C. M. WILKINS.

Automatic Car-Brake.

No. 220,010. Patented Sept. 23, 1879.

Fig. 1.

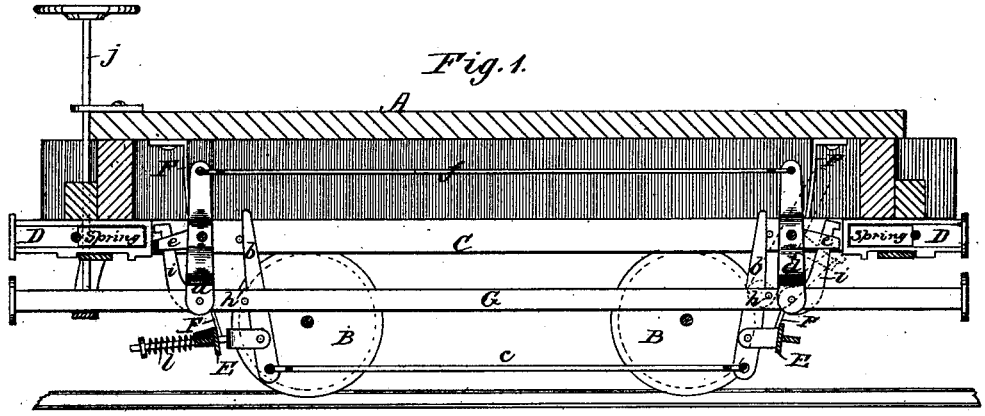
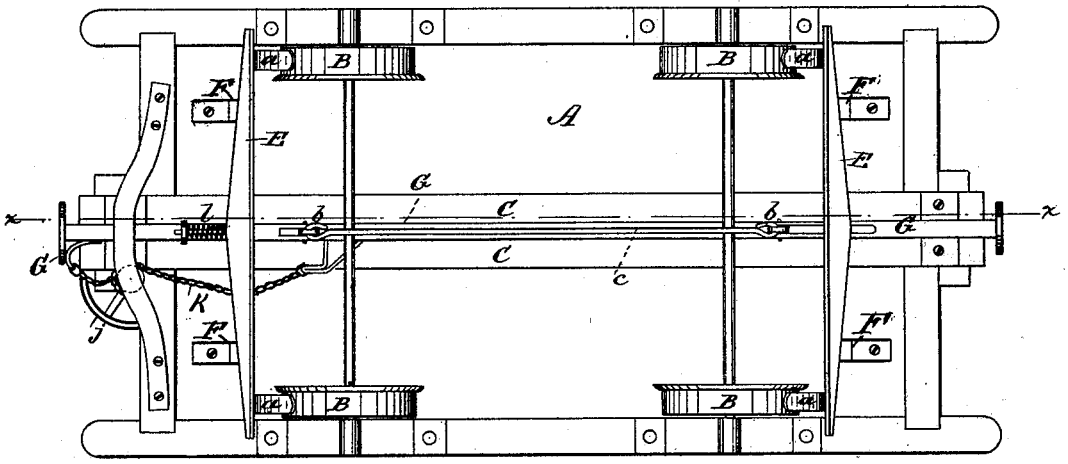


Fig. 2.



WITNESSES:

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INVENTOR:

C. M. Wilkins

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UNITED STATES PATENT OFFICE.

COOLEY M. WILKINS, OF ASHTABULA, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO H. M. FICKINGER, OF SAME PLACE.

IMPROVEMENT IN AUTOMATIC CAR-BRAKES.

Specification forming part of Letters Patent No. **220,010**, dated September 23, 1879; application filed July 25, 1879.

To all whom it may concern:

Be it known that I, COOLEY M. WILKINS, of Ashtabula, in the county of Ashtabula and State of Ohio, have invented a new and Improved Car-Brake; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section through line *x x* of Fig. 2. Fig. 2 is an inverted plan view.

My invention relates to an improved automatic car-brake designed to be applied by the impact or momentum of the cars coming together when the locomotive is "slowed up" or the brakes are applied to the same.

The invention is an improvement upon that general form of car-brake in which a longitudinal bar runs the full length of the car beneath the same, and terminates in heads, so that when the cars are slowed up these heads on the adjacent cars strike together, and by a longitudinal movement of said bars apply the brakes.

