

(No Model.)

2 Sheets—Sheet 1.

R. BUSTIN.

SAFETY ATTACHMENT OR FENDER FOR CABLE, ELECTRIC, OR OTHER CARS.

No. 545,771.

Patented Sept. 3, 1895.

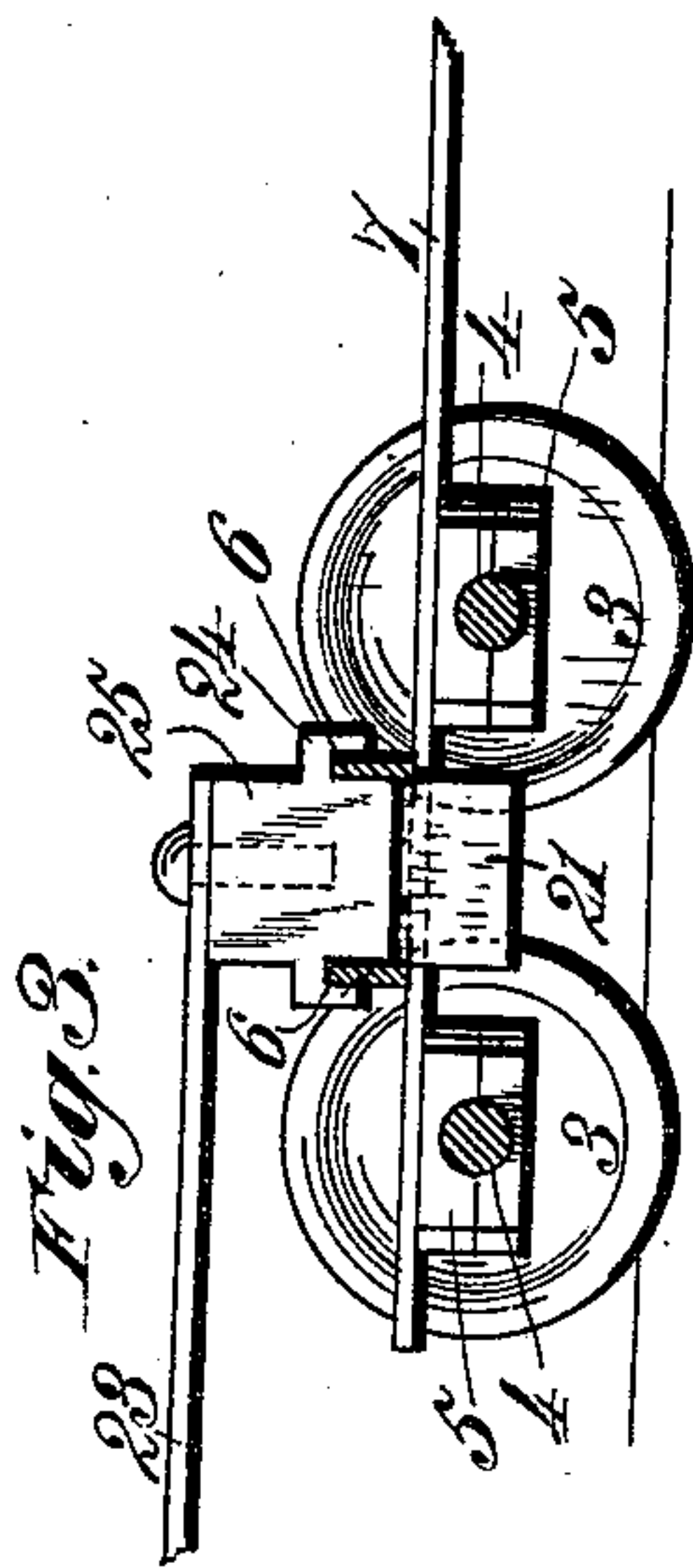
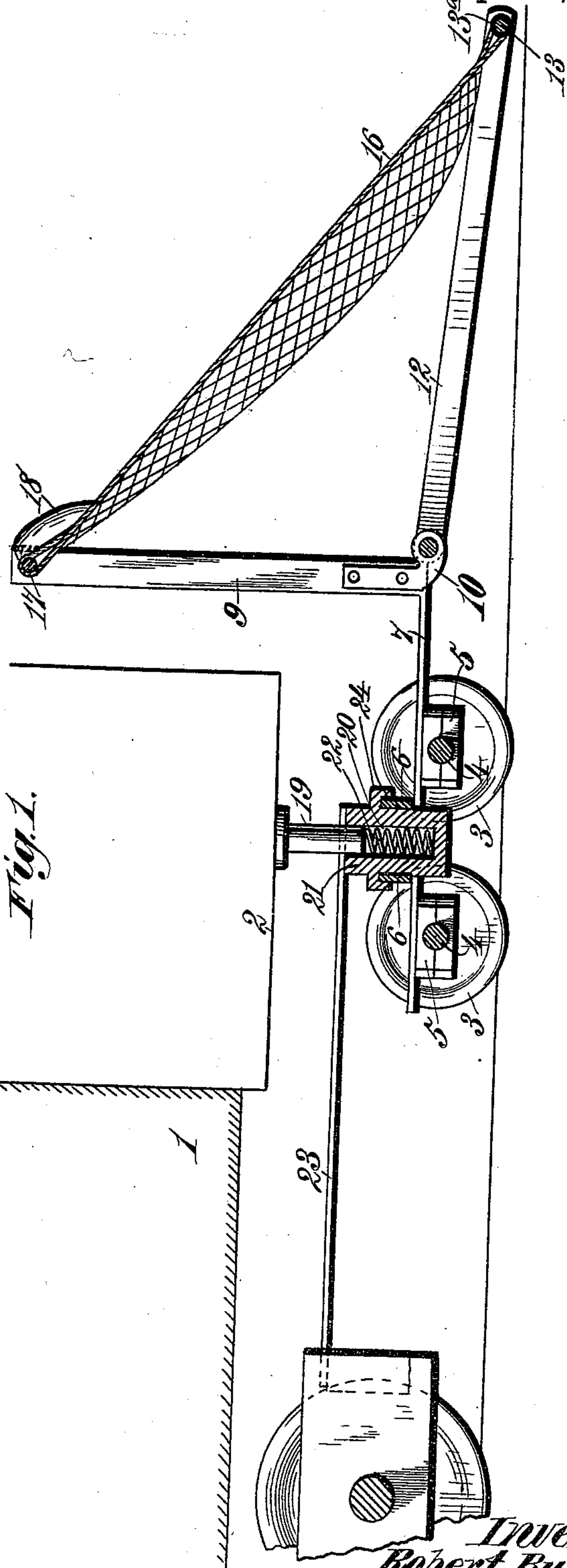


