

M. W. GRISWOLD.
Car Brake.

No. 106,152.

Patented Aug. 9, 1870.

Fig. 1.

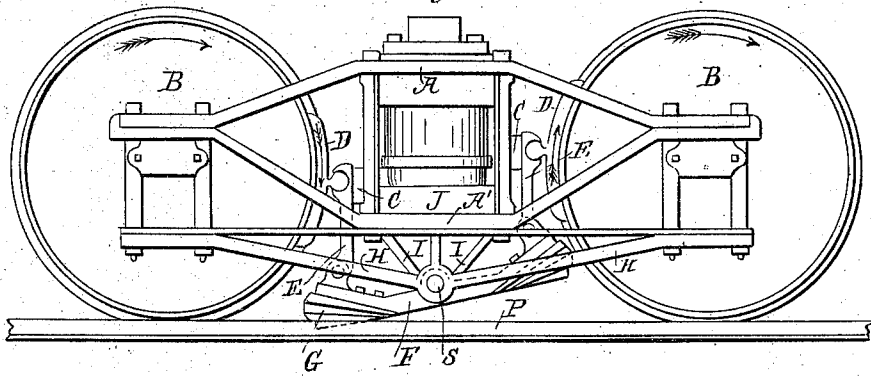


Fig. 2.

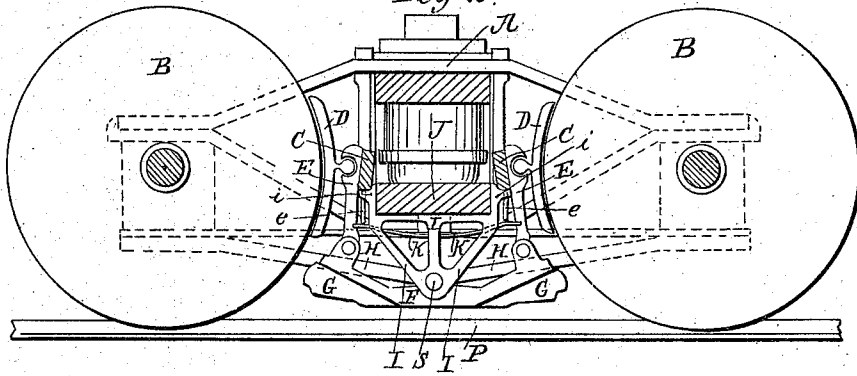
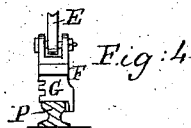
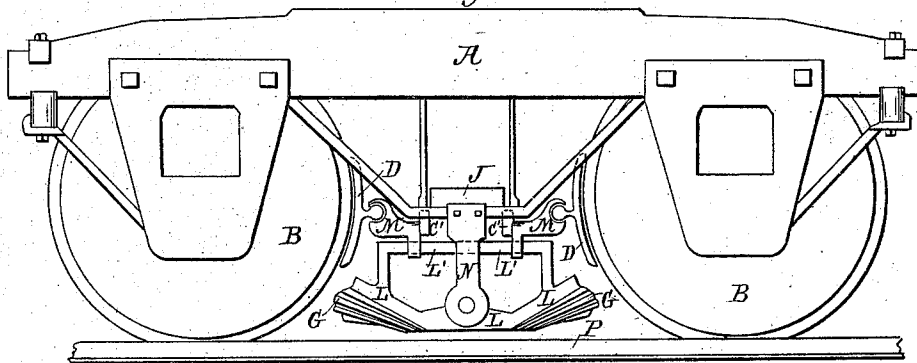


Fig. 3.



Witnesses;

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Letters Patent No. 106,152, dated August 9, 1870.

IMPROVEMENT IN CAR-BRAKES.

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

I, MERRITT W. GRISWOLD, of the city, county, and State of New York, have invented a new and improved Brake for Railroad Cars, of which the following is a specification.

My invention relates to the suspension of a pivoted oscillating or rocking bar or frame from the truck of a railroad car, in front of or between the wheels thereof, in such manner as that one end of the bar or frame may be dropped down upon the track, and to the combination of such a bar or frame with the ordinary wheel-brakes, by means of suitable links or joints, in such manner as that the friction of said brakes, when applied, shall automatically operate upon the oscillating bar or frame, and force one end thereof down upon the rail with a power proportionate to that with which the wheel is carried forward and the brake brought to bear thereon, the object of my invention being to combine, with the resistance of the ordinary brakes applied to the wheels of a car, the resistance of a brake applied to the rail, and to operate them both by the ordinary devices and mechanical appliances now in use.

In the accompanying drawing—

Figure 1 is a side view of a car-truck to which my improved oscillating bar and brake is attached, illustrating the rail and wheel-brakes applied and in operation.

Figure 2 is a longitudinal section taken through the truck inside of the wheels and looking outward, illustrating, in elevation, the inner side of the bar and its attachments and supports, the wheel-brakes being shown, however, as at rest, withdrawn from contact with the wheels and rail.

Figure 3 illustrates, in elevation, a modified form of my rail-brake, consisting of an oscillating frame working against the rail, instead of a simple bar, the wheel-brakes being supported by slides working upon the upper bar of the frame.

Figure 4 is an end view of the oscillating bar and of the improved shoe secured thereto to bear upon the rail, illustrating the grooves cut in one side of said shoe, to facilitate the breaking off of the edges as the shoe wears down.

A is the car-truck, of any approved construction.

B, its wheels.

C, the brake-bars of the truck, extending across the same transversely, and made to slide to and from the wheels, in the usual manner, by means of a lever and chains, worked by a brake-wheel and post on the platform of the car, or by other customary and well-known devices for the purpose.

