

L. DE VITO.
BRAKE FOR RAILWAY CARS.
APPLICATION FILED DEC. 9, 1908.

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Patented Dec. 7, 1909.

2 SHEETS—SHEET 1.

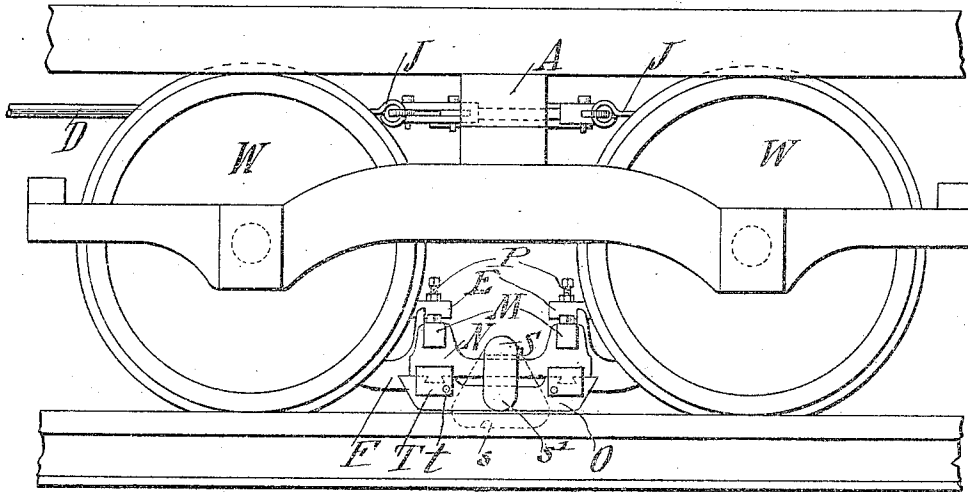


Fig. 1

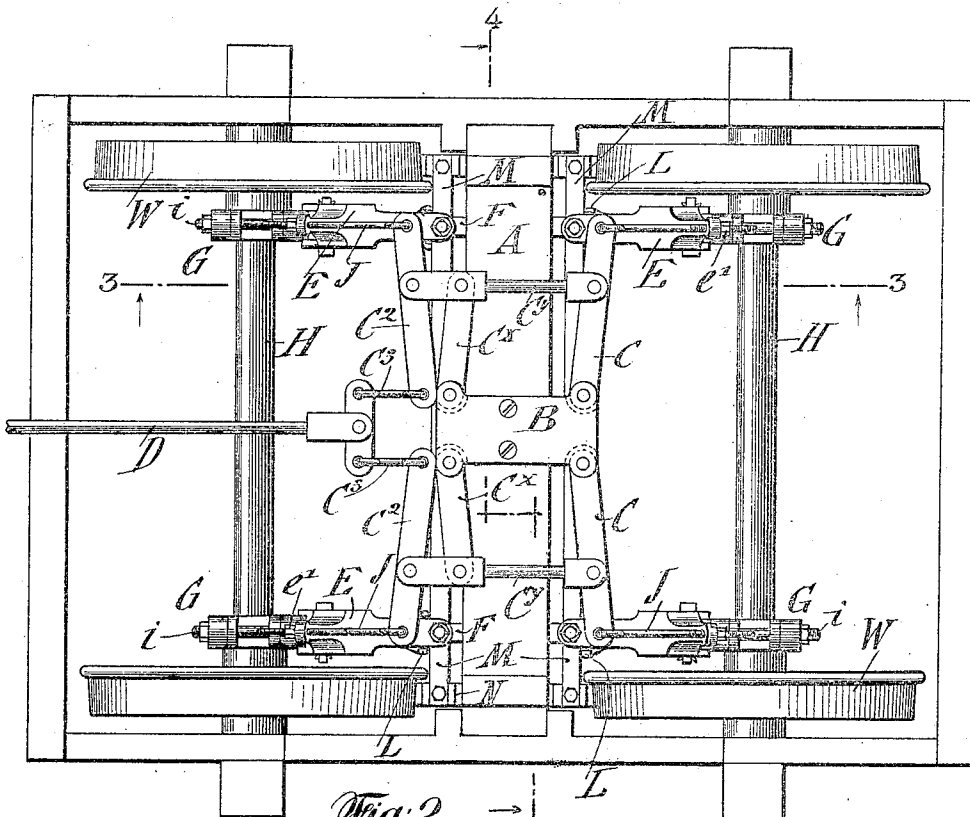


Fig. 2

Witnesses:
H. J. Sukrhet.
