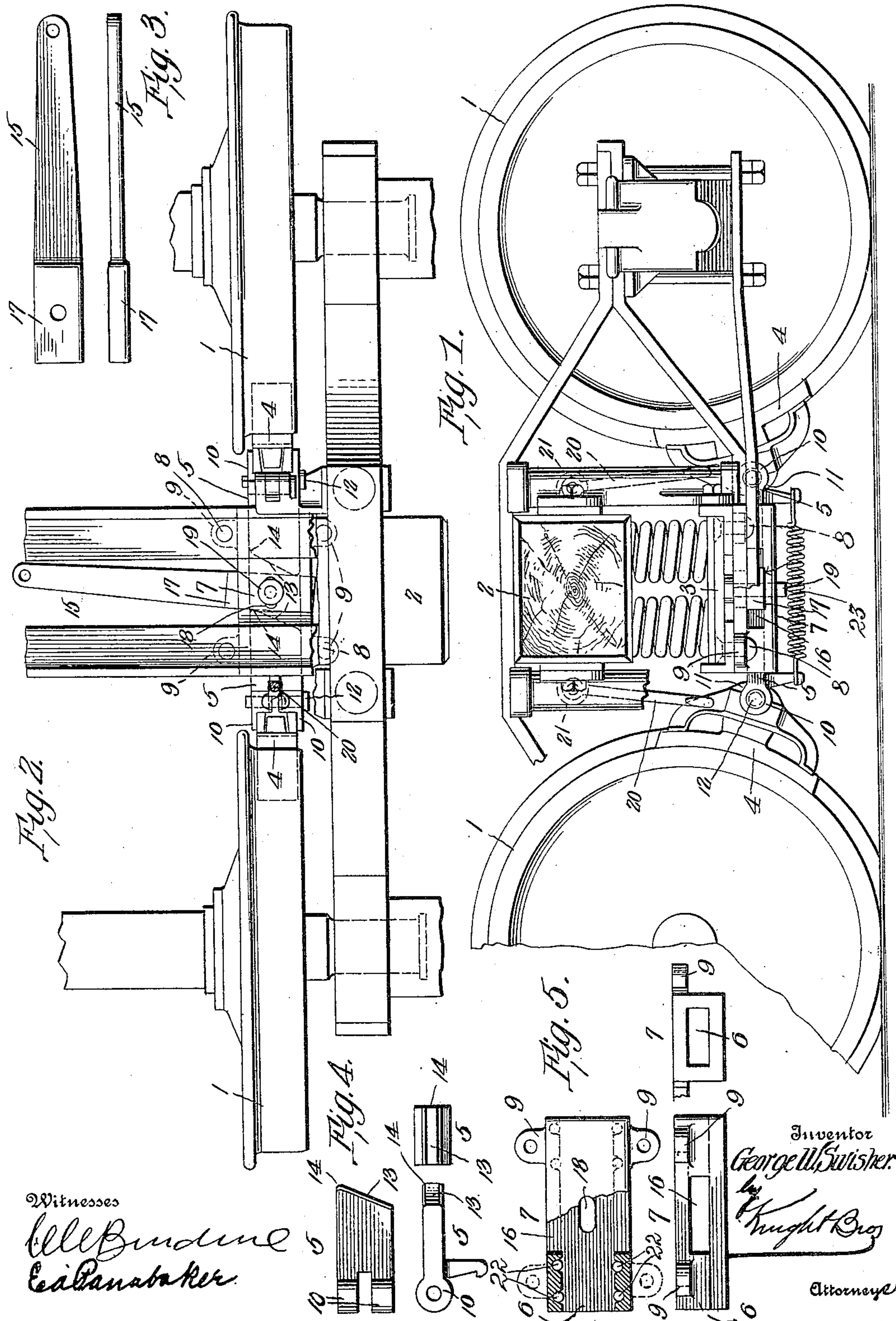


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G. W. SWISHER.
BEAMLESS CAR BRAKE.
APPLICATION FILED AUG. 17, 1905.



Witnesses

Wm. B. Underhill
Ed. Panabaker

Inventor
George W. Swisher

by
Knight Bros

Attorneys

UNITED STATES PATENT OFFICE.

GEORGE WM. SWISHER, OF CLIFTON FORGE, VIRGINIA.

BEAMLESS CAR-BRAKE.

No. 816,617.

Specification of Letters Patent.

Patented April 3, 1906.

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To all whom it may concern:

Be it known that I, GEORGE WM. SWISHER, a citizen of the United States, and a resident of Clifton Forge, in the county of Alleghany and State of Virginia, have invented certain new and useful Improvements in Beamless Car-Brakes, of which the following is a specification.

My invention relates to brakes for railway and other cars which are mounted directly upon some suitable member or members of the truck without the use of a brake-beam and in which the truck-shoes are connected to oppositely-sliding members which are forced apart to press the brake-shoes into frictional contact with the wheels.

One object of my invention is to suspend or support the brake-shoes from an immovable member of the truck, while the brake-applying means is mounted either above or below upon the same member.

Another object is to produce a brake of this type in which the brake-shoes are applied by the direct thrust from a single lever.

Further objects are to produce a brake of this type which shall be more effective in operation and durable in use and which shall at the same time be of simple and inexpensive construction and readily replaceable in its several parts in the event that they become worn or broken and constructed of parts that shall not be of sufficient size to cause derailment of the car in the event that they drop off on the track.

With these and other objects in view my invention consists in certain novel arrangements and relations of parts and features of construction hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of a car-brake having my invention applied thereto, non-essential parts of the brake being broken away or omitted for the sake of clearness. Fig. 2 is a plan view of the same. Figs. 3, 4, and 5 are detail views showing, respectively, the construction of the brake-lever, one of the plungers, and the box which forms the fulcrum for the brake-lever and slideways for the plungers.