Fig. 1.



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Inventor  
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By James L. Norring.  
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(No Model.)

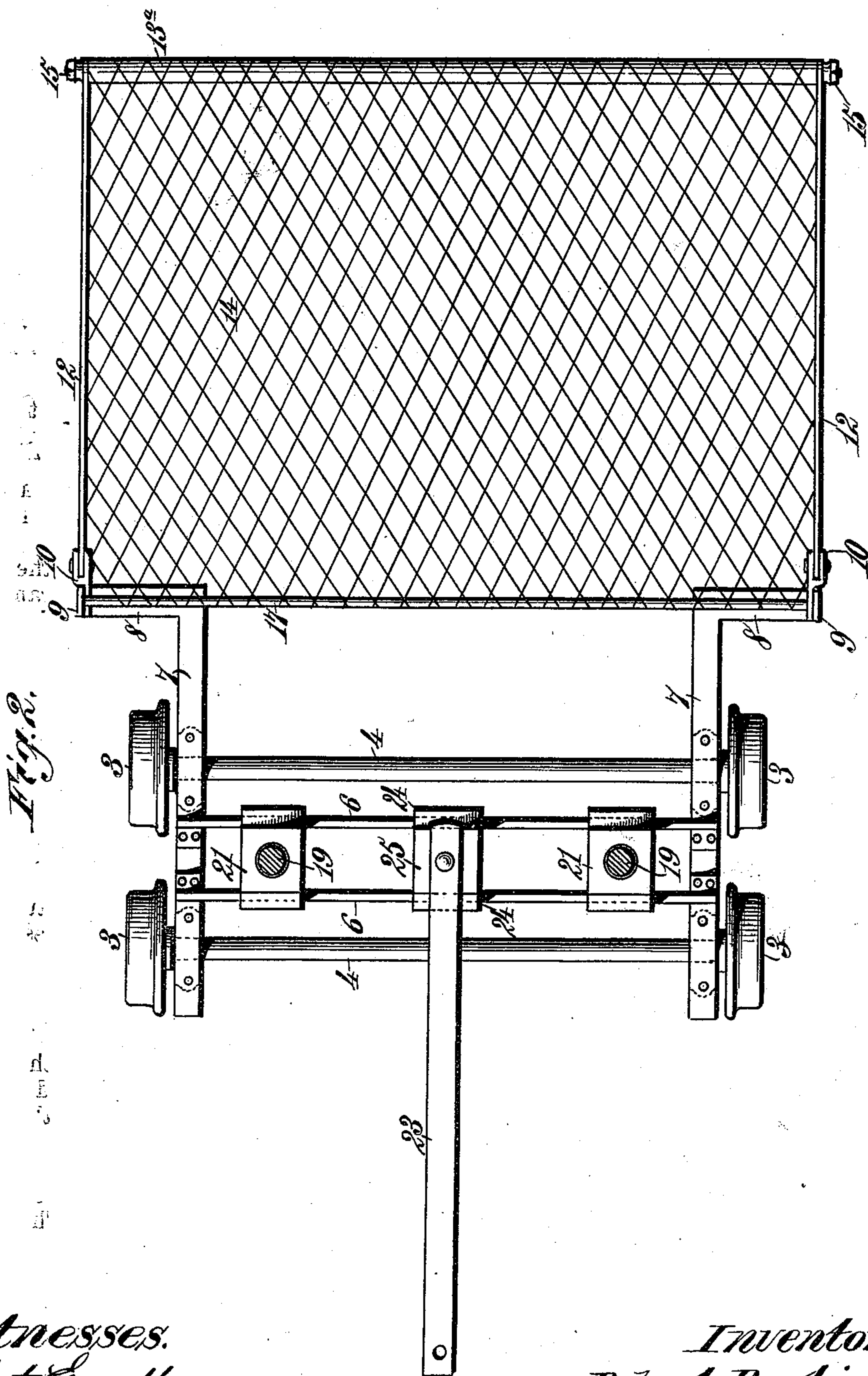
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Witnesses.  
Robert Crockett.  
Thos. A. Green

Inventor.  
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# UNITED STATES PATENT OFFICE.

ROBERT BUSTIN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS  
TO WESLEY VANWART, OF FREDERICTON, AND JOHN R. McCONNELL,  
OF MARYSVILLE, CANADA.

## SAFETY ATTACHMENT OR FENDER FOR CABLE, ELECTRIC, OR OTHER CARS.

SPECIFICATION forming part of Letters Patent No. 545,771, dated September 3, 1895.

Application filed February 9, 1895. Serial No. 537,767. (No model.)

### *To all whom it may concern:*

Be it known that I, ROBERT BUSTIN, a subject of the Queen of Great Britain, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Safety Attachments or Fenders for Cable, Electric, or other Cars, of which the following is a specification.

This invention has for its object to provide a new and improved fender for cable, electric, or other cars, and to provide new and improved means whereby the wheels of the fender-carrying truck are maintained at all times in engagement with the track and the vertical play or rocking of the car is permitted without disturbing the engagement of the fender-carrying truck with the track.

To accomplish these objects my invention consists in the features of construction and the combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in longitudinal vertical section, showing my invention applied to a car. Fig. 2 is a plan view, partly in horizontal section. Fig. 3 is a detail vertical section taken longitudinally through the center of the frame of the fender-truck.

The reference-numeral 1 indicates the body of a street-railway car adapted to be moved by cable traction, electric propulsion, or other power, its construction being of any preferred type. The running-gear of the car does not differ in material respects from constructions used heretofore, and requires no specific description.

