No. 713,357. Patented Nov. 11, 1902.

# A. L. VON STEUBEN.

## EMERGENCY BRAKE.

Application filed June 14, 1902.

(No Model.)

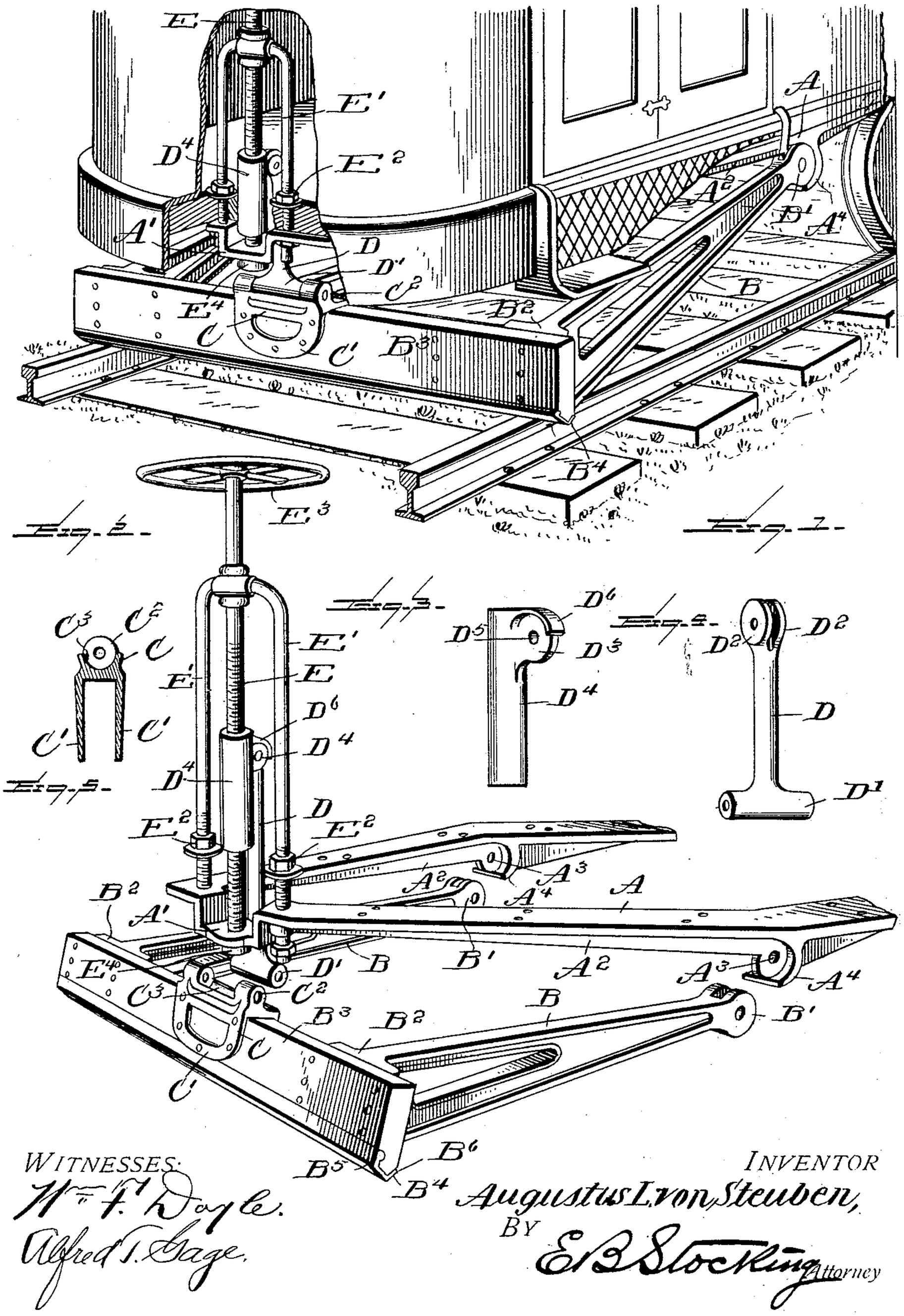


Fig. 2.

Fig. 7.




Fig. 3.




Fig. 4.




Fig. 5.

Fig. 6.

WITNESSES:
W. F. Doyle.
Alfred S. Gage.

INVENTOR
Augustus L. von Steuben,
BY
E. B. Stocking
Attorney

# UNITED STATES PATENT OFFICE.

AUGUSTUS L. VON STEUBEN, OF ALLENTOWN, PENNSYLVANIA.

