

W. R. BETHAM.
STREET CAR SAFETY APPLIANCE.
APPLICATION FILED JULY 16, 1909.

988,070.

Patented Mar. 28, 1911.

2 SHEETS—SHEET 1.

Fig. 2.

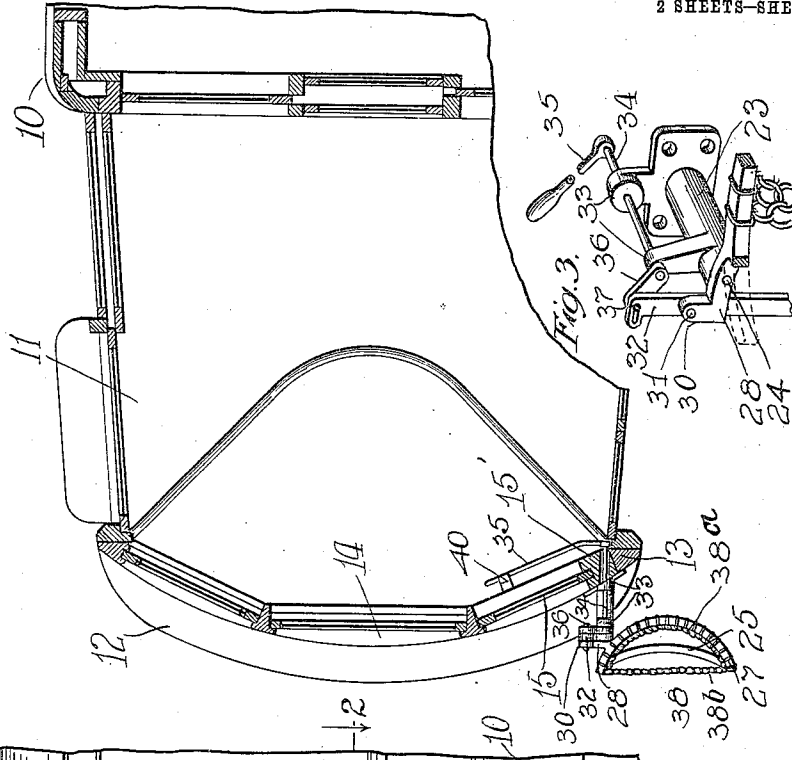
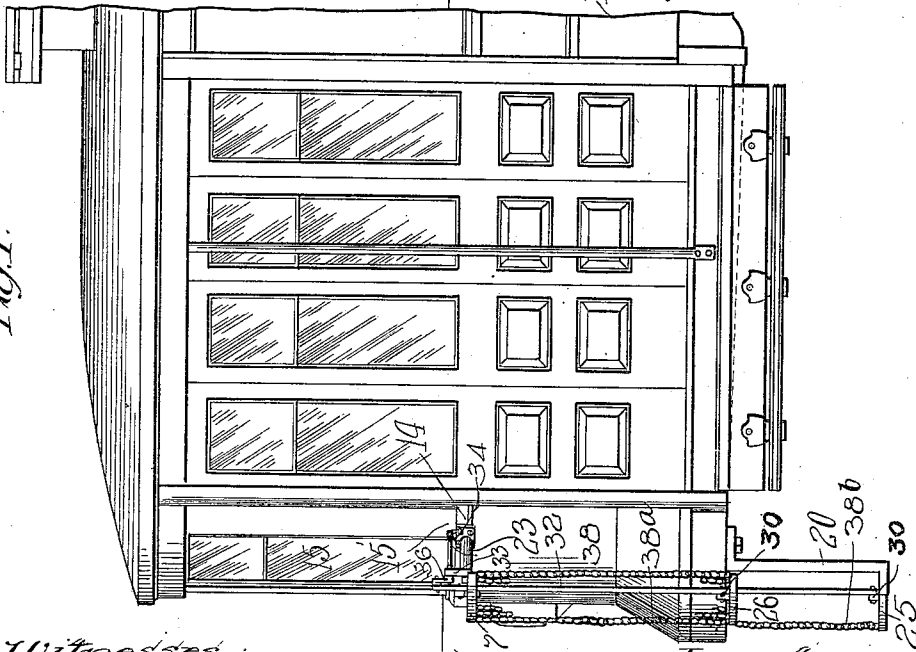


Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

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STREET-CAR SAFETY APPLIANCE.

988,070.

Specification of Letters Patent. Patented Mar. 28, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM R. BETHAM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Street-Car Safety Appliances, of which the following is a specification.

