

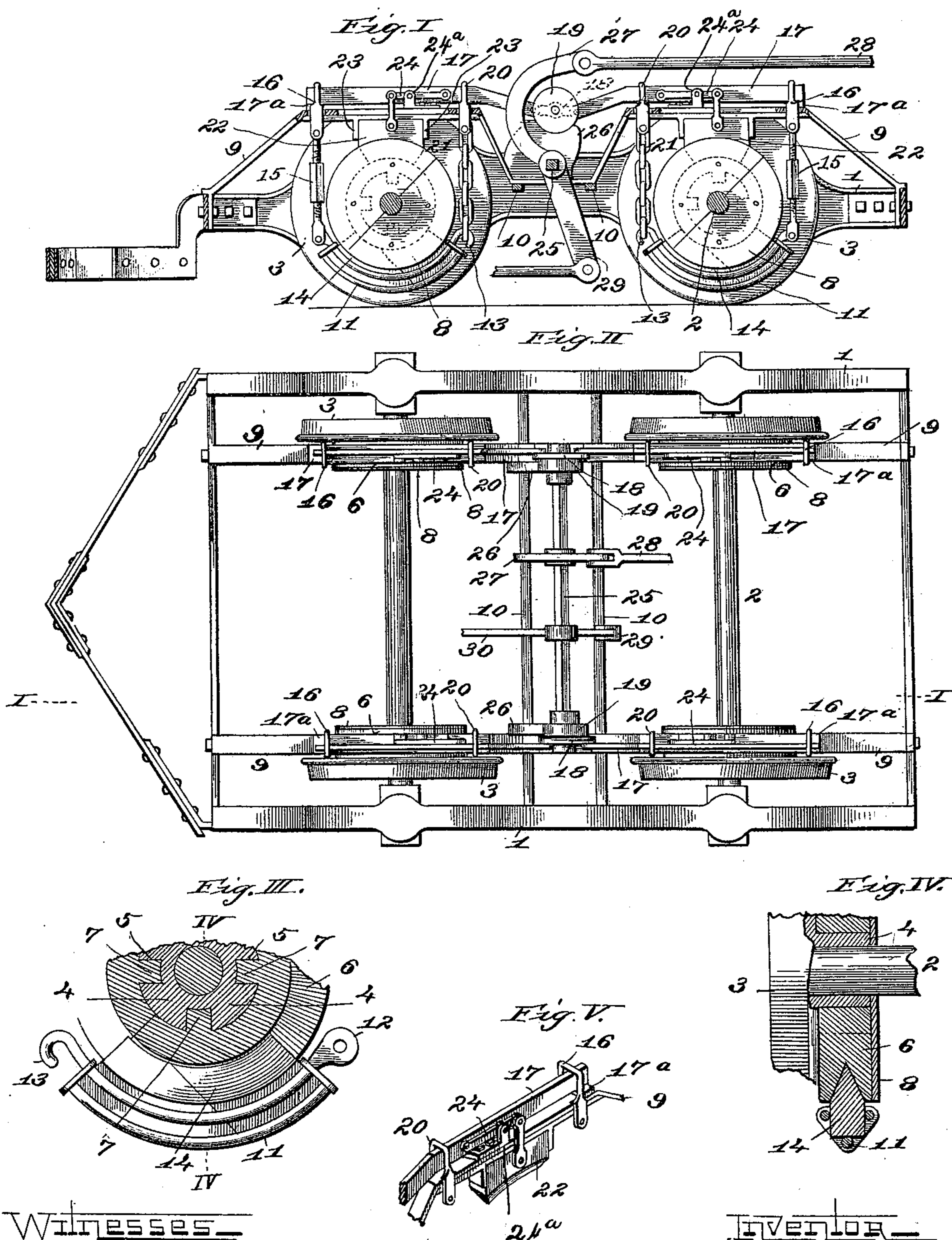
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Patented Jan. 23, 1900.

P. S. KINGSLAND.
CAR BRAKE.

(Application filed Nov. 25, 1898.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

PHILIP S. KINGSLAND, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE KINGSLAND FRICTION CAR BRAKE COMPANY, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 641,973, dated January 23, 1900.

