(No Model.) 3 Sheets—Sheet 1.

W. BAXTER, Jr.

RAILWAY CAR BRAKE.

No. 531,582. Patented Dec. 25, 1894.

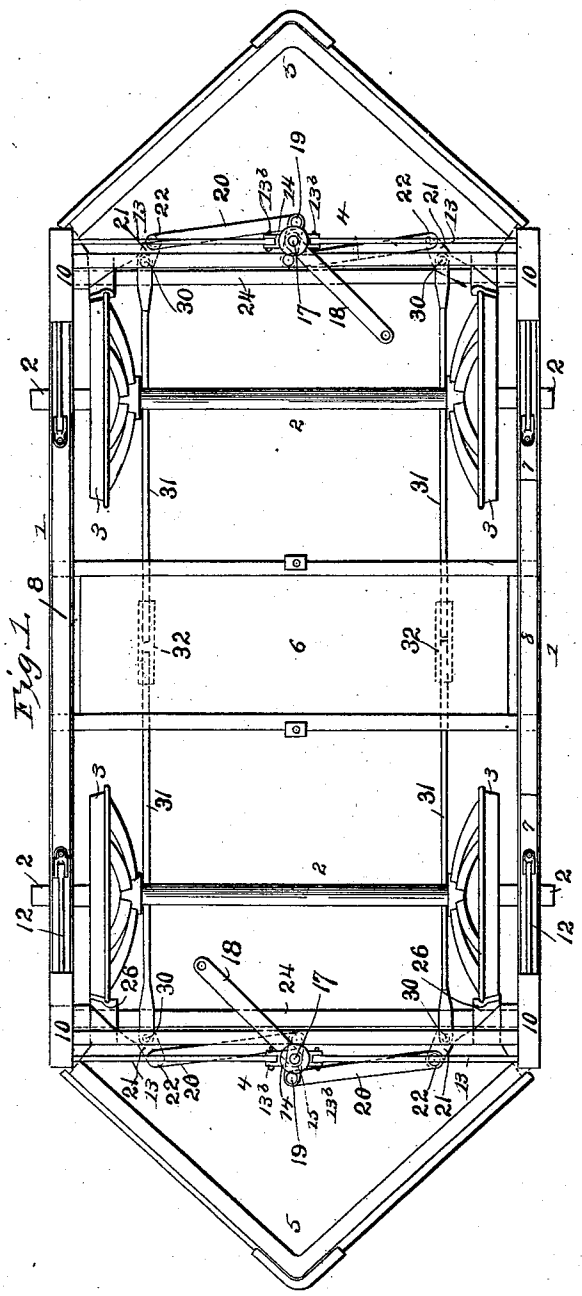

Fig. 1.

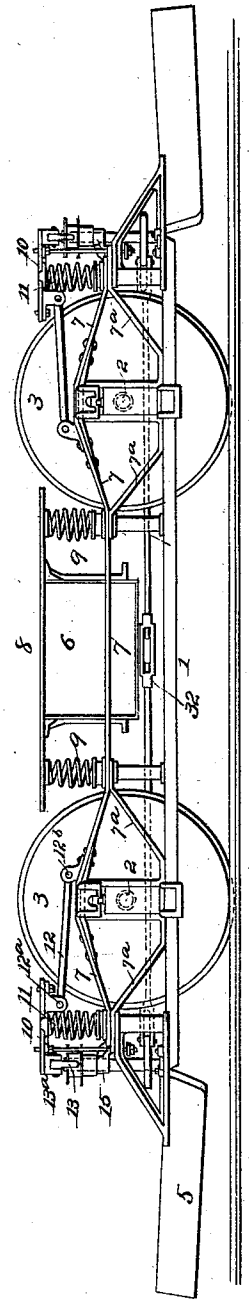

Fig. 2.

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(No Model.) 3 Sheets—Sheet 2.

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RAILWAY CAR BRAKE.

