(No Model.) 2 Sheets—Sheet 1.

G. A. LYNCKER.

AUTOMATIC RAILROAD BRAKE.

No. 547,219. Patented Oct. 1, 1895.

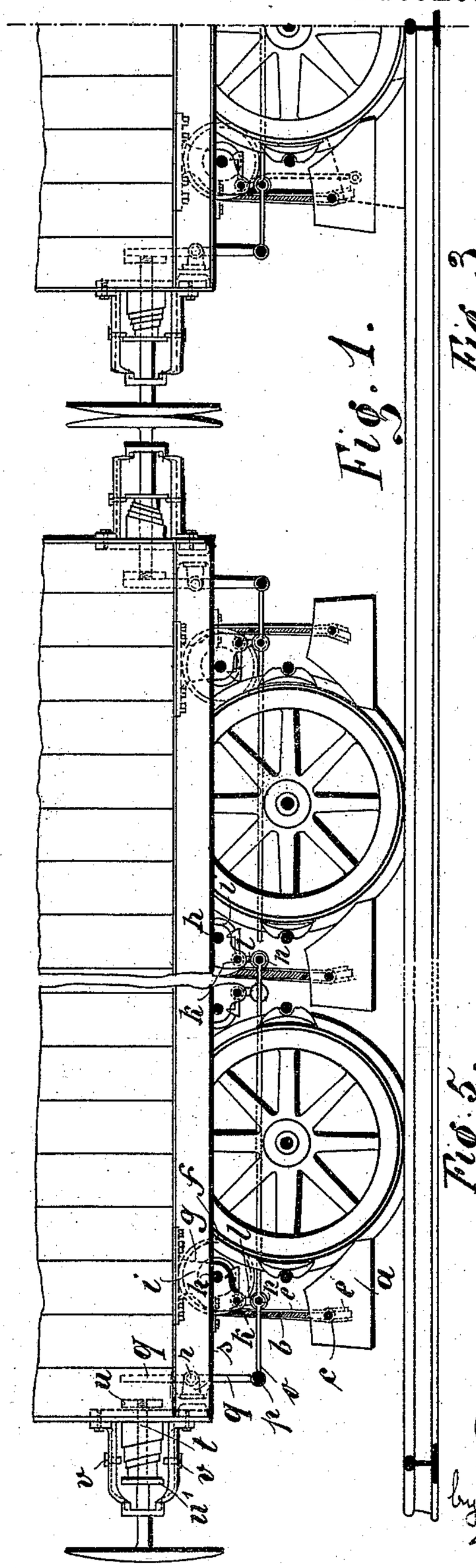

Fig. 1.

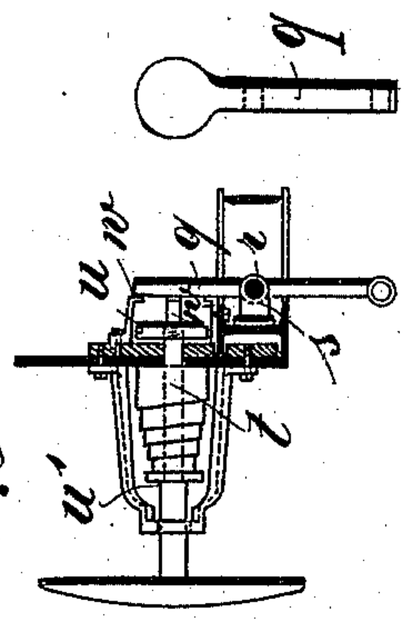

Fig. 3.

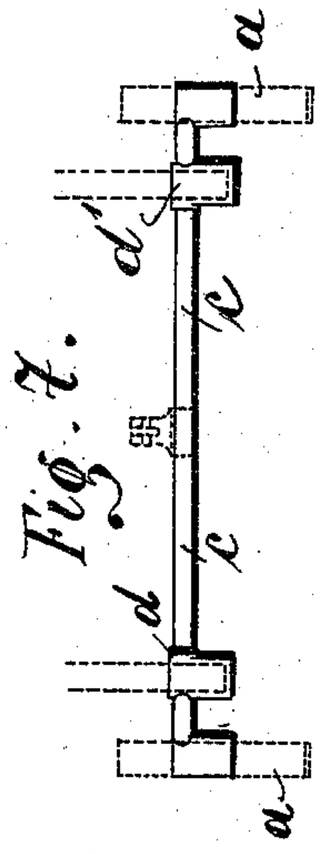

Fig. 2.

