(No Model.) 2 Sheets—Sheet 1.

G. B. QUIGG.

CAR BRAKE.

No. 383,904. Patented June 5, 1888.

Fig. 1.

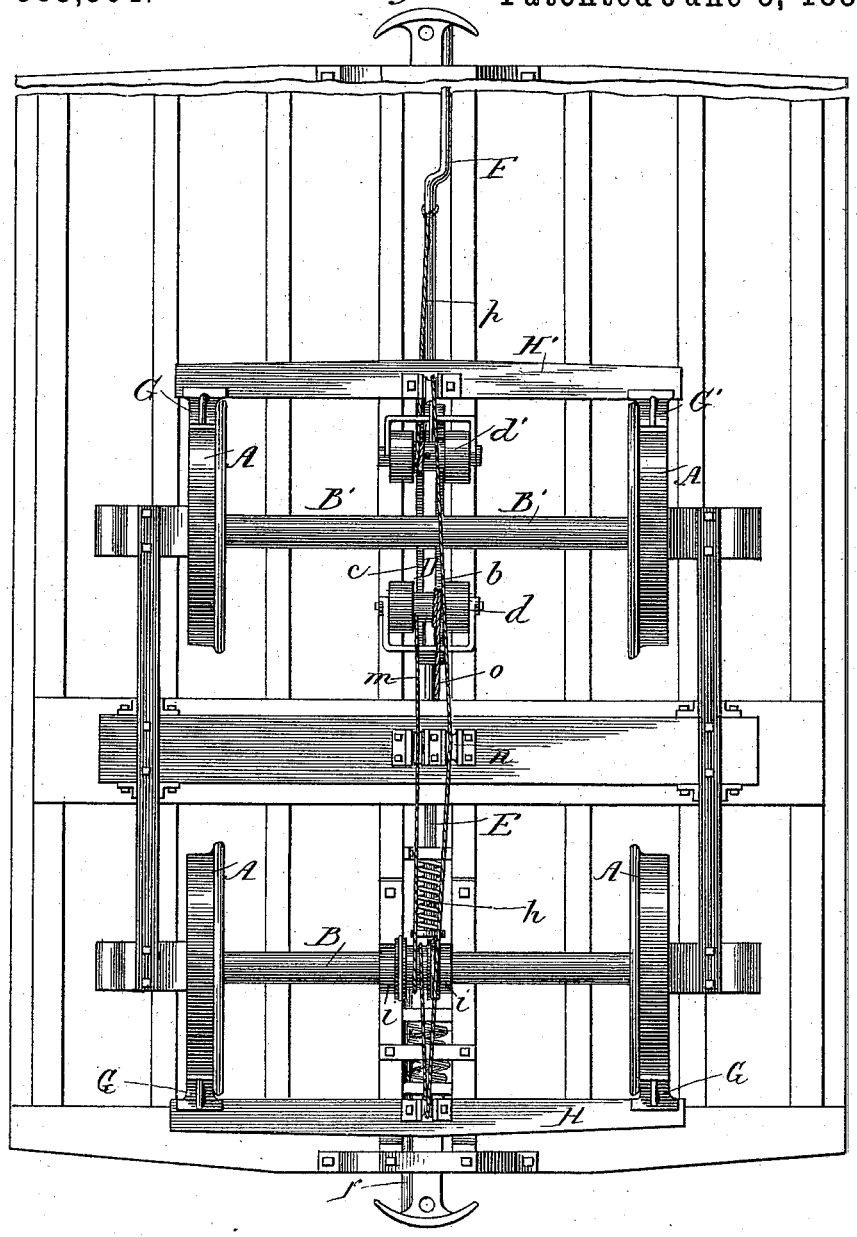
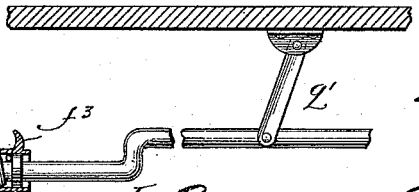


Fig. 7.



Witnesses:
Albert H. Adams.
Harry F. Jones.

