

(No Model.)

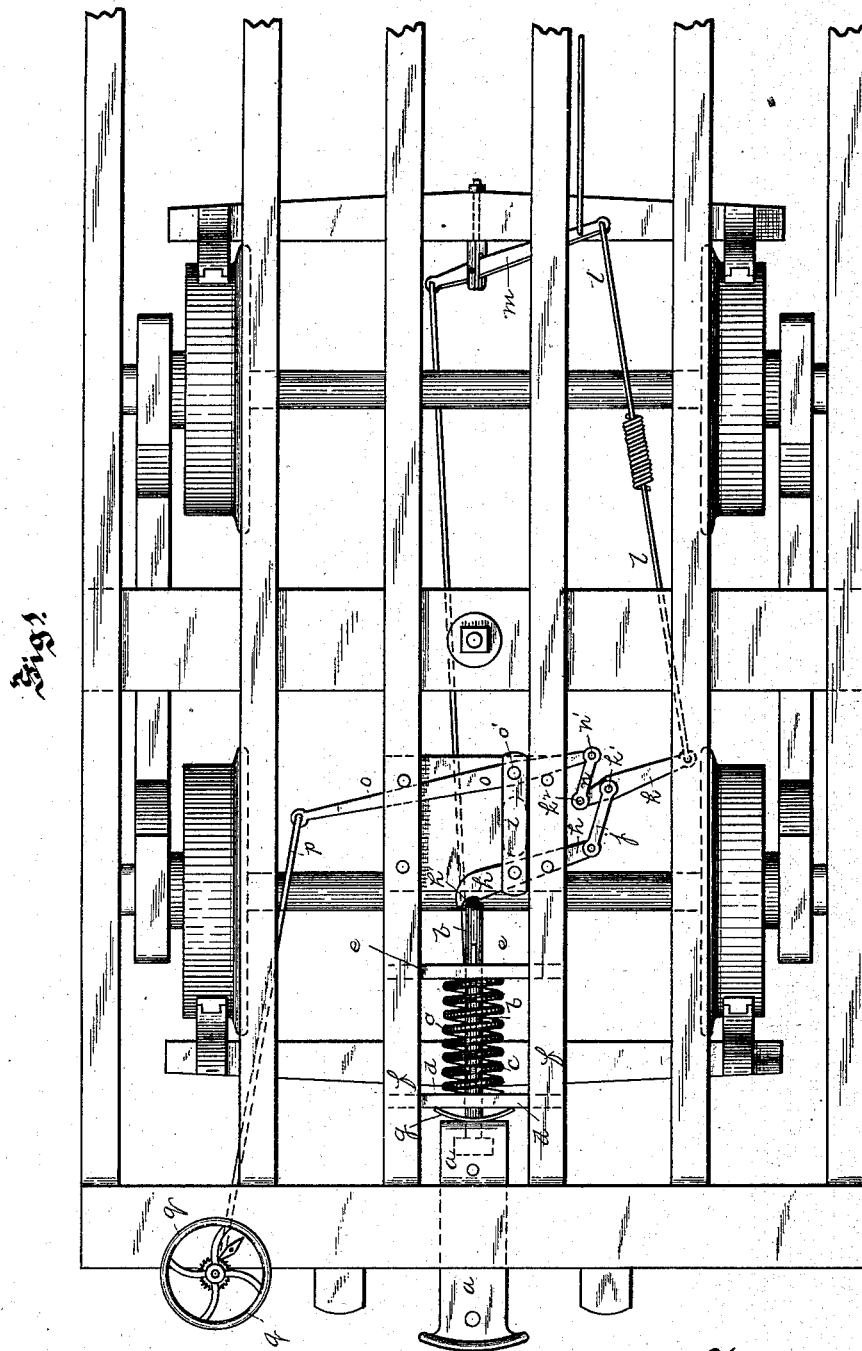
2 Sheets—Sheet 1.

A. REESE.

CAR BRAKE.

No. 385,007.

Patented June 26, 1888.