Beneath the platform 2 at the forward end of the car is arranged a fender-truck consisting of two pairs of wheels 3, mounted on parallel axles 4. These axles are journaled in boxes 5, which form part of a truck-frame consisting of parallel angle-plates 6, connecting the two pairs of wheels, and parallel bars 7 at the sides of the frame, which connect the journal-boxes at the sides. These bars are parallel with the rails, or substantially so, and extend a suitable distance forward of the wheels. They are then formed at an angle, preferably a right angle, and extend over the

rails and to a point a short distance outside the rails, where they are again formed at an angle and carried upward vertically, or nearly so, to a point between the front rail of the platform and its floor, these features being the same upon both sides of the truck. At or near the points where the vertical portions 8 of the bars unite with the outwardly-extending parts 9 of the bars 7 are formed or attached forked lugs 10, in which the ends of the stretcher-bars 12 of the fender-frame have pivotal support. These stretcher-bars are rigid and of suitable strength, and they extend forward in substantial parallelism with the rails a little distance outside the latter, a slight inclination downward being allowed, whereby their forward ends approach the surface of the track as closely as practicable. Said ends are connected by a transverse bar 13, to which the flexible net 14 is attached in any suitable manner. For convenience in attaching the bar 13 to the stretcher-bars 12 I prefer to use a rod upon which is slipped a tube of elastic rubber 13<sup>a</sup> of suitable thickness to form a buffer, which will yield upon impact and prevent injury to the body of a person lying upon the track. The ends of the rod 13 are of such size as to enable them to pass through apertures in the ends of the stretcher-bars, their projecting ends being provided with nuts 15, which are turned up against the outer faces of the stretcher-bars.

The sides of the flexible net are supported by any suitable flexible connections 16, such as ropes or their equivalent. The upper transverse edge of the net is supported by a rod or bar 17, extending between the upper ends of the vertical parts 8 of the bars 7. A cushion 18 is usually provided along this portion of the net.

The fender-truck is connected to the platform of the car by hangers 19, which are rigidly secured to the platform and extend downward into chambers 20, the latter being formed in housings 21, mounted on the truck-frame between its center and sides. In these chambers are springs 22, of any suitable type, which exert their tension upon the hangers and hold the truck-wheels at all times closely against the rails. The springs 22 permit all



the necessary vertical play or rocking of the car, and the hangers form positive connections between the truck-frame and the body or platform of the car, whereby the wheels of the truck are held in constant contact with the rails, and whereby, also, thrust or strain upon the fender-frame will be resisted. In order, however, to provide means for sustaining end-thrust or sudden strain upon the fender, which may at times be quite severe, I provide a thrust-bar 23, which is connected at one end to the center of the frame of the fender-truck and at the other end to the frame of the car-truck.

The housings 21 may be conveniently mounted upon the frame of the fender-truck by providing each housing with clips 24, which hook over the edges of the angle-plates 6. The housings drop between the vertical walls of the plates, and may extend, if necessary, below them, as shown. The forward end of the thrust-bar 23 is preferably attached to a central box 25, which is mounted between the angle-plates 6 in the same manner as the housings.

My present invention provides a fender-truck by which the fender and its frame are supported without connection to any part of the car, positive connections being provided between the frame of the fender-truck and the under side of the forward platform, and elastic pressure being used to maintain constant engagement of the wheels of the fender-truck with the rails and to permit the rocking of the body of the car. All thrusting strain upon the truck is taken up by the thrust-bar, which also resists any tilting action which would result from the sudden imposition of a heavy weight upon the fender.

What I claim is—

1. In a street-railway car, the combination with a fender-carrying truck arranged beneath the car-platform, of hangers rigidly connected to said platform, housings on the frame of the truck having chambers entered by said hangers, and springs arranged in said chambers and pressing the hangers upward, substantially as described.

2. In a street railway car, the combination with a fender-carrying truck arranged beneath the car-platform, of hangers rigidly mounted on the under side of the platform, housings mounted on the frame of the fender-truck and having chambers entered by the hangers, springs arranged in said chambers and exerting their tension upon the hangers, and a fender frame wholly supported by the fender-truck, substantially as described.

3. In a street-railway car, the combination with a fender-carrying truck arranged beneath the car-platform, of hangers rigidly secured to the platform housings arranged between angle-plates forming part of the frame of said fender-truck, said housings being provided with clips engaging the edges of the vertical walls of the angle-plates, springs arranged in chambers in said housings and receiving the downward thrust of the hangers, which enter said chambers, and a fender-frame wholly supported by said fender-truck, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

ROBT. BUSTIN. [L. S.]

Witnesses:

LAURA L. BURPEE,

OLIVER B. STOCKFORD.