Inventor:
George B. Quigg.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2

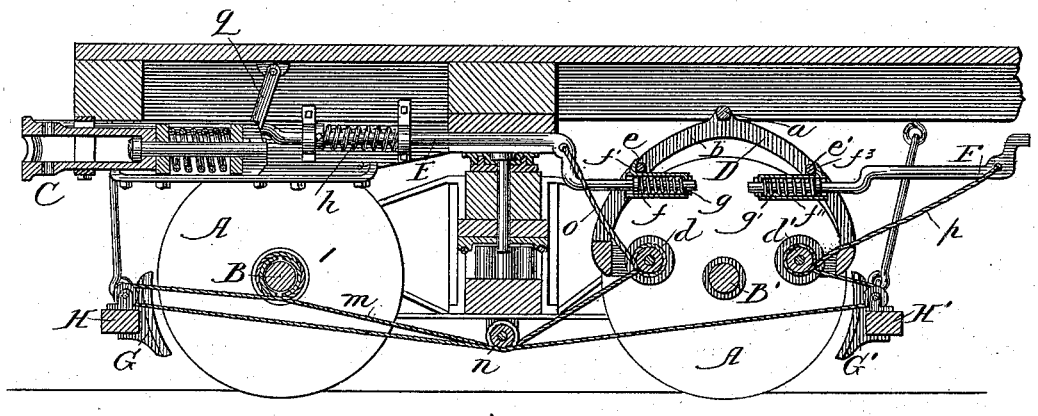


Fig. 3.

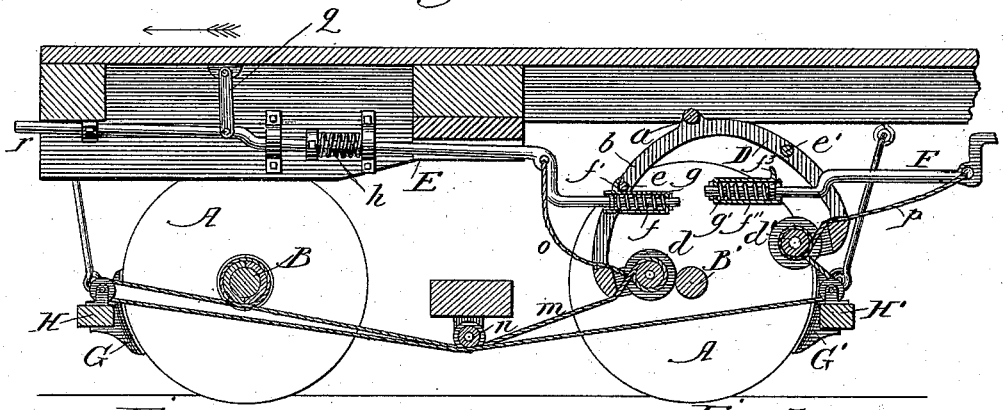


Fig. 4

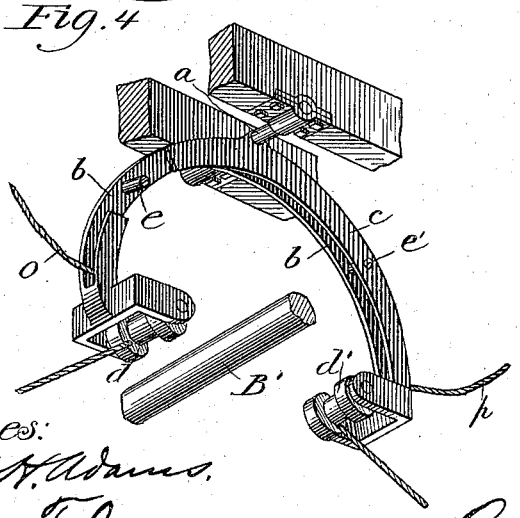


Fig. 5.

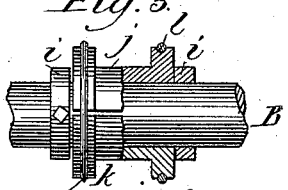
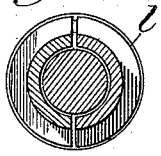


Fig. 6.



Witnesses:
Albert H. Adams.
Harry T. Jones.

Inventor:
George B. Quigg.

UNITED STATES PATENT OFFICE.