## EMERGENCY-BRAKE.

SPECIFICATION forming part of Letters Patent No. 713,357, dated November 11, 1902.

Application filed June 14, 1902. Serial No. 111,702. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS L. VON STEUBEN, a citizen of the United States, residing at Allentown, in the county of Lehigh, State of Pennsylvania, have invented certain new and useful Improvements in Emergency-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an emergency-brake, and particularly to a construction embodying means for frictional contact with a rail to guard against accidents caused by slippery rails or the failure of an ordinary brake to operate on dangerous grades.

The invention has for an object to provide a pivoted frame having means at its free end for adjusting and holding a contact-plate upon the upper surface of the rails, which means may be adjusted to vary the tension of the contact, so as to perform either a scraping action or to offer a positive resistance to the movement of the car.

A further object of the invention is to provide an improved adjusting means for this brake embodying a screw-shaft provided with a threaded sleeve which is connected by a pivoted link or pitman with the contact-plate carried by the frame in position to rest upon the track-rails.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is a perspective of the invention applied to a car with parts of the latter broken away. Fig. 2 is a detail perspective of the brake mechanism, showing some of the parts in separated relation from each other. Fig. 3 is a detail perspective of the threaded sleeve; Fig. 4, a similar view of the pivoted link or pitman, and Fig. 5 a vertical section of the saddle-plate.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates a frame having opposite members of any desired material adapted to be bolted to the under surface of the car and connected together at one end by means of a depressed portion A′. Each of the frame-plates is formed upon its under surface with a rib $A^2$, having at one end a pivoting-aperture $A^3$ for the drop-arms B and also a guard-flange $A^4$, adapted to engage the knuckles B′ of the drop-arms B, which knuckles are pivoted by a suitable pin passing through the aperture $A^3$ in the flange $A^2$. The outer free ends of the drop-arms B are enlarged, as at B′, and bolted or otherwise secured to a contact-plate or scraper $B^3$, which may be formed of any desired material—for instance, high-carbon steel, with its contact edge highly tempered, or a mild steel or other metal, with a highly-tempered shoe $B^4$ secured thereto, as shown. This plate $B^3$ is made of sufficient length so that its ends slightly project beyond the outer edge of the rails, and it is fastened to the arms at such an angle as to bring it into contact with the rails at a right angle thereto. The lower forward edge of the shoe $B^4$ is provided with a long bevel $B^5$, while the rear edge is only slightly beveled, as at $B^6$, whereby the edge $B^5$ is prevented from catching at the rail-joints and the edge $B^6$ presents a stout cutting edge or bite to the rails. For the purpose of adjusting this plate toward and from the rails a saddle C is secured thereto by means of flanges C′, which may be bolted or riveted to opposite faces of the plate, while the upper face of the saddle is provided at opposite ends with pivoting-ears $C^2$ and intermediate thereof with a curved hinge-socket $C^3$. This socket is adapted to receive the lower end of the pitman D, which is extended laterally, as at D′, to fit this socket, while the upper end of the pitman is provided with pivoting-ears $D^2$, adapted to receive between the same a flange $D^3$, carried by the threaded sleeve $D^4$, adapted to operate upon the screw-shaft E. The flange $D^3$ is also provided upon a part of its periphery above the pivoting-aperture $D^5$ therein with a safety-flange $D^6$, against which the ears $D^2$ of the pitman are adapted to bear to relieve the strain from the pivot-pin and to prevent accident in case of said pin breaking. The socket in the saddle-plate also relieves the pivoting-bolt thereof from the strain of the downward pressure on the pitman and secures it in position should the bolt break.

The screw-shaft is supported in a vertical position by means of a yoke-frame B′, bolted to the floor of the car by any desired means—

for instance, nuts $E^2$—while the screw-shaft is provided at its upper end with any form of operating means—for instance, the hand-wheel $E^3$. The screw-shaft is provided at its lower end with an integral head $E^4$ to resist the strain of the screw, while the depression A′ in the frame permits the sleeve $D^4$ to descend into the body of the car-platform. The lateral extensions D′ at the lower end of the pitman also form arms to counteract the tendency of the sleeve to rotate with the screw.

