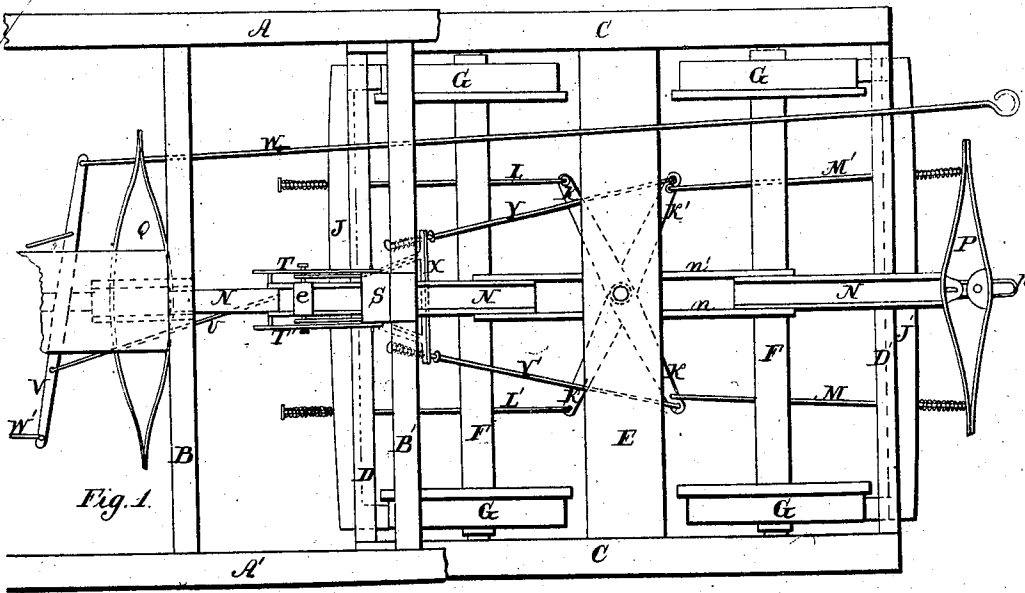


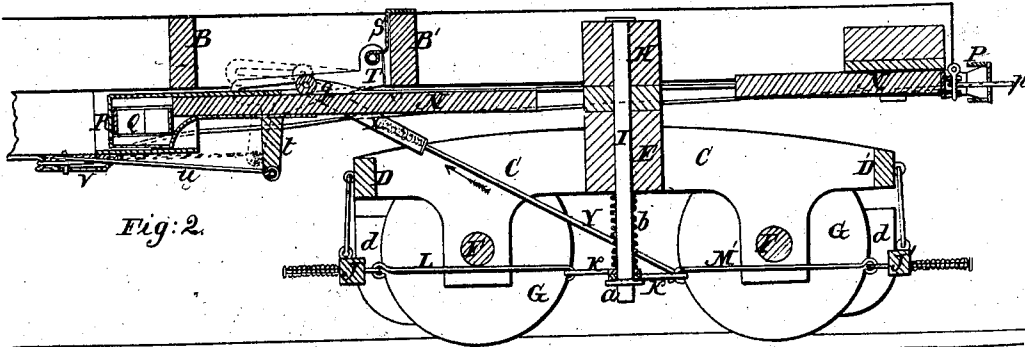
*P. Keffer,  
Car Brake.*

*No. 30,946.*

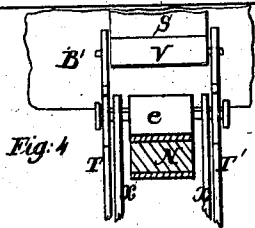
*Patented Dec. 18. 1860.*



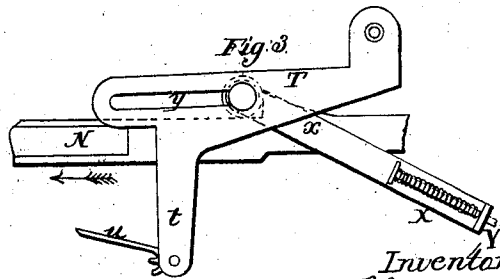
*Fig. 1.*



*Fig. 2.*



*Fig. 4.*



*Fig. 5.*

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# UNITED STATES PATENT OFFICE.