GEORGE B. QUIGG, OF THORNTON, ASSIGNOR TO HIMSELF, AND JOHN N. YOUNG, OF CHICAGO, ILLINOIS.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 383,904, dated June 5, 1888.

Application filed February 20, 1888. Serial No. 264,560. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. QUIGG, residing at Thornton, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Car-Brakes, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an under side view of a freight-car containing my improvements, the trucks being shown only at one end. Fig. 2 is a central vertical longitudinal section of the same, the parts for operating the brakes being out of action. Fig. 3 is also a central vertical longitudinal section, the draw-bar being removed and the devices which operate the brakes being shown in position for action. Fig. 4 is a detail, being a perspective of the yoke and rollers. Fig. 5 is a detail showing the divided clutch. Fig. 6 is a detail, being a central cross-section through the clutch. Fig. 7 is a detail showing the case and spring at the inner end of one of the sliding rods. Figs. 4, 5, 6, and 7 are enlarged.

My improvement is primarily designed to be used upon freight-cars.

The leading object of my invention is to provide a safety-brake which will be brought into action automatically whenever adjoining cars come together in consequence of the slackening of the speed of the locomotive or from other cause, and which will also be automatically released when the cars are again separated from each other, and to provide devices which will prevent the action of the brakes when backing, which I accomplish as illustrated in the drawings and hereinafter fully described. That which I claim as new will be set forth in the claims.

In the drawings, A represents the wheels of a freight-car truck, which is located under one end of the car, as usual.

B B′ are two axles.

C is a draw-bar provided with a spring, as usual.

D is a yoke hinged at *a* to the under side of the car. As shown, this yoke is made of two bars, *b c*, placed at a little distance from each other and having upon their ends bearings which support the rollers *d d′*.

e e′ are two short connecting bars or rods permanently secured to the parts *b c*.

E is a rod supported in bearings secured to the car, so that the rod can have a limited longitudinal movement. One end, *r*, of the rod projects beyond the car, and this end is arranged to come in contact with the inside of the head of the draw-bar C. The other end is provided with a casing, *f*, on which is a hook or projection, *f′*, arranged to engage with the bar *e*.

g is a coiled spring in the case *f*. One end of the spring is against a collar and the other end comes in contact with the head on the inner end of the case *f*.

h is a coiled spring arranged to act upon the rod E.

F is a second rod supported so as to have a limited longitudinal movement, the same as the rod E. This rod F extends to the opposite end of the car and projects a little distance therefrom, and this outer end is arranged to come in contact with the inside of the head of the draw-bar. This rod or bar F is also provided with a case, *f″*, which has a hook, *f³*, similar to *f′*, to engage with the bar *e′*. In this case *f″* is a spring, *g′*, similar to the spring *g*.

G G′ are brakes, and H H′ brake-bars arranged in the usual manner.

i i are collars fixed upon the axle B. Between these collars there is a sleeve made in two parts, *j k*, which parts are held loosely in place upon the axle by means of rings *l l*, arranged in grooves in projections upon the two parts of the sleeve.

m is a rope, one end of which is attached to the roller *d*, from which it passes under a roller, *n*, thence around the divided sleeve *j k*, thence over a pulley upon the outer brake-bar, H, thence to the inner brake-bar, H′, and thence to the roller *d′*, to which it is secured.

o is a short piece of rope, one end of which is connected to the roller *d* and the other end is connected to the rod E.

p is another short rope, one end of which is connected to the roller *d′* and the other to the rod or bar F.

As shown, the rod E is partly supported by a swinging link, *q*, and the rod F by a link, *q′*,

which aid in keeping the inner end of the rods E F in proper position.

