

(No Model.)

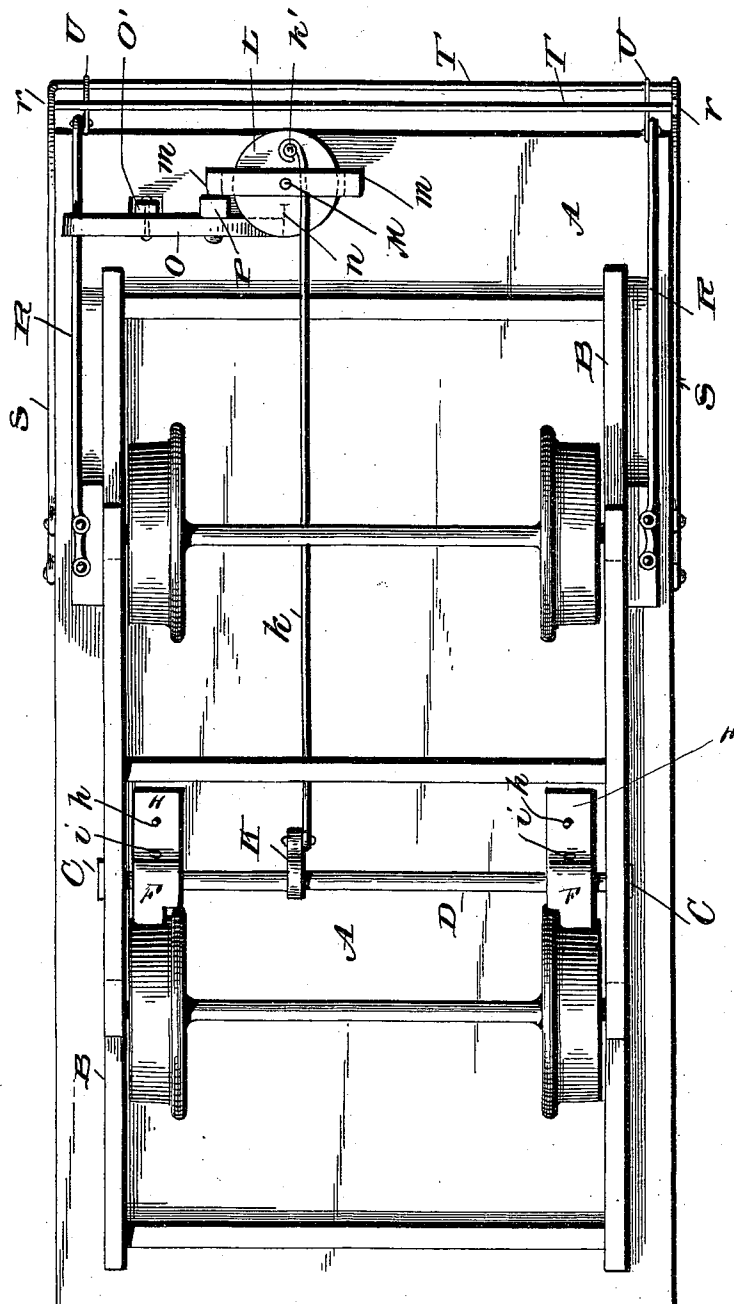
2 Sheets—Sheet 1.

C. BRANDAU.
AUTOMATIC CAR BRAKE.

No. 546,808.

Patented Sept. 24, 1895.

Fig. 1



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W. S. Van Loan

Inventor:
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Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