1 represents the car-wheels, 2 the truck-bolster, and 3 the spring-plank or sand-board of a known construction of railway-car truck.

To avoid the use of brake-beams upon which the brakes used are mounted in pairs, I mount each brake-shoe 4 upon a horizon-

tally-sliding plunger 5, fitted in the horizontal slideway 6 of a box 7, that is secured in some suitable manner upon an immovable part of the truck, preferably beneath spring-plank 3—as, for instance, by rivets 8 passing through said spring-plank and through attaching-lugs 9 on the box. The plungers 5 have bifurcated ends 10, which receive the shanks 11 of the brake-shoes 4, said brake-shoes being pivotally secured in said bifurcated ends of the hangers by pins 12 in a well-known manner. The inner ends of plungers 5 are beveled, as shown at 13, so as to provide bearing ends 14, spaced apart transversely as well as longitudinally in the box, for impingement of the spreading-lever 15 to give greater range of spreading movement as well as more direct thrust for a given angular movement of said lever. For mounting the lever in spreading relation to the plungers 5 box 7 is provided with a transverse slot 16 in the same horizontal plane with the slideway of said plungers, which receives the end 17 of lever 15. A vertical opening 18 for a pin 19, which confines the lever against longitudinal displacement in the slot 16, may also be provided and should be elongated in the direction in which the plungers slide in order that the lever may be free to exert equal pressure upon the two plungers notwithstanding any inequalities that may exist in the brake-shoes.

The brake-shoes are sustained vertically by means swingingly attaching them to parts of the truck immovable relatively to that part in which the box is mounted—as, for instance, links 20—connecting each brake-shoe with a hanger on one of the truck-columns 21 or parts equivalent thereto.

The plungers 5 are introduced into the box in such relation that their beveled faces are parallel, and the space between them extends at an angle to the transverse line of the box. Hence it is necessary that the lever assume a position at an angle to the transverse position in order to permit the plungers to approach. Any movement from this position toward or beyond the transverse position will cause the lever to impinge the bearing ends formed by the acute angles of the plungers and force them apart. When the lever assumes its normal position, the plungers are forced together by a coil-spring 23, secured at each end to one of the plungers.

It is the intention to have a suitable rigging for the controlling-levers 15, whereby they

are connected in pairs to the piston in the brake-cylinder of an air-brake system.

As shown in Fig. 5, the slideway 6 may be provided with antifriction-rollers 22 to reduce the friction between the plungers and the sides of the slideway.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

10 1. In a beamless car-brake, the combination of the spring-bolster of the truck, a box secured to the under side thereof, having a longitudinal slideway, transverse horizontal slot, and vertical elongated pin-opening,
15 plungers mounted in the slideway of the box and provided with perforated bifurcated outer ends, and oppositely-beveled inner ends providing bearing ends spaced apart transversely as well as longitudinally in the
20 box, brake-shoes pivotally connected to said outer ends of the plungers, a controlling-lever working in the slot of the box between the beveled ends of the plungers and impinging the same, and a retaining-pin passing
25 through the lever and working in the elongated pin-opening of the box, substantially as set forth.

2. In a beamless car-brake, the combination of the spring-bolster of the truck, a box
30 secured thereto having a longitudinal slideway, transverse horizontal slot, and vertical elongated pin-opening, plungers mounted in the slideway of the box and provided with oppositely-beveled inner ends providing bear-
35 ings spaced apart both longitudinally and transversely of the box, brake-shoes connected to the outer ends of the plungers, a controlling-lever working in the transverse slot of the box between the beveled ends of the
40 plungers and impinging the same, and a retaining-pin passing through the lever and working in the elongated pin-opening of the box, substantially as set forth.

3. In a beamless car-brake, the combination of a box adapted to be secured to a mem-
45 ber of the car-truck and having a longitudinal slideway and transverse horizontal slot, plungers mounted in the slideway of the box and provided with oppositely-beveled inner
50 ends, brake-shoes connected to the outer

ends of the plungers, and a controlling-lever working in the slot of the box and lying in the plane of and between the beveled ends of the plungers, and impinging the same.

4. In a beamless car-brake, the combination of the box, the plungers adapted to slide in said box and carrying the brake-shoes, and a spreading means also provided with a bearing in said box entering between and bearing against said plungers.

5. In a beamless brake employing a box having plungers sliding therein and carrying the brake-beams and a spreading-lever extending transversely through the box and operating upon the plungers; the herein-described plunger constructed with a beveled inner end providing a bearing-point at one side thereof and constructed for the attachment of the brake-shoe at its outer end.

6. In a beamless brake employing oppositely-sliding plungers and a lever working between said plungers for spreading the same; the herein-described box providing longitudinal sliding bearings for the plungers and a transverse slot in the plane of the plunger-
75 bearings, to admit a controlling-lever.

7. In a beamless brake employing oppositely-sliding plungers and a lever working between said plungers for spreading the same; the herein-described box providing longitudinal sliding bearings for the plungers and a transverse slot in the plane of the plunger-
80 bearings to admit a controlling-lever, and a vertical elongated pin-opening intersecting both the longitudinal slideway and the transverse slot.

8. In a beamless car-brake, the combination of the car-truck, brake-shoes and suspending and applying means mounted upon relatively fixed parts of the truck; said applying means comprising sliding plungers and a lever interposed between said plungers and having a direct bearing against each.

The foregoing specification signed at Washington, District of Columbia, this 11th day of
95 August, 1905.

GEORGE WM. SWISHER.

In presence of—

HERVEY S. KNIGHT,
EDWIN S. CLARKSON.