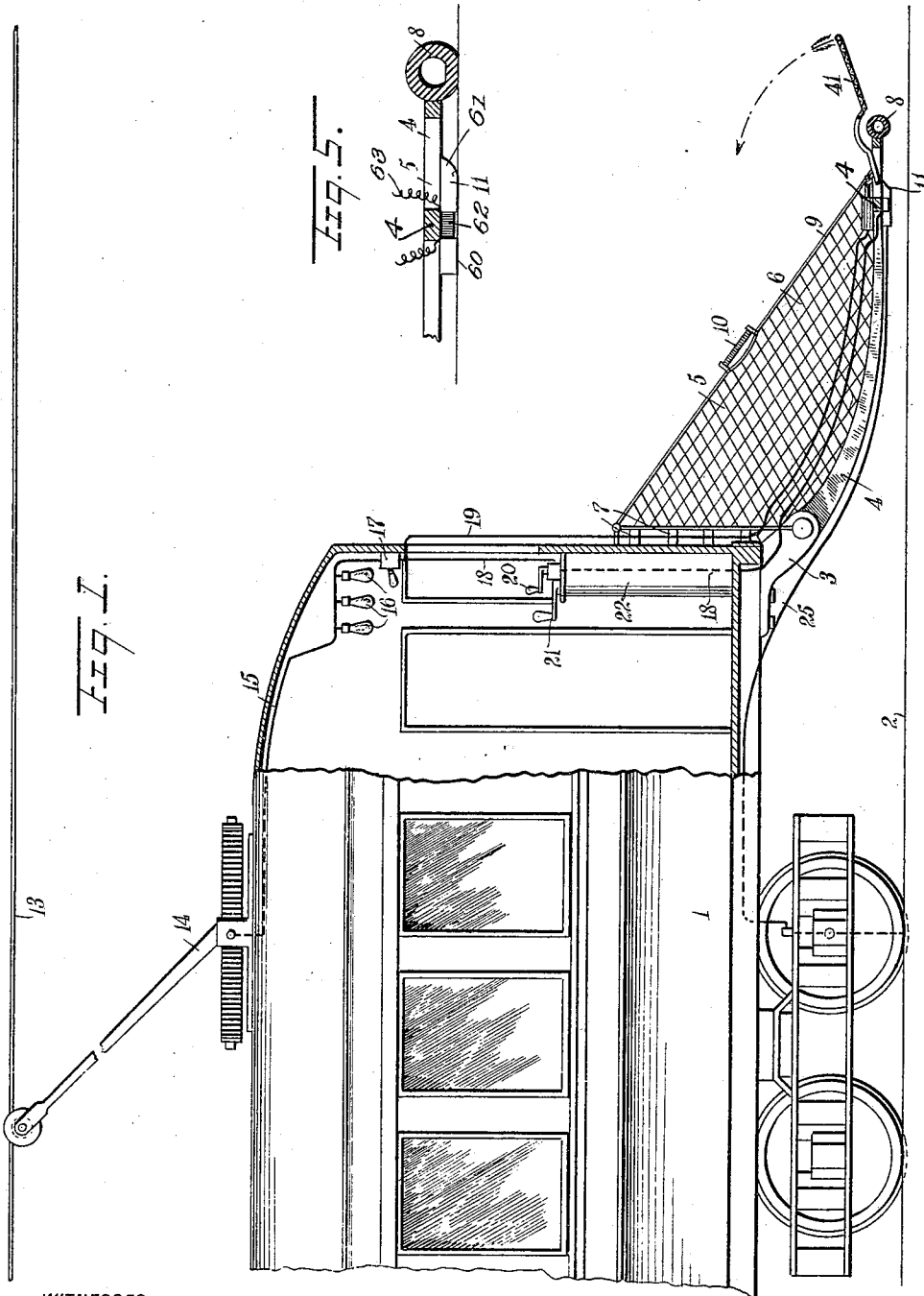


H. S. BEATTIE.  
CAR FENDER.  
APPLICATION FILED JUNE 21, 1910.

993,219.

Patented May 23, 1911.

2 SHEETS-SHEET 1.



WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 2.