Application filed November 25, 1898. Serial No. 697,367. (No model.)

To all whom it may concern:

Be it known that I, PHILIP S. KINGSLAND, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Car-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement in the class of car-brakes in which friction-disks are carried by the car-wheels and receive the frictional contact of brake-shoes adapted to be thrown into engagement with the disks.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a view showing a car-truck equipped with my improved brake, partly in section, taken on line I I, Fig. II, and partly in elevation. Fig. II is a top or plan view. Fig. III is an enlarged view showing a portion of one of the friction-disks in vertical section and the lower brake-shoes and frames in elevation. Fig. IV is a sectional view taken on line IV IV, Fig. III. Fig. V is a detail perspective view of the auxiliary brake-shoe and parts adjacent thereto.

1 designates the truck-frame, which may be of any common form, 2 the car-axles, and 3 the car-wheels. The car-wheels 3 are provided with sleeves 4 on their inner faces surrounding the axles, and in these sleeves are grooves 5. (See Fig. III.)

6 are grooved friction-disks mounted on the sleeves 4 and having tongues 7, that fit in the grooves 5 of the sleeves.

8 are face-plates secured to the faces of the friction-disks 6 by bolts or screws passed therethrough and through the disks into the car-wheels to hold said disks in place on the sleeves 4.

9 designates frames mounted on the truck-frame 1 and extending upward over the friction-disks 6 and then down to positions between the sides of the truck-frame. The frames 9 are supported at their central portions by cross-bars 10.

11 designates brake-shoe frames, each provided at one end with an eye 12 (see Fig. III) and at the other end with a hook 13. These

frames receive and support brake-shoes 14, of V shape in cross-section, that are adapted to seat in the grooves of the friction-disks 6.

15 designates turnbuckles, to the lower ends of which the eye ends 12 of the brake-shoe frames 11 are connected. The upper ends of the turnbuckles are suspended from shackles 16, mounted on the frame 9 and projecting through slots therein.

17 designates levers that pass over and which bear and fulcrum on the frame 9 at 17^a. These levers are connected at their inner ends by links 18, to which rollers 19 are journaled.

20 designates shackles through which the levers 17 pass and which are connected to the hook ends of the frames 11 by chains 21.

22 are auxiliary brake-shoes mounted between guides 23, depending from the frames 9. These auxiliary brake-shoes are connected to the levers 17 by toggles 24, that are supported on fulcrums 24^a and pivoted to said shoes and levers. The auxiliary shoes being mounted between the guides 23 are capable of vertical movement only, so that when the inner ends of the levers 17 are elevated the links of the toggles 24 are caused to be moved toward a parallel line with each other, thereby increasing the distance between the opposite ends of the toggles and carrying the auxiliary shoes into bearing with the friction-disks 6.

25 designates a rock-shaft on which cams 26 are mounted beneath the rollers 19. 27 is an arm on said rock-shaft extending upwardly therefrom and pivoted to a brake-rod 28, and 29 is an arm on said rock-shaft extending downwardly and having connection with a brake-rod 30, leading to the opposite end of the car from that to which the brake-rod 28 leads.

In the operation of the brake the brake-shoes may be applied to the friction-disks from either end of the car by a strain exerted through means of the brake-rod 28 or 30. A pull upon either of the rods causes the shaft 25 to be rocked and the cams 26 to be turned with said shaft. The cams 26, turning beneath the rollers 19, raise said rollers, and with them the inner ends of the levers 17, while said levers fulcrum at their ends at 17^a.

The upward movement of the inner ends of the levers 17 causes the shackles 20 to be carried upwardly with them, together with the chains 21, and the brake-shoe frames 11 are drawn upwardly to carry the brake-shoes 14 into frictional contact with the grooved friction-disks 6. At the time that the brake-shoes 14 are forced into contact with the friction-disks the auxiliary shoes are also thrown into contact with the friction-disks by the toggles 24 straightening and causing the auxiliary shoes to be carried downwardly between the guides 23. The brake-shoes are released by rocking the shaft 25 in the opposite direction, when the parts will assume their normal inoperative position.

