

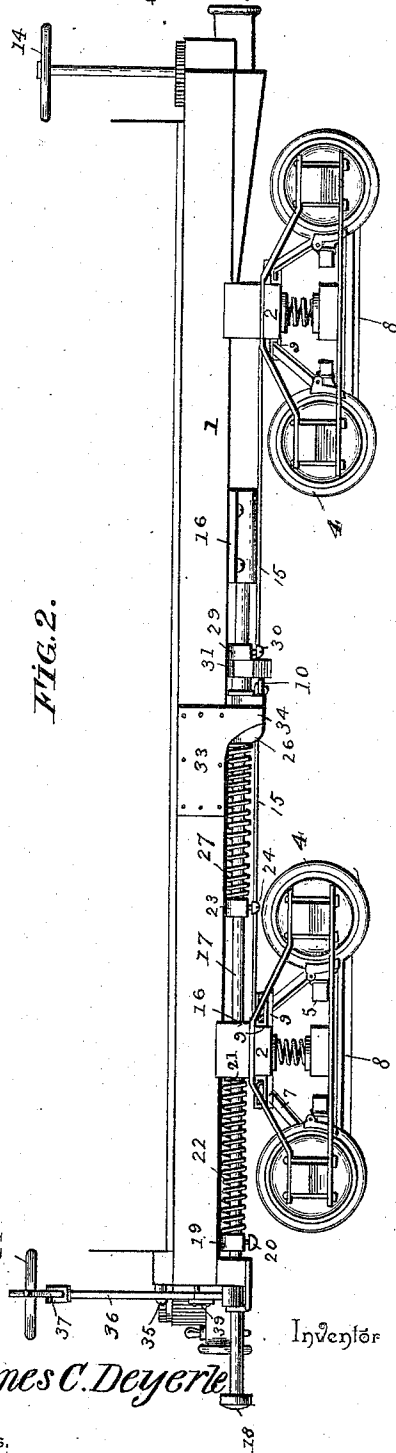
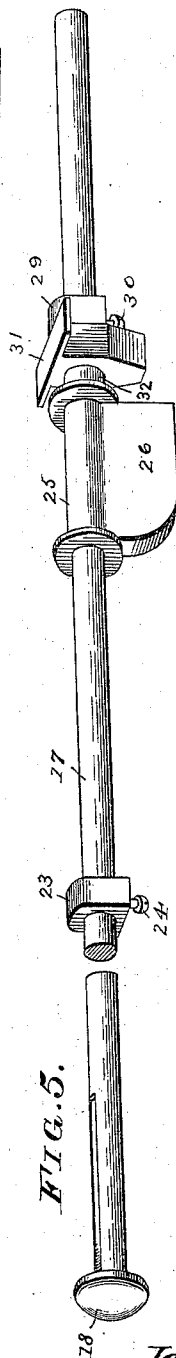
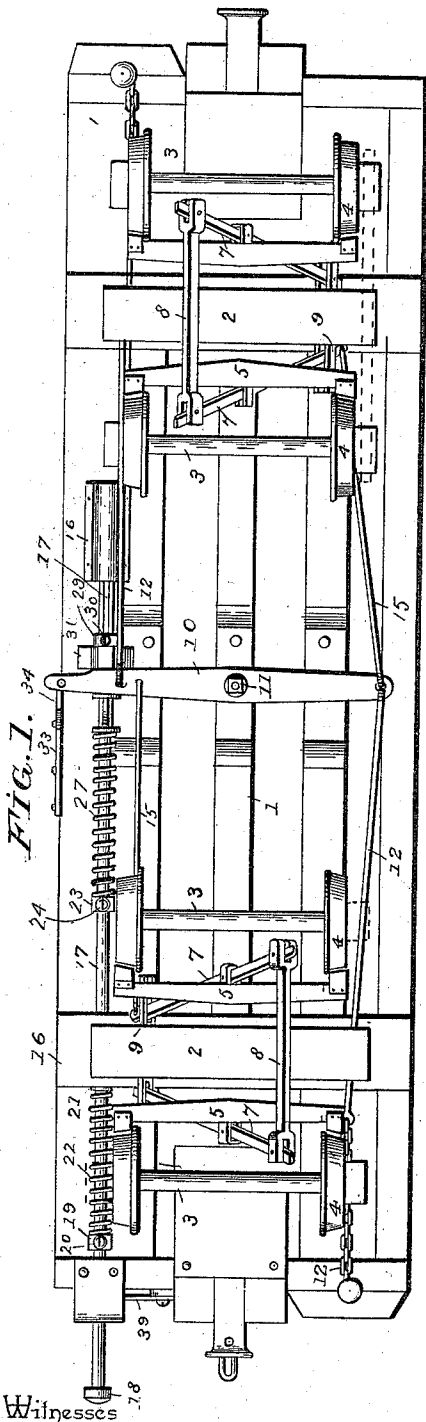
(No Model.)

