

(No Model.)

2 Sheets—Sheet 1.

R. BUSTIN & T. I. McMACKIN.
SAFETY ATTACHMENT FOR CARS.

No. 495,928.

Patented Apr. 18, 1893.

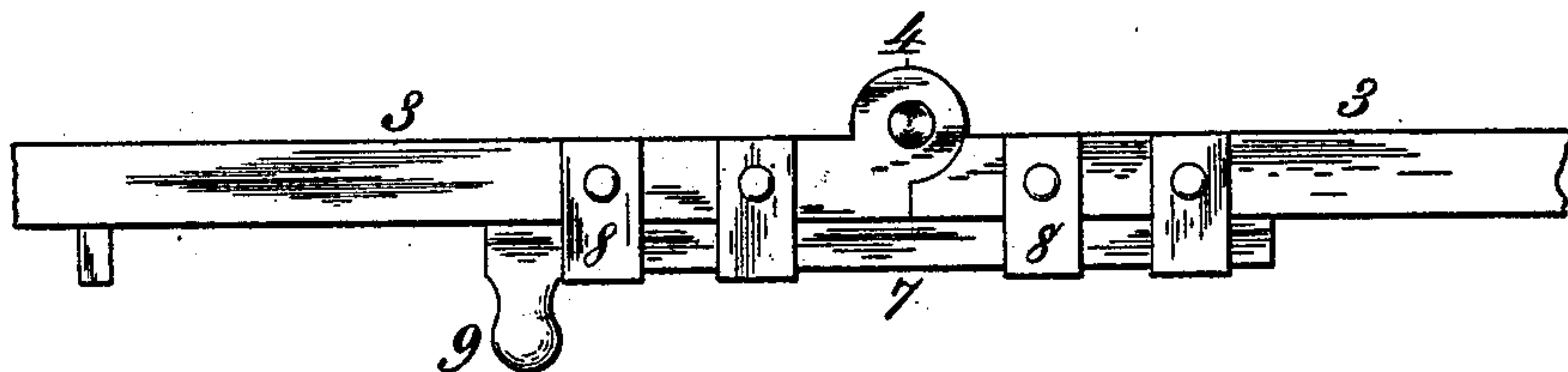


FIG. 4

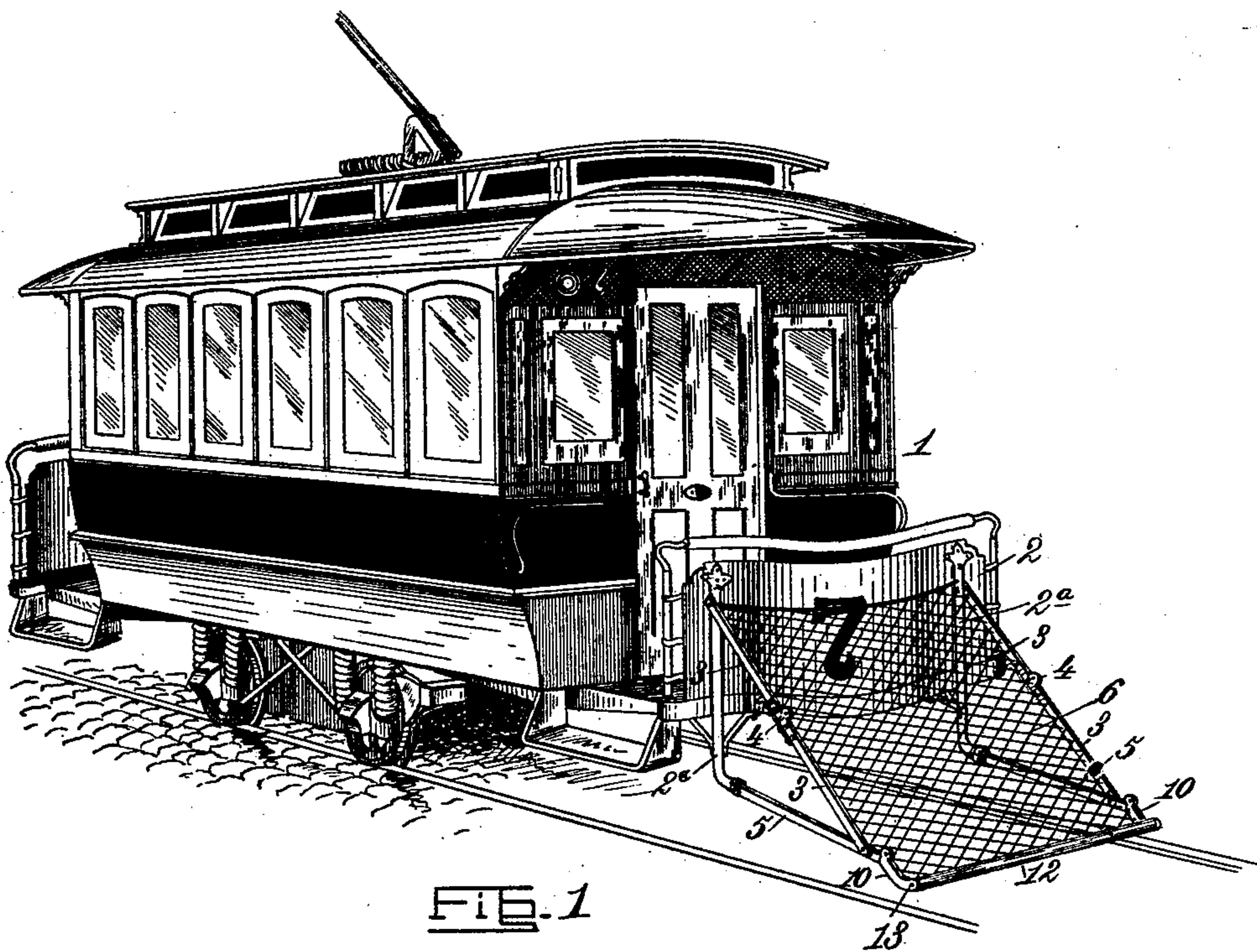


FIG. 1

WITNESSES.

G. M. Rea.

Robert Emmett.

INVENTORS.

Robert Bustin

Thomas I. M. Mackin.

By James L. Norris. Atty.

