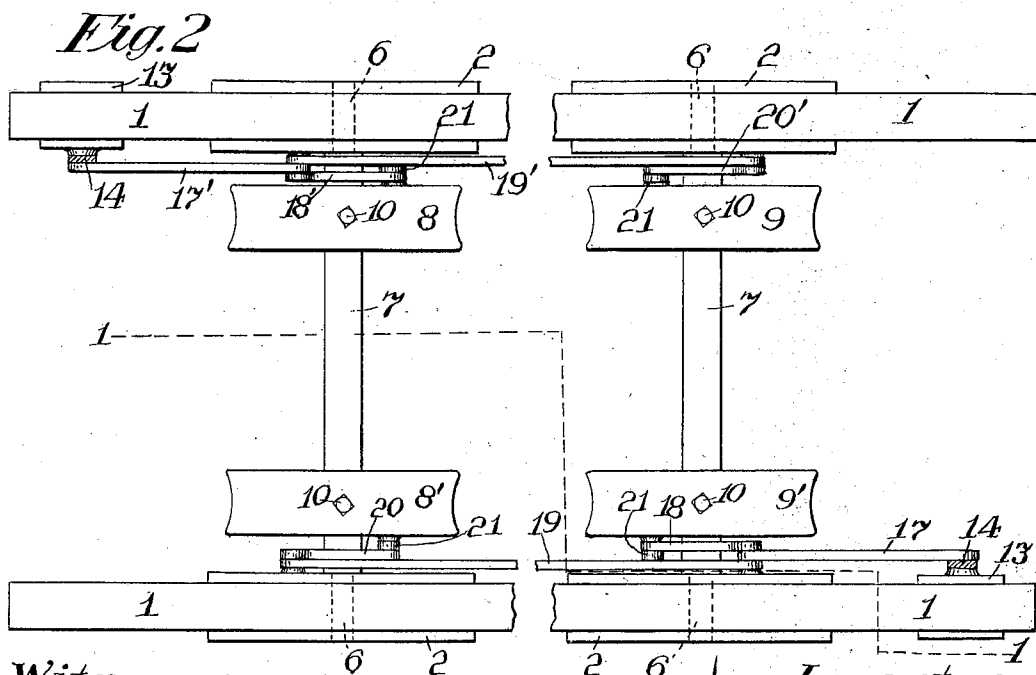
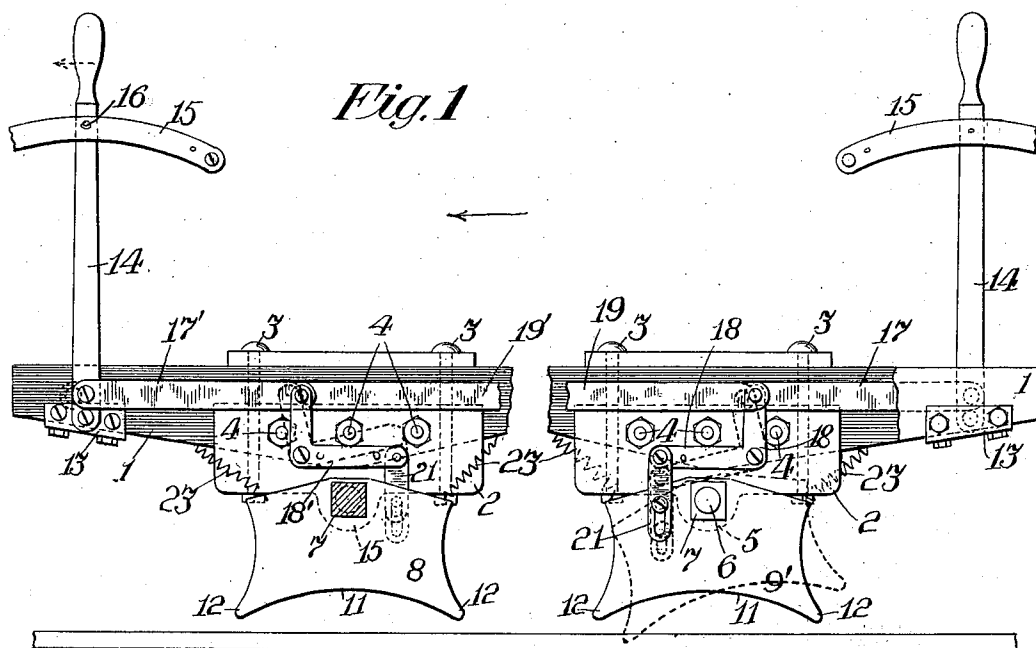


