

H. P. BROWN.
REFLECTOR ATTACHMENT FOR VEHICLES.

APPLICATION FILED AUG. 1, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

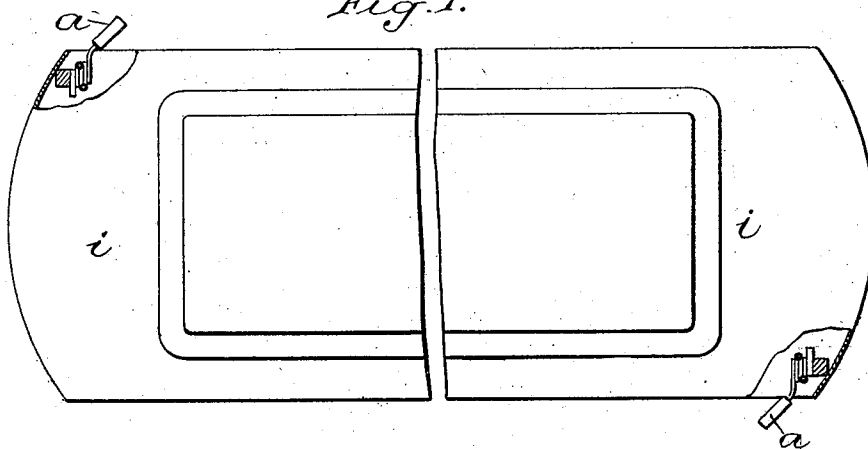


Fig. 2.

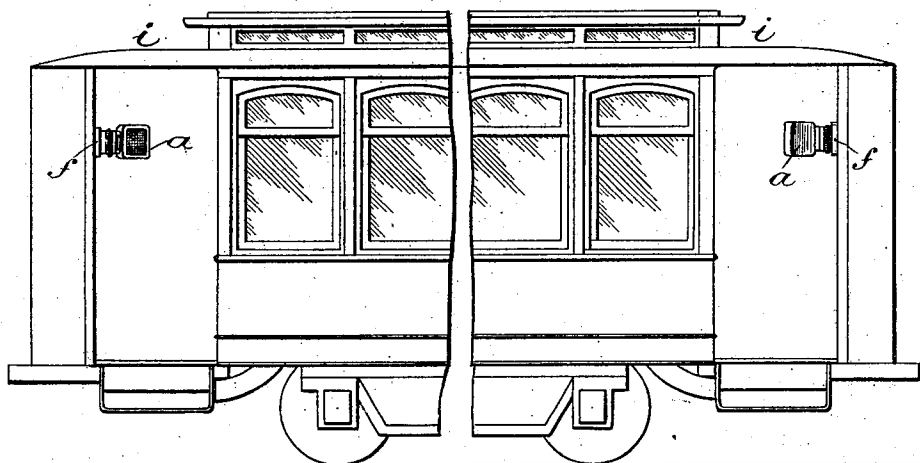


Fig. 3.

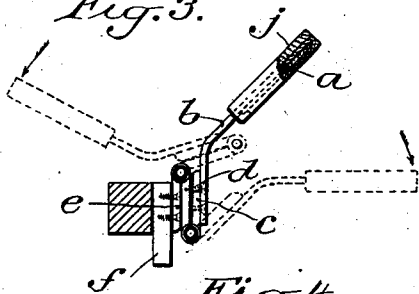


Fig. 4.

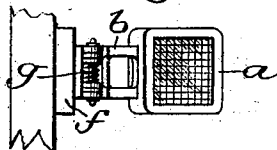
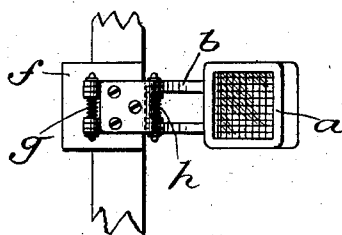


Fig. 5.



Witnesses:
George Barry
Henry Thome.

