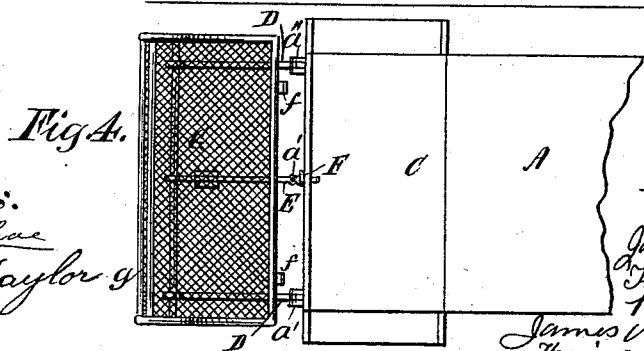
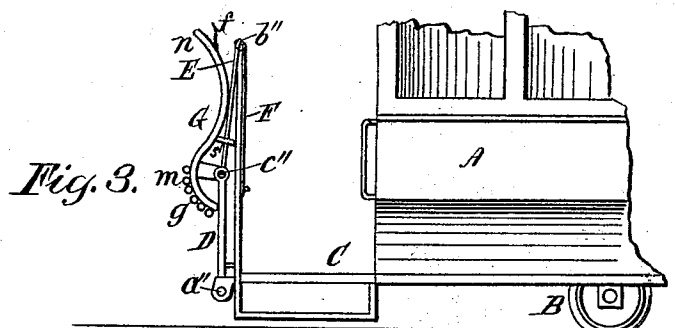
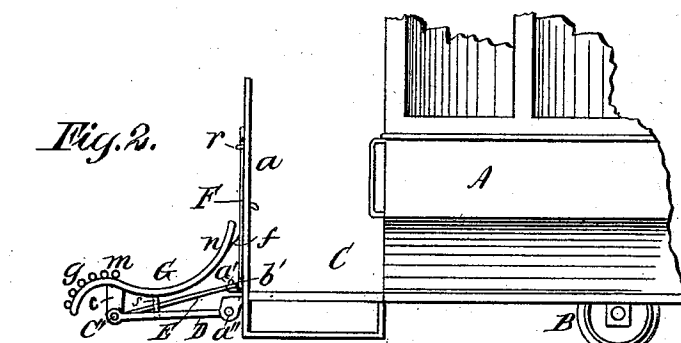
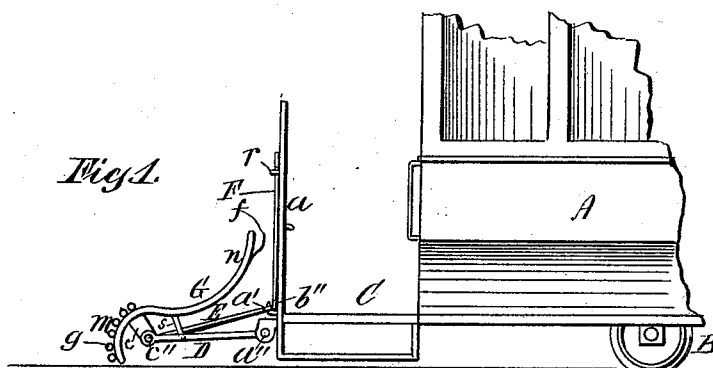


(No Model.)

J. J. ANDREWS & T. MOTT.
SAFETY APPARATUS FOR STREET RAILWAY CARS.

No. 527,646.

Patented Oct. 16, 1894.



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UNITED STATES PATENT OFFICE.

JAMES J. ANDREWS, OF HEMPSTEAD, AND THEODORE MOTT, OF FAR
ROCKAWAY, NEW YORK.

SAFETY APPARATUS FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 527,646, dated October 16, 1894.

Application filed March 8, 1894. Serial No. 502,814. (No model.)

To all whom it may concern:

Be it known that we, JAMES J. ANDREWS, of Inwood, in the town of Hempstead, and THEODORE MOTT, of Far Rockaway, in the county of Queens, State of New York, have invented certain new and useful Improvements in Safety Apparatus for Street-Railway Cars; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view representing our said invention with the parts in the position normally occupied by them in anticipation of active operation. Fig. 2 is a like view of the same showing the position of the parts when brought into active operation. Fig. 3 is a like view of the same showing the position of the parts folded as when not in use, and Fig. 4 is a plan or top view of the same with the parts in the position shown in Fig. 1.

This invention relates to that class of apparatuses which are designed to prevent or minimize danger to pedestrians and others from rapidly moving street cars propelled by electricity, cables, or other means which dispense with the use of draft animals.

It comprises certain novel combinations of parts whereby a person struck by an advancing car, instead of being thrown down and run over, will be lifted and sustained by the automatic action of the apparatus and thereby withheld from injury from the advancing movement of the car.

A is the body, B the wheels, and C one of the platforms of a street car.

The structure of the car itself, its means of propulsion, &c., may be of any appropriate kind.

