substantially as and for the purpose described.

The above specification of my invention signed by me this 14th day of November, 1866.

J. H. WILLIAMS.

Witnesses:

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