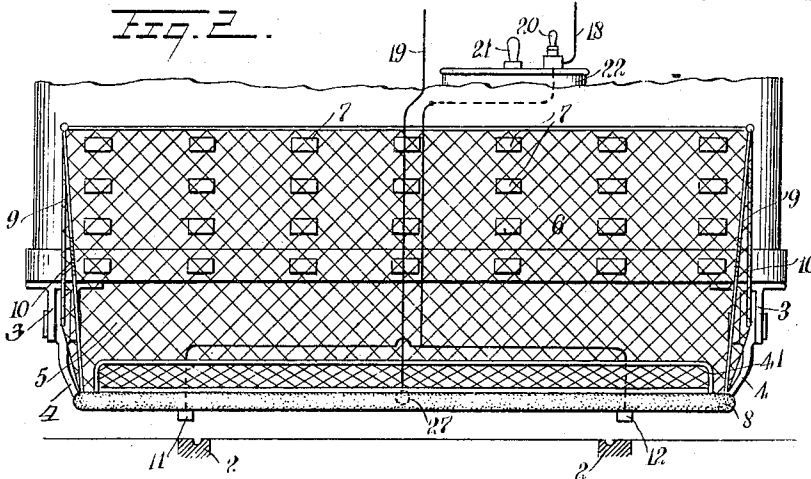


Fig. 3.

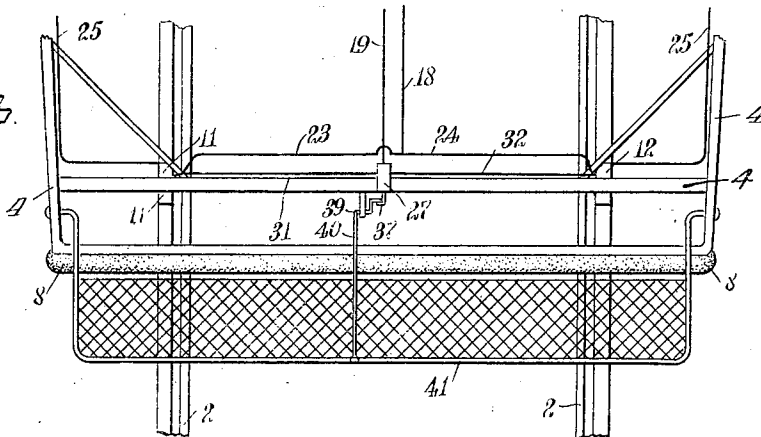
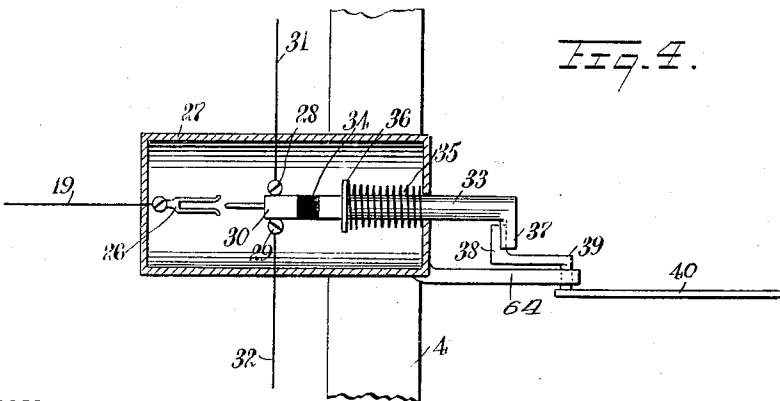


Fig. 4.



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# UNITED STATES PATENT OFFICE.

HUGH SINCLAIR BEATTIE, OF TEZIUTLAN, MEXICO.

## CAR-FENDER.

993,219.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed June 21, 1910. Serial No. 568,131.

*To all whom it may concern:*

Be it known that I, HUGH SINCLAIR BEATTIE, a citizen of the United States, and a resident of Teziutlan, Puebla, Mexico, have invented a new and Improved Car-Fender, of which the following is a full, clear, and exact description.

This invention relates to a new and improved fender for cars or the like, which is adapted to be operated either by the motorman or automatically by impact with an obstacle or person to lower the fender into intimate contact with the ground, whereby the person or obstacle is safely picked up and deposited on the fender out of harm's way.

An object of this invention is to provide a device which will be simple in construction, inexpensive to manufacture, strong, durable, and positive, reliable and yielding in its operation.

A further object of this invention is to provide a fender with magnets thereon operative either automatically or manually, which are adapted to engage the track rail and draw the fender down into its picking-up position.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a fragmentary side view in elevation of the car with my fender attached thereto, partly broken away to show the underlying structure; Fig. 2 is a fragmentary front view in elevation; Fig. 3 is a fragmentary top plan view, with the net removed to show the underlying structure; Fig. 4 is an enlarged horizontal section through the automatic circuit-closer; and Fig. 5 is an enlarged vertical section showing the position of one of the magnets when engaging the track rail.