It will be seen that in the operation of the invention the hand-wheel is turned to operate the screw-shaft and feed the contact-plate downward into contact with the rails with more or less pressure as required, so that the plate may be used as a scraper to remove ice or snow from the track or by further contact therewith act as a brake having perfect control varying from a slight frictional contact to a firm pressure which would stop and hold a car. It will also be noted that this plate will remove from the rails all substances—such as ice, snow, or wet leaves—which cause the wheels of a car to slip and slide on a descending grade, thus rendering the ordinary brake not only useless, but a source of danger, while the present brake will at such time attain a firm pressure upon the rails. When the brake is not in use, it may be drawn up against the under side of the car-platform and will not in any way interfere with the ordinary service of the car or the brakes thereon. It will also be noted that the guard-flanges at the several pivoting-points in the brake relieve the bolts from undue strain and tend to hold the parts in position should the bolts break while under pressure, so as to entirely remove the liability of an accidental disablement of this emergency-brake.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims and that the brake may be applied to any form or character of vehicle to which it is adapted.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. In an emergency-brake, a supporting-frame, drop-arms pivoted thereto, a contact-plate carried by the free ends of said arms, a threaded shaft, and a traveler thereon connected to the plate for positively adjusting and holding said plate; substantially as specified.

2. In an emergency-brake, a supporting-frame, drop-arms pivoted thereto, a contact-plate carried by the free ends of said arms, means for positively adjusting and holding said plate comprising a screw-shaft, a threaded sleeve thereon, and a pitman pivotally connected to said sleeve and contact-plate; substantially as specified.

3. In an emergency-brake, a supporting-frame, drop-arms pivoted thereto, a contact-plate carried by the free ends of said arms, means for positively adjusting and holding said plate comprising a screw-shaft, a threaded sleeve thereon, a pitman pivotally connected to said sleeve and contact-plate, a supporting-frame for said shaft, and a saddle secured to said plate and provided with a curved socket to receive the lower end of said pitman; substantially as specified.

4. In an emergency-brake, a supporting-frame, drop-arms pivoted thereto, a contact-plate carried by the free ends of said arms, means for positively adjusting and holding said plate comprising a screw-shaft, a threaded sleeve thereon, a pitman pivotally connected to said sleeve and contact-plate, a supporting-frame for said shaft, a saddle secured to said plate and provided with a curved socket to receive the lower end of said pitman, a guard-flange surrounding a portion of the upper end of said pitman concentric to its pivotal point, and concentric guard-flanges extending around the pivots for said drop-arms; substantially as specified.

5. The combination with a car, of a frame secured at the forward end thereof beyond the front trucks, pivoted drop-arms at opposite sides of said frame, a contact-plate extending between said arms, and a threaded shaft held against longitudinal movement upon the platform of a car above said plate, and means traveling upon said shaft and connected to said plate for raising and lowering the same; substantially as specified.

6. In an emergency-brake, a supporting-frame comprising opposite ribbed members connected by a depressed portion at one end, drop-arms having pivoting-lugs adapted to embrace said ribs, guard-flanges extending concentric to said lugs at one side thereof, and a contact-plate carried by said drop-arms; substantially as specified.

7. In an emergency-brake, a supporting-frame, a pivotally-mounted contact-plate carried thereby, a rotatable screw-shaft, a threaded sleeve mounted thereon and provided with a pivoting-flange having a concentric guard-flange at one side thereof, and a pitman connected to said contact-plate and at its opposite end provided with pivoting-ears to lie on opposite sides of said pivoting-flange and beneath said guard-flange; substantially as specified.

8. In an emergency-brake, a supporting-frame, a pivotally-mounted contact-plate carried thereby, a rotatable screw-shaft, a threaded sleeve mounted thereon and provided with a pivoting-flange having a concentric guard-flange at one side thereof, a pitman connected to said contact-plate and at its opposite end provided with pivoting-ears to lie on opposite sides of said pivoting-flange and beneath said guard-flange, a saddle having flanges to embrace said contact-plate and a curved socket between the pivoting-lugs upon the upper face thereof, and an elongated pivot

at the lower end of said pitman adapted to fit in said curved socket; substantially as specified.

9. In an emergency-brake, pivotally-supported drop-arms, a contact-plate connecting said arms, a shoe upon the lower portion of said plate having faces beveled in opposite directions; substantially as specified.

10. In an emergency-brake, pivoted drop-arms, a contact-plate connecting the same, a reciprocating device for operating said plate, and a pitman pivotally connected at its opposite ends to said device and plate for insuring a positive downward movement of the latter; substantially as specified.

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

AUGUSTUS L. VON STEUBEN.

Witnesses:
TILGHMAN F. KECK,
THOMAS E. MILLER.