The front or dash-board of the car platform is shown at *a*. To the front of the platform is pivoted as at *a''*, a bracket bar D. To the front or outer end of this bracket bar is pivoted the outer end of a brace, E, the inner end of which has a hook, *a'*, or equivalent device by which it is, on occasion, hooked to a staple, eye-bolt or equivalent device, *b'*, upon the front of the dash-board. The brace E, has pivoted to it near its inner or upper end as at, *b''*, a vertical lifting rod, F. This lifting

rod passes through a guide, *r*, at the top of the dash-board, *a*, said guide serving to keep the rod in place and in vertical position when the apparatus is placed for expected operation. It will be observed that when in their lowered position as shown in Fig. 1, they constitute a bracket which extends forward from the front of the car.

G is what we term a trap, the office of which, in the operation of the apparatus, is to throw and receive free from harm any person who, in the advance movement of the car, may be in danger of being struck thereby. This trap, G, has the form shown more fully in the side views in Figs. 1 and 2, its lower and forward part, *m*, being of convex form, and its upper and rearward part, *n*, being concave. This concave upper and rearward part of the trap when the parts are in position for expected operation is in front of the dash-board, *a*, but at such distance therefrom as to permit the said part to tilt backward as and for the purpose presently herein explained. From the convex lower and forward part of this trap projects downward an arm, *c*, the lower end of which is pivoted as at, *c''*, to the forward or outer end of the bracket bar, D. By this means the trap, G, is attached to, and made capable of turning upon, the said bracket bar. The trap is intended to be made of steel or other metallic ribbons plaited after the fashion of basket work to afford combined strength and lightness, said ribbon-work being surrounded by, and attached to, a suitable circumferential frame. When desired the trap may be of any other suitable material, and its shape and contour may be modified within wide limits without departing from our invention. It is desirable that the convex lower forward part, *m*, of the trap be of moderate size in order that its effect, upon striking the person of a pedestrian upon the track in front of a rapidly moving or unmanageable car be exerted as low down or near the ground as possible. Placed along the said convex part of the trap, in a direction transverse to the length of the car and securely attached to the said part are any desired number of sections, *g*, of india rubber hose or tubing. By reason of their elastic character and their position in front of the

arm, *c*, and the pivot by which the latter is connected with the bracket these sections of tubing cushion the impact of the trap against the person of a pedestrian and thereby prevent serious bruising and injuries which otherwise would be likely to occur in the operation of the apparatus under said conditions of use. When desired instead of a single bracket rod, *D*, placed at or near the center of the front of the platform, two may be employed, placed at a suitable distance apart and projecting forward from the platform with the trap pivoted thereto by a transverse rod passing from the front end of the one bar to that of the other, and with the lower end of the brace-rod pivoted to said transverse rod.

Attached to the back of the upper part of the trap is a spring, *f*, so placed that when the said part of the trap swings backward as hereinafter set forth said spring coming in contact with the dash-board behind it, will act to prevent the sharp concussion which otherwise would occur to the trap by the sudden arrest of its said backward movement.

The parts being in the position hereinbefore explained and as represented in Fig. 1, the operation of the apparatus is as follows:— Assuming the advancing car to meet an obstacle, as, for example, a pedestrian upon the track, the convex lower part, *m*, of the trap strikes the person near the ground. This trips or throws the latter from his feet, and causes him to fall against the trap, *G*, with the result of swinging the latter backward upon its pivot, *c''*, to a position sufficiently approximating the horizontal to hold and retain the person during any further advance movement of the car, the spring, *f*, as the trap approaches the limit of its backward motion coming in contact with the dash-board, *a*, and thereby softening the jar which would otherwise attend the cessation of the backward movement of the aforesaid upper or carrying part of the trap.

It will be observed that the pivotal connection of the trap with the front end of the bracket bar being considerably below the outer adjacent surface of the trap, the latter is enabled to swing from a point near the ground while, at the same time a sufficient size is permitted to the lower and forward point of the trap to insure its effective action in tripping and gathering the endangered pedestrian as just explained.

When it is not required that the apparatus remain in position for expected operation, the lifting rod, *F*, is drawn upward to disengage the brace, *E*, from its connection at *a'*, *b'*, with the platform, and this upward movement being continued the bracket bar, *D*, is turned upon its pivot, *a''*, the trap being by this means hauled up to the position shown in Fig. 3. The parts are intended to be so proportioned that when this last named position of the trap is reached, the pivot, *a''*, will be at the top of the dash-board whereupon the

lifting rod, *F*, may be turned backward and downward behind the dash-board as shown in said Fig. 3, thereby acting as a retaining device to hold the parts in their just described position.

It is of course to be understood that in practice, with double-ender cars, an apparatus will be provided to each end of the car, that at one end to be kept in position for expected operation while that at the other is in the folded position just herein described.