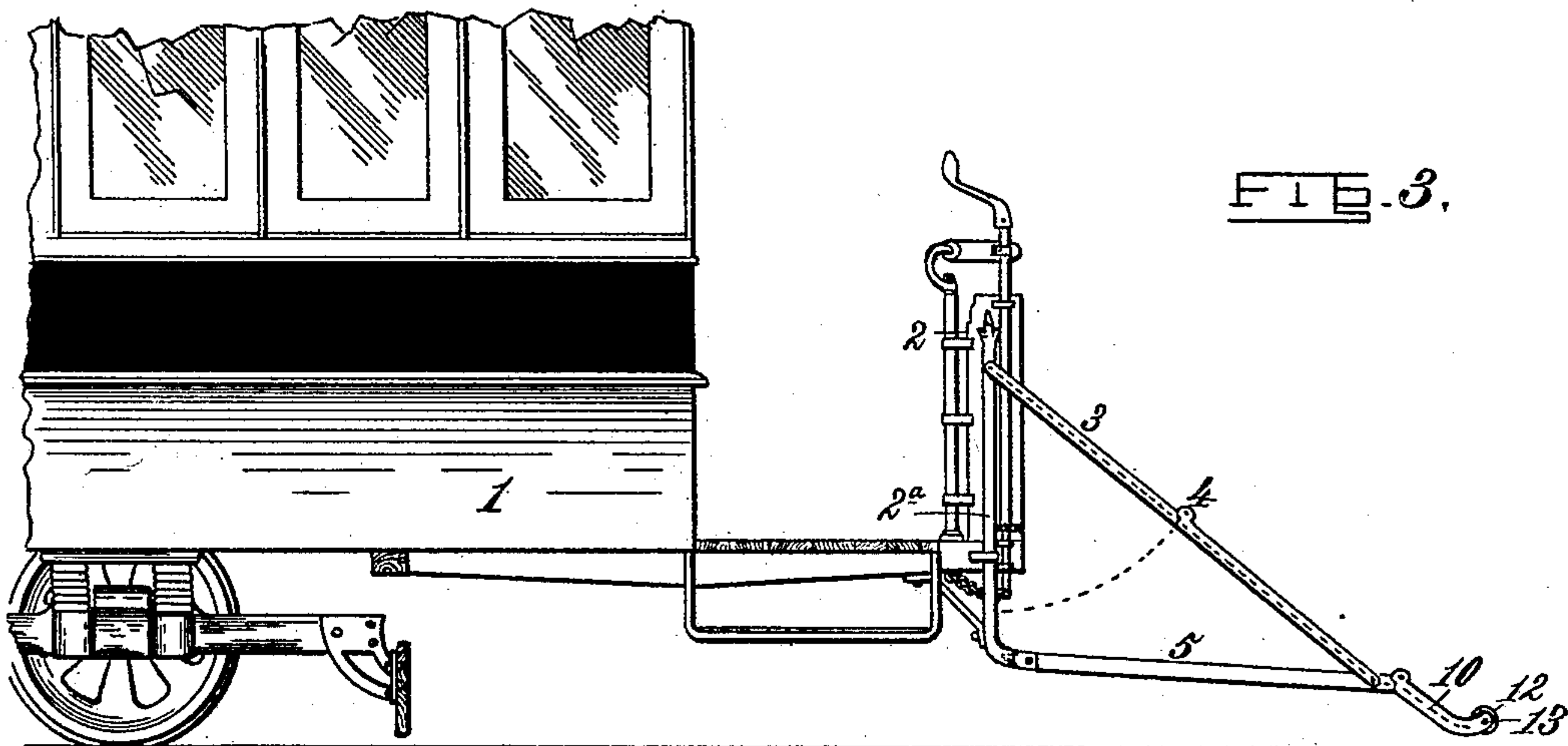