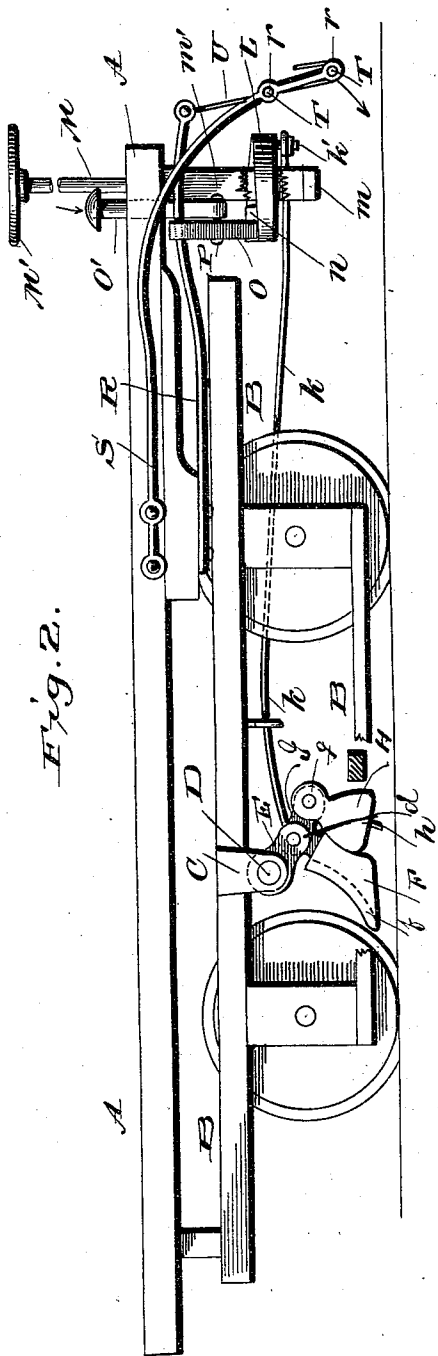


Fig. 3.

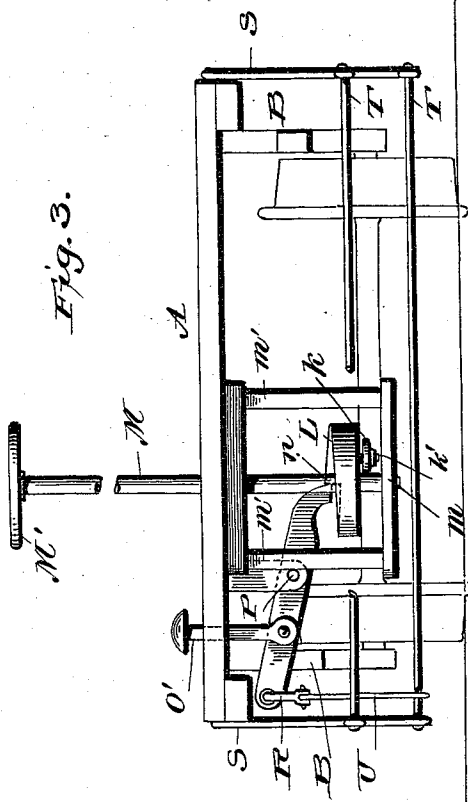


Fig. 4.

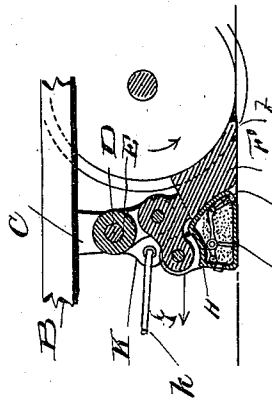
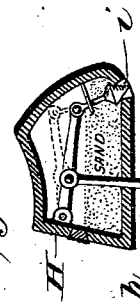


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHRISTINA BRANDAU, OF COHOES, NEW YORK, ASSIGNOR OF ONE-FOURTH
TO FRANK P. HIGBY, OF SAME PLACE.

AUTOMATIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 546,808, dated September 24, 1895.

Application filed July 10, 1895. Serial No. 555,555. (No model.)

To all whom it may concern:

Be it known that I, CHRISTINA BRANDAU, a citizen of the United States, residing at Cohoes, in the county of Albany and State of New York, have invented certain new and useful Improvements in Automatic Car-Brakes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in automatic brakes for street-railway or other cars, and the object of the invention is to produce a safety-brake which can be applied in an emergency instantaneously, as where the car equipped with my improved brake comes in contact with an obstruction on the track.