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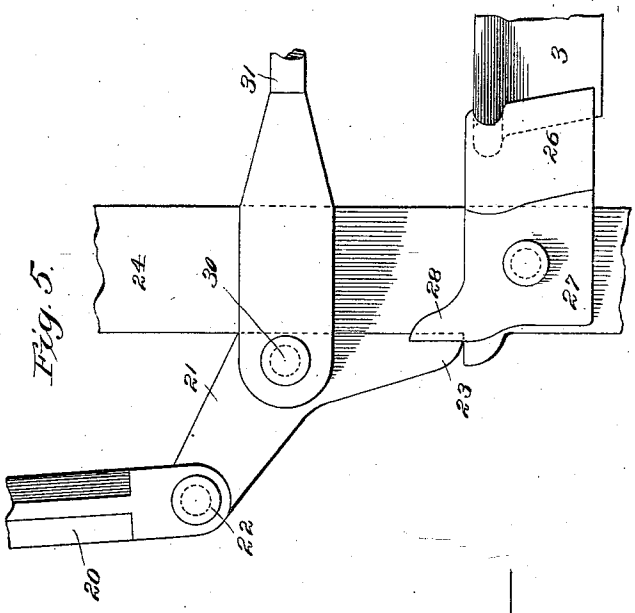

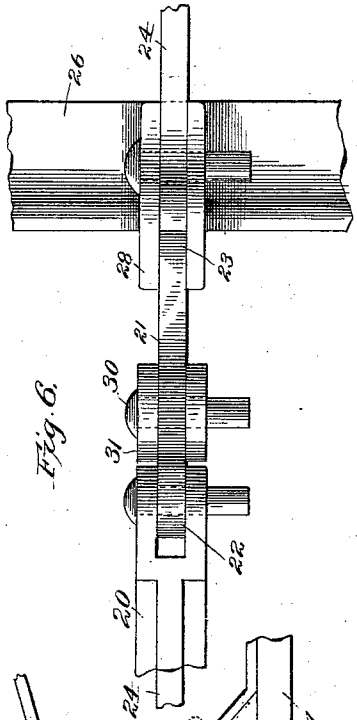

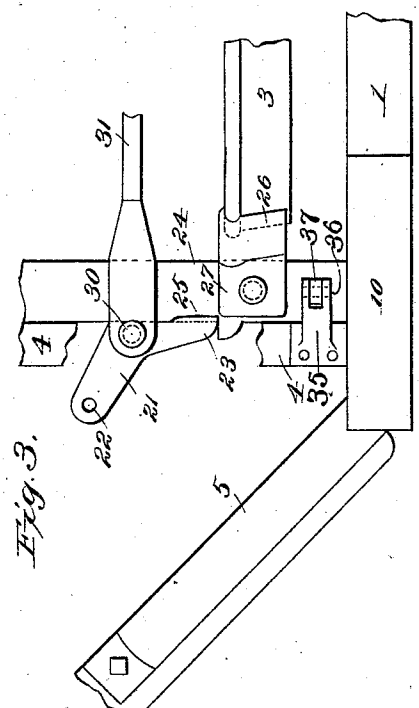

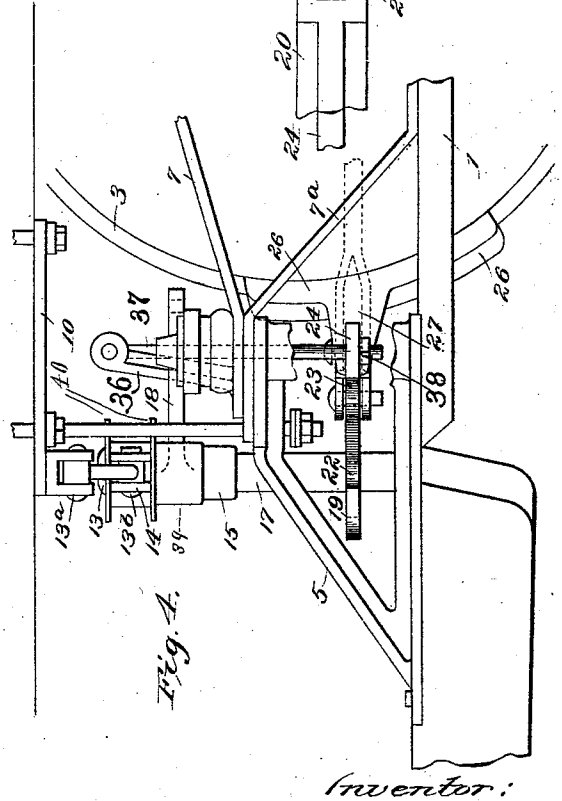

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(No Model.) 3 Sheets—Sheet 3.

