

(No Model.)

H. F. NOTBOHM.

CAR BRAKE.

No. 262,690.

Patented Aug. 15, 1882.

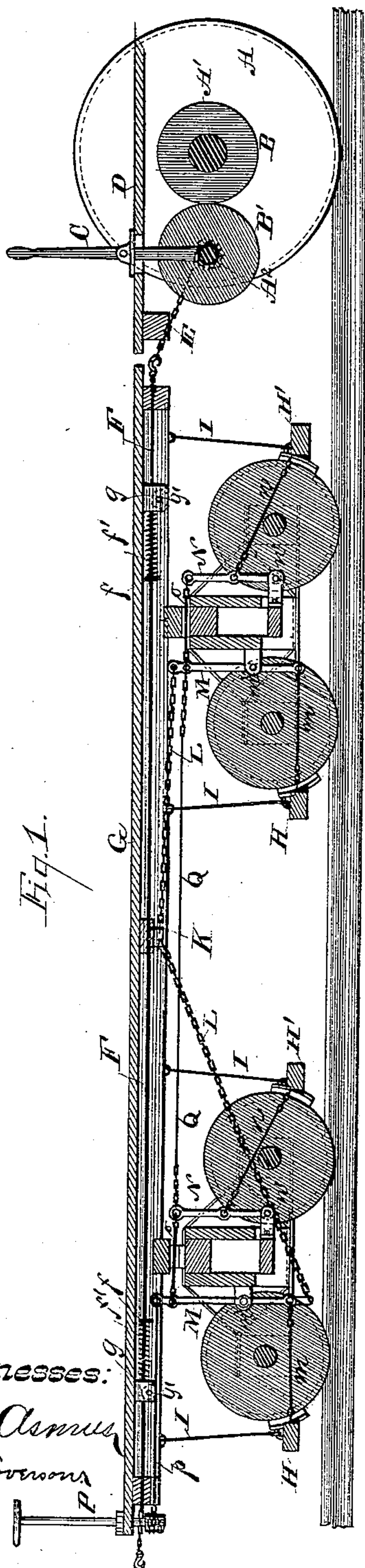
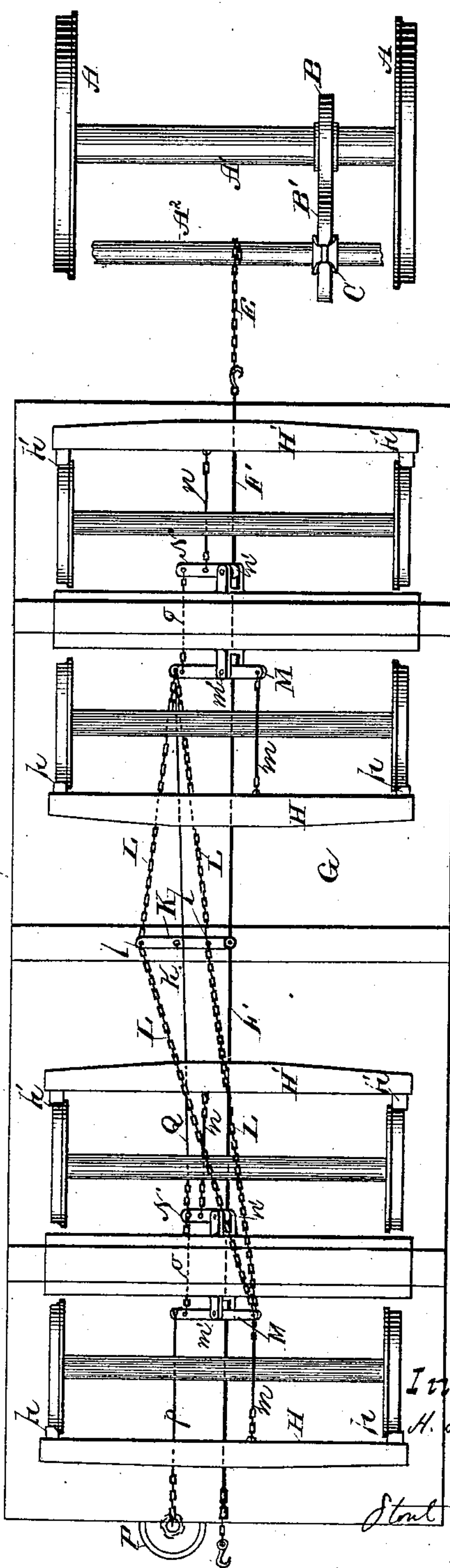


Fig. 1.