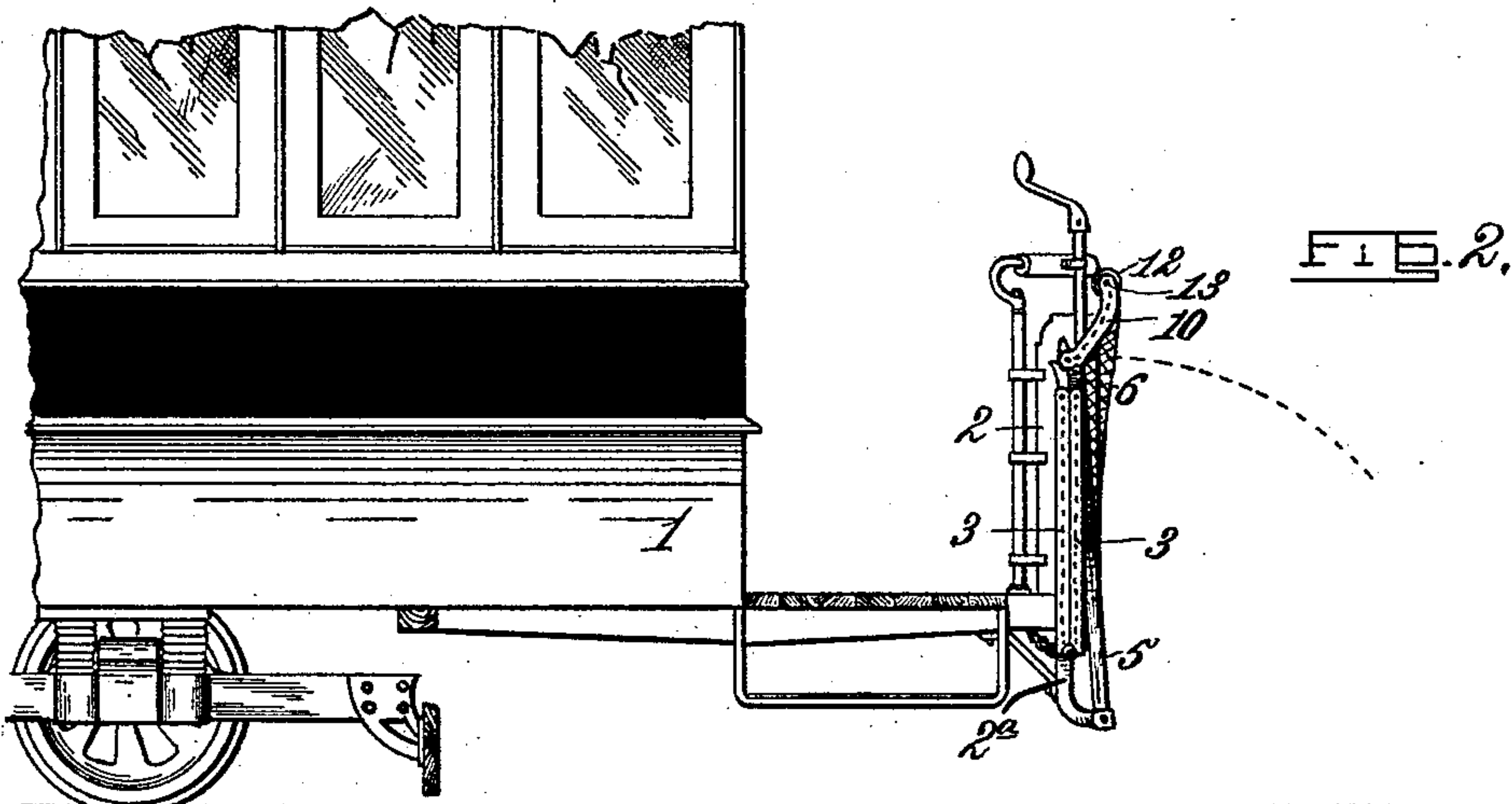
(No Model.)