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RAILWAY CAR BRAKE.

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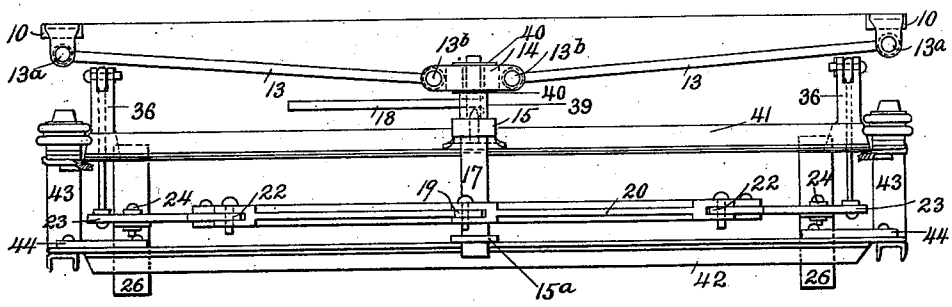
Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM BAXTER, JR., OF BALTIMORE, MARYLAND.

RAILWAY-CAR BRAKE.

SPECIFICATION forming part of Letters Patent No. 531,582, dated December 25, 1894.

Application filed December 12, 1891. Serial No. 414,848. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BAXTER, Jr., a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Railway-Car Brakes, of which the following is a specification.

My invention relates to the construction of brakes for railway cars and it has for its object to increase the strength and durability and improve the general construction of the brake. A brake-beam at each end of the truck is supported by links from hangers and upon the ends of each brake-beam are attached brake-shoes and just within the brake-shoes are placed bell-crank levers. The outer ends of these levers are fulcrumed against the beams, while the angles of corresponding levers at opposite ends of the truck are connected together by longitudinal brake-rods and the inner ends of each pair are connected by pitmen to opposite ends of a cross-head on an adjacent brake-shaft. A lever on said brake-shaft completes the construction whereby the bell-crank levers on either end may be rocked and both pairs of brake-shoes simultaneously applied.

In carrying out my invention, I also employ certain novel features in the construction of the several parts above mentioned.

In order that my invention may be fully understood, I will describe the same with reference to the accompanying drawings which form a part of this specification, and in which—

Figure 1 is a plan of a truck having applied thereto brakes constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detail view of a part of the brake on an enlarged scale. Fig. 4 is a side elevation of the same. Figs. 5 and 6 are views similar to Figs. 3 and 4, showing a slight modification in the means for retaining the bell-crank levers on the brake-beams. Fig. 7 is an end view of the truck, with the guard or fender removed and designed to show the construction of one of the two end frames upon which the brakes are mounted.

My invention is shown applied to a truck, which, though not claimed herein may be briefly described as follows:

1 represents the side frames in which are journaled the axles 2 of wheels 3, and 4 represents the ends which carry the guards 5 and are connected to said sides.

6 is a transverse cradle which is supported centrally of the truck and is intended to receive the resistance, switch and other current-controlling apparatus when the truck is provided with an electric motor.

7 represents the arch-bars, and 7^a the inverted arch-bars of the side frame.

8 represents the side plates which are supported on the middle springs 9, and 10 represents the corner plates which are supported on the end springs 11. The corner plates 10 and through them the car body, are guyed against horizontal movement relatively to the truck by means of pitmen 12 which extend longitudinally of the truck and are hinged at 12^a and 12^b to the plates 10, and arch bars 7 respectively, and pitmen 13 which extend transversely of the truck and are hinged at 13^a and 13^b to the corner plates 10 and cross-heads 14 respectively.

The cross-heads 14 are mounted upon the upper ends of the vertical brake-shafts and are held against rotation by pitmen 13. 15 is the upper or main bearing, and 15^a the bearing on the lower part of the end-frame, for the vertical brake-shaft 17, which carries the controlling lever 18 and the movable brake cross-head 19. The brake cross-head 19 is connected by pitmen 20 with inner ends 22 of bell-crank levers 21 which have bearing at their outer ends 23 against the brake-beams 24. 26 represents the brake-shoes which have sockets 27 which fit on the brake beam 24, and are secured thereto by suitable rivets. The outer ends 23 of the bell-crank-levers may be provided with lips or flanges 25 by which said levers are prevented from slipping from said brake-beams, as shown in Fig. 3. This particular construction, however, is not essential inasmuch as the levers may be held in place in the manner illustrated by Figs. 5 and 6 in which the plates forming the socket 27 of the brake-shoes 26 may be provided with lips 28 which engage on oppo-

site sides of the outer ends 25 of the bell-crank levers. The corresponding bell-crank levers of the respective pairs are connected at their angles 30 by means of longitudinal brake-rods 31. Each brake-rod 31 has a coupling sleeve 32 (see Figs. 1 and 2) for changing the length of said rod.