Witnesses:

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 262,690, dated August 15, 1882.

Application filed January 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, HARMON F. NOTBOHM, of Janesville, in the county of Rock, and in the State of Wisconsin, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to improvements in railway-car brakes; and it consists in a construction whereby the brakes can be simultaneously applied to the wheels throughout an entire train by a single movement of a lever under the control of the engineer or other person at any specified point on the train, as will be more fully set forth and explained hereinafter.

In the drawings, Figure 1 is a longitudinal vertical section, and Fig. 2 is an under side plan view, of the floor and truck of a railway-car with my improvements applied thereto.

In the said drawings I have shown to the right of the car a portion of the locomotive, consisting of the drive-wheels and part of the floor and my attachment secured thereto, but dispensing with the tender, it being understood that a rod or chain passes under or through the tender, making a brake-connection between the locomotive and first car exactly as the several cars are connected, the tender being omitted in the drawings simply to avoid unnecessary detail.

A A represent the large driving-wheels of a locomotive, supported on an axle, A', which is provided also with a friction-wheel, B. B' is another friction-wheel, on a separate axle, A², and a bifurcated lever, C, extends down through an opening in the floor D of the locomotive and straddles the friction-wheel B' and its axle, the latter having bearings in hinged hangers secured to the under side of the locomotive-floor, which are not shown. A chain, E, connecting at one end by a hook or other fastening with a chain on the end of one of the rods F, which run under each car, connects at its other end with the described hanging axle A², and thus a slight movement of the lever C will cause the peripheries of the two friction-wheels B and B' to impinge, and thus wind up this chain E, which pulls the rods F forward throughout the entire length of the train, and sets every brake-shoe hard

against its wheel, as hereinafter described, stopping the train.

G represents the bottom or entire platform of a railway-car provided with the ordinary trucks and wheels, requiring no special description.

H H' are the brake beams or bars, and h h' the brake-shoes, the said beams being suspended from the platform or bottom of the car by hinged rods I.

K is a lever, pivoted at k to a beam on the under side of the platform G, one end of said lever being secured to the rod F, already named. A doubled or endless chain, L, is likewise attached at its center to the lever K, at the points l l, on either side of the pivot k, while the ends of this doubled chain are attached respectively to the lower end of the bar M, at the left-hand side of the car shown in the drawings, and to the upper end of the bar M, shown at the right-hand side. Links m connect the lower ends of these bars M with the left-hand brake-bars H, and these bars M are pivoted nearly midway, at m', to projections on the frame-work between the car-wheels. On the opposite side of the said frame-work, and pivoted to similar projections, are bars N, which, however, are pivoted at n', at their lowest points, instead of midway, and to the middle of these bars N links n are secured, which connect these bars to the right-hand brake-bars H'. Links o connect the tops of the bars M with the tops of the bars N. This system of bars and links M N m n o, between each set of wheels, in its general features resembles the ordinary brake attachments now in general use, which are adapted, in connection with the usual brake-bars and brake-shoes, to stop a train by means of individual hand-brakes on each car. I do not propose to disturb these hand-brakes, but to simply add my improvement to the present cars, although, of course, in building new cars the hand-brakes and their attachments may be dispensed with; but, in order to show the adaptability of my invention to the existing forms of car-trucks and attachments, I have here shown a hand-brake, P, connected by rod and chain P to the left-hand bar M, nearest the brake on the left-hand side of the car, and by means of another rod and

chain, Q, connecting the bar N on the left-hand side of the car to the bar M on the right-hand side of the said car. Thus my invention is represented as applied to a car already fitted up with an ordinary hand-brake, and this adaptability of application, without material change in the construction of existing cars, constitutes a most valuable feature of my invention.