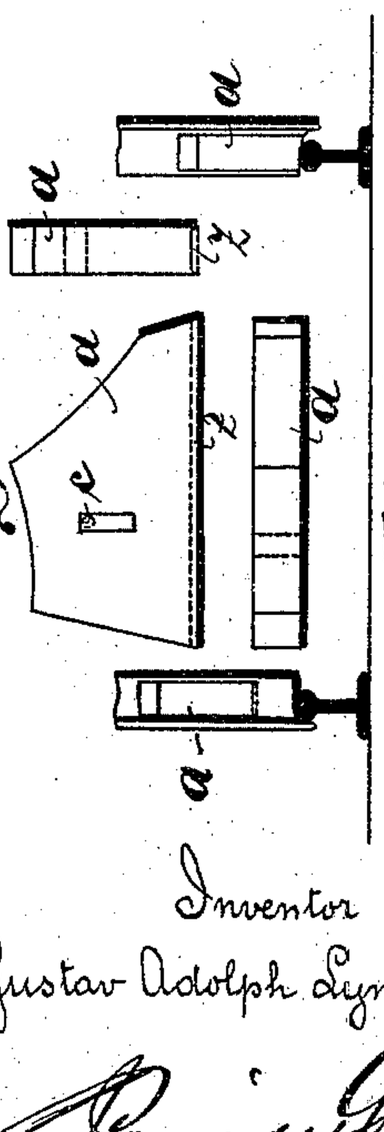

Fig. 5.

Fig. 4.

Witnesses
H. van Oldenneel
C. H. Sturtevant

Inventor
Gustav Adolph Lyncker
by Howard & Howard
Attorneys

(No Model.) 2 Sheets—Sheet 2.

G. A. LYNCKER.

AUTOMATIC RAILROAD BRAKE.

No. 547,219. Patented Oct. 1, 1895.

