

(No Model.)

W. RITTENHOUSE & I. L. CRIPPEN.
SAFETY BRAKE FOR STREET CARS.

No. 558,312.

Patented Apr. 14, 1896.

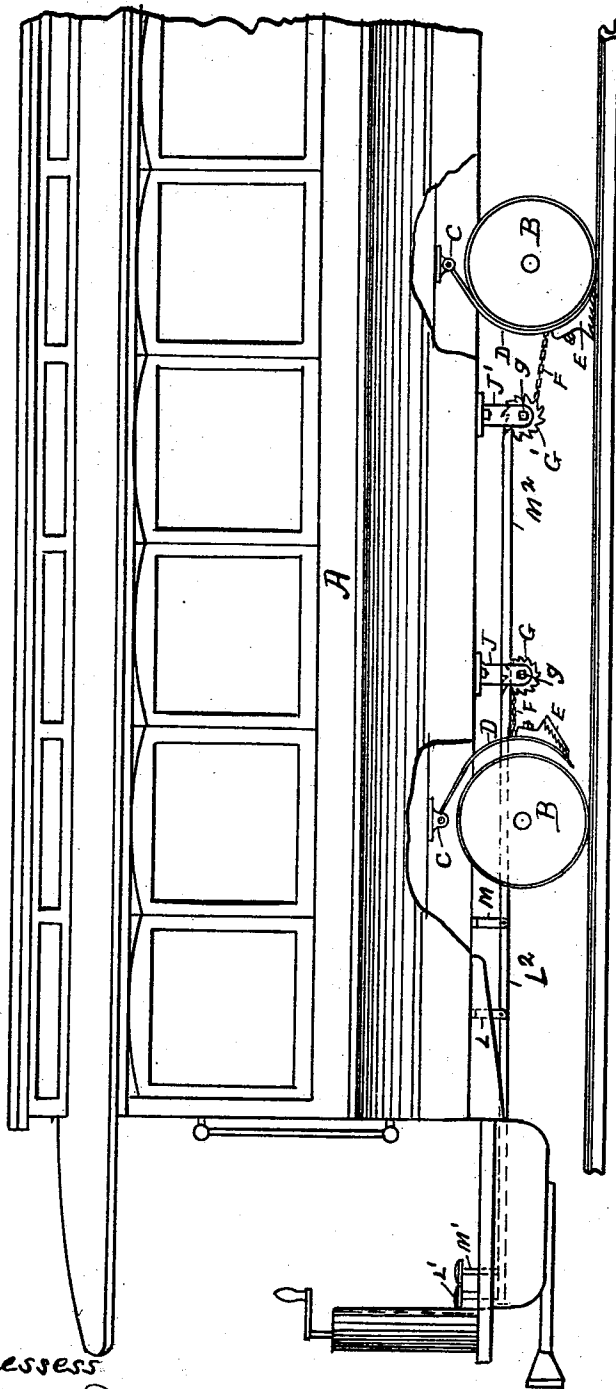


Fig. 1.

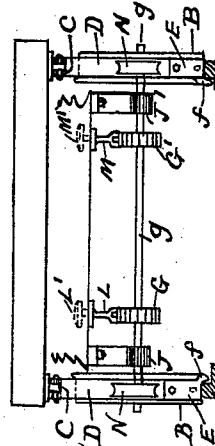


Fig. 2.

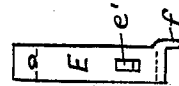


Fig. 3.

Witnesses
M. M. Donald
Charles Marren

Inventors
William Rittenhouse
Ira L. Crippen.
By Hurman & Silvius
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM RITTENHOUSE, OF CLEVELAND, OHIO, AND IRA L. CRIPPEN, OF INDIANAPOLIS, INDIANA.

SAFETY-BRAKE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 558,312, dated April 14, 1896.

Application filed December 30, 1895. Serial No. 573,791. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM RITTENHOUSE, residing at Cleves, in the county of Hamilton and State of Ohio, and IRA L. CRIPPEN, residing at Indianapolis, in the county of Marion and State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Safety-Brakes for Street-Cars; and we 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.

Our invention relates to an improvement in safety-brakes for street-cars designed to be operated by the motorman.

The object of our invention is to provide a brake for street-cars that can be easily operated from the platform of the car by the motorman should the ordinary brakes on the car fail when the car is going up or down inclines, and which may be used without changing the design of the cars.

Our invention still further consists in certain novel details of construction and arrangement of parts, such as will be more fully hereinafter described, and pointed out in the claims.

A practical embodiment of our invention is illustrated in the accompanying drawings, in which similar letters of reference indicate the same parts throughout the several views.