The brake-bars, however, instead of sliding upon horizontal ways to and from the wheels, are supported by such horizontal ways only when drawn entirely back from the wheels. When thrown out to come

into contact therewith, they are upheld by the action of supporting springs, in combination with the oscillating bar or frame, as hereinafter more fully explained.

D D are the brake-blocks, bearing against the peripheries of the wheels B B, and operated by the action of the brake-bars C, in the usual manner.

Thus far the brakes and appliances, as described, and the mode of operating the same, are old and well-known devices, such as are in common use upon the railways of the country.

F is my oscillating or rocking rail-brake.

It consists of a bar, F, pivoted centrally at S, between a hanger-bar, H, (extending on the outer side of the track and wheels from one axle to the other, and secured thereto by the same bolts and nuts used to fasten the ordinary horizontal brace A, which extends between the same, as shown in fig. 1,) and a hanger-frame, I, secured on the inner side of the wheels to the bottom of the lower transverse truck-beam J, and made to clamp or embrace the sides thereof, as shown in fig. 2 of the drawing.

E E are the links, pivoted to the bar F at either end thereof, and whose upper ends are secured to the ends of the brake-bars C, between said bars and the brake-blocks D, these brake-blocks being hinged to said links instead of being jointed directly to said bars, as is ordinarily the case.

G G are detachable shoes or blocks, firmly secured upon the under sides of the ends of the bar F, so as to receive the wear and tear incidental to the application of the brake to the rail, as hereinafter more fully set forth.

These brake-shoes G are grooved longitudinally upon one side, (see fig. 4,) so that, as they are worn down centrally by contact with the head of the rail, the lip or flange consequently formed upon that side of the bottom of the shoe will break off as soon as the shoe is worn down to one of the said grooves, and the liability to accidents, which would follow were the lips or flanges formed on each side allowed both to remain so as to embrace the rail, thus be avoided.

In fig. 2, *i i* are horizontal projections from the upper side of the hanger-frame I, upon which the brake-bars C C rest when drawn back to relieve the brakes D.

e e are rods or pins, secured to the under side of said bars C C, to bear upon the ends of springs K, secured to the under side of the lower truck-beam J, so as to project therefrom, as shown in fig. 2 of the drawing.

These springs serve to uphold the bars C C, after they have been thrown out from the rests *i i*, in a horizontal plane therewith. It is evident that various forms of springs may be thus applied for the purpose of supporting the brake-bars.

In operating the improved brakes, constructed as above described, when the brake-blocks *D* are thrown out and forced against the wheels *B*, turning in the direction indicated by the arrows in fig. 1, they first strike against the same, each in the horizontal plane in which they are upheld by the action of the springs *K K*, supporting their transverse connecting-bars *C*, (see fig. 2,) but so soon as they come into close contact with the revolving wheels, the brake-blocks bearing against the front wheels are drawn upward, carrying up with them the corresponding arm of the pivoted bar, to which they are connected by the links *E*, while the brakes against the hind wheels are simultaneously forced downward, bearing down with them, to a corresponding extent, the opposite arm of the pivoted bar *F* and the end of the spring *K*, upon which the brake-bar *C* rests.

By the movement of the pivoted bar *F*, thus produced, the rear end thereof is brought to bear down upon the rail *P* with a degree of pressure proportionate to that of the brake-blocks upon the wheels and the velocity of their rotation.

So soon as the brake-blocks are withdrawn from the wheels, the resistance of the spring under the depressed rear brake-bar, combined with the weight of the elevated front brake-bar, will operate to bring these bars and the brakes to their original horizontal position, when they may be drawn back upon their rests *i i*, fig. 2, and thus secured against accidental contact with the wheels.

L L, fig. 3, represent my invention when constructed in the form of a frame. The lower bar, *L*, of the frame corresponds, in all essential particulars, with the bar *G*, above described, and is pivoted centrally, in like manner, to a hanger, *N*, suspended from the truck-beam or its frame-work.

At each end of this lower bar *L* are two uprights, connected by an upper horizontal bar, *L'*, so as to form the frame, as illustrated in fig. 3.

M M are boxes or slides embracing the upper bar *L'* of the frame, and made to slide smoothly back and forth thereon.

The ends of the transverse bars *C* of the truck are secured to the rear ends of these slides, and to their forward ends are jointed the ordinary brake-blocks *D*. The horizontal position of the bar *L*, when at rest, may be enforced by springs, placed under or otherwise combined with the brake-bars *C C*, as before described.

The operation of the brakes, when applied to the wheels, will serve to cause the frame to tip, so as to bring the rear end of its lower bar, *L*, to bear against the rail, substantially as described, with reference to the rail-brake *G*.

I contemplate, as a modification of my invention, employing a bar, *G*, pivoted at one end only, and connected with a single brake-bar, operating alone, as may be illustrated by considering the operation of the rear half of the bar *G*, in fig. 1, if parted beyond its pivot from the remainder thereof, and connected to and operated by the rear brake-block alone.

I claim as my invention—

1. A pivoted oscillating or rocking bar or frame, so supported from the truck of a railroad car and combined with its wheel-brakes, as that the friction of the latter upon the wheels shall operate to depress and force down upon the rail one end of said bar or frame, substantially in the manner and for the purpose herein set forth.

2. Lateral grooves formed in the sides of a rail-brake-bar or shoe, *G*, substantially as and for the purpose herein set forth.

Witness my hand to the foregoing specification this 22d day of January, A. D. 1870.

MERRITT W. GRISWOLD.

Witnesses:

DAVID A. BURR,
H. H. YOUNG.