The operation is as follows: In Figs. 1 and 2 the brakes and parts which operate the same are shown in their normal position, out of action, and the train is supposed to be moving in the direction of the arrow, Fig. 3. If, now, from any cause, the adjoining ends of two cars come together, the projecting end *r* of the rod E will come in contact with the inside of the head of the draw-bar, which will push the rod E backward, and the hook *f'* on the case *f* will engage with the bar *e*, which will cause the yoke D to be brought into the position shown in Fig. 3, the roller *d* coming into contact with the axle B', and in consequence thereof the roller *d* will be rotated, winding the rope *m* thereon and setting the brakes G G'. Ordinarily the axle B will rotate in the divided sleeve; but as the rope *m* passes around such sleeve when the tension on the rope becomes sufficient the sleeve will be clamped upon the axle B and will rotate with it, and this will aid in setting the brakes. When the roller *d* is in contact with the axle B', as shown in Fig. 3, the yoke will be swung so that the bar *e'* will be carried away from the hook f^3 of the case *f''* on the bar F, so that the longitudinal movement of this bar will not act upon the yoke. When the train moves in the opposite direction, the bar F will act upon the yoke when two adjoining cars come together, bringing the roller *d'* into contact with the axle B' and setting the brakes, substantially as before described, at which time the bar *e* will be carried away from engagement with the hook *f'*, so that it cannot act upon the yoke. The springs *g g'* in the cases *f f''*, respectively, serve the purpose of relieving the yoke from too great strain when by a sudden movement of the operating-rods E or F the roller upon one end of the yoke, or some other part, is brought into contact with the axle. The spring *h* serves the purpose of returning the rod E to its normal position (shown in Fig. 2) when the rod E is released by the separation of the cars. When from any cause, either from the slackening of the speed of the locomotive or as the result of going down a grade, the ends of two adjoining cars come together, thus moving the rod E, through which the yoke is operated, the brakes will be brought into action automatically, and whenever, from an increase of speed or other cause, the cars separate the brakes will be released. When backing a train, the brakes would be operated if no device were used to prevent their action. The office of the short ropes *o p* is to prevent the action of the brakes when backing. These ropes are arranged to be wound upon the rollers *d d'* in a direction opposite to that in which the ropes which operate the brakes are wound on such rollers, so that in backing the rope which operates the brakes will be unwound from the roller and the proper short rope will be wound thereon, so that although in backing one of the rollers will be brought in contact with the axle, yet the winding of the short rope on the roller will have a tendency to draw the yoke and roller away from the axle, so that the friction between the roller and axle will not be sufficient to operate the brakes. These short ropes *o p* may be attached at one end to some part of the car-frame instead of to the rods E F. The rope which operates the brakes may be connected to the levers used for that purpose instead of being connected to the brake-bars, as shown.

The divided sleeve may be of such length that before too much pressure is applied to the brakes the sleeve will rotate upon the axle.

I have only shown brakes at one end of the car. They may be used, however, at both ends, if desired, and may be located in any usual position, the operating-ropes being properly arranged and connected.

I have shown only one car; but the several cars of the train are supposed to be provided with the devices described for operating the brakes.

I have described *m*, *o*, and *p* as ropes. Of course wire cables or chains may be used. Of course the projecting ends of the rods E F might be arranged to be acted upon by an adjoining car; but such projecting ends will be much better protected when arranged to be acted upon by the head of the draw-bar, as described.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In combination with a car, a pivoted yoke, D, carrying rollers *d d'*, and sliding rods E F, adapted to operate the yoke and bring one of the rollers in contact with an axle, substantially as and for the purpose specified.

2. In combination with a car, a pivoted yoke, D, carrying at its ends rollers *d d'*, sliding rods E F, adapted to operate the yoke, brakes G G', and a rope or chain, *m*, to operate the brakes, substantially as specified.

3. In combination with a car, a pivoted yoke, rollers *d d'*, sliding rods E F, brakes, a divided sleeve, *j k*, on one of the axles, and a rope or chain, *m*, substantially as specified.

4. In combination with a car, a pivoted yoke, rollers *d d'*, rods E F, brakes, a rope or chain, *m*, and ropes or chains *o p*, substantially as and for the purposes specified.

5. In combination with a car, a pivoted yoke, D, carrying rollers *d d'*, sliding rods E F, each having at its inner end a case, *f* and *f''*, on which is a hook, *f'* and f^3, to engage with one of the bars or rods *e e'*, springs in such cases, a return-spring for each of the sliding rods, and draw-bars, all constructed and arranged substantially as shown and described, and for the purposes specified.

GEORGE B. QUIGG.

Witnesses:
ALBERT H. ADAMS,
HARRY T. JONES.