M. SHIMER.

Car Brake.

No. 12,033. Patented Dec. 5, 1854.

Fig. 1.

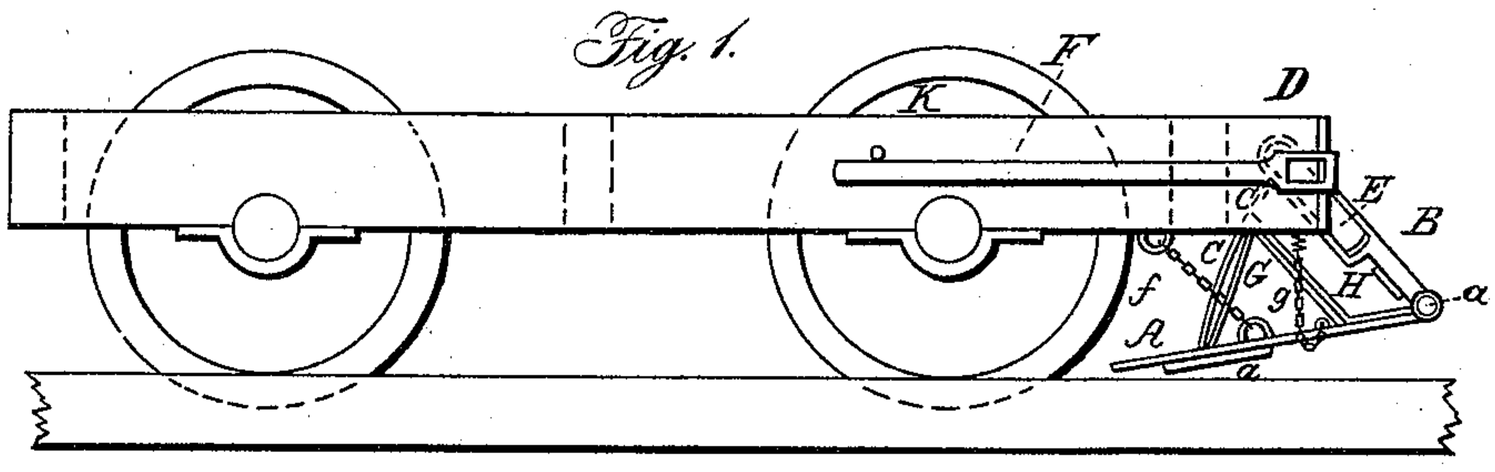


Fig. 2.