2 Sheets—Sheet 2.

R. BUSTIN & T. I. McMACKIN.
SAFETY ATTACHMENT FOR CARS.

No. 495,928.

Patented Apr. 18, 1893.



WITNESSES.

G. W. Rea.

Robert Enright.

INVENTORS.

Robert Bustin.

Thomas I. McMackin.

By James L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

ROBERT BUSTIN AND THOMAS I. McMACKIN, OF BOSTON, MASSACHUSETTS;
SAID BUSTIN ASSIGNOR TO CHARLES F. THOMSON, OF SAME PLACE.

SAFETY ATTACHMENT FOR CARS.

SPECIFICATION forming part of Letters Patent No. 495,928, dated April 18, 1893.

Application filed December 17, 1892. Serial No. 455,428. (No model.)

To all whom it may concern:

Be it known that we, ROBERT BUSTIN and THOMAS I. McMACKIN, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Safety Attachments for Cars, of which the following is a specification.

Our invention relates to street railway-cars, of the class deriving propulsion from cable-traction, or from electric wires, either overhead, or underground.

It is the purpose of our invention to provide a safety-attachment for such cars, whereby danger to life, or liability to serious injury shall be removed or practically so.

It is our further purpose to provide a safety-attachment for cars which shall be of simple, strong, and durable construction and comparatively inexpensive in manufacture; which shall be capable of being readily folded, in a plurality of parts, into substantial parallelism with the end-guard of the car, and with each other, and which shall be provided with a pivotally connected fore-section capable of being dropped, or raised, independently of the remaining parts, a roll being pivotally mounted, or journaled, upon the forward extremities of said section, and formed wholly, or in part, of elastic, or yielding material from end to end, whereby the liability of receiving severe bruises, should a foot-passenger be struck by said roll, is largely diminished.