To maintain the lower edge or end of the trap, *G*, at a suitable distance from the ground, a loop, *S*, is extended from the under side thereof, above its point of pivotal connection with the bracket bar, *D*. This loop passes around and below the brace, *E*, so that when the latter is in the position shown in Fig. 1 the trap is prevented from tilting farther forward and consequently from striking the ground at its front or lower end. At the same time this loop is so arranged that it does not interfere with the backward movement of the trap, nor with its elevation to the position shown in Fig. 3.

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

1. The combination with a car platform, a bracket apparatus extended forward from the said platform, and a trap, *G*, constructed with a convex forwardly extended lower part, *m*, and concave rearwardly extended upper part, *n*, of an arm, *c*, extended downward from the said lower and convex part and means for transversely pivoting the arm to the front of the bracket, substantially as and for the purpose herein set forth.

2. The combination with a car platform of a bracket apparatus extended forward from the platform, a trap, *G*, convex at its lower and forward part and concave at its upper and rearward part and transversely pivoted to the front end of the bracket, and a spring, *f*, arranged to come into play when the said concave part approaches the limit of its backward movement, substantially as and for the purpose herein set forth.

3. The combination with a car platform, a bracket apparatus extended forward from the said platform, and a trap, *G*, constructed with a convex forwardly extended lower part, *m*, and concave rearwardly extended upper part, *n*, of an arm, *c*, extended downward from the said lower and convex part, means for transversely pivoting the arm to the front of the bracket, and elastic tube sections arranged upon said part of the trap opposite and in front of said arm and its pivotal connection with the bracket, substantially as and for the purpose herein set forth.

4. The combination with a car platform of a bracket apparatus projected forward from said platform, a trap *G*, convex at its lower forward part, *m*, concave at its upper rearward part, *n*, and transversely pivoted to the front of said bracket, and elastic tube sections, *g*, attached to the said convex part of

the trap to sustain the impact of the latter, substantially as and for the purpose herein set forth.

5. The combination with a car platform, of a bracket apparatus projected forward from said platform, a trap, G, convex at its lower forward part, *m*, concave at its upper rearward part, *n*, and transversely pivoted to the front of said bracket, and a spring, *f*, arranged to come into play when the aforesaid concave part approaches the limit of its backward movement to relieve the jar incident to the cessation of said movement, substantially as and for the purpose herein set forth.

6. The combination of a bracket bar, D, constructed for pivotal attachment to the front of a car platform, the brace, E, pivoted at one end to the bracket bar and at the other constructed for removable attachment to the front of the said platform, the trap, G, pivoted at its lower part to the bracket rod, and a lifting rod, F, connected with the brace, substantially as and for the purpose herein set forth.

7. The combination of a bracket bar, D, pivoted to the front part of a car platform, a trap, G, pivoted to the front end of said bracket bar, a brace, E, pivoted at one end to the bracket bar and detachably pivoted at the other end to the said platform, and means for lifting the bracket bar, brace, and trap, to close the same parts in a raised position substantially vertical and parallel with the dash-board, substantially as and for the purpose herein set forth.

8. The combination of a bracket bar, D, constructed for pivotal attachment to the front of a car platform, the brace, E, pivoted at one end to the bracket bar and at the other constructed for removable attachment to the front of the said platform, the trap, G, pivoted at its lower part to the bracket rod, and a guide, *r*, for retaining said rod in a vertical position when the apparatus is in position for expected use, substantially as and for the purpose herein set forth.

9. The combination of a bracket bar, D, con-

structed for pivotal attachment to the front of a car platform, the brace, E, pivoted at one end to the bracket bar and at the other constructed for removable attachment to the front of the said platform, the trap, G, pivoted at its lower part to the bracket rod, elastic tube sections, *g*, provided upon said convex part of said trap, and a guide, *r*, for retaining the rod in a vertical position when the apparatus is in position for expected use, substantially as and for the purpose herein set forth.

10. The combination of a bracket bar, D, constructed for pivotal attachment to the front of a car platform, the brace, E, pivoted at one end to the bracket bar and at the other constructed for removable attachment to the front of the said platform, the trap, G, pivoted at its lower part to the bracket rod, elastic tube sections, *g*, provided upon said convex part of said trap, and a spring, *f*, provided at the back of the concave upper part of said trap, and a guide, *r*, for retaining the rod in a vertical position when the apparatus is in position for expected use, substantially as and for the purpose herein set forth.

11. The combination of a bracket bar, D, pivoted to the front part of a car platform, a trap, G, provided with a downwardly projecting arm, which is pivoted to the bracket bar, a brace, E, pivoted at one end to said bracket bar and at the other detachably connected with the front of said platform, a lifting rod, F, pivoted to said brace, a guide, *r*, for guiding said rod and a dash-board, *a*, so proportioned to the brace and lifting rod that the pivot of the latter may reach the top of the dash-board when the parts are raised, whereby the lifting rod may be turned back over the top of the dash-board to hold the parts in their folded condition, substantially as herein set forth.

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Witnesses:

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