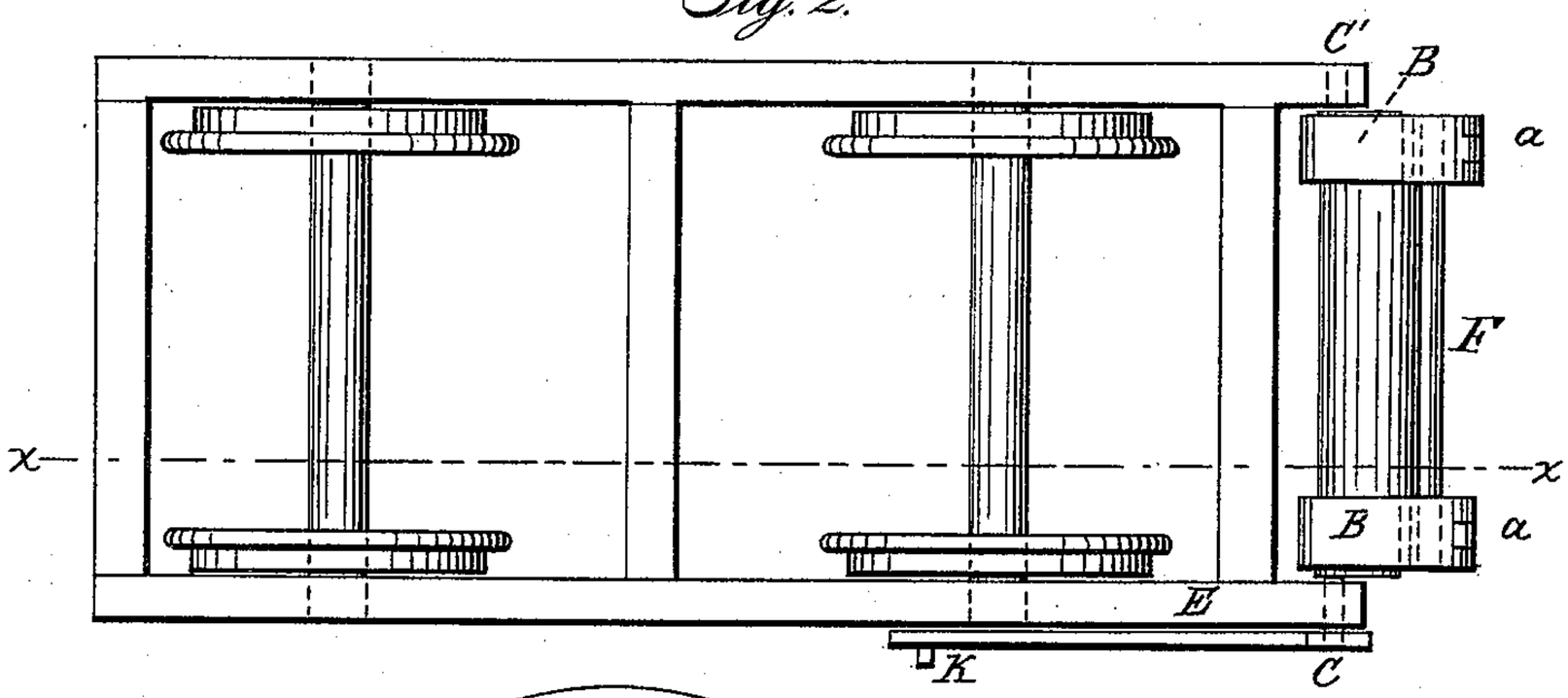
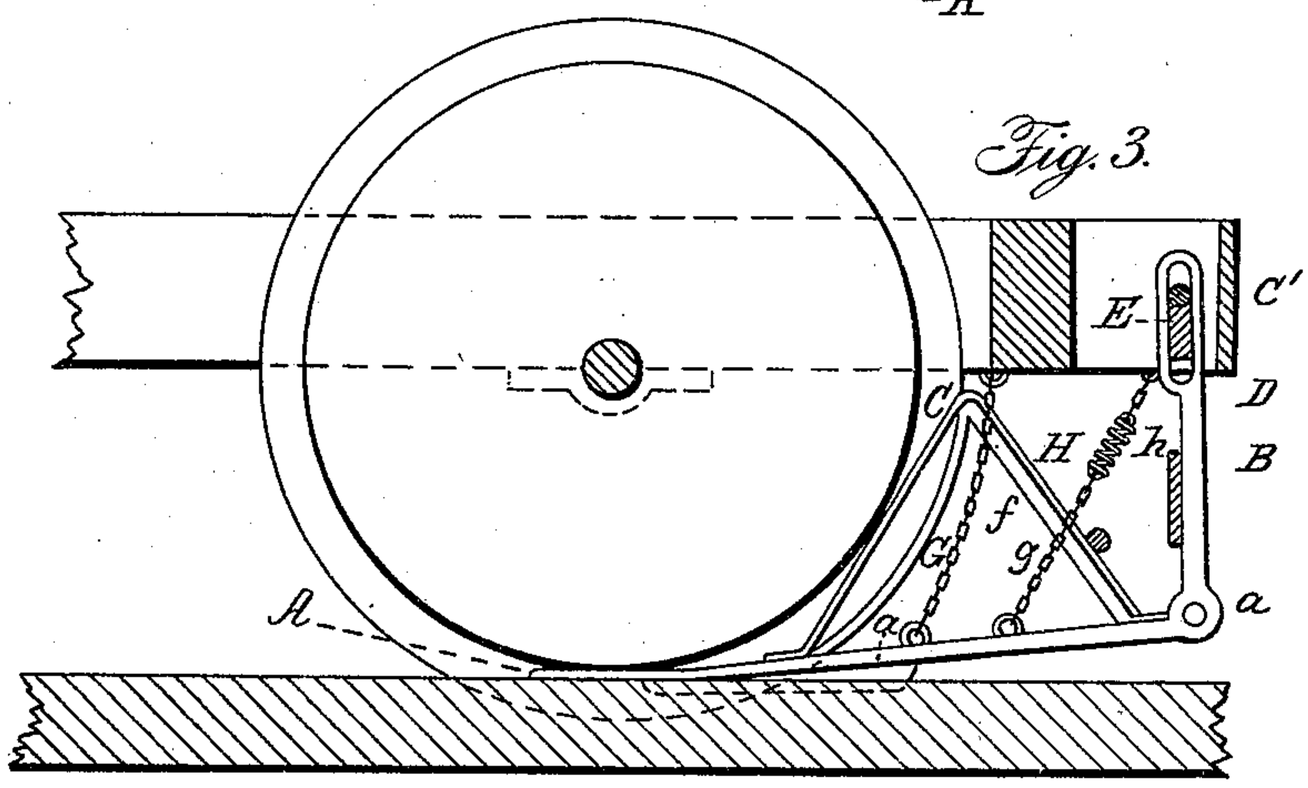


Fig. 3.



UNITED STATES PATENT OFFICE.