W. B. & V. STORCH.
EMERGENCY CAR BRAKE.
APPLICATION FILED MAR. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



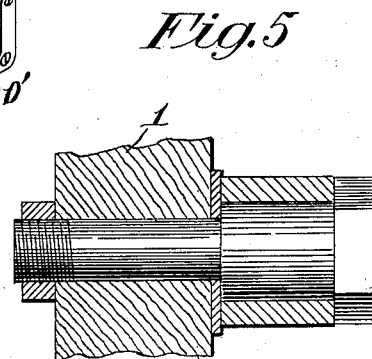
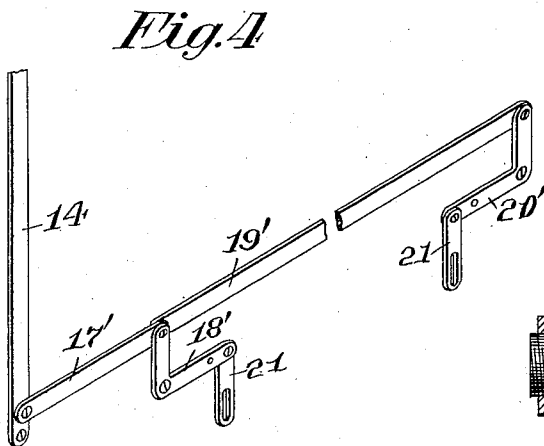
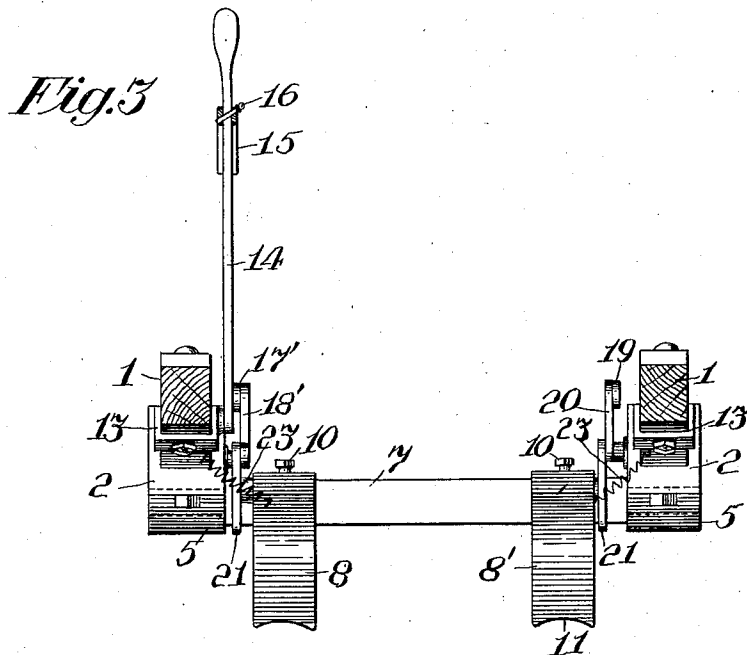
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM B. STORCH AND VALENTIN STORCH, OF KNOXVILLE, PENNSYLVANIA.

EMERGENCY CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 732,600, dated June 30, 1903.

Application filed March 6, 1903. Serial No. 146,491. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM B. STORCH and VALENTIN STORCH, citizens of the United States of America, residing at Knoxville, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Emergency Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in brakes, and relates more particularly to that class known as "emergency-brakes," adapted particularly for use on street-cars and the like for use only when the ordinary brakes are out of order or for any cause fail to work in the proper manner to stop the car.

Our improved brake embodies brake-shoes adapted to be operated when the car for any reason is beyond the control of the motor-man, these brake-shoes being adapted to be brought into engagement with the facing of the road-bed, and thereby lift the wheels from the track; and our invention contemplates the construction of a brake by means of which the forward movement of the car may be arrested and the car brought to a stop and also operative whereby the rear set of shoes may be operated so as to engage the road-bed and check and stop the car in case the latter is running backward and beyond control, and by slight changes the forward set of shoes are the operative ones.

The specific construction of the device will be hereinafter more specifically described and then pointed out in the accompanying claims, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference will be employed for designating like parts throughout the different views of the drawings, in which—

Figure 1 is a vertical sectional view taken on the line 1 1 of Fig. 2 of our improved brake mechanism as applied to a car, the car being broken away intermediate of its length. Fig. 2 is a plan view of our mechanism as applied to a car. Fig. 3 is a front elevation of the same. Fig. 4 is a perspective view of the lever-and-

link connections for the operation of the brake-shoes. Fig. 5 is a detail sectional view showing the construction of the bell-crank pivots.

