T. E. THOMPSON.

CAR-BRAKE.

No. 173,829. Patented Feb. 22, 1876.

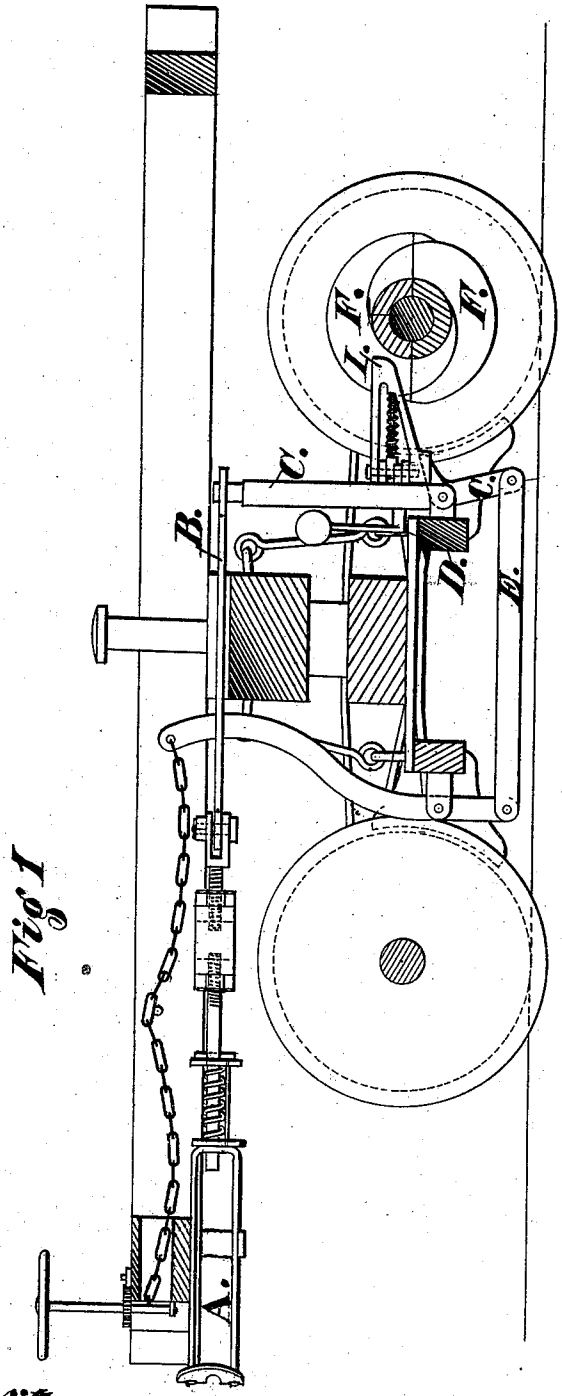

Fig 1

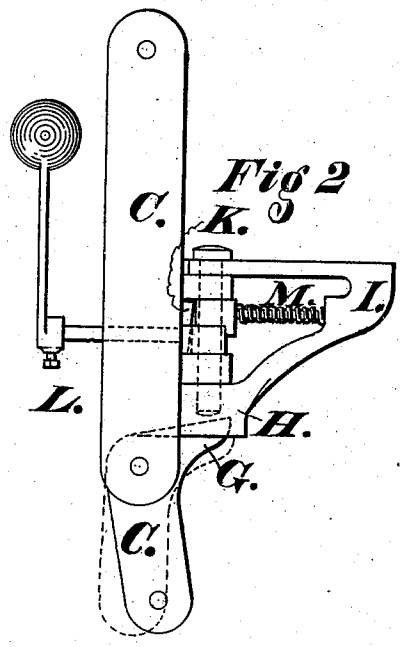

Fig 2

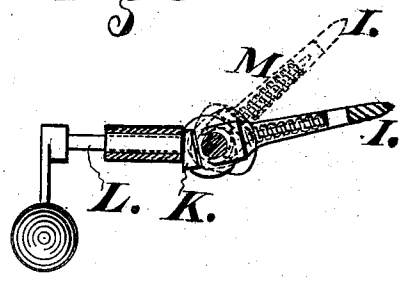

Fig 3

Witnesses:
Stanley Williams
Thos Mabry

Inventor:
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UNITED STATES PATENT OFFICE.

THOMAS E. THOMPSON, OF RICHMOND, INDIANA, ASSIGNOR OF PART INTEREST TO G. MORGAN ELDRIDGE, OF PHILADELPHIA, PA.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **173,829**, dated February 22, 1876; application filed June 14, 1875.

