E. Stiles.

Car-Brake.

No. 76843 Patented Apr. 14, 1868.

Fig. 1

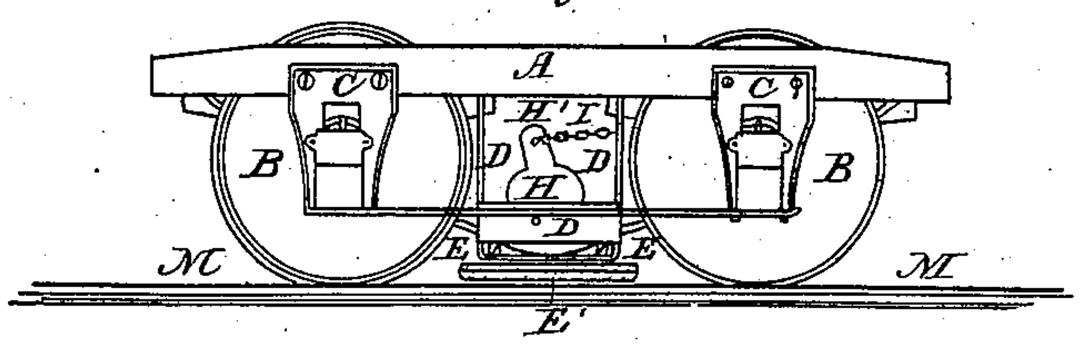


Fig. 3

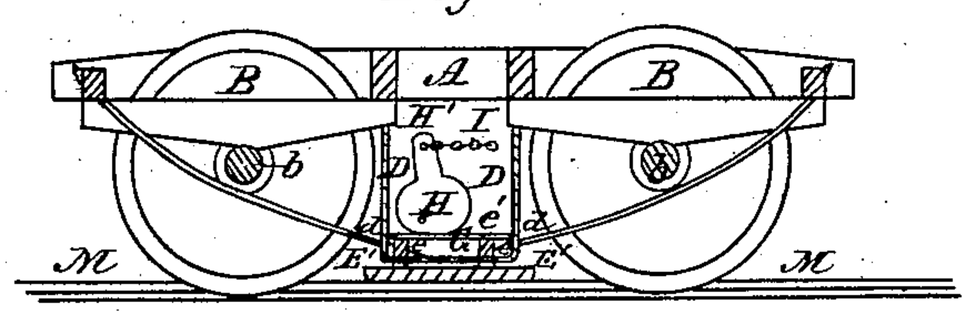


Fig. 2

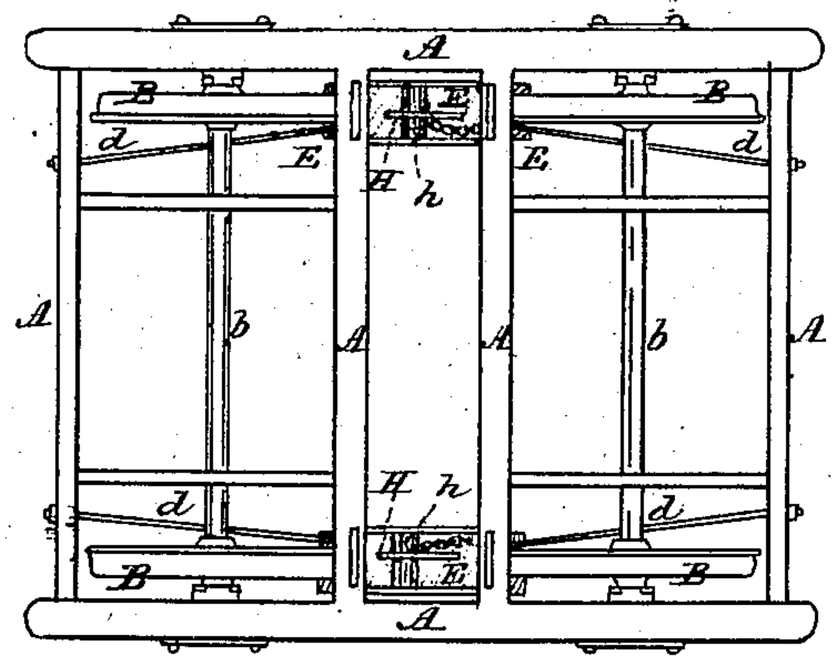
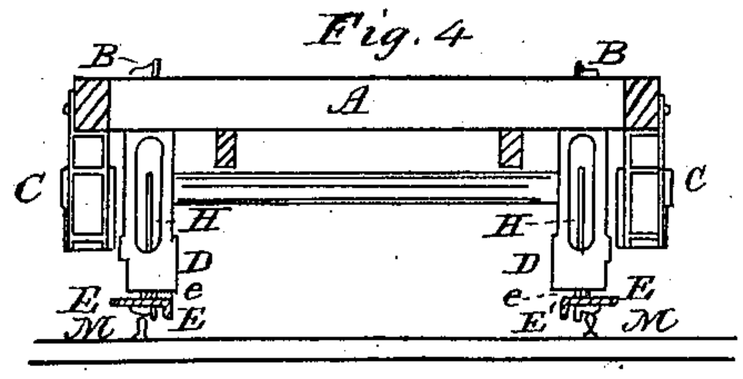