PETER KEFFER, OF READING, PENNSYLVANIA, ASSIGNOR TO HIMSELF, AND D. A. ULRICH,  
OF BERKS COUNTY, PENNSYLVANIA.

## CAR-BRAKE.

Specification of Letters Patent No. 30,946, dated December 18, 1860.

*To all whom it may concern:*

Be it known that I, PETER KEFFER, of Reading, Berks county, Pennsylvania, have invented certain new and useful Improvements in Self-Acting Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to improvements in that class of self-acting car brakes, in which sliding rods are used for applying the rubbers to the wheels, the said rods being operated by the forcible contact of the cars with each other, which takes place on the retarding of the train; and my invention consists: Firstly, in certain devices, described hereafter, for releasing the brakes after the train has been stopped by the movement of the sliding rods. Secondly, in a certain arrangement of levers and rods connected with the brake-beams, and explained hereafter, whereby the brakes may be readily applied, no matter what position the trucks may assume on turning the curves of the track.

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

On reference to the accompanying drawing, which forms a part of this specification, Figure 1 is a plan view of sufficient of the frame of a railway car, and truck, to illustrate my improved self-acting car brake. Fig. 2, a longitudinal vertical section of Fig. 1. Fig. 3, a detached view of part of my improvement drawn to an enlarged scale, and Fig. 4, a transverse section of part of Fig. 3.

A and A' represent parts of the opposite side beams, and B and B' two of the transverse beams of a railway car.

C and C' are the opposite side beams, D and D', the opposite end beams, and E the central beam of the truck, which is furnished with the usual axles F, F, and flanged wheels G, G.

The pin I which passes through the king-post H of the car, as well as through the central transverse beam E of the truck, and on which the latter turns, is extended downward below the frame of the truck, as seen in Fig. 2; and to the lower end of this pin are hung the two levers K and K', at a

point midway between their opposite ends, both levers being retained in their proper vertical position, below by a collar *a*, and above by a spiral spring *b*, which surrounds the pin, and intervenes between the levers and the central beam E of the truck.

To the transverse beam D of the truck, the brake beam J is suspended by links in the usual manner, and is furnished with the ordinary rubbers *d, d*, bearing against the peripheries of the wheels G G. To the transverse beam D' of the truck is suspended a similar brake beam J', also furnished with the usual rubbers *d, d*.

The brake beam J is connected by a rod L to one end of the lever K, the opposite end of which is connected by a rod M to the brake beam J', which is connected by a rod M' to one end of the lever K', the opposite end of this lever being connected to the brake beam J by the rod L'. Each rod is connected to the brake-beam by a bolt which passes through the beam, and between the head of which, and the said beam intervenes a spiral spring, the bolt being hooked or otherwise attached to the rod.

A rod N, situated midway between the opposite sides of the car frame, is arranged to slide in a longitudinal direction only beneath the same and the bars *n*, and *n'* serve to connect rigidly together the two portions of this sliding rod, at the point where the uniformity of the latter is discontinued, in order to be clear of the pin I. The outer end of this sliding rod N is furnished with the elliptic spring P, and a link *p* for coupling the car to the adjacent car of the train, and the opposite or inner end of the sliding rod bears against the elliptical spring Q, which is confined to a box R secured to the under side of the car frame.

To a plate S attached to the transverse beam B' of the frame, are hung the two arms T and T', one being situated on one side, and the other on the opposite side of the sliding rod N, but both being connected together so as to move simultaneously. These arms have projections *t*, which are connected by means of a rod *u*, to the lever V, the latter being hung loosely at a point midway between its opposite ends, to a pin in a plate *v*, secured to the under side of the car-frame. To one end of this lever is connected a rod W which is continued under the car frame, and projects beyond the end

of the car, so as to be under the control of an attendant; a similar rod  $W'$  connected to the opposite end of the lever, extends beyond the opposite end of the car.