Witnesses:
J. P. Cooke.
W. S. Stockwell

Inventor.
Abraham Reese.
By James S. Ray,
Attorney

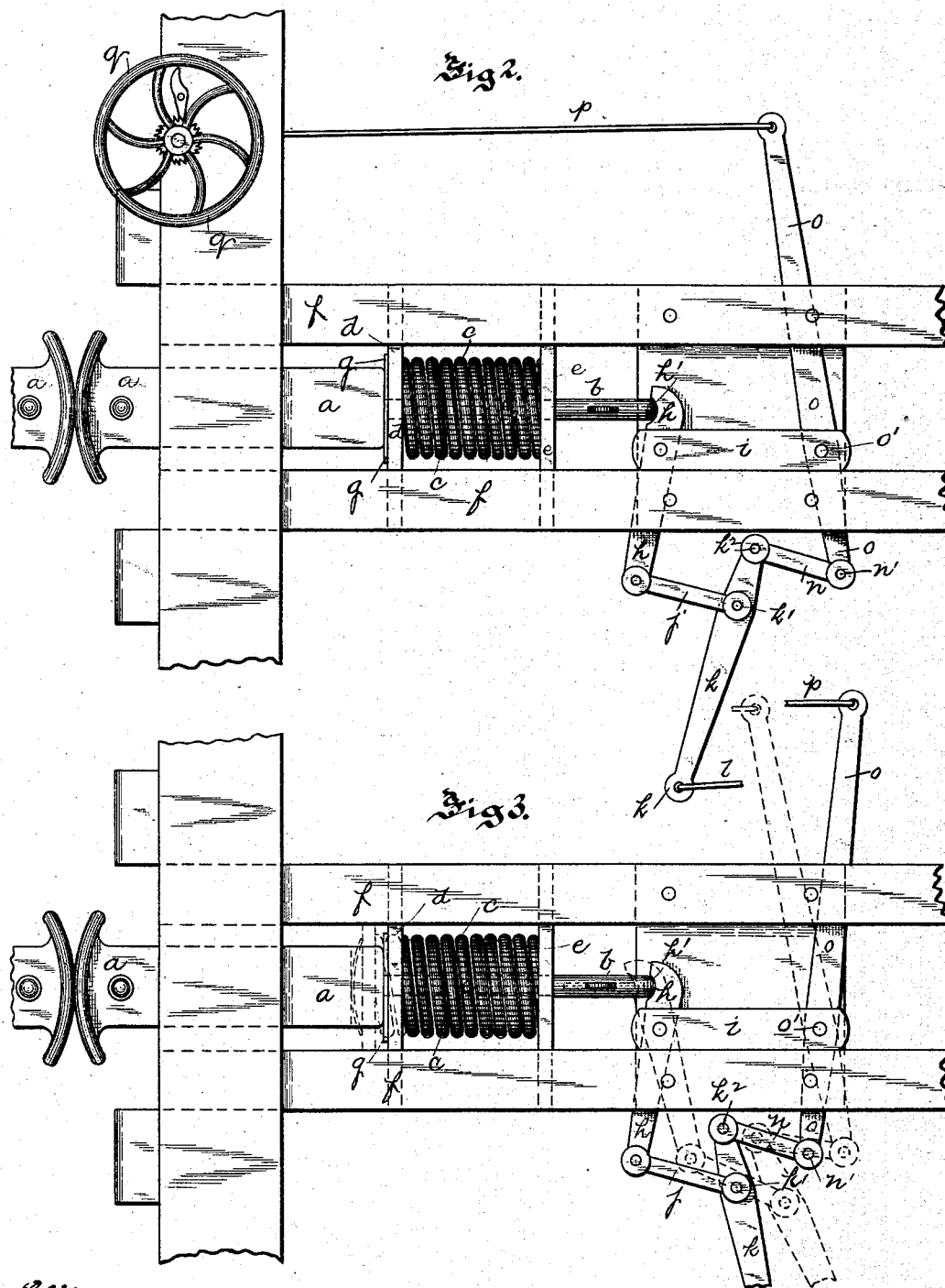
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Attorney.

UNITED STATES PATENT OFFICE.

ABRAM REESE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE REESE
SAFETY BRAKE COMPANY, (LIMITED,) OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 385,007, dated June 26, 1888.

Application filed October 4, 1887. Serial No. 251,451. (No model.)