Fig. 4



Witnesses
C. C. Livingston
J. R. Dey

Inventor
Ezra Stiles
by his attorney J. D. Stetson

United States Patent Office.

EZRA STILES, OF NEW YORK, N. Y.

Letters Patent No. 76,843, *dated April* 14, 1868.

IMPROVEMENT IN CAR-BRAKES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, EZRA STILES, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Railroad-Cars; and I do hereby declare that the following is a full and exact description thereof.

My invention relates to the construction, arrangement, and means of operating a certain brake-apparatus. My brake makes a friction directly on the track, instead of on the wheel. Brakes possessing this general characteristic have been before proposed. My invention makes this style of brake more practicable and reliable than heretofore, and also contributes to the safety of the car and its contents in case of the fracture or derangement of a wheel or axle.

I prefer to designate my invention as a concentric cam-brake.

I will first proceed to describe what I consider the best means for carrying out my invention, and will afterwards designate the points which I believe to be new. The accompanying drawings form a part of this specification.

Figure 1 is a side view of a truck.

Figure 2 is a plan view.

Figure 3 is a longitudinal section on the line of the centre of the track, and

Figure 4 is a cross-section on the line S S in fig. 3, but omitting to section the wheels.

Similar letters of reference indicate like parts in all the figures.

A is the framework of a truck; B B are the wheels, *b b* the axles, and C the housings, which may contain boxes, springs, &c., of any approved construction. The car (not represented) may be mounted on two of these trucks in any approved manner. D is a stout housing, which carries the brake-shoe E, and the means of operating it. There are braces, *d d*, which connect the lower part of the housing D to the framework A, and stiffen it against the severe strain to which it is subjected. The shoe E is connected by stout vertical slides *e e* to supporting-springs, which are within the housing D. A cross-piece, *e'*, connects the upright slides *e*, and is adapted to receive a powerful downward pressure from the eccentric, H, which turns on the pivot *h*, and is adapted to be operated by the long arm or lever H'. The housing D and its connections may be adjusted at different heights by ordinary means not represented, so as to ordinarily support the shoe E at a height of from one to two inches above the rail M. Under ordinary circumstances, the shoe E is thus carried, and is of no effect.

When it is desired to stop the car, the lever H' is operated by the brake-chain I, and the eccentric, H, by turning on the eccentrically-mounted axle *h*, depresses the cross-piece *e'*, and thus depresses the shoe E. So soon as the latter commences to press with any force upon the rail, it induces a friction, which tends to stop the train. So soon as the chain I is slackened, the eccentric, H, returns to its original position, and the shoe E is raised out of contact with the rail by the force of the spring G.

The shoe E is broader than the tread of the wheels, and is provided with a stout flange at its inner edge. Each shoe is so mounted that a portion of its width is outside of the line of the wheels, and another portion is inside of the line of the wheels. It follows, from this arrangement, that the shoe strikes on the rail, and supports the truck quite efficiently in case an accident to a wheel or axle has let the truck sufficiently down, either with or without disturbing its position on the track. As soon as the truck is thrown two inches to one side or to the other of its proper position, the shoe-flange, as represented, will be sure to strike, and to be supported on the rail.

The flange upon the inner edge of the shoe E is marked E', and contributes efficiently to prevent the truck from becoming further displaced to one side or the other after the shoe E has come to a bearing upon the rail.

It will be understood, in regard to this feature of the utility of my invention, that the shoe E, while supporting the truck, will exercise a great force by friction to arrest the motion of the train. I consider this a desirable quality. It is certain to so greatly retard the train as to attract the attention of the engineer, and cause the stoppage of the train before the weight has been long supported in this manner.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

I claim the flanged bearing-block or brake-block E E′, when made to extend beyond the lines of the wheels, both outside and inside, as represented, and when combined with and operated by the cam H, lever H′, and spring G and chain I, all arranged substantially as and for the purposes herein set forth.

In testimony whereof, I have hereunto set my name in presence of two subscribing witnesses.

EZRA STILES.

Witnesses:

HENRY STANTON,

F. W. SALMONSOR.