To all whom it may concern:

Be it known that I, THOMAS E. THOMPSON, of the city of Richmond, in the county of Wayne and State of Indiana, have invented a new and useful Improvement in Automatic and Momentum Car-Brakes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to the construction of a brake for a railroad-car, which shall be operated by the momentum of the car by means of its thurst upon its draw-bar, but so that the car can either be drawn forward or pushed backward without interference by the brakes.

The draw-bar of a car as at present constructed has a movement of some inches when two cars are thrust together, but returns to its place by the action of its spring when pressure is relieved. It is of this movement that I avail myself.

The draw-bar A, Fig. 1, is extended by a prolongation, B, to the line of the brake-bar, or thereabout, and at its extremity it is connected with a lever, C, which is attached to the brake-bar D, and at its lower end to a rod, E, which extends to and connects with the other brake-bar. With brakes inside the wheels the extension of the draw-bar is carried beyond the center of the truck, and the lever is attached to the farther brake-bar, and the connecting-rod is a pressure-rod; but with brakes outside the wheels the lever is attached to the brake-bar of the nearer wheels, and the connecting-rod becomes a draft-rod.

It will be readily seen that if while a train is in motion the locomotive is restrained the car next to it will thrust upon it, and that this thrust will be at once transmitted to the brake-shoes by means of the lever and connecting-rod, effectually braking the train and restraining the car until it ceases to press forward; when the brakes will be at once relieved, and so, respectively, with every car on the train, each one acting for and by itself.

It is evident that the wheels cannot be dragged, because so soon as the thrust ceases, and before the link can be tightened, the wheels are free; but it is clear that with this appliance, and without more it will be impossible to push the car back, because the thrust will come entirely upon the brakes, and will effectually prevent the revolution of the wheels.

To obviate this I so adjust the length of the connecting-rod that when the draw-bar is pressed in the brake-shoes are brought close to, but not pressing on, the wheels; and I attach an engaging and disengaging gear, by means of which the strain is put on and thrown off the brakes at the proper time, one form of the mechanism of which I shall now proceed to describe.

Upon the axle I attach a double scroll-worm, F, which acts upon the tongue I, hereafter mentioned. The lever C, which is shown with its connections in detail in Fig. 2, is jointed at the point at which it connects with the brake-bar D, and to its lower part is attached a lug, G, which rests upon a cam, H, by means of which the lever may be strengthened, and the strain upon the connecting-rod tightened. Attached to this cam, and moving it, is a tongue, I, (shown also in section in Fig. 3) which extends toward the axle, and is of such length as to engage with the worm F, when the brakes are brought close to the wheels, but to be free when the brakes are loose. Connected with the cam, and immediately in the rear of it, is an eccentric, K, upon a rock-shaft, L, which, being set in one position, adjusts the tongue so that it will engage with one of the worms, and in the other position so adjusts the tongue that it will engage with the other worm. The tongue is provided with a spring, M, by which it is held in its proper place ready for action. The car being ready to go in a certain direction the eccentric is set in that position which will put the tongue in place to engage with the worm which runs from the center to the circumference. The car may now be backed, because the pressure upon the draw-bar will cause the brake shoes to approach but not to press upon the wheels, and the worm near which the tongue lies does not engage with it, and the car may also be drawn forward freely; but if while it is in motion forward

the locomotive is held back the forward thrust of the car is received upon the draw-bar, and by means of the lever and connecting-rod the brakes are brought close to the wheels, and at the same time the tongue engaging with the worm brings the cam into action upon the lug, straightening the lever and bringing the thrust of the car to bear upon the brakes until the car is so checked that it ceases to thrust upon the one in front of it, when the spring of the draw-bar presses it out, the tongue is relieved from the worm, and the brakes from the wheels. When the car is to be drawn in the other direction the eccentric is set the other way, so that the tongue will engage with the other worm.

The hand-brake may remain substantially as it is now ordinarily attached, whether with the inside or outside brakes.

The purpose of my invention is accomplished when, by the thrust of a car in combination with mechanism impelled by the forward motion of its wheels, the brakes are applied and are held in action so long as the thrust continues; but are not operated by the thrust of the car in connection with the backward motion of the wheels.

The operation of the brakes is not effected by the thrust of the car alone, nor by the motion of the wheels alone, but is the result of the combination of these two forces acting at the proper time, and not otherwise.

In the application of these forces I do not confine myself to the precise form of apparatus described, for I have constructed sundry devices; and I am aware that many others can be constructed, differing in mechanical detail, but accomplishing the same result.

I claim as my invention—

The combination of the brake-lever directly attached to the draw-bar and mechanism, actuated by the wheels, substantially as and for the purpose described.

THOS. E. THOMPSON.

Witnesses:

S. P. HANSON,

F. K. HIPPLE.