N. J. Redman

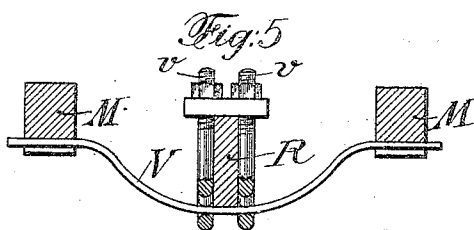
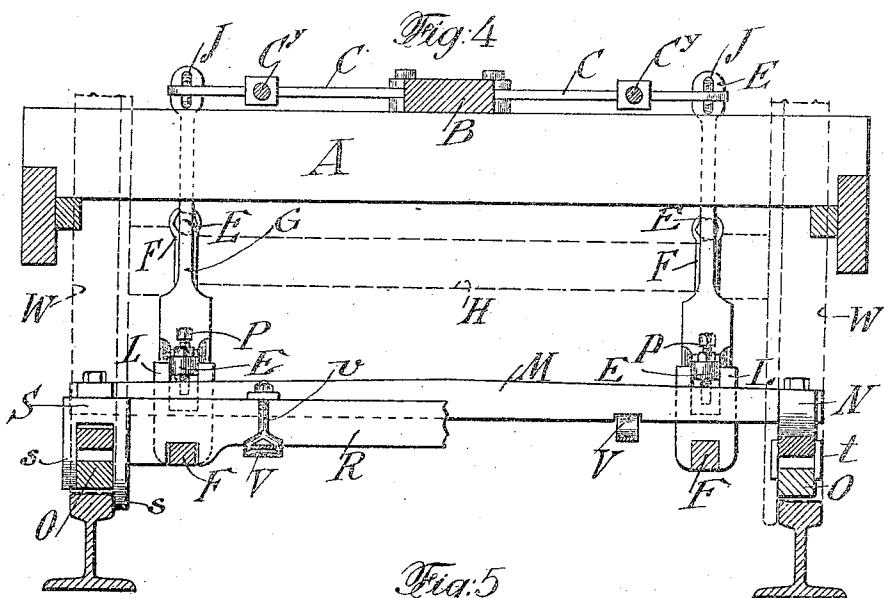
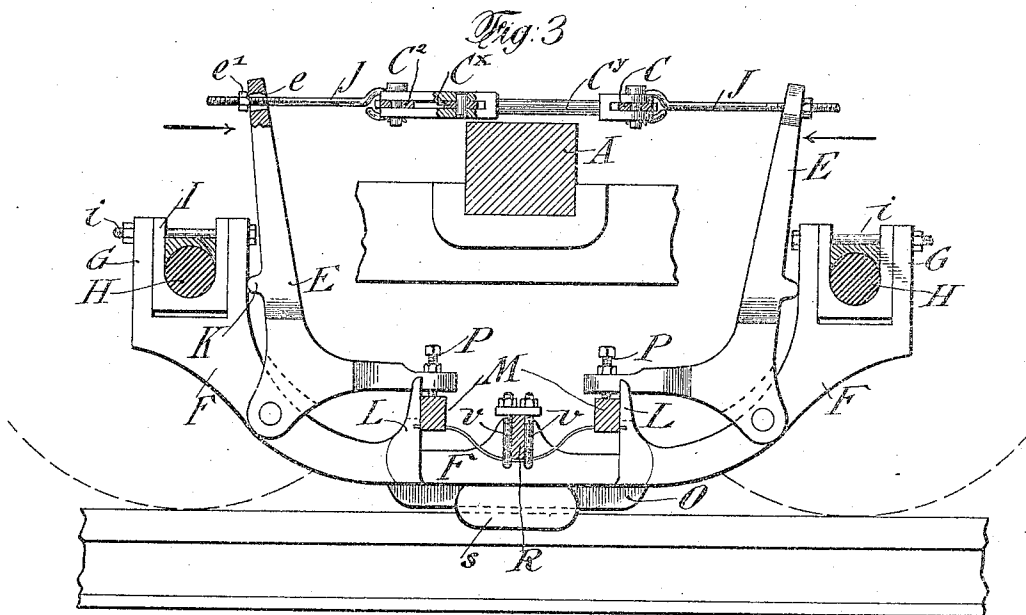
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Witnesses:
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UNITED STATES PATENT OFFICE.

