

(No Model.)

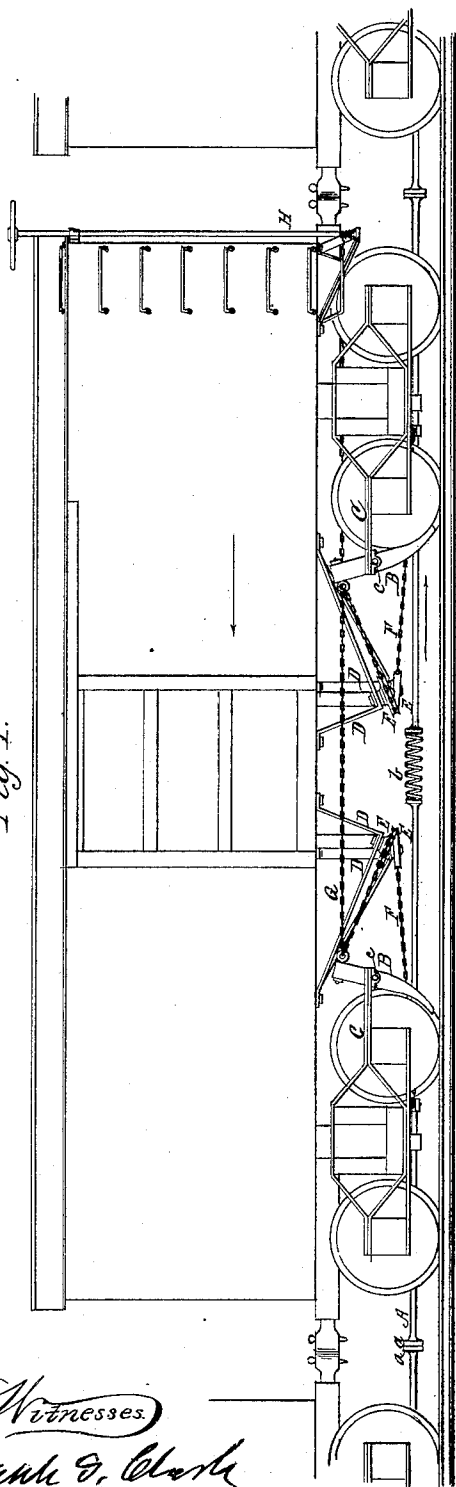
F. L. VOLZ.

CAR BRAKE.

No. 341,079.

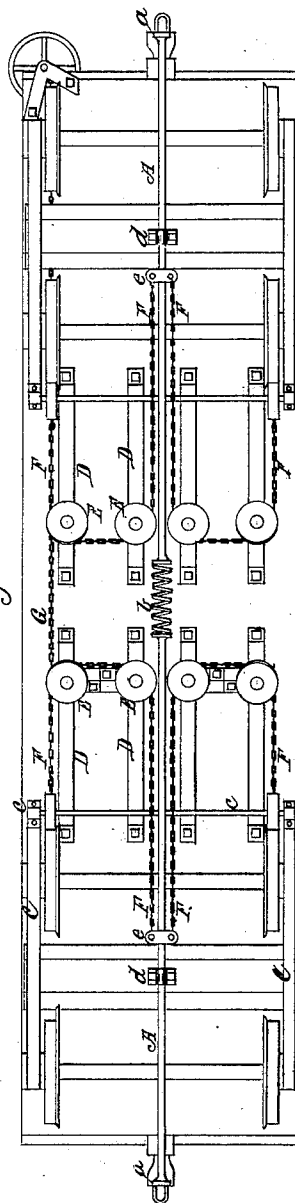
Patented May 4, 1886.

Fig. 1.



Witnesses.  
Frederick D. Clark  
G. G. Watters

Fig. 2.



Inventor.  
Friedrich L. Volz.  
By Justice M. S. Johnson  
Att'y.

# UNITED STATES PATENT OFFICE.

FRIEDRICH L. VOLZ, OF NORWAY, IOWA.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 341,079, dated May 4, 1886.