The rods F run preferably under the longitudinal center of each car, and are supported in bearings or hangers *g*, provided with rollers *g'*, on which the rods rest in order to facilitate their movement. These rods have collars *f* formed on them, between which and the hangers *g*, and connected to these parts are springs *f'*, which serve to draw back the rods F into their normal positions as soon as the friction-wheel B' is released from contact with the wheel B.

The operation of my device is mainly set forth in the foregoing description of its construction. It is apparent that as soon as the friction-wheels B B' are brought into contact the revolution of the former on the axle to which it is secured will transmit the needed power to the latter wheel, causing its axle to revolve and the chain E to be wound up thereon, pulling the bars F forward, and thereby operating the series of levers, rods, and chains described, forcing the brake-shoes against their respective wheels and stopping the train. As soon as the friction-wheels B B' are released from contact the springs *f'* will retract the rods F to their normal positions, and the brake-bars thus released will fall back by gravity, and the rods of the brake-bars will resume a vertical position, supporting the brake-shoes free of contact with the car-wheels.

It is obvious that my invention may be readily applied to cars having less than four brake-bars, the principle being exactly the same whether there be one, two, or more brake-bars, the rods F operating under all circumstances in precisely the same manner, and my doubled chain or equivalent device connecting the said rods with the levers, rods, and chains of the brake-bars, whether the latter be few or many in number, in the same general way, the changes necessary in case there are less than four brake-bars being such as lie within the province of the skilled mechanic, rather than in the domain of invention.

I wish it also understood that, in addition to placing the friction-wheel B on the axle of the driving-wheels or other axle in the locomotive, I may place a similar wheel on one of the car-axles on each or any of the cars, and arrange another friction-wheel, corresponding to the wheel B', in like manner contiguous thereto, with chains connecting the hanging axle of this last wheel to the rod F, so that the frictional force (generated by contact of the wheels B B') necessary to control the brakes on the train may be augmented by like fric-

tional contact throughout the train, a feature especially valuable when a very long train is in motion. A lever substantially like the lever C might be connected to the extra friction-wheel described, so as to operate the brakes from some other point on the train than the locomotive, but under ordinary circumstances the preferable way would be to have the brakes on the entire train under the control of the engineer, as already described.

My method of simultaneously setting all the brakes on a train from the engine or other given point is dependent on the construction and arrangement of the long rods F and their attachments, the friction-wheels described being simply for the purpose of supplying the necessary power, and hence it is apparent that my rods and chains would work satisfactorily, if power were derived from other sources—as, for instance, by means of pistons or stationary engines on the locomotive, or other power under control of the engineer; and I by no means limit myself to the exact method of obtaining power herein described in so far as the operation of these rods and their attachments and connections is concerned. In some instances it might be more convenient to place the wheel B' above the wheel B, with an endless chain around both these wheels, suitably grooving them to receive the chain, which latter, when the wheel B' was in its normal position, would hang below, and substantially free of the wheel B, and when the engineer desired to stop the train it would only be necessary to raise the wheel B' by a movement of the lever, when the chain would become tight and transmit motion and power from the axle of the wheel B through the wheel B', as before. This would be an obvious alternative, and I wish it understood that the friction-wheels may be disposed in relation to each other and brought into contact, direct or indirect, in such way as seems best in any particular case without departing from the spirit of my invention.

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

In a system of braking railway-trains, the combination, with the bottom, truck, and wheels of a car, of the pivoted lever K, the rod F and its connections, the doubled chain L, arranged as described, and the bars or levers M N, links *m n o*, and the brake-bars and brake-shoes, all connected, arranged, and operating substantially as shown and described, and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of December, 1881.

HARMON F. NOTBOHM.

Witnesses:

STANLEY S. STOUT,
HAROLD G. UNDERWOOD.