LOUIS DE VITO, OF CLEVELAND, OHIO.

BRAKE FOR RAILWAY-CARS.

942,684.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed December 9, 1908. Serial No. 466,584.

To all whom it may concern:

Be it known that I, LOUIS DE VITO, a citizen of the United States of America, residing in Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Brakes for Railway-Cars, of which the following is a specification.

This invention relates to certain improvements in brakes for railway cars of that type in which the brake-shoe is located between the truck-wheels and adapted to be pressed on the top of the rail so as to arrest the car by the powerful friction exerted by the same.

The object of the invention is to provide a construction in which the brake-shoes are mounted on a brake-carrying frame which is guided vertically in an improved manner in hanger-frames connecting the axles, and in which simple, easily operated means are employed to depress said brake-carrying frame. This frame is normally sustained in elevated position by means of springs located in an improved manner, and there are also provided improved means for guiding the brake-shoes in their vertical movement.

The brake-carrying frame is depressed by means of pivoted elbow-levers arranged at opposite sides of the bolster, and for operating these levers simultaneously an improved lever mechanism is provided which is operated by a single draft-rod, which when pulled causes all the elbow-levers to be drawn toward the bolster in order to depress the brake-carrying frame.

A further object of the invention is to mount the hanger-frames in an improved manner, so that they are suspended from and have bearings for the axles, and at the same time are so connected with the latter as to be capable of lateral swinging movement, whereby a certain flexibility is imparted to the brake mechanism in order that the brake-shoes may closely follow the rails.

The invention also aims to generally improve the construction of devices of this character and to furnish improvements in numerous details of the construction, as will appear from the following description and claims.

In the accompanying drawings, Figure 1 is a side-elevation of a railway truck with

my improved brake, Fig. 2 is a plan-view of the same, showing the lever mechanism for actuating the brake-shoes, Fig. 3 is a side-elevation, partly in section, of the brake mechanism, Fig. 4 is a detail vertical transverse section on line 4, 4, Fig. 2, and Fig. 5 is a detail showing the springs for lifting the brake-shoes away from the rails as soon as the action of the lever mechanism is interrupted.

Similar letters of reference indicate corresponding parts throughout the several figures.

Referring to the drawing, A represents the cross-beam or bolster of the truck-frame on which the body of the car is supported. The truck-frame is provided with the usual axle-boxes for supporting the axles H of two pairs of truck-wheels W. In the space between the truck-wheels, at each side of the truck-frame, is arranged a brake-shoe O, which is guided in a suitable manner and supported on transverse bars M which are guided in hanger-frames F that are suspended by journal-bearings G from the axles H of the truck-wheels W. To each hanger-frame F are fulcrumed two elbow-levers E, which are provided with projections K which abut against the end-portions of the hanger-frames F when in position of rest, these levers being adjustably connected by their lower arms with the vertically moving brake-supporting bars M by means of set-screws P, and at their upper longer arms by means of perforated eyes *e* with draft-links J, which are threaded at the ends passing through the eyes of the elbow-levers and which are held thereon by means of set-screws *e*¹.