2 Sheets—Sheet 1.

# J. C. DEYERLE. AUTOMATIC BRAKE FOR RAILWAY CARS.

No. 526,384.

Patented Sept. 25, 1894.



Witnesses

*Julius Ulke Jr.*  
*John N. Siggers*

By his Attorneys.

*James C. Deyerle*

*C. Brown & Co.*

(No Model.)

2 Sheets—Sheet 2.

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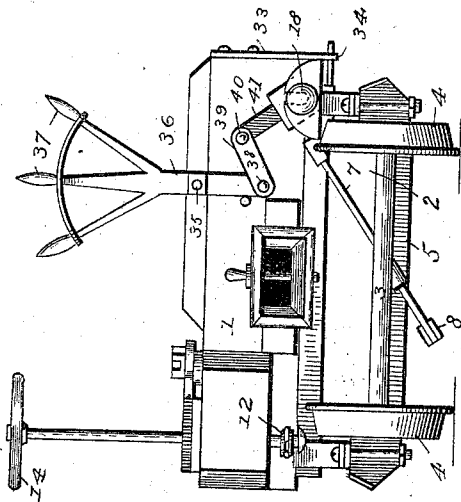


FIG. 3.

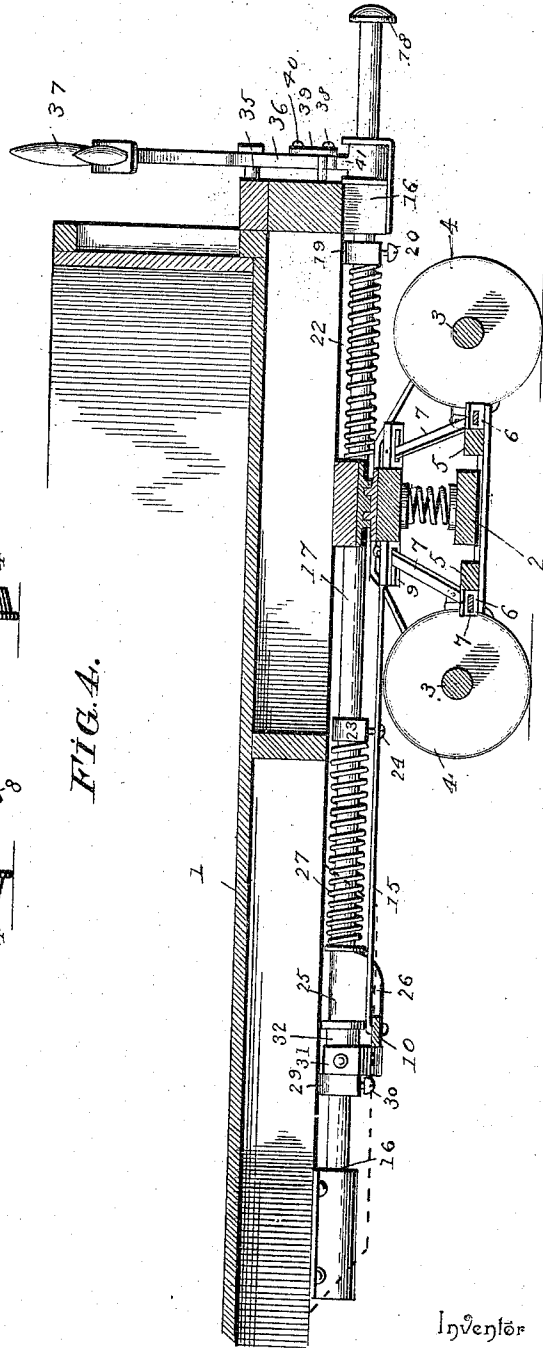


FIG. 4.

Inventor

James C. Deyerle

By his Attorneys.

Casey & Co.

Witnesses

Julius Ulker, Jr.  
J. H. Siggers

# UNITED STATES PATENT OFFICE.

JAMES C. DEYERLE, OF SALEM, VIRGINIA.