Figure 1 is a side view of a portion of the car A, showing our brake attachment secured thereto at the front and rear wheels, so that if the car were going uphill and should stop and proceed backward the front brake would be used, and should the car be going downhill and the motorman could not control the car the brake on the rear wheel would be used in case of emergency. Fig. 2 is a rear view of the frame of the car, showing our invention attached. Fig. 3 is an enlarged detailed view of the shoe.

Referring to the drawings, C represents brackets secured to the under side of the car, to which the brakes E are attached by means of the thin steel hangers D, said steel hangers

being bent to the same radius as that of the periphery of the wheels B, so that when the brake-shoe is dropped the steel hanger D will act as a friction-brake by binding against the wheel and will assist the brake-shoe in controlling the car.

g is the shaft to which the ratchet-wheel G' is attached. Said shaft is supported by the bracket J J', bolted to the framing of the car. The grooved pulley N is mounted on the same shaft to receive the chain F. Said chain is secured to the brake-shoe hanger by means of a small eyebolt and is attached in the same manner to the grooved pulley N. The brake-shoe E is designed, with the lug *e'* on the face next to the wheel, to receive the hanger D, which is slotted to go over this lug, and is further held to the shoe by means of the bolt *e*, countersunk flush with the face of the hanger. The bottom of the shoe next to the rail has the flange *f* to guide it when dropped, and has the teeth or racks *a* cut at an angle to gouge into the rail to resist the inertia of the car.

In operation should the car be going uphill, when it would be necessary to drop the emergency-brake, the motorman would press his foot on the lever L', which is fulcrumed to the bracket L underneath the car, which would raise the lever L² from the ratchet and cause the shoe to fall upon the track and press against the wheel and track simultaneously and thereby stop the motion of the car. Should the car be going downhill and it would be deemed necessary to use the emergency-brake, the motorman would press his foot on the lever M', which is fulcrumed to the bracket M underneath the car, which would raise the lever M² out of the ratchet-wheel G' and cause the shoe to fall. To raise the shoes again, it is only necessary to simply apply a wrench onto the end of the shaft *g*, which is made square, and wind the chain around the grooved pulley N, which will raise the brake-shoe from the track. It will be seen that these levers can be operated either by foot or electrical power. Said electrical power can be taken from the motor of the car, and the levers can be operated by means of the switch instead of the arrangement as shown.

Having thus described our invention, what

we claim, and desire to secure by Letters Patent, is—

1. In a safety-brake for street-cars, the combination of the wedge-like brake-shoe adapted to conform both to the periphery of a wheel and the top of a carrying-rail, having at its under side transversely-inclined teeth for gouging into said rail; a band-hanger for said brake-shoe attached and suspended at its upper end to the frame of the car, and at its lower end attached to and sustaining said brake-shoe, said hanger being formed in shape conforming to the radius of the periphery of the car-wheel against which it may be pressed to produce friction and retard the motion of said wheel; revoluble shafts suspended in brackets below the body of the car, said shafts having each a ratchet-wheel attached; pawls engaging the teeth of said ratchet-wheels, said pawls being in the shape of long levers fulcrumed near the centers and extending to the ends of the car where they are in connection with a suitable means for tripping them when desired; rollers attached to said shaft, chains attached at one of their ends to said rollers and at opposite ends to said brake-hangers for the purpose of winding the chains around the rollers to hold up the brake-shoes normally when not in use, substantially as shown and described.

2. In a safety-brake for street-cars, the combination of the combined brake and frictional hanger D, made to conform to the radius of

the periphery of the wheel and pivotally secured at its upper end to the car body or frame at a point above the wheel; the wedge-like brake-shoe E having a radius at its upper portion approximately equal to that of the wheel, and at its lower straight portion a downwardly-protruding guide-flange *f* at the inner side; the portion alongside the said flange having the series of transverse inclined grip-teeth *a*, said brake-shoe being secured to the lower portion of said hanger by means of the bolt *e* and a lug *e'* inserted into a suitable slot or hole in the hanger, with suitable means for dropping said brake-shoes to the rail and wheel and raising same when desired, substantially as shown and described.

3. In a street-car, the combination of the herein-described safety-brake comprising the curved frictional hanger D pivotally attached at its upper end to the car body or frame, the brake-head E secured to the lower end of said hanger, said head having the series of gripping-teeth *a* and side flange *f*, and the means for manipulating said brake, substantially as shown and described.

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

WILLIAM RITTENHOUSE.
IRA L. CRIPPEN.

Witnesses:

JNO. S. THURMAN,
E. B. GRIFFITH.