The invention consists, further, in providing a brake-shoe in several sections, one of which is hollow and is provided with an automatically-operating slide for allowing emery, sand, or other material which is contained within said hollow section to drop on the track as the brake is crowded between the circumference of the wheel and the track.

To these ends and to such others as the invention may pertain the same consists, further, in the novel construction, combination, and adaptation of the parts, as will be herein-after more fully described, and then specifically defined in the appended claims.

I clearly illustrate my invention in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which similar letters of reference indicate like parts throughout the several views, in which—

Figure 1 is a bottom view of the bottom of the truck and the brake mechanism. Fig. 2 is a view in side elevation. Fig. 3 is a front end view; Fig. 4, an enlarged detail view of the sectional brake-shoe. Fig. 5 is a vertical longitudinal section of the brake-shoe upon an enlarged scale.

Reference now being had to the details of the drawings by letter, A designates the floor

of a car, carrying the truck B, and journaled in the bearings C of the truck is the shaft D, and E are collars keyed to said shaft and having the integral arms *d*, between which one end of the wheel-engaging brake-shoe F is pivoted. The said brake-shoe is provided with a flange *f*, and the integral extended portion G has an eye *g*, to which is pivoted the member H, the latter being hollow for the reception of emery, sand, or any other suitable substance which may be automatically fed upon the track as the brakes are applied by the slide *h* coming in contact with the track, which allows the material to pour out on the track through the aperture *i* as the slide is crowded up.

Pivoted to a collar K on the shaft D is a rod *k*, which has its front end secured to a pin *k'* on the under surface of the wheel L, which is keyed to the shaft M, the latter being journaled vertically in the bearings *m* in the frame *m'*, the upper end of said shaft carrying a hand-wheel M' within convenient reach of the operator of the car. The upper surface of the said wheel has a spirally-inclined face and has its highest surface terminating abruptly, as seen at *n*, thus forming the shoulder against which the dog O is adapted to normally engage to hold the brake open or away from the track and wheel. This dog is pivoted to the member P, and near its outer end is pivoted the foot push-rod O'.

R is a spring-rod secured to the side of the platform of the car and having its free end passing through the end of the dog O, provided to hold the free end of said dog against the shoulder *n*.

S are rods secured at their rear ends to the sides of the truck or platform, their forward ends curving downwardly and terminating in the loops *r*, in which the ends of the cross-bars T engage.

U are links engaging at one end the spring-rod R and with their other ends one of the cross-bars T, these cross-bars being provided to present themselves as a fender, and any object coming in contact therewith will cause the said rods R to arch upward in such a way as to release the pawl from the notched disk, and also cause the said curved spring-arms S to yield, the dog engaging with the

shoulder on the wheel L to be tilted to allow the shoes to fall by gravity on the track and wedge between the track and the circumference of the wheel.

5 The operation of the brakes is as follows: The operator turns the hand-wheel to the right, causing the wheel L to make a partial revolution until the end of the dog comes against the shoulder *n*, the brake-shoes are
10 drawn away from the wheels by means of the rods connected therewith, and the brakes are held open. When it is desired to apply the brakes, the operator simply steps on the push-rod O', which releases the dog from engage-
15 ment with the said shoulder, and the weight of the shoes causes the said wheel to turn and the two sections of the shoe to drop by gravity, the wheel-engaging section F to securely clamp the wheel and to be wedged be-
20 tween the wheel and the track-engaging portion II, which crowds against the said wheel-engaging portion as it slides along on the track, with the emery or sand running on the rails from the hollow interior of the said section II,
25 which is provided with its automatically-operating slide, allowing the sand to escape while the brake is on and to check its flow when the brake is off.