## AUTOMATIC BRAKE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 526,384, dated September 25, 1894.

Application filed March 7, 1894. Serial No. 502,678. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. DEYERLE, a citizen of the United States, residing at Salem, in the county of Roanoke and State of Virginia, have invented a new and useful Brake Attachment, of which the following is a specification.

My invention relates to improvements in car-brakes; the objects in view being to provide an attachment especially designed for freight car-brakes, the same being adapted to automatically apply the brakes by operating the brake-lever whenever the cars should contact, as in descending a grade and thus prevent the several cars composing the train from crowding the engine; and to automatically remove the brakes from the wheels after the grade has been passed or when traveling on a level or ascending a grade; furthermore, to so arrange the aforesaid attachment as not to interfere with the operating of the brakes through the ordinary hand-wheels at the ends of the cars.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a bottom plan of a freight car having the brake attachment constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation of the car. Fig. 4 is a longitudinal sectional view. Fig. 5 is a detail in perspective of the operating-rod.

Like numerals of reference indicate like parts in all the figures of the drawings.

The car-bottom 1 comprises the usual timbers, and is mounted upon the usual trucks 2, which comprise the axles 3 and wheels 4. Located between the wheels are the brake-bars 5 to which are loosely coupled by eyes 6 the inclined brake-levers 7. These brake-levers are connected at their lower ends by the coupling-rod 8. The inner brake-levers have their upper ends located for loose movement in guide-eyes 9.

Located between the two trucks is the main brake-lever 10, the same being pivoted between its ends as at 11 and having its opposite ends connected by means of coupling-rods and chains 12 to the vertical spindles at

the opposite ends of the car, which are operated through the medium of the usual hand-wheels 14. The outer brake-levers 7 are connected by the coupling-rods 15 to the aforesaid main brake-lever 10 at opposite sides of the pivot 11 thereof, so that any oscillations upon the part of the main brake-lever 10 will be communicated to the outer brake-levers 7 and by means of the aforesaid coupling-rods 8 will be likewise communicated to the inner brake-levers, and thus the brake-levers 5 which carry the brake-shoes either separated and forced against the wheels or withdrawn therefrom, all as is well known.

I have thus described simply the usual construction of brake employed on freight-cars of railroads, and I will now proceed to describe my attachment, whereby the said main brake-lever 10 may be automatically operated by the cars descending a grade to throw on the brakes, and again automatically operated when the cars are ascending a grade or moving on a level to throw off the brakes, and in the former instance relieving the engine of the gravitating tendency of the cars in rear thereof.

At one end of the car, at the side thereof opposite to which is located the hand-wheel, I form in the cross-timbers of the framework of the bottom thereof longitudinally aligning bearings 16, and locate in said bearings a reciprocating and rotatable plunger-shaft 17, which terminates at one end beyond the end of the car and its coupler and is provided with a head 18. Between the two front bearings 16 I locate upon said shaft an adjustable collar 19, the same being held in position by means of a binding-bolt 20, and I interpose between said collar and a suitable washer 21 also located upon the said shaft, a spiral spring 22, the tendency of which is to force the said rod forward so as to project its end beyond that of the car.

In rear of the second timber in which the bearing 16 is formed I secure upon the shaft 17 a second collar 23, the same being adjustable through the medium of a binding-bolt 24 passing through the collar and binding on the shaft. I also locate upon this shaft in rear of the collar 23 a sleeve 25, which terminates at its ends in flared heads, and has formed at one side a fin 26. This sleeve is

splined upon the shaft, so that it is capable of reciprocation thereon yet cannot turn except with the shaft.

A coiled spring 27 is interposed between the collar 23 and the front end of the sleeve and serves to force the latter rearward in contact with one end of the main brake-lever 10. At the opposite side of the brake-lever 10, upon the aforesaid shaft 17, I locate a collar 29, binding the same in position through the medium of the binding-bolt 30. I interpose between this collar and the brake-lever 10 a loose sleeve 31, the same having a projection upon its under side corresponding to the fin 26 of the sleeve 25. Between the sleeve 31 and the rear end of the sleeve 25 I locate upon the shaft above the lever 10 a loose collar 32.

A plate 33 is secured to the side of the framework of the car, and has an arm 34 that projects down into the path of the lever 10 so as to prevent the same passing beyond said arm and thereby remove the brake-shoes too far from the wheels by reason of the disposition of the coiled spring 22. It also serves to maintain the shaft 17 at a proper point for contacting with the car in advance thereof.