5 On the sliding rod  $N$  is a projection  $g$ , abrupt on one side, and inclined on the other, the abrupt side bearing against a roller  $e$  on a pin, which passes through the ends of the two arms  $x, x$ , of the frame  $X$ ,  
10 as well as through the slots  $y, y$ , in the two arms  $T$  and  $T'$ , one end of the frame  $X$  being connected by a rod  $Y$  to one end of the lever  $K'$  and the other end of the frame by a similar rod to the lever  $K$ .

15 It should be understood that both ends of the car are furnished with a sliding rod  $N$  and other appliances precisely similar to those above described.

20 On cutting off the steam from the cylinders of the locomotive, and thereby retarding the movements of the engine, the whole of the cars of the train will have a tendency to be forced against each other, the sliding rods  $N$  at both ends of each car will therefore be pushed inward. On this movement  
25 of the sliding rod  $N$  taking place, its projection  $g$  bearing against the roller  $e$ , will push the latter, and with it the frame  $X$ , the slots  $y, y$ , in the arms  $T, T'$ , allowing  
30 for the free movement of the frame in the direction of the arrow. The frame being thus moved by the sliding rod will impart through the rods  $Y$  and  $Y'$ , such a movement to the levers  $K$  and  $K'$ , as to draw  
35 the brake beams  $J$  and  $J'$ , simultaneously toward each other, and thus apply the whole of the rubbers to the wheels of the truck, and thereby stop the further movement of  
40 the train. Prior to the latter being again put in motion it becomes necessary to relieve the wheels from the friction of the rubber, this is accomplished by pulling one of the rods  $W$  or  $W'$  thereby moving the lever  $V$ , and causing the rod  $w$  to raise the  
45 arms  $T$  and  $T'$  and with them the roller  $e$ , which is thus elevated clear of the projection  $g$  on the sliding rod; when the frame  $X$ , its rods  $V$  and  $V'$ , and the levers  $K$  and

$K'$  will at once recover their former positions, and allow the brake beams  $J$  and  $J'$  50 to assume such a position, that their rubbers  $d, d$  are clear of the wheels. The train being now set in motion, the sliding rods will, through the elliptical springs  $P$  and  $Q$ , assume their former position, the inclined side 55 of the projection  $g$  sliding beneath the roller  $e$ , and its abrupt side taking a position in front of the roller  $e$ , prior to another stoppage of the train being effected in the manner above described. 60

By hanging the levers  $K$  and  $K'$ , to the pin on which the truck turns, and by the peculiar arrangement of the rods for operating these levers, and of the rods by which the levers are caused to act on the brakes, 65 any alteration in the position of the truck, caused by the car traversing curves of the track, will not interfere with the proper application of the brakes.

I am aware that sliding rods operated 70 by the retarding of the cars, have been heretofore used for applying the brakes to the wheels, I therefore do not claim broadly such a device, but

I claim as my invention, and desire to 75 secure by Letters Patent—

1. The spring sliding rod, and its projection  $g$ , in combination with the slotted arms  $T$  and  $T'$ , and the frame  $X$  with its roller  $e$ , the said arms being operated, and motion 80 being communicated from the said frame to the brake bars, by the devices herein described or their equivalents.

2. The levers  $K$  and  $K'$  hung to the pin  $I$ , on which the truck turns, in combination 85 with the rods  $L$  and  $L'$ , and rods  $M$  and  $M'$ , the whole being arranged and operated as and for the purpose specified.

In testimony whereof, I have signed my name to this specification, in the presence of 90 two subscribing witnesses.

PETER KEFFER.

Witnesses:

HENRY HOWSON,  
JOHN WHITE.