To the cross-beam or bolster A is applied a plate B extending beyond the bolster at the ends of said plate and having pivoted at its four corners levers C C^x, of which the levers C are connected to the eye-shaped ends of two of the draft-links J. The levers C C^x at each side of the plate B are connected by rods C^y which extend beyond the levers C^x and have pivoted to their ends levers C². The pivots of the levers C² are located immediately of the length of said levers, and one end of each lever is connected to the adjacent draft-link J, while the opposite ends of the levers C² are connected by means of links C³ to a draft-rod D by which the entire brake mechanism is operated. By the lever

mechanism described, a pull on the draft-rod D results in pulling the upper ends of the elbow-levers E away from the hanger-frames F and toward the bolster A, as indicated by the arrows in Fig. 3. This simultaneous movement of the elbow-levers depresses the bars M and the brake-shoes O and causes the latter to frictionally contact with the rails.

The hanger-frames F are suspended from the axles of the wheels by means of journal-bearings G formed at the ends of said hanger-frames and having set therein journal-blocks I in which the axles rest, as shown in Fig. 3. The hanger-frames are held on the axles by means of bolts *i* passing through the upper ends of the journals G and journal-blocks I; and in this manner there is formed a pivotal connection for each hanger-frame by which it may be swung laterally to a certain extent on its bolt *i*.

The parallel brake-carrying bars M are disposed at the opposite sides of the centers of the hanger-frames F, at which points said hanger-frames are connected by a transverse bar R. Said bar R is located parallel with and between the bars M, though slightly below said bars, and rests in suitable notches formed in the central parts of the hanger-frames, at the upper edges of said frames.

Both the bars M and the bar R extend at their ends beyond the hanger-frames and the bars M in conjunction carry the brake-shoes, while at the ends of the bar R suitable guide devices for the brake-shoes are located. At the ends of the bars M the same are connected by means of blocks N, which are bolted or otherwise secured to the ends of said bars and carry at their lower parts the brake-shoes O connected with said blocks by means of small blocks T and pins *t*, as shown in Fig. 1. The brake-blocks N and their shoes O are guided vertically in U-shaped guides S carried at the ends of the supporting bar R, and each formed of an inner flange *s*, which is triangular in shape and extends below the rail, as shown in Fig. 2, to prevent derailment, and an outer flange *s*¹, which merely serves to guide the brake-block and brake-shoe at their outer surfaces.

The transverse bars M, together with the blocks N, form a rectangular brake-carrying frame which is freely movable in vertical direction, being guided by the guides S and also by means of upright guides L extending upward from and integral with the hanger-frames F and located at the sides of the bars M, as shown in Fig. 3. Said guides L are also forked, as shown in Fig. 4, in order to serve as guides for the lower ends of the elbow-levers E, which fit in the forked upper ends of said guides. The brake-carrying frame M N is yieldingly supported on the

supporting bar R by means of leaf-springs V, which are held at their intermediate portions by means of bolts *v* attached to the supporting bar R, and having apertured lower ends in which the springs are held. These springs, which are thus firmly held by the intermediate supporting bar, engage at their ends with the under surfaces of the brake-supporting bars M and normally hold said bars in elevated position, so that the brake-shoes O will normally be held slightly above the track-rail. Said springs also normally hold the elbow-levers E in such position that their projections K abut against the hanger-frames, which form stops for the elbow-levers.

When the brake is to be applied the draft-rod D is pulled by any suitable mechanism, so that through the lever arrangement described the elbow-levers E are pulled at their upper ends toward the bolster. This results in the depressing of the lower ends of the elbow-levers and consequently of the brake-supporting frame M N and the brake-shoes O, which then contact frictionally with the track-rails and cause the stopping of the car. Upon the release of the draft-rod D the springs V are allowed to act, and they thereupon again push the brake-carrying frame into its elevated or "off" position.