Pivoted to the front end of the car, as at 35, is a lever 36, the same having at its upper end radiating handles 37. The lower end of the lever is pivoted as at 38 to a link 39, and the latter is pivoted at its outer end, as at 40, to a rock-arm 41 that extends from the shaft 17. By this means it will be seen that the lever may be operated, that is, swung to a vertical or inclined position, and will accordingly rotate or rock the shaft 17 to such an extent as when in an inclined position to swing the fin 26 of the sleeve 25 out of the path of the main brake-lever 10, so that when said shaft is struck at its forward end, the aforesaid fin will slide over or above the brake-lever and not influence it; or, on the other hand, if the lever 36 is swung to a vertical position the fin will be lowered into the path of said brake-lever 10, and should the rod 17 be forced rearward against the tension of its spring 22 the fin engaging with the brake-lever 10 would carry the same rearward and apply the brakes in a yielding manner by reason of the presence of the spring 27 and with the same effect as they would have if applied through the medium of the hand-wheels and brake spindles at the ends of the car. The object of this attachment is to avoid the necessity of applying the brakes by hand when a train descends a grade. It is well known that during such descent the several cars composing the train crowd forward by reason of their gravitating tendency and thus exert considerable strain and force against the engine. I propose to utilize this gravitating tendency for the application of the brakes and I accomplish the same by the mechanism heretofore set forth. It will be seen that as a train descends a grade the cars gravitating forward naturally crowd one against the other, each

car abutting against the car in advance. When this takes place the shaft 17 extending in advance of the end of the car will abut against the car in advance thereof and be forced to the rear, and the lever 36 having been set so as to throw the fin into the path of the brake-lever 10, it will be seen that said brake-lever will be moved to the rear against the tension of the spring 22, such operation taking place in each car of the train. This serves to apply the brakes in the same manner as if the brake-wheels were operated and the brakes are applied to the wheels of the several cars so as to throw the latter back and prevent them from crowding against the engine. As soon as an up-grade is reached, or a level, and the cars begin to pull back, it will be seen that the shafts 17 are no longer pushed to the rear, but being released are thrown forward by the spring 22 so that they no longer influence the brake-lever 10, and the brake-shoes are immediately withdrawn from contact with the wheels of the cars.

It will be seen that by reason of the presence of the spring 22 the brake-shoes will be yieldingly held against the wheels and any excessive pressure against the brake-lever 10 avoided, so that no breakage of the parts can thus occur.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same to any degree and extent within the knowledge of the skilled mechanic without departing from the spirit or sacrificing any of the advantages thereof.

Having described my invention, what I claim is—

1. The combination with a car and its brake mechanism, of a reciprocating shaft, a projection slidingly mounted on the shaft and arranged to engage the lever of the brake mechanism, and a spring disposed on the shaft and holding the projection against the lever and forming a cushion, whereby the brake is yieldingly applied, substantially as described.

2. The combination with a car and its brake-mechanism, of a reciprocating rock-shaft, means for rocking said shaft, a spring for normally pressing the same to the front, and a brake-lever engaging projections splined upon the shaft and yieldingly pressed into the path of the lever, substantially as specified.

3. The combination with a car and its brake-mechanism, of a reciprocating shaft, a sleeve splined upon the shaft and having a fin extending into the path of the lever of the brake mechanism, and a spring for pressing the sleeve against the lever, substantially as specified.

4. The combination with a car, its brake-mechanism and a stop extending in front of its main brake-lever, of a reciprocating shaft, a spring for normally pressing the same outward, and devices on said shaft for engaging the brake-lever, substantially as specified.

5. The combination with a car and its brake-mechanism, of a reciprocating shaft terminating beyond the end of the car, a lever for rocking said shaft, a spring for normally pressing the shaft to the front, and projections arranged on the shaft for engaging the brake-lever of the brake-system, substantially as specified.

6. The combination with a car and its brake-mechanism, of longitudinally aligning bearings at one side of said car, a reciprocating rotary shaft arranged in the bearings, a rock-arm at the end of the shaft, a lever fulcrumed on the end of the car, a link connecting the lower end of the lever to the rock-arm, a spring for normally pressing the shaft outward beyond the end of the car, a sleeve

splined upon the shaft and having a fin adapted to engage with the lever of the brake-mechanism, a spring for normally pressing the sleeve toward the lever, an adjustable sleeve in advance of each spring, a sleeve in rear of the lever, means for securing the same fixedly upon the shaft, and a loose sleeve interposed between the fixed sleeve and the lever, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES C. DEYERLE.

Witnesses:

EMILY F. TALIAFERRO,  
JACOB S. BAER.