The arrangement and operation of the valve
30 and its connecting-levers whereby the outlet for the sand from the hollow interior of the track brake-shoe is automatically controlled will be readily understood upon reference to Fig. 5 of the accompanying drawings. It will
35 be seen that the slide or valve which controls the sand-outlet *i* is pivotally attached to one end of a lever *i'*, which link or lever is in turn pivoted to the tilting lever-arm *i''*, to which is attached the arm or projection *h*,
40 which normally extends through an opening in the bottom of the shoe, and while thus projecting through said opening serves to hold the slide closed over the sand-outlet passage. When, however, the brake is applied and the
45 shoe is thrown into contact with the track, the extending end of the arm or projection *h* is by its contact with the track forced inward, thus operating the outlet slide or valve through the medium of the connecting-levers *i'* and *i''*.
50 It will also be understood that when the brake is released the projection *h* will, by gravity, return to its seat, thus serving to close the sand-outlet passage.

The brake is also set automatically by
55 means of the fender described coming in contact with an obstruction on the track, as the spring-actuated dog has connection with the fender and any slight pressure on the same will cause the dog to tilt and the brake-shoes
60 to fall and engage the wheels.

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

1. In a car brake, the combination of a sectional gravity brake shoe journaled on a shaft which has connection with a wheel whose upper surface is spirally inclined and terminates

in a shoulder designed to be engaged by a dog, and means for releasing the said dog, substantially as shown and described. 70

2. In a brake for railway cars, the combination of the sectional shoe, mounted on a suitable shaft, a rod connecting the said shaft with a wheel having its upper surface spirally inclined, of the spring actuated dog adapted 75 to engage a shoulder on the said spiral surface, and a push rod pivoted to the said dog, substantially as shown and described.

3. In a car brake, the combination of the sectional shoe mounted on a rocking shaft, a collar on said shaft having connection by any suitable means with a wheel having a spirally inclined upper surface, and mounted on a vertical shaft provided with a hand wheel, of a spring actuated dog pivoted to a portion of 85 the car, and adapted to engage with a shoulder on the inclined surface of said wheel, and a push rod pivoted to the dog, whereby the brakes are set by gravity when dog releases the said wheel, substantially as shown and 90 described.

4. In a brake for cars, the combination of the sectional brake shoe, mounted on a rock shaft, collar on said rock shaft, a rod connected to said collar at one end, its other end eccentrically pivoted to the under surface of the wheel L, which is keyed to the vertical shaft M, the dog O pivoted to an upright post, the push rod pivoted to the dog, and the spring rod R, having its rear end secured to the side of the 100 car or truck, its forward end engaging the outer end of the said dog, and of suitable connection with a fender, substantially as shown and described.

5. In combination with the brake mechanism as described, adapted to be set by gravity, when released by the dog O, the fender which is yieldingly secured to the end of a car, and has connection with the outer end of the spring actuated dog, substantially as shown and de- 110 scribed.

6. In combination with a car brake, as described, the fender consisting of the downwardly curved rods S secured at their rear ends to the side of the car truck, their forward 115 ends terminating in loops carrying the cross bars T, and the link U, connecting a cross bar with the spring rod R, substantially as and for the purpose set forth.

7. The improved brake shoe made up of the wheel engaging portion F, having a flange *f*, and pivoted to a collar E, combined with the section II pivoted to an integral portion of the said wheel engaging section, substantially as and for the purpose set forth. 120

8. As an improved article of manufacture, a brake shoe, which is adapted to hold emery, sand or other substance, which is designed to be automatically fed upon the track, as the brake is applied, substantially as shown and 125 described.

9. The improved brake shoe made up of sections, consisting of the flanged wheel engaging section to which is pivoted a track engaging

section designed to hold sand, emery or other material, which is designed to be automatically fed upon the track, as the brake is applied substantially as shown and described.

5 10. The improved sectional brake shoe consisting of the wheel engaging section, the hollow sand carrying section pivoted thereto, and the slide *h* normally closing the outlet for the sand, but when the brake is applied, to slide
10 up and allow the sand to escape, all substantially as shown and described.

11. A brake shoe for cars, made up of the section F, designed to engage with the wheel,

the section H pivoted to an integral portion of the said section F, combined, so that the
15 section H, when the brake is applied, will crowd the said wheel engaging section between the periphery of the said wheel and the track, all substantially as shown and described.
20

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTINA BRANDAU.

Witnesses:

ELMER E. BELL,

GEO. F. BRANDAN.