MICHAEL SHIMER, OF UNION TOWNSHIP, BEDFORD COUNTY, PENNSYLVANIA.

RAILROAD-CAR BRAKE.

Specification of Letters Patent No. 12,033, dated December 5, 1854.

To all whom it may concern:

Be it known that I, MICHAEL SHIMER, of Union township, in the county of Bedford and State of Pennsylvania, have invented certain improvements in Collision-Brakes for Railroad-Cars; and I do hereby declare that the following is an exact description of the same, reference being had to the accompanying drawings and to the letters marked thereon.

In the drawings Figure 1, is a side elevation showing the brake suspended above the truck and in front of the wheel. Fig. 2, is a plan view. Fig. 3, is a longitudinal section taken in the line H H Fig. 2, showing the brake in operation.

Like letters refer to like parts in the different figures.

The nature of my invention consists in constructing a brake which is to be used in cases of extreme danger when it becomes necessary to stop the train very suddenly.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

I construct a shoe A, the front end of which is secured by means of a hinge *a*, to a link B. Said link is provided with a slot D, through which a flat bar E, passes. The upper edge of said bar is provided with journals *c'*, *c'*, which are secured in suitable bearings formed in the frame of the car body, in front of the wheels.

The bar E is operated by a lever F. Shoe A, is provided with an inclined curved bar G, the lower end of which is secured firmly to the upper surface of shoe A. This bar, is supported in an inclined position by means of a brace H, the lower end of which rests firmly on the forward part of the shoe as seen in the drawings. *c*, is an elliptical spring which is secured to the lower end of the curved bar G, and extends over the top of said bar and is secured to the brace H. Said spring is also curved as seen in Figs. 1, and 3. *d*, is a flange which is formed on the inner side of the shoe for the purpose of keeping said shoe on the track. *f* is a chain one end of which is secured to the body of the car, and the other is secured to the upper surface of the shoe. *g*, is another chain which is also attached to the body of the car and to the shoe, in such a position, that when the brake is in operation, said chain will be extended in a line parallel to the direction of bar G. Said chain is also provided with a spiral spring *h*. Said spring acts in concert with spring *c*, and slot D, in overcoming all shocks or jarring which would otherwise render the apparatus entirely inoperative, as the concussion would be almost equal a collision.

The operation of my brake is as follows: When it becomes necessary to stop the cars very suddenly, the operator relieves the lever F from the pin K, and then the slotted bar B, falls to a perpendicular position, and serves to lower the shoe and its appendages and at the same time carries it to the rear so that the wheel catches the rear end of it, and draws it down under the wheel and forms a shoe which slides on the track. The wheel then strikes the spring *c*. This spring acts to partially stop the force of the wheel and turn its course from a horizonal line to an inclined plane. That is after the wheel strikes spring *c* it has a tendency to ascend the inclined plane formed by said spring. Therefore in order to prevent a concussion which would otherwise ensue should this motion be abruptly checked I have secured the elastic chain or the chain provided with a spiral spring as seen in the drawings, in a position so that, as the wheel commences to ascend spring *c*, the chain *g*, and spiral spring will arrest its progress in the most effectual manner without producing the least concussion whatever.

When the wheel strikes the spring *c*, and slightly ascends the inclined plane formed by said pring, the body of the cars are raised, and also the flat bar E, whose bearings are formed in the framework of said body. Therefore the slot D, must be elongated above the upper edge of bar E, so that said bar can be elevated without interfering with the slotted bar B. This is considered a very essential point in the combination, as it will be readily seen, that if this bar was firmly secured to the flat bar E and raised with it, the front end of the shoe would be raised up and the shoe would be broken, and the concussion would not be prevented, after the train has been stopped. The brake is relieved by reversing the cars then the operator draws the lever F back and secures it as seen in the drawings and the brake is thereby drawn up and thrown forward to the position seen in Fig. 1. The chain *f* securing one end while the other is sustained by the slotted bar B.

I am aware that the use of a shoe made of iron or other materials, and pressed down upon the rail by the weight of the car is a well known device for checking the speed of a train of cars. I make no claim to such shoe in or of itself, but I believe this species of brake has thus far proved unsatisfactory on account of the violent concussions which have resulted in consequence of the defective mode in which they were constructed. I profess to have discovered the remedy for this difficulty, and now ask a patent only for the special contrivances by which this is affected.

What I claim as my invention and desire to secure by Letters Patent is—

The inclined curved bar G, and elliptical spring *c*, in combination with the elastic chain *g*, and the slotted bar B, for the purpose of preventing a concussion when the car wheel strikes the curved bar G and spring *c* and also for the purpose of preventing the shoe A from being broken.

Witness my hand and seal.

M. SHIMER. [L. S.]

Witnesses:

H. F. WILLSON,

D. A. BROOKS.