While I have shown and described the friction disks or collars 6 as being attached to the car-wheels, which are, as usual, rigid on the axles, yet they may, if preferred, be attached to the axles, so as to revolve therewith.

I claim as my invention—

1. In a car-brake, the combination with the car wheels and axles, of a friction-disk carried by said wheels, upper and lower brake-shoes adapted to engage said disk, a lever by which the brake-shoes are operated, means for moving the lever, connections between the lower brake-shoe and the lever, and a second lever pivoted to a fixed fulcrum and to the first-mentioned lever and connected by a link to the upper brake-shoe; substantially as described.

2. In a car-brake, the combination with the car wheels and axles, of friction-disks carried by said wheels, pivotally-supported brake-shoes, levers from which said brake-shoes are suspended, a rock-shaft, and cams on said rock-shaft arranged to elevate said levers, substantially as described.

3. In a car-brake, the combination with the wheels and axles, of friction-disks carried by said wheels, pivotally-supported brake-shoes, levers from which said brake-shoes are suspended, and which are fulcrumed at their outer ends, connections between the inner ends of said levers and said brake-shoes, a rock-shaft, and cams carried by said rock-shaft adapted to elevate the inner ends of said levers, substantially as described.

4. In a car-brake, the combination with car wheels and axles, of friction-disks carried by said wheels, pivotally-supported brake-shoes, levers fulcrumed at their outer ends, brake-shoe frames pivotally connected to the outer ends of said levers, brake-shoes in said frames, connections between said brake-shoe frames and the inner ends of said levers, a rock-shaft, and cams carried by said rock-shaft arranged to elevate said levers, the brake-shoe frames being suspended from the levers, substantially as described.

5. In a car-brake, the combination with the car wheels and axles, of friction-disks carried by said wheels, levers fulcrumed at their outer ends arranged in pairs and having their inner ends connected, rollers carried in con-

nection with said levers at the junction of their inner ends, brake-shoe frames pivotally connected to said levers and suspended therefrom, a rock-shaft, and cams carried by said rock-shaft arranged to operate under said rollers to elevate the inner ends of said levers, substantially as described.

6. In a car-brake, the combination with the car wheels and axles, of friction-disks carried by said wheels, levers fulcrumed at their outer ends and connected in pairs at their inner ends by links, rollers mounted in said links, brake-shoe frames pivotally connected to said levers and suspended therefrom, a rock-shaft, and cams carried by said rock-shaft arranged to operate under said rollers for the purpose of elevating them, substantially as described.

7. In a car-brake, the combination with the car wheels and axles, of friction-disks carried by said wheels, levers arranged in pairs fulcrumed at their outer ends and connected together at their inner ends, brake-shoes pivotally suspended from said levers, auxiliary brake-shoes arranged in guides above said disks and connected to said levers, and means for elevating the inner ends of said levers, whereby said first-named brake-shoes are raised into contact with said friction-disks and said auxiliary shoes are moved downwardly in their guides into contact with said disks, substantially as described.

8. In a car-brake, the combination with the car wheels and axles, of friction-disks carried by said wheels, levers arranged in pairs fulcrumed at their outer ends and connected at their inner ends, brake-shoes pivotally suspended from said levers, auxiliary brake-shoes mounted in guides above said disks, toggles connecting said levers and said auxiliary brake-shoes, and means for elevating the inner ends of said levers, substantially as described.

9. In a car-brake, the combination with the wheels and axles, of friction-disks carried by said wheels, levers arranged in pairs fulcrumed at their outer ends and connected together at their inner ends, rollers carried by the connections of said levers, pivotally-suspended brake-shoes carried by said levers, auxiliary shoes mounted in guides, toggles connecting said levers and said auxiliary shoes, a rock-shaft, and cams carried by said rock-shaft arranged to elevate said rollers, substantially as described.

10. A car-brake comprising the lifting-levers, the upper and lower brake-shoes, the lower brake-shoes being suspended from the levers, and the upper brake-shoes being connected to the levers by toggle-links and adapted to slide in bearings so that the lower brake-shoes are drawn upward and the upper brake-shoes are forced downward against the disks; substantially as described.

PHILIP S. KINGSLAND.

In presence of—

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