It is our purpose, also, to provide a folding, or collapsible, safety-attachment, which shall be readily attachable to the end-guard of any street-car, and capable of speedy and easy extension in an inclined position, its several members being capable of folding upon each other and against, or adjacent to, the end-guard without projecting above the same.

Finally, it is one purpose of our said invention to provide a safety-attachment of the type specified, in which the longer members shall be provided with rule-joints, and maintained in their extended position by slide-bolts of novel construction, whereby they shall be retained in their locking-engagement by gravity.

Our invention consists, to these ends, in the several novel features of construction and new

combinations of parts hereinafter fully set forth and then particularly pointed out and defined in the claims which follow this specification.

To enable those skilled in the art to understand and to make, construct, and use our said invention, we will proceed to describe the same in detail, reference being had for such purpose to the accompanying drawings, in which—

Figure 1 is a perspective view of a railway car embodying our invention, said car employing electricity as the means of propulsion. Fig. 2 is a side-elevation of one end of a car, showing our invention, the upper part of the car being broken away and the safety-attachment being shown in its folded or collapsed position. Fig. 3 is a similar view, showing the same parts in their extended position. Fig. 4 is a detail view, on an enlarged scale, of the lock-bolt for holding the rule-joints.

The reference-numeral 1, in said drawings, indicates the body of a street railway-car, of any known class, in which cable-traction, or electricity, is used as the medium of propulsion. The several parts of the car, therefore, require no special description, for the purposes of this application, being well known to those skilled in the art.

Upon the end-guards 2, or, as they are sometimes termed, the "dashboards," are rigidly mounted bars 2^a, extending from a point a little below the upper edge of the end-guard to a point below the platform of the car, said bars being arranged near the vertical sides of the end-guards, and their lower ends being curved, or turned, toward the front and provided with eyes.

To the upright bars 2^a are pivotally connected the ends of sustaining-bars 3, provided, at or near their middle points, with rule-joints 4. The other, or lower ends of these sustaining-bars are pivotally connected to the forward ends of stretcher-bars 5, the rearward ends of the latter having pivotal support upon the lower, forwardly turned extremities of the upright bars 2^a. These parts form the main portion of the safety-attachment, and when the rule-joints 4 are broken, the frame upon each side, composed of the sustaining-bars 3 and the stretcher-bars 5, may be folded into

substantial parallelism with the upright bars 2, and with each other.

Connected to the parallel sustaining-bars 3 is a netting 6, of such material and having such strength that it will sustain the strains which may be imposed thereon. This netting extends from end to end of the sustaining-bars, and is properly stretched between them.

In order to support the jointed sustaining-bars 3 against the breaking of the rule-joints 4, we provide a locking-bolt 7, which slides in keepers 8, mounted upon each of the sustaining-bars upon both sides of the rule-joint. Two of such keepers 8 are shown in the drawings upon each side of said rule-joint, but this number may be increased, or decreased, as circumstances may require. These bolts are provided with knobs, 9, or other equivalent devices, at the ends of the bolts, which lie, when the frame is extended, nearest the car. As the sustaining-bars are, when in this position, inclined downward, as the knobs 9 can not pass through the keepers 8, it will be seen that the locking-engagement of said bolts will be maintained by gravity. By simply drawing said bolts until their lower ends are free from the keepers 8 upon the lower sides of the rule-joints, the latter may be broken and the two parts of each of the sustaining-bars may readily be folded one upon the other.

The forward extremities of the stretcher-bars 5 are extended somewhat beyond the points of pivotal attachment of the sustaining-bars 3, and to the said extremities are pivoted short extension-arms 10, the joint being so formed that said arms will project downward and forward at such an angle that their curved fore-ends will lie several inches above the rails of the road, and be maintained in such position by gravity, being, at the same time, free to rise, should any obstruction be met over which the said arms, or the roll connecting their forward ends, can pass by raising the same. The forward extremities of the extensor-arms 10 are connected by a roll 12, having journals 13, which lie in eyes, or other suitable bearings, in the ends of said arms 10. This roll is preferably formed of an iron bar, covered with rubber, or padded with hair, wool, flock, or any other soft, elastic, or yielding substance, by which a cushion will be formed capable of yielding to the impact of the roll with the body, or limbs, of a person, in order to avoid severe bruises, and to largely diminish the danger of fracturing the bones of any person with whom the said roll comes in contact when the car is under headway. It will be noted that the netting 6 is extended, at its lower and forward end, as far as the roll 12, or nearly so. The cushioning material of the said roll is covered by canvas, leather, rubber, or any other suitable material.