Referring more particularly to the separate parts of the device, 1 indicates a car of any suitable character adapted to run on track rails 2. Pivotally supported on each end of the car in any well known manner, as by means of brackets 3, there is provided a frame 4 for a fender 5, whereby the fender may be swung up out of the way when not in use and extended down when in use. The

body of the fender may be of any suitable character, such as a flexible network stretched over the bottom and rear of the fender frame, and extending upwardly to form sides. The rear of the fender is preferably spaced apart from the body of the car by means of suitable spaced buffers, which may be of any suitable material, such as yarn, of such a nature that it will resiliently absorb the shock of a person impacting thereon, so that the person will not be injured by the shock.

The front end of the fender is guarded by a suitable pneumatic tube 8, which is adapted to conform yieldingly to the contour of the ground when the fender is in its lowermost position.

The tops of the sides of the network are provided with suspension members 9, which support the front end of the fender from the body of the car. In order that the slack in these suspension members 9 may be taken up, and the forward end of the fender held out of contact with the ground, under normal conditions, there are provided in these suspension members, intermediate their ends, tension members 10 in the nature of springs.

For the purpose of drawing the forward end of the fender down into intimate contact with the ground when it is desired to pick up a person out of the path of the wheels, there are provided on each side of the fender, shoe magnets 11 and 12, which are superposed above the track rails 2 and are adapted, when excited, to engage the track rails, and thus depress that portion of the fender to which they are attached, against the tension of the springs 10. The magnetic shoes 11 and 12 may be of any suitable form, such as that shown in Fig. 5, which will be seen to consist of two poles or heads 60 and 61 connected by a somewhat narrower body portion 62, around which is wound the wire 63 for electrically exciting the magnet. It is preferred that the forward heads or poles 61 be curved upwardly at the front so as to cause them to ride over slight obstructions.

For the purpose of exciting the magnets 11 and 12, there are provided both automatic and manual controls, so that they may be excited either by the contact of the fender with an obstacle, such as the body of a person, or that they may be excited by the motorman on the vehicle. The current for

exciting the magnets is drawn from the source which supplies the car 1, or from any other source, and is illustrated in the drawings by means of a trolley wire 13 and a trolley 14, although it might just as well be an underground source of current.

A conductor 15 extends from the source indicated by the trolley pole 14 through a plurality of lights 16, arranged preferably in series, so as to reduce the voltage, to a cut-out switch 17. From the cut-out switch 17, two branch conductors 18 and 19 extend downwardly. The conductor 18 extends downwardly to a controlling switch 20, which is located in juxtaposition to a controlling lever 21 on a controller box 22, where the motorman can readily operate it. This controlling switch 20 is further located in a break in the conductor 18 which is normally open, corresponding to the non-excited condition of the magnetic shoes 11 and 12. The conductor 18 extends from the opposite side of the break which the controller switch 20 is adapted to close to two branches 23 and 24, which extend to the shoes 11 and 12. The shoes 11 and 12 are provided with wires 25, which take the current off through the wheels to the ground. The branch conductor 19 extends down to a preferably bifurcated contact 26 of a switch, which is located in a casing 27 on the frame of the fender.

Slidingly mounted in the casing 27, preferably between terminal screws 28 and 29, there is provided a contact 30, which is adapted to engage between the forks of the contact 26 for the purpose of closing a break between the conductor 19 and conductors 31 and 32 connected to the terminal screws 28 and 29. The conductors 31 and 32 extend to the magnetic shoes 11 and 12, and are adapted to carry thereto the exciting current. The contact 30 is connected to a plunger 33, but insulated therefrom by means of an insulating member 34 of any suitable material. The plunger 33 is slidingly mounted in the casing 27, and is normally urged inwardly so as to force the contact 30 into engagement with the contact 26 by means of a spring 35 which engages the casing 27 at one end and a collar 36 on the plunger 33 at the other end. For the purpose of maintaining the contact 30 out of engagement with the contact 26, under normal conditions, the plunger 33 is provided with a lug 37 which has a curved depression or concavity which is adapted to be engaged by an arm 38 on a bell crank lever 39, which is pivoted to an extension 64 on the frame 4. The other arm of this bell crank lever, which is indicated at 40, extends forwardly, where it is pivotally connected to a trip 41 and adapted to be operated thereby.