Application filed October 26, 1885. Serial No. 180,926. (No model.)

*To all whom it may concern:*

Be it known that I, FRIEDRICH L. VOLZ, a citizen of Prussia, residing at Norway, in the county of Benton and State of Iowa, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

The object of my invention is to provide a freight or other car with a brake so constructed as to admit of the brakes being applied to the whole train at once by means of an air or steam brake attached to the engine.

The invention consists in the construction, arrangement, and adaptation of parts, as will hereinafter fully appear.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of the invention as applied to an ordinary freight-car, and Fig. 2 a plan view of the same inverted.

Similar letters of reference indicate corresponding parts.

A is a rod exactly corresponding to the extreme length of the car, including the bumper and draw-bar. This rod is enlarged at each end, so as to give a broad abutting surface. For convenience the rod is attached to the car below the trucks, and is adapted to slip endwise in suitable boxes, *d d*. The height of the rods in all cases should be the same, so as to secure a proper alignment in any number of cars. The rod is preferably not made continuous, but is composed of two parts, connected in the middle by a spring, *b*, stiff enough to give sufficient pressure upon the brake when the rod is thrust endwise, as will be hereinafter explained.

To an extension of the frame of the truck C are pivoted the brake-shoes B B. These separate brakes may be both attached securely to the shaft *c*, or mounted independently thereon, as may be desired. Back of each truck, on suitable brackets, D D, are mounted grooved pulleys E E, which receive the brake-chains F F, passing from the upper part of the brake-shoe B to a lug, *e*, secured to the rod A somewhat forward to Fig. 2. The result of this simple arrangement will now be evident. The cars being supposed to be running in the direction indicated by the arrow on the side of the car in

Fig. 1, steam is applied to the air-brake connected with the locomotive. The immediate effect is to thrust backward the rod under the first car back of the engine, as indicated by the arrow at the bottom of the same figure. As it moves backward the rod carries the connecting-chains in the same direction, drawing the upper part of the rear brake in the opposite direction and applying the rear brake, as will be seen in the drawings. The same movement is communicated to all the cars, and the result is a quick and easy stoppage of the train.

It is preferable that the cars be closely coupled, though this is not absolutely essential, because as the brakes are applied to the front end of the train the tendency is of course to stop that end first, and the momentum of the cars following will automatically apply the brake to them, whether closely coupled or not. As soon as the pressure of the air-brake is withdrawn, the apparatus resumes its normal position, the brake-shoes falling back from the rim of the wheels of their own gravity.

The object of the spring is to serve as a buffer to relieve the apparatus from the strains incident to sudden jars, and the more gradually apply the brakes. It also compensates in some degree any inequalities in the adjustment of the various brakes throughout the train, and renders the pressure of the respective brakes as uniform as possible.

To admit of the brakes being applied by hand, the car is provided with the ordinary hand-wheel and shaft, H, connecting with the brake by a chain, G, in the usual manner.

Thus constructed, the device has all the advantages of the air-brake in dispensing with the services of a large number of brakemen, by putting the control of the train in the hands of the engineer, and thereby the better preventing casualties, with this additional advantage, that no special coupling between the cars is required.

As will be evident, the device may be attached to any cars operated by steam, and at a comparatively small expense.

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

1. In a car-brake, the rod A, having the head *a* and the central spring-connection, *b*, in

combination with the brake-shoes B and the chains F, substantially as and for the purpose set forth.

2. In a car-brake, the combination of rod A, 5 having the central spring-connection, *b*, the pivoted brake-shoes B B, chains F F, pulleys E E, and brackets or supports D D, all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

10 3. In combination with the hand-brake H G, the rod A, having heads *a a* and spring *b*,

the brake-shoes B B, chains F F, pulleys E E, and supporting-brackets D D, adapted to be operated by an air-brake connected with the engine, substantially as and for the purpose set 15 forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRIEDRICH L. VOLZ.

Witnesses:

FRANK G. CLARK,  
J. M. ST. JOHN.