The netting 6 is of such construction that it will, in no respect, interfere with the head-

light placed upon the end-guard, or "dash-board." As the safety-attachment is not folded up, or stowed, except at those times when the car is not running, and as the headlight is usually removed, at such times, there will be no difficulty in obtaining access to said lamp, when the car is in service, by passing the arm through the open side-frames. The light will pass through the extended net 6, without sensible obstruction.

What we claim is—

1. In a railway-car having propulsion by electricity, or by cable-traction, the combination with the end-guards of two downwardly and forwardly inclined sustaining-arms, each composed of two members united by a rule-joint, two stretcher-bars pivotally connected at their rearward ends to the lower ends of upright bars rigidly mounted upon said end-guards and pivoted at their forward ends to the lower and forward ends of the jointed sustaining-arms, and a net sustained by said parts, substantially as described.

2. In a railway-car having propulsion by means of electricity, or by cable-traction, the combination with an end-guard, or dash-board, having upright bars rigidly mounted thereon, of sustaining-bars having a forward and downward inclination, each being composed of two members united by a rule-joint, the upper and rearward ends of said jointed bars being pivoted to the upper portions of the upright bars, stretcher-bars pivotally connected at their rearward ends to the lower curved ends of said upright bars and at their forward ends to the lower, forward extremities of the sustaining-bars, locking-bolts movable in keepers arranged upon both sides of the rule-joints and a net sustained by said parts, substantially as described.

3. In a railway car, the combination with a net-supporting frame, which comprises two sustaining-bars each composed of two members connected by a rule-joint, of a sliding lock-bolt movable in keepers arranged upon both sides of each rule-joint, substantially as described.

4. In a railway car, the combination with a folding, or collapsible and extensible frame, extended forwardly, of an independently folding and extensible forward section, pivotally connected to the lower and foremost extremity of said frame and having lateral sustaining arms extending downward and forward from said extremity of the extensible frame, the lower and forward ends of said lateral sustaining-arms being connected by a revoluble roll, padded with elastic, or yielding material, substantially as described.

5. In a railway car the combination with an end-guard, or dash-board, of sustaining-bars each formed in two parts connected by a rule-joint, a locking-bolt movable in keepers arranged on both sides of each rule-joint, stretcher-bars pivotally connected to the lower ends of rigid supports on the end-guard, the upper ends of the sustaining-arms having pivotal

support below the top of the end-guard, and a section composed of short lateral arms at the fore ends of the stretcher-bars, and inclined downwardly and forwardly, a padded
5 roll having its journals supported in the lower, forward ends of said lateral arms, and a net sustained by said parts, the padded roll and its supporting-arms being capable of an independent rising and falling movement, sub-
10 stantially as described.

6. In a railway car, the combination with a folding and extensible frame projecting from the end-guard, said frame comprising two sustaining-arms each formed in two parts united
15 by a rule-joint, of a locking-bolt mounted upon

each of said arms and movable in keepers arranged upon both sides of each rule-joint, said bolt having a knob at its upper end by which it is moved, said knob resting, when the frame is extended, against the rearward keeper, and
20 being maintained in such position by gravity, substantially as described.

In testimony whereof we have hereunto set our hands and affixed our seals in presence of two subscribing witnesses.

ROBERT BUSTIN. [L. S.]

THOMAS I. McMACKIN. [L. S.]

Witnesses:

RUEL W. WHARFF,

L. L. AMES.