My invention relates to improvements in street-car safety appliances, and has for its general object to provide a safety appliance for street cars adapted to prevent pedestrians from being caught between oppositely moving cars in the clearance space between the cars.

One of the objects of my invention is to provide a construction adapted for application to the inner front corner of the street car, arranged to be closed or opened, so that when in opened position it forms a generally vertical barrier extending from the front of the car transversely across the width of the clearance space to the left between passing cars, in position to pick up in substantially erect position a pedestrian; and when folded it occupies a position wholly within the confines of the lateral dimensions of the car and in position not to obstruct the view of the motorman or conductor.

Among further objects of my invention, are to provide a structure simple, cheap, readily operable, and easily applicable to standard constructions of cars.

In the drawings, Figure 1 is a side elevation of a front end of a street car, equipped with a safety appliance embodying my invention; Fig. 2 is a section on line 2—2 of Fig. 1; Fig. 3 is an enlarged detail of a fragment of the appliance; Figs. 4 and 5 are front elevations of a fragment of the car, showing the appliance respectively in open and closed position.

In the preferred embodiment of my invention shown, I provide upon what I may term the inner front corners of the car—that is to say at each corner of the car which is toward the clearance space between the tracks at the forward end when the car is in progress—a safety appliance providing a foldable screen or basket arranged when extended to stand in vertical position at or beyond the front of the car, spanning the area allotted for clearance space between passing cars, and said basket or screen being of transverse dimensions sufficient to receive the body of the pedestrian, thereby to pre-

sent an impassable barrier which will prevent a pedestrian from getting between the bodies of two passing cars; and which when folded will stand in vertical position at the front of the car wholly within the confines of its width and entirely out of the way.

In the drawings, 10 indicates in general a car of modern wide-body construction wherein 11 is the vestibule or platform, 12 the platform end sill, 13 the inner corner post, and 14 the transverse frame strip at the upper edge of the dash or solid structure of the platform end, immediately below the windows, 15. The only change which I preferably make in the construction of the car proper is the narrowing of the inner window 15 by the insertion of a frame bow, 15', to provide a space between the corner post 13 and the adjacent rail of the window sash through which an operating shaft to be described may pass without interfering with the window sash.

To the front of the car adjacent the inner corner post, I attach brackets providing a plurality of vertically alining bearing points, there being in the construction shown a lower bracket, 20, secured under the front sill 12 and carrying pivots, 21 and 22, the former being at what I may term ankle level, and the latter at knee level, and both arranged to afford supporting points in front of and close to the platform front sill 12 of the car, adjacent the inner front corner post. A third bracket, 23, is secured to the transverse frame member 14 of the dash or other suitable part of the front structure of the car to provide a pivot 24, in vertical alinement with the pivots 21 and 22, preferably at about five or six feet from the ground. To these three pivots are pivotally connected arms, 25, 26, and 27, respectively, movable on horizontal axes longitudinally arranged with respect to the car, so that the arms may move to horizontal or vertical position as shown in Figs. 4 and 5. The arms are preferably connected together for movement in common from a single operating part, and to this end each has a fork or projection, 28, adjacent its end, mounted on its appropriate pivot, 21, 22, or 24, and provided with an upturned extremity, 30, pivotally connected, as at 31, to a common vertical bar, 32, to which is connected the moving lever. In the specific construction shown, the bracket 23 projects forward from its base a considerable distance and carries up-

wardly extending bearing projections, 33, in which is rotatably mounted a shaft, 34, extending in through the window frame box, 15', and at its inner extremity bearing an operating lever, 35, by which it may be rotated. At its outer extremity the shaft 34 has secured thereto a crank part, 36, to which the rod 31 is pivotally connected with a pin-and-slot connection, 37, so that partial rotation of the handle 35 will result in movement of the arms 25, 26, and 27, to vertical or horizontal position at pleasure.

The arms 25, 26, and 27 serve as supporting means for a life-net structure, 38. It is my preference that the lower arm 25 be given a comparatively slight concave curve in a horizontal plane, while the upper arms, 26 and 27, are more deeply concaved. It is my preference that the net construction be of flexible metallic netting made of rings, although any form of net, of metal or otherwise, suitably constructed, may be employed. It is further my preference that the net 38 be made in two sections, 38^a and 38^b, the upper section 38^a being connected throughout its top and bottom edges with the similarly curved arms 26 and 27, so that it is concaved throughout to the curvature prescribed by said arms. The lower net section, 38^b, I prefer should be a straight apron connected only at its corners to the alining extremities of the differently curved arms 25 and 26, to hang straight when in open position. I also preferably provide, as a chord across each concaved arm, a coiled spring or other yielding body which will prevent too severe an impact of the life-net with the person of the pedestrian.