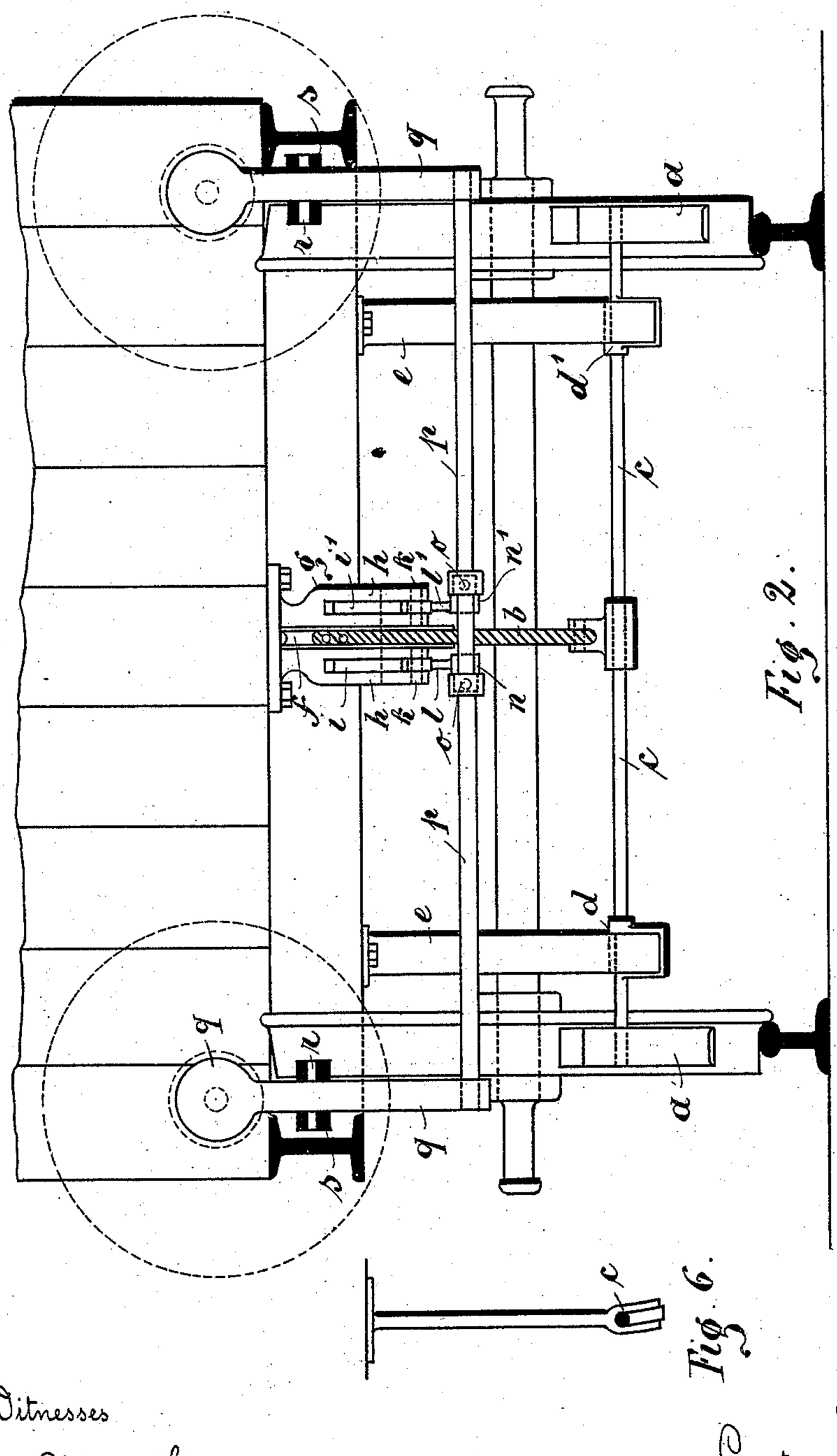

Fig. 2.

Fig. 6.

Witnesses
H. van Oldenneel
E. H. Sturtevant

Inventor
Gustav Adolph Lyncker
by Howard & Howard
Attorneys

UNITED STATES PATENT OFFICE.

GUSTAV ADOLPH LYNCKER, OF MUNICH, GERMANY.

AUTOMATIC RAILROAD-BRAKE.

SPECIFICATION forming part of Letters Patent No. 547,219, dated October 1, 1895.

Application filed April 16, 1895. Serial No. 545,879. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV ADOLPH LYNCKER, a subject of the King of Bavaria, and a resident of the city of Munich, Bavaria, Germany, have invented certain new and useful Improvements in Automatic Railroad-Brakes, of which the following is a specification.

The object of the present invention is to prevent collision between trains, or at least to render such accidents almost impossible.

Figure 1 shows a profile view, and Fig. 2 a front view, of my invention, partly in section. Fig. 3 shows a modification of the linking apparatus. Fig. 4 shows two car-wheels upon the track with one of the brake-blocks in operation and the other raised, and Figs. 6 and 7 show details.

In the present case the braking of the cars occur by means of brake-blocks *a*, which are arranged in front of and very near all the wheels and below the ordinary brake spoons or shoes. They are placed as near as possible the wheel and over the rails, and the pairs for each side are fixed to a common connecting-rod *c*.

The back part of the brake-blocks *a* turned toward the wheel has a shape which corresponds exactly with the periphery of said wheel, and is also exactly as wide as the wheel, while the bottom surface is of a shape similar to the upper part of the rail-head.