To put our invention into practice, we attach to the short beams 1, which constitute a part of the frame of the car-body, U-shaped bracket-plates 2, which are held by means of the vertical bolts 3 and the transverse bolts 4. Each of these U-shaped brackets is provided on its lower edge centrally of its length with a downwardly-extending lug 5, apertured to receive the journal ends 6 of the rock-shafts 7. These rock-shafts 7, except for the journal ends, are square, rectangular, or other suitable shape in cross-section and have mounted thereon adjacent each end the brake-shoes 8 8' and 9 9', respectively. These brake-shoes may be held against longitudinal movement on said rock-shafts by means of set-screws 10 or any other suitable means. The brake-shoes are provided with concave lower faces 11, forming the engaging points 12, which are adapted to be engaged with the road-bed when the shoes are tilted, as will more presently appear. Located on either end of the car and suitably journaled in the brackets 13 13, which are secured to the beams 2, are the operating-levers 14. These levers are adapted to operate in suitable segmental brackets 15, and the locking-pin 16 is adapted to lock said handle in its different positions, this pin 16 being preferably inserted at an angle for the purpose of preventing the displacement by vibration, but may be readily removed when desired. This pin 16 is always located at the forward end of the car and at the end where the motorman is stationed in order that the brakes may not be operated from the other platform, the pin locking the same against such operation. Pivotaly secured to the lower ends of these levers 14 are the links 17 17', the other ends of said links being pivotaly connected to the bell-cranks 18 18', and links 19 19', the other ends of said links 19 19' being pivotaly secured to the bell-cranks 20 20'. These bell-cranks 18 18' and 20 20' are pivotaly mounted on their adjacent brackets 2. The other ends of the bell-cranks have depending therefrom the links 21, which at their lower ends

are slotted, and the pin or screw 22 passes through these slots, thereby connecting them with the shoes.

The operation of the device is as follows:
 5 The levers 14 are normally in the vertical position, such as shown in Figs. 1 and 2, and when said levers are in this position the brake-shoes will be held in the horizontal position by the tension-springs 23. Should the
 10 car be moving in the direction shown by the arrow in Fig. 1, and should it be desired to operate the brake-shoes to stop the movement of the car, the movement of the lever 14 at the forward end of the car in the direction shown
 15 by the dotted arrow will, through the consequent movement of the lever 14, bell-crank 18, and slotted link 21, cause the brake-shoes to be inclined to such a position as shown in dotted lines in Fig. 1. The front shoe,
 20 however, which is connected to the lever 14 by the link 17', bell-crank 18', and link 21, will not be operated, for the reason that, though movement will be imparted to the link 21, secured to bell-crank 20', the link 21,
 25 secured to the bell-crank 18', will by means of the slot provided therein pass over the pin without actuating the forward shoes. Should it be desired to operate this device from the rear end of the car moving in the direction
 30 of the arrow, the movement of the lever 14 at the rear end of said car in the direction of the arrow shown in dotted lines will effect the same results, except that it will be through the movement of the links 17, bell-crank 18,
 35 and link 21 to the rear brake-shoe and through link 19, bell-crank 20, and link 21 to the front brake-shoe. This arrangement—viz., having one set of operating mechanism connected to the brake-shoes on their one
 40 side and with the rear platform and another set connected with the opposite side of the brake-shoes at the forward end of the car—permits the person on either end of the car going in either direction to independently

control the operation of said brake-shoes, 45 provided the pin 16 is not in position; but should the pin be in position the brakes are then locked until the same is removed.

By reversing the position of the bell-cranks and connecting the link to the brake-shoe on 50 the opposite side of the pivot-bar the forward set of shoes will be the ones to engage the road-bed and the rear ones will remain stationary upon the device being actuated.

Having fully described our invention, what 55 we claim as new, and desire to secure by Letters Patent, is—

1. In an emergency-brake, the combination with the car-beams, of brackets attached to said beams, rock-shafts journaled in said 60 brackets, brake-shoes carried by said shafts, bell-cranks pivotally suspended from the brackets with one arm thereof having a slotted connection with the brake-shoes, an operating-lever, and a link or lever connecting 65 the other end of said bell-crank with said operating-lever, substantially as described.

2. In an emergency-brake, the combination with the supporting-beams, of brackets attached to said beams, rock-shafts journaled 70 in said brackets, brake-shoes carried by said shafts, bell-cranks pivotally supported from the brackets and having slotted connection with the shoes, a pair of operating-levers, a link or lever connecting one of the bell-cranks 75 with one of the operating-levers, a separate link or lever connecting the other bell-crank with the other operating-lever, and connecting-rods between the front and rear set of brake-shoes, substantially as described. 80

In testimony whereof we affix our signatures in the presence of two witnesses.

WILLIAM B. STORCH.
 VALENTIN STORCH.

Witnesses:

A. M. WILSON,
 E. E. POTTER.