To all whom it may concern:

Be it known that I, ABRAM REESE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful
5 Improvement in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-brakes, and more especially to that class which are applied by
10 the impact of the preceding car on the draw-head or buffer. In brakes of this class as heretofore constructed it has been necessary to weaken the spring-backing of the draw-head in order to get sufficient movement of the draw-
15 head or draw-bar to apply the brakes, as the powerful springs which are employed in the rear of the draw-head to take up the impact or shock thereon do not permit sufficient movement of the draw-bar to properly apply
20 the brakes. This weakening of the draw-head springs has always resulted injuriously, as the ability of the car to withstand the shock brought upon it by the impact of other cars thereon is very much reduced and the life-
25 time of the car shortened.

The object of my invention is to provide a brake which can be used without weakening the draw-head or buffer-spring, and one which can be readily thrown into or out of action.

30 To this end my invention consists in interposing in the path of the draw-head or draw-bar a lever and connecting said lever to a brake-operating lever by a link, and providing this brake-operating lever with a fulcrum
35 which can be either stationary or movable, for the purpose of applying or not applying the brakes, as will be more fully hereinafter set forth. And the invention also consists in interposing between said draw-head and the
40 brake a system of levers by which the amount of movement of the draw-head is multiplied to secure a more effective application of the brakes, as will be more fully hereinafter set forth.

45 The invention also consists in certain other improvements, all of which will be more fully hereinafter set forth and claimed.

To enable others skilled in the art to make and use my invention, I will describe the same

more fully, referring to the accompanying 50 drawings, in which—

Figure 1 is a view of the under side of a car having my invention applied thereto, the parts being in a position for the operation of the brakes. Fig. 2 is a similar view on a larger
55 scale, showing the position of the parts when the brakes are applied; and Fig. 3 is a similar view showing the position of the parts when the draw head or bar is forced back and the brake not applied.

Like letters refer to like parts in each of the
60 figures of the drawings.

The draw-head *a*, which is of the usual or suitable construction, slides in suitable guides in the end of the car-frame and has attached
65 to its rear end the draw-bar *b*, around which is coiled a spring, *c*, that is held between two follower-plates, *d* and *e*, the front one of which, *d*, slides in suitable guides, *f*, in the car-frame, in the usual manner, so that this spring *c* will
70 take up the shock on the draw-head. For the purpose of allowing a small backward movement of the draw head and bar before it is necessary to compress this heavy spring *c*, a
75 flat or disk spring, *g*, may be placed in the rear of the draw-head between it and the front follower-plate, *d*, so that the impact on the draw-head and the backward movement of the same will compress this spring first, it being a
80 little weaker than the spring *c*, and thus reduce the amount of impact necessary to apply the brakes. Instead of this construction, however, two springs coiled around the draw-bar may be used, one of which projects beyond
85 the other and bears against the draw-head, as described in my application, Serial No. 237,937, filed May 12, 1887. The advantage of this arrangement of springs is that sufficient movement of the draw head or bar backward to apply the brakes effectively is obtained in the compression of the first spring
90 before it is necessary to compress both, and the shock is taken up and resisted by the combined resiliency of both springs, so that the weakening of the latter is avoided. In the
95 rear of the draw-bar *b*, which is preferably somewhat longer than usual, is pivoted a lever, *h*, to a suitable support, *i*, on the car-

frame, one end of this lever being notched, as at h' , to form a seat for the end of the draw-bar b , and the other end, which is the longer arm of the lever, has hinged or pivoted there-
 5 to the link j , which in turn is pivoted to the lever k at an intermediate point, k' . The end of the lever h , instead of bearing against the end of the draw-bar b , as heretofore described, may bear against a lug on the draw-
 10 head; but the former construction is thought to be preferable, as it necessitates no change in the present form of draw-head. The outer or long arm of the lever k is connected by a rod, l , to the brake-shoe bars m in the usual
 15 manner, while the other end of this lever k is hinged or pivoted at k^2 to a link, n , that is hinged or pivoted at its opposite end, n' , to the short arm of a lever, o , which is pivoted at o' to the car-frame, or other suitable sup-
 20 port thereon, in the rear of and preferably in line with the pivot i of the lever h . The other end of this lever o extends over to the other side of the car, and has secured to that end a rod and chain, p , which are attached to and
 25 wound around an ordinary brake-operating spindle and hand-wheel, g , on the end of the car or its platform, by which the lever o may be held in one position, for the purpose hereinafter described. Other suitable arrange-
 30 ments may be employed for holding the lever o stationary, the only requisite being that they shall be so constructed that free movement of the lever on its pivot may at the proper time take place, as hereinafter described.