The points of the brake-blocks *a* are cut obliquely, in order to prevent the cars from running over the same when they are in operation and in order that the wheels shall press tightly against their entire brake-surface, whereby the first hard stroke is directed against the brake-blocks, forcing them against the rail; but the main value of the apparatus lies in the bottom surface of the brake-blocks, (the shape of which corresponds with the shape of the rail-head,) which is covered with softer metal—such as lead, copper, composite materials, (shown at 2, Fig. 5,) so that said blocks are pressed into the rails and the first hard shock lessened. Thus the lower surfaces of the blocks will slip over the rails until the momentum of the car is checked entirely by the friction. The adapting of such brake-blocks to the front and hind wheels of locomotives will also be found to be of great value. In this case, as in all cases where those blocks can be adapted to cars not provided with a brake, these safety-blocks can be made much higher.

From the center of the connecting-rod *c*, Figs. 2 and 7, a carrying-chain or wire rope *b* leads to the bottom of the car or to a carrying-roller *f*, which fits in the bearing-frame *g*, and this roller is provided with locking-disks *i i'*, into which the locking-levers *l* and *l'* catch, guide-bars *e*, Figs. 1 and 2, depending from each side support, the rod *c* fitting in dents or slots in the end thereof. Thus all forward and backward oscillation of the brake-blocks is prevented, and the side swinging is prevented by the adjoint pieces *d d'*. Balls or spherical disks *n* are placed at the lower lever-arms of the locking-levers *l*, which close the locking devices by their own gravity, so that no spring is required.

The two draw or detaching bars *o* are connected with the cross-bar *p*, Figs. 1 and 2, which is arranged at the inner front side of the car and connected at its extremities with the vertical levers *q*, which are arranged pivotally around bolts *r* in bearings *s*. These vertical levers *q* are arranged directly behind the buffer-bolt. The disks *u'* placed in the inside of the buffers aid to compress the buffer-springs. To the wall of the buffer-box three or four pins *v* are screwed, which limit the movement of the disk *u'* normally, and instead of these pins, as shown in Fig. 3, four levers *w*, provided with inwardly-bent prongs, are fixed in the inside part of the car, and in both cases the extremity of the buffer-bolts is provided with a plate *u*.

Under ordinary circumstances—for instance, when ranging trains, if the cars or buffers come in contact, the disk *u'* after the buffer-springs have been compressed as much as necessary will exercise the further pressure either, as shown in Fig. 1, upon the side pins *v* and thereby upon the car itself, or, as shown in Fig. 3, the plate *u* will work upon the prongs of the levers *w*, and thereby upon the car. To that effect the pins or prongs must be of proper strength. In one part of Fig. 1 the buffer-springs are shown not compressed and the disk *u'* distant from the pins *v* and the disk *u* distant from the levers *q*, while the other side shows the springs compressed

where the pressure is transmitted by the pins v, because the disk u' presses against the same, while at the other hand the disks u press against the levers q. In case of an accident, if there is a powerful shock, the ends of the side pins v or the prongs of the levers w must break or be torn off, and then the plates u will hit directly the vertical lever q, pushing the same forward, whereby the locking devices will be attracted or detached and all the brake-blocks will fall together upon the rails and under the wheels of the cars. The main point is that the effect of the first powerful shock is transmitted to the wheels and so to the rails, and as all wheels are locked at the same time the motion of the car is stopped and a collision becomes impossible, and as this locking occurs to all the cars and the wheels are stopped by insurmountable obstacles the cars cannot possibly be crushed.

I claim—

1. In combination, suspended brake blocks, supporting means therefor, locking devices for holding the brake blocks raised, a sliding buffer on the end of the car, arranged to receive the impact of the adjacent car, a pivoted lever located in rear of said buffer and in line therewith, and releasing connections between said lever and the locking devices, substantially as described.

2. In combination, the brake blocks a, the supporting shaft c, the flexible support b therefor, the guides e, depending from the car and serving to guide the shaft c, the drum for the flexible support, locking means for said drum and releasing means for said locking means, substantially as described.

3. In combination with brake blocks, locking means and releasing means, a buffer and a stop capable of fracture limiting the movement thereof, said releasing means being in line with said buffer, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV ADOLPH LYNCKER.

Witnesses:

ALBERT WEICKMANN,

SYRUS F. LULLEY.