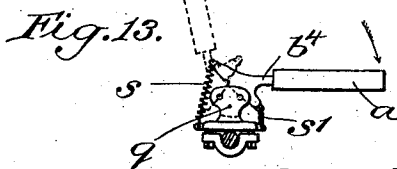
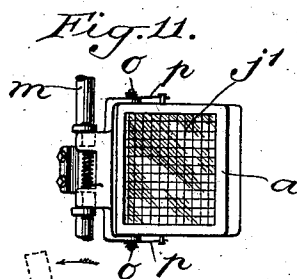
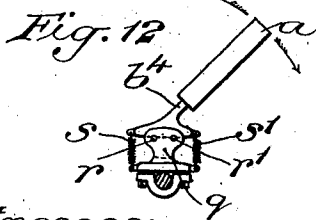
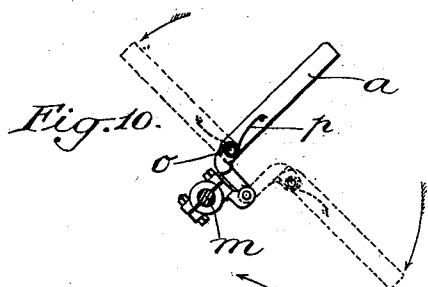
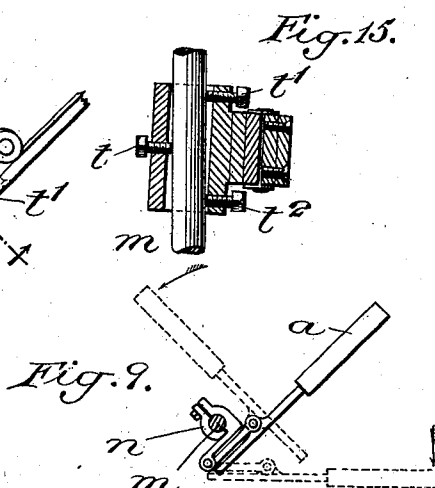
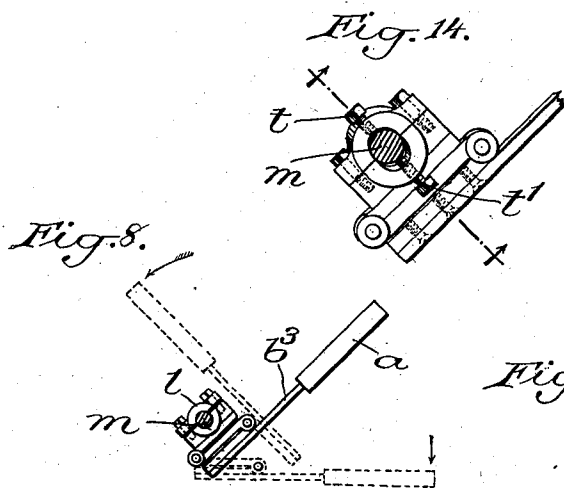
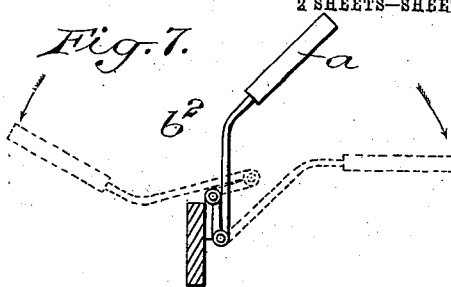
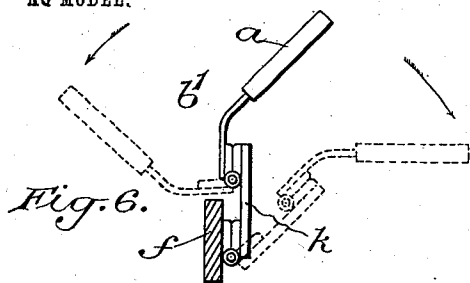
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Harold P. Brown
By Brown & Brown
Attorneys

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2 SHEETS—SHEET 2.



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Henry Thome.