35 In operating my improved brake on a car, the hand-wheel and spindle g are turned until the chain is sufficiently wound on the spindle to draw forward the lever o until the lever h rests against the end of the draw-bar b or the
 40 lug on the draw-head. The spindle g is then locked by means of the ordinary pawl and ratchet or other suitable device, so as to hold the lever o in this position, as shown in Fig. 1. If, now, a backward thrust comes upon
 45 the draw-head a , the latter will recede, compressing the springs c and g and forcing back the inner end of the lever h , the other end of which is drawn forward and through the link j , draws forward the brake-operating lever k ,
 50 which turns upon the pivot k^2 of its connection with the link n , as shown in Fig. 2, and the brakes are applied. As the link n is pivoted at n' to the now rigid lever o , the pivot n' serves as the fulcrum of the brake-operat-
 55 ing lever k , which lever can have a certain amount of swinging of its inner end about this pivot n' , and thus materially aid the application of the brakes. As the leverage which applies the brakes has been very much multi-
 60 plied by this system of levers and links, it is only necessary that there should be a very small amount of backward play of the draw-head, and motion imparted to the end of the lever h to get a very considerable amount of move-
 65 ment at the end of the brake-lever k , and hence

a thorough application of the brakes is obtained with a very small amount of lost motion of the draw-head. As long as the lever o is held so that it cannot move backward when the impact comes on the draw-head the brakes
 70 will be applied; but when it is desired to back the train and the brakes are not to be applied, by loosening the spindle g and permitting the chain to unwind the backward thrust on the draw-head simply causes the lever o to move
 75 back the same amount as the lever h , (as shown in Fig. 3,) and the outer end of the brake-operating lever k , having no fixed pivot or fulcrum to turn about, is not affected by the movement of the lever h , and hence the brakes
 80 will not be applied. The inner end of the lever k simply swings forward on its outer end as a pivot, carrying with it the lever o , as shown in Fig. 3. Thus when the lever o is allowed to move no action of the brakes by
 85 the impact on the draw-head is obtained, and thus the brakes are readily thrown out of action at any time by loosening the hand-wheel g , or other suitable device which holds the lever o in position.

The preferable way of employing the brakes is to tighten the hand-wheel g until the lever h is in contact with the draw-bar and allow the parts to constantly remain in this position until for some reason it is necessary to back
 95 the train. By this arrangement all that is necessary to do to apply the brakes of the train is for the engineer to slacken the speed of the engine, which will successively apply the brakes in the manner heretofore described,
 100 and, as the draw-head springs are not weakened or materially changed, the ability of the car to withstand shocks is not injured.

Having now described my invention, what I claim is—

1. In a car-brake, the combination of a draw-head, a pivoted lever interposed in the path of said draw-head or draw-bar, and a brake-operating lever linked to the aforesaid lever and to a stationary pivot, substantially
 105 as and for the purpose set forth.

2. In a car-brake, the combination of a draw-head having a draw-bar attached thereto, a spring coiled around said draw-bar and held between two follower-plates, and a disk
 110 or bar spring interposed between the rear of the draw-head and the front follower-plate, substantially as described.

3. In car-brakes, the combination of a draw-head, a lever pivoted in the rear thereof and in the line of movement of the same, another lever pivoted in the rear of the first, and a brake-operating lever having a link-connection with both levers, substantially as and for the purpose set forth.

4. In car-brakes, the combination of the draw-head or draw-bar, a lever, h , interposed in the path of the same, a lever, o , pivoted in the rear of said lever h , and a brake-operating lever, k , connected to said levers h and o by
 130

links *j* and *n*, substantially as and for the purpose set forth.

5 In car-brakes, the combination of the draw-head or draw-bar, a lever, *h*, interposed in the path of the same, a lever, *o*, pivoted in the rear of said lever *h*, and means for holding said lever stationary, with a brake-operating lever, *k*, connected to said levers *h* and *o*

by the links *j* and *n*, substantially as and for the purpose set forth.

In testimony whereof I, the said ABRAM REESE, have hereunto set my hand. 10

ABRAM REESE.

Witnesses:

ROBT. D. TOTTEN,
J. N. COOKE.