The invention consists in the peculiar construction of devices for applying the effect of the longitudinal bar, in the means for strengthening and bracing the same, and in the means for holding the brakes applied until the cars start again, as hereinafter described.

In the drawings, A represents the platform of a car, sustained upon the wheels B B. C C are two longitudinal beams arranged beneath the car-floor, and running parallel with each other throughout the length of the car. Between these beams, at the ends of the car, are arranged the draw-bars D D, which are made spring-seated or yielding in their connection with the car, so that they have a slight movement between the beams D D, to break the abruptness of the start or impact of the cars.

E E are the brake-bars, which are provided with brake-shoes *a*, and are suspended from the bottom of the car by means of hangers F F, which are in the nature of flat springs. These brake-bars are pivoted to levers *b b*, whose lower and shorter ends are loosely connected by a rod, *c*, while their longer ends project upwardly.

G is the buffer-bar, which is made in the form of a double bar, running the full length of the car, and terminating in heads at the ends in the same vertical plane with the faces of the draw-bar, which heads come in contact with corresponding heads on the buffer-bar of the adjacent car. This buffer-bar is swung in frames *d d*, pivoted at each end of the car between the beams C C, which frames are extended above the beams C C, and are connected by a tie-rod, *f*, and are provided also with a loop or keeper, *e*. Said buffer-bar G is also provided with pins *h h'*, connecting the two sections of the bar, which pins bear against the upper ends of levers *b b*, which extend through the opening in the bar, so that when the locomotive is slowed up or the brakes applied to the same, no matter which end of the car is struck by the adjacent car, one of the pins, *h* or *h'*, strikes one of the levers *b*, and by drawing the brake-bars together applies the shoes of each to the wheels.

If the impact occurs at the right-hand end of the car, the pin *h* acts on the lever *b* to produce this result, while if the impact occurs at the left-hand end of the car the pin *h'* acts to produce the same result.

As the bar G is of considerable length and comparatively small transverse dimension, it would under ordinary circumstances be liable to bend or buckle in transmitting the force of the impact. This difficulty, it will be seen, however, is provided against by the rod *f*, which, in tying the upper ends of the frames *d d* together, braces and stiffens the bar G against bending.

After the brakes have been applied by the concussion of the cars against each other, it will be seen that they would be immediately released again by the reaction of the impact, and thus lose their useful effect. To retain the benefit of this impact, I pivot to the buffer-bar G, at each end of the car, a catch, *i*, whose upper end is retained in the keeper *e*. Now, when the buffer-bar G is driven back and the brakes applied, the catch *i* drops down into the lower end of the keeper *e*, in which posi-

tion it catches behind the rear edge of the draw-bar, as shown in dotted line, holding the brakes applied, and in which position it is retained until the car starts again. As soon as the car starts, the traction upon the movable draw-bar allows the latter to be pulled away from the catch, and the spring of the hangers of the brake-bars causes the parts to resume their normal position. This locking device is specially desirable on long freight-trains; but in passenger-trains I may dispense with the same.

For applying the brakes independently of the automatic action described, I may employ an ordinary form of vertical brake-shaft and hand-wheel, *j*, in connection with a chain, *k*, connected to the buffer-bar G.

For rendering the pressure of the brake-shoes elastic, the bar carrying the same may have a spring-seated connection, *l*, with the lever *b*, through which the brakes are applied. This, it will be seen, relieves any sudden or violent strain caused by the driving in of the buffer-bar beyond its usual range of movement.

Having thus described my invention, what I claim is—

1. The double or slotted buffer-bar G, having pins *h h'*, and made longitudinally adjustable, in combination with the brake-bars, the connecting-rod *c*, and the levers *b b*, having their upper ends disconnected from the buffer-bar, so as to be acted upon independently by the same, substantially as described.

2. The combination, with the longitudinally-adjustable buffer-bar, connected with and designed to operate the brakes, of the pivoted frames *d*, having their upper ends extended above their pivots, and connected by a tie-rod, *f*, substantially as and for the purpose described.

3. The combination of the buffer-bar G, the pivoted frames *d*, having loop or keeper *e*, the catch *i*, and the yielding draw-bar, substantially as and for the purpose described.

The above specification of my invention signed by me this 10th day of July, 1879.

C. M. WILKINS.

Witnesses:
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EDWD. W. BYRN.