It will be observed that, as applied to a street car, the safety appliance, when in open position, extends from a point in front of the car transversely across the space allotted for clearance between passing cars and presents a generally vertical bearing or net which will receive any pedestrian standing in the clearance space between the car tracks as the car approaches. When the appliance is closed or folded, it stands with all of its parts substantially in vertical alinement in front of the corner of the car and out of the way both of passing vehicles and of the car crew and passengers. Obviously to fold the appliance to closed position, the motorman need only depress the lever 35—which may conveniently be provided with a latching spring, 40, for holding it in depressed position—and the motion communicated to arms 25, 26, and 27, moves them to upright position, all similar points on the respective arms retaining their given distances apart on account of the constant parallelism of the arms. To restore the appliance to open position, the latch 40 may readily be released and the slightest upward movement of the lever 35 will disturb the

poise of the parts sufficiently to cause the weight of the netting to draw the appliance down to open position. In practice, all cars running in one direction might carry their nets extended, or they might all be carried normally closed to be dropped only when needed.

While I have herein described in some detail an embodiment of my invention for purposes of full disclosure, it will be apparent to those skilled in the art that the spirit of the invention might be embodied in constructions widely different in detail than herein illustratively disclosed, and I do not desire to be understood as limiting my invention to the particular construction and mode of operation illustratively shown further than is covered by the claims.

What I claim is:

1. The combination with a street car, of a safety appliance comprising a life-net arranged for generally vertical presentation at the front of the car to extend laterally beyond the width thereof substantially at right angles to the line of traverse of the car, to cross the clearance space between passing cars and to afford an area to receive an upright human body.
2. The combination with a street car of a safety appliance comprising a net arranged for presentation in generally vertical position at the front of the car to extend laterally beyond the width thereof across the clearance space between passing cars and in part concaved in plan.
3. The combination with a street car of a protective structure comprising a generally vertical life-net arranged beyond the end of the car and adapted for movement to a position standing laterally beyond the width of the car overlying the clearance space allowed between cars, or to a position wholly within the width of the car.
4. The combination with a street car of a protective appliance comprising a folding life-net arranged, when extended, to guard the clearance space beyond the inner side of the car and when closed to stand wholly in front of the car within the confines of its width.
5. The combination with a car of a protective structure comprising a plurality of arms pivotally supported upon the front of the car upon longitudinal horizontal axes, a basket structure supported by said arms, and means for simultaneously moving said arms from horizontal to vertical position, thereby to cause the basket to stand either laterally beyond the width of the car in a substantially vertical plane transverse to the direction of progress of the car, or to stand folded in narrow vertical compass within the width of the car.
6. The combination with a street car of brackets, secured upon the front thereof, ad-

jacent its inner corner; arms mounted on said brackets and movable to horizontal position, to stand projecting beyond the width of the car, or to stand vertically wholly within the confines of the width of the car and in front thereof; a flexible netting carried by said arms; and means for moving said arms.

7. The combination with a street car of a safety appliance therefor comprising a plurality of horizontal arms, pivotally mounted in front of the car for movement to vertical or horizontal position; means connecting said arms for simultaneous and equal movement; netting connecting said arms; and means for moving said arms, operable from the platform of the car.

8. The combination with a car of brackets placed upon the front thereof in vertical alinement, in different horizontal planes; arms pivoted to said brackets, and movable from a horizontal position substantially at right angles to the line of travel of the car, and extending across the clearance space allowed between cars, to a vertical position

wholly in front of the car; netting carried by said arms; and a lever for moving said arms, arranged for operation from within the car.

9. The combination with a car of a plurality of brackets upon the front end thereof at different elevations in vertical alinement, rearwardly concaved arms pivoted to said brackets, a connection between said arms uniting them for simultaneous movement about said pivots, a netting carried by said arms, and means upon the car for vertically moving said connection thereby to raise the arms and their netting to a closed position wholly in front of the car within the limits of its width, or to lower the arms and netting to a position laterally beyond the width of the car to substantially the width allotted for clearance between cars.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

WILLIAM R. BETHAM.

In the presence of—

MARY F. ALLEN,
GEO. T. MAY, Jr.