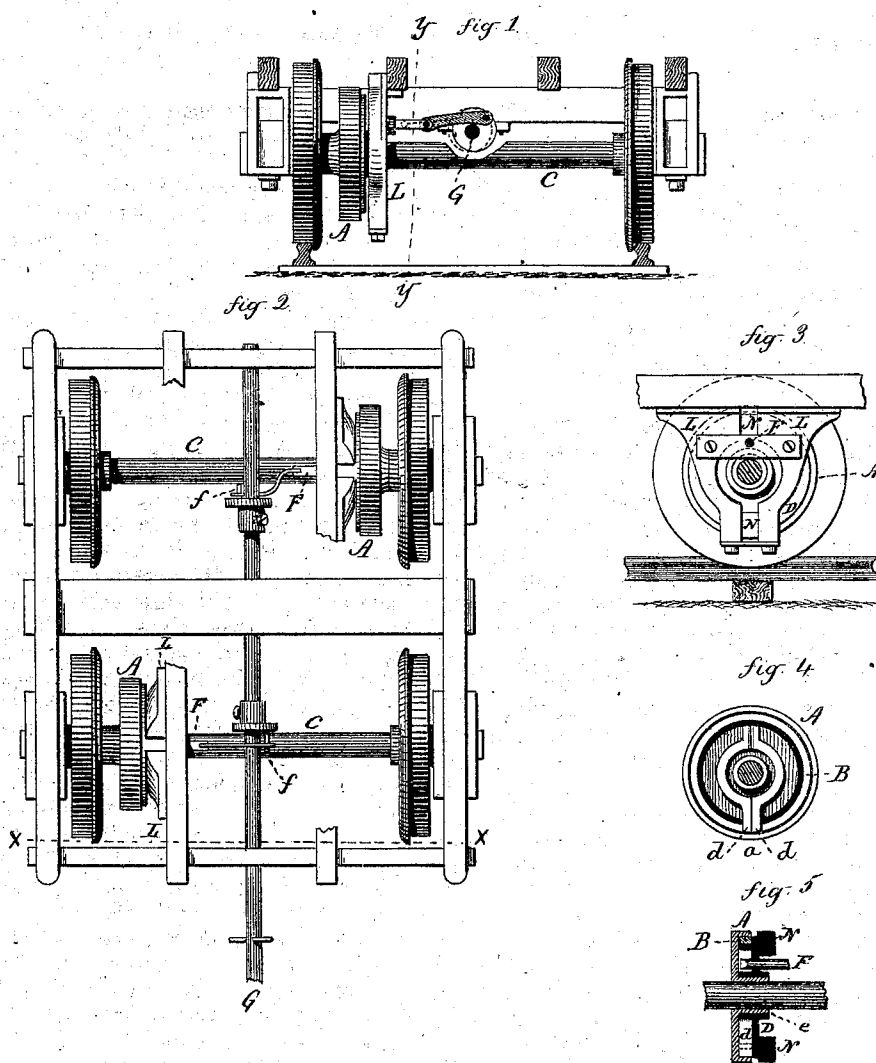


F. G. BATES.

Railroad Car Brakes.

No. 136,019.

Patented Feb. 18, 1873.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANCIS G. BATES, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE
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IMPROVEMENT IN RAILROAD-CAR BRAKES.

Specification forming part of Letters Patent No. 136,019, dated February 18, 1873.

To all whom it may concern:

Be it known that I, FRANCIS G. BATES, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new Improvement in Railroad-Car Brake; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a transverse section on line *x x* of Fig. 2; Fig. 2, a top view of a railway truck; Fig. 3, a vertical section on line *y y* of Fig. 1; and in Figs. 4 and 5, detached views to illustrate the construction and operation.

This invention relates to an improvement in brakes for the wheels of railway carriages; and it consists in a flange made fast to the axle or a part of the wheel combined with a divided ring within the said flange and a pair of levers, one end of each of which is set into the division within the said ring, and with a mechanism for spreading the other arm of said levers, whereby the said ring will be expanded to completely fill the said flange to prevent the revolution of the flange and wheel, the said ring and levers attached to a part of the truck to prevent their revolving.

The clutch herein described, so far as the ring, levers, and flange are concerned, is substantially that patented to me March 12, 1872.

A is the rim or flange within which the divided ring B is arranged. The ring B is set onto a plate, D, denoted in solid black, and this plate into the flange A, as denoted in Fig. 5. The flange A is here represented as attached directly to the axle C, one to each of the axles of a common truck, which requires no further description; but the flange may be made a part of the wheel. The ring B is divided at *a*, leaving a space into which one end of two levers, *d d*, sit, as seen in Fig. 4. These levers run around the axle to the opposite side, and lie within a chamber between the plate D and the plate or surface of the wheel within the flange. By opening the upper end of the levers the lower end

will open proportionately and cause the ring B to expand and engage the inner surface of the flange.

The plate D and the divided ring are made stationary, as hereinafter described.

A sleeve, *e*, on the axle and a part of the flange-plate form a bearing, upon which the plate D sits, as seen in Fig. 5.

The upper ends of the levers are opened by means of a wedge-shaped bar, F, which is forced in through the plate D, between the upper ends of the levers, sufficiently to spread the levers to cause the necessary expansion of the ring B to engage the inner surface of the flange A; consequently, when the wheels and flange A are revolving, if the rod F be thrown in to spread the levers and expand the ring B to engage the surface of the revolving flange, it will create so much friction between the said ring and flange that the revolution of the wheel and flange will be retarded or entirely arrested, according to the extent which the levers are spread; and when the levers are allowed to close and the ring to contract the wheels are free from the action of the brake. One of these brakes is represented as applied to each of the axles of a truck; and the bars F are operated by a shaft, G, running longitudinally through the truck, and with a crank, *f*, which is connected to the bars F, so that by turning the shaft in one direction the bars are thrown in to apply the brake, and in the other direction to relieve the brake. This shaft may be continued through an entire train of cars by suitable connection, and so that at one point the brake may be applied to all the cars. The plate D is supported between two braces, L L. These are securely attached to the truck, and on the plate D projecting lugs N are formed, which sit into a recess between the two braces L, as seen in Fig. 3. These hold the plate D firmly to prevent its revolution, and yet allow it to move vertically with the axle, such movement of the axle being permitted by the springs between the axle and the truck.

I claim as my invention—

1. In combination with the flange A formed upon or revolving with the wheels, and the

divided ring B and levers *d d* and bar F, the plate D, constructed with projecting lugs N, and the braces L L, whereby the said ring, levers, and plate are held stationary, substantially as described.

2. In combination with the subject-matter of the first clause of claim, the rod G, with

its crank or cranks *f*, in connection with the said rod F, for the purpose of operating the same, substantially as set forth.

FRANCIS G. BATES.

Witnesses:

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