The trip 41 is pivotally connected to the fender proper in any well known manner, but preferably so as to have the forward end

thereof normally extend upwardly, as indicated in Fig. 1, so that on engagement with an object, it will be swung rearwardly to a position on top of the fender, whereby the locking projection 38 on the bell crank lever 39 will be released from the lug 37, so as to permit the contact 30 to come in engagement with the contact 26. The trip 41 is arched over the forward end of the fender, so that it is normally spaced apart therefrom, allowing room for the tripper to be depressed by the weight of an object thereon a sufficient distance to release the locking projection 38 from engagement with the lug 37 to release the plunger 33 by movement in the opposite direction. This trip 41 is preferably covered with a suitable flexible network, so as to be more readily engaged by a small object.

The operation of the device will be readily understood when taken in connection with the above description. The fender is normally in the raised position indicated in Fig. 1 out of contact with the ground. If the motorman should observe a person in the way of the car and be unable to bring the car to a stop in sufficient time to avoid striking the person, he can almost simultaneously with the throwing off of the current by the controlling lever 21, throw the switch 20 to excite the magnets 11 and 12, and thereby cause them to be attracted toward the rails 2, thus depressing the forward end of the fender into intimate contact with the ground, in which position the fender will readily take up the person without any possible injury. If, however, the motorman should not happen to see the person in front of the car, the impact of the person with the trip 41 will automatically release the plunger 33, so that the switch contacts 30 and 26 will be brought into engagement with each other, thereby completing the circuit through coils of the shoes 11 and 12, causing them to be attracted to the rails. After the accident is over, the switches can be opened, so as to break the circuit through the electro-magnetic shoes 11 and 12, when the springs 10 will automatically withdraw the shoes from engagement with the track rails and lift the forward end of the fender from engagement with the ground.

The use of the series of lights 16 in the circuit renders the device safe, by avoiding all possible chance of giving a person a severe shock by a high-voltage current in case any of the conductors should become exposed.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, modifications and alterations which I may make within the scope of the appended claims.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent:—

1. The combination with a car adapted to run on rails, of a fender movably connected to said car, shoes on said fender adapted to cooperate with said rails to depress said fender, means for normally holding said fender in its raised position, and an automatically-operated switch for controlling the excitation of said magnets, comprising a pair of contact members, a trip adapted to normally hold said contact members out of engagement and adapted to be released by impact with an obstacle, and a spring for forcing said contacts into engagement.

2. The combination with a car adapted to run on rails, of a fender movably connected to said car, magnetic shoes on said fender adapted to cooperate with said rails to depress said fender, suspension members for supporting the outer end of said fender away from the ground, springs located intermediate the ends of said suspension members for taking up the slack therein and maintaining said fender out of contact with the ground, and an automatically-operated switch for controlling the excitation of said magnetic shoes, comprising a pair of contact members, a trip adapted to normally hold said contact members out of engagement and adapted to be released by impact with an obstacle, and a spring for forcing said contacts into engagement.

3. The combination with a car adapted to run on rails, of a fender movably connected to said car, shoe magnets on said fender adapted to cooperate with said rails to depress said fender, suspension members for supporting the outer end of said fender away from the ground, a spring located intermediate the ends of said suspension members for taking up the slack therein and

maintaining said fender out of contact with the ground, and an automatically operated switch for controlling the excitation of said magnets, comprising a pair of contacts and a trip under tension adapted to normally hold said contacts out of engagement and also adapted to be released by impact with an object.

4. The combination with a car adapted to run on rails, of a fender movably connected to said car, magnetic shoes on said fender adapted to cooperate with said rails to depress said fender, means for normally holding said fender in its raised position, an automatically operated switch for controlling the excitation of said magnetic shoes, comprising a pair of contact members, a trip adapted to normally hold said contact members out of engagement and adapted to be released by impact with an obstacle, and a spring for forcing said contacts into engagement, and a manual control for governing the excitation of said magnetic shoes.

5. The combination with a car adapted to run on rails, of a fender movably connected to said car, magnetic shoes on said fender adapted to cooperate with said rails to depress said fender, and an automatically operated switch for controlling the excitation of said magnetic shoes, comprising a pair of contact members, means normally urging said contact members toward each other, and a trip adapted to hold said contact members out of engagement and also adapted to be released by impact with an obstacle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HUGH SINCLAIR BEATTIE.

Witnesses:

G. A. GUERRA,  
W. ASCOT.