The mechanism can be adjusted by means of the set-screws P by means of which the brake-supporting bars are connected with the elbow-levers, and also by means of the adjustable connection between the draft-links J and the upper ends of said levers; in this manner the mechanism can be so regulated as to produce the proper frictional contact between the brake-shoes and the rails.

When the brake-shoes are worn out they can be readily renewed and adjusted into proper position by means of the set-screws P.

When the truck passes around a curve the hanger-frames are permitted to swing laterally on their pivot connections *i*, and by the construction described a certain amount of flexibility is given to the brake-supporting mechanism by which the brake-shoes are permitted to closely follow the rails.

The entire mechanism can be readily applied to existing railway trucks, whether for trolley cars or railroad cars, so that a comparatively simple and yet very reliable braking mechanism can be provided. When applying the mechanism to a car-truck, it is a simple matter to suspend the hanger-frames from the axles and apply the lever mechanism to the bolster.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a brake mechanism for railway cars, the combination, with the axles of the car-truck, of hanger-frames having bearings at

their ends for said axles and pivotally supported on the latter to swing laterally, and brake mechanism supported on said frames.

2. In a brake mechanism for railway cars, 5 the combination, with the axles of the car-truck, of hanger-frames connecting the axles and having journal-bearings at their ends for the latter, means pivotally supporting said frames on the axles so that the frames 10 may swing laterally with respect to the rails, and brake mechanism supported on and extending between said hanger-frames.

3. In a brake mechanism for railway cars, the combination, with the hanger-frames, of 15 parallel bars extending between the same and guided vertically, brake-blocks connecting said bars at the ends, and brake-shoes carried by said blocks.

4. In a brake mechanism for railway cars, 20 the combination, with the hanger-frames, of parallel bars guided vertically therein, brake-blocks connecting said bars, and an intermediate supporting bar extending between the hanger-frames and having means 25 at its ends to guide the brake-blocks.

5. In a brake mechanism for railway cars, the combination of hanger-frames, a transverse supporting bar connecting the same, a 30 brake-carrying frame embodying parallel bars at opposite sides of said supporting bar, leaf-springs extending across the supporting bar and beneath said bars of the brake-carrying frame, and means to depress the 35 brake-carrying frame.

6. In a brake mechanism for railway cars, the combination, with the hanger-frames and the brake-carrying frame guided vertically therein, of brake-blocks at the ends of 40 the brake-carrying frame, a supporting bar connecting the hanger-frames and which yieldingly supports the brake-carrying frame, and guides on said bar for guiding the brake-blocks.

7. In a brake mechanism for railway cars,

the combination, with the hanger-frames 45 and the brake-carrying frame, of elbow-levers fulcrumed to the hanger-frames at opposite sides of the bolster and connected with the brake-carrying frame, and means to simultaneously operate said levers. 50

8. In a brake mechanism for railway cars, the combination, with a depressible brake-carrying frame, of pivoted elbow-levers connected at their lower ends with said frame and located at opposite sides of the bolster, 55 and lever mechanism operated by a single draft-rod to pull the upper ends of all of said elbow-levers into such position as to depress the brake-carrying frame.

9. In a brake mechanism for railway cars, 60 the combination, with the hanger-frames, of upright guides carried thereby and having forked portions, a brake-carrying frame embodying bars guided vertically by said guides, and elbow-levers to operate said 65 frame engaging at their ends in the forked portions of said guides.

10. In a brake mechanism for railway cars, the combination of a rectangular brake-carrying frame having side-bars, el- 70 bow-levers to depress said frame, and set-screws by which said levers are adjustably connected at their ends with said side-bars.

11. In a brake mechanism for railway cars, the combination, with the hanger-frames, of a spring-pressed brake-carrying 75 frame guided vertically therein, and elbow-levers to depress said brake-carrying frame pivoted to the hanger-frames and having stops abutting against the hanger-frames. 80

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

LOUIS DE VITO.

Witnesses:

V. CAMPANELLO,
LORENZO LANEGE.