At their outer ends, the brake-beams are swung from hangers 35, mounted upon end frames 4 of the truck and having swiveled in them at 36, rods 37 which hang down and are secured into the ends of the brake-beams at 38. By this means the brake is hung with freedom of swinging and the location of the hangers is such that the brake-shoes drop away from the wheels by gravity, when released.

In mounting the brake-shaft the same is first passed through the bearing 15, then the sleeve 39, lower washer 40, cross-head 14 and upper washer 40 are placed over said shaft and a head formed on its upper end to prevent the removal of said parts.

Each end frame of the truck upon which the brakes are mounted consists of upper and lower bolsters 41 and 42 formed preferably of L-shaped iron and which are secured at their ends to the side frames of the truck and suitably spaced apart by the end posts 43. Upon the upper bolster 41 are mounted the brackets 36 from which the brake-beams are swung and bearing 15 in which the brake shaft 17 is mounted.

44 represents bracing corner plates on the lower bolster end for the purpose of stiffening the connection between them.

I have shown the brake applied to a truck of peculiar construction, as the form of the brake is such that it is wholly supported upon the lower rigid portion of the truck and is therefore well adapted to this particular construction of truck, but it is obvious the use of the brake is by no means limited to this form of truck.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a railway car brake, the combination of the side frames provided with suitable end posts, the double end pieces consisting of two parallel horizontal parts connected with the side frames and spaced by the end posts, a brake beam, hangers for the brake beam on the upper member or part of the end piece, and a brake shaft having bearings in both parts of the end frame, and having controlling connection with said brake-beam, substantially as and for the purpose set forth.

2. In a railway car brake, the combination of the side frames and the end pieces, the brake-shaft mounted upon one end piece, the brake-beams supported from said end piece, links connecting the brake-beam eccentrically with the brake shaft, and a controlling lever connected with said brake-shaft, all substantially as and for the purpose set forth.

3. In a railway car brake, the combination of the side frames, the end pieces connected with said side frames, a brake-shaft mounted upon one end piece, a cross-head on the brake-shaft, the brake-beam supported from said end piece, bell-crank levers mounted upon the respective ends of the brake-beam, links connecting the ends of the bell-crank levers with the cross-head on the brake-shaft and a controlling lever also connected with said brake-shaft, substantially as and for the purpose set forth.

4. In a railway car brake, the combination with the side frames, of the end pieces connected with said side frames, the brake-shafts mounted upon said end pieces, the brake-beams supported from the end pieces, the brake-shoes carried by the brake-beams and adapted to bear against the wheels, a pair of bell-crank levers bearing at their outer ends against the respective ends of each brake-beam, brake-rods connecting the angles of corresponding bell-crank levers of the respective pairs, brake-shafts mounted upon the respective end pieces and provided with cross-heads, links connecting the inner ends of the respective bell-crank levers with the cross heads and means for controlling said brake-shafts, all substantially as and for the purpose set forth.

5. In a railway car brake, the combination of the brake-beam, fulcrumed bell-crank levers bearing at the respective ends of the brake-beam for applying the brakes, and a centrally disposed rock-shaft having means for controlling it and having a cross-head connected to the respective free ends of the bell-crank levers, substantially as and for the purpose set forth.

6. In a railway car brake, the combination of the brake-shoes, the bell-crank levers controlling the brake-shoes, means for connecting the fulcrums of the bell-crank levers together, and a rock shaft having connection with the bell-crank levers for controlling them as explained.

7. In combination with a car truck of substantially the character specified, having the supporting springs for receiving the car body and having brakes mounted upon said truck, the brake-shaft 17 having crank connection with the brakes for applying, and also carrying a cross-head 14 connected by links 13 with the car body for restricting its lateral movement on the truck, as explained.

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