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his Attorneys

UNITED STATES PATENT OFFICE.

HAROLD P. BROWN, OF MONTCLAIR, NEW JERSEY.

REFLECTOR ATTACHMENT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 718,309, dated January 13, 1903.

Application filed August 1, 1901. Serial No. 70,486. (No model.)

To all whom it may concern:

Be it known that I, HAROLD P. BROWN, a citizen of the United States, and a resident of Montclair, in the county of Essex and State of New Jersey, have invented a new and useful Reflector Attachment for Vehicles, of which the following is a specification.

My invention relates to a reflector attachment for vehicles, and more particularly to a reflector attachment for use in connection with surface or elevated railway cars—such, for example, as trolley-cars—to enable the motorman to observe the movement of passengers getting on and off the car without leaving his post.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a plan view of a car broken away at the opposite corners to show the reflector attachment in its position as in use. Fig. 2 is a view of the same in side elevation. Fig. 3 is an enlarged top plan view in detail, showing in full lines the reflector in its normal position and in dotted lines the positions which it may assume when hit in opposite directions by an obstruction. Fig. 4 is a view of the same in elevation looking in a direction transverse of the car. Fig. 5 is a view in elevation looking in the direction of the length of the car. Fig. 6 is a top plan view of a modified form, showing in full lines the reflector in its normal position and in dotted lines the position which it may assume when hit by an obstruction in each of two opposite directions. Figs. 7, 8, 9, and 10 show similar views of further modifications. Fig. 11 is a view in elevation of the form shown in Fig. 10. Fig. 12 represents a top plan view of another modification. Fig. 13 represents a top plan view of the same, showing in full lines the position which the reflector may assume when hit by an obstruction in one direction and in dotted lines the position which it may assume when hit by an obstruction in the opposite direction; and Figs. 14 and 15 represent enlarged top plan and vertical section views of the tilting reflector-support.

In each of the several modifications presented the reflector has a normal position which will reveal to the eye of the motorman when standing in his position to manipulate

the car the movement of passengers getting on and off at the rear, and in each of the several forms presented provision is made for the swinging movement of the reflector in either of two opposite directions to prevent it from becoming damaged or ruined by contact with passing vehicles or other obstructions with which it is liable to come in contact in a crowded thoroughfare.

In the form represented in Figs. 1 to 5, inclusive, the reflector *a* is supported on the outer end of a bent arm *b*, the inner end of which is made fast to the leaf *c* of a three-part hinge, the other two parts or leaves of which are denoted, respectively, by *d* and *e*. The part *e* is intended to be fastened to a suitable support *f* at the front right-hand corner of the car, and when in normal position the leaf *d* will fold flatly against the leaf *e* and the leaf *c* will fold flatly against the leaf *d*, holding the arm *b* in a position to set the mirror *a* at an angle of forty-five degrees to the longitudinal axis of the car. The arm *b* is held normally in its position to hold the mirror at an angle of forty-five degrees by means of a spring, in the present instance a coil-spring *g*, tending to hold the leaf *c* of the three-part hinge close against the leaf *d* and a spring, in the present instance a coil-spring *h*, tending to hold the leaf *d* folded against the leaf *e*.

The car-body is denoted by *i*, and it is intended that a reflector shall be placed at each of two opposite corners, so that in whichever direction the car be made to travel the reflector will be in position to disclose what is taking place at the proper entrance to and exit from the car.

The reflector *a* is preferably provided with a backing *j*, of cork, rubber, or other suitable material, capable of receiving a blow or a shock from a passing vehicle or other obstruction without damaging the reflector *a*. The face of the reflector is protected by an open-mesh wire screen *k*. Furthermore, the reflector, together with its arm *b*, is free to be swung into the position shown in dotted lines in Fig. 3, swinging on the pivotal connection between the leaves *c* and *d* when hit in one direction and on the pivotal connection between the leaves *d* and *e* when hit in the opposite direction, and it is an important feature of the structure that each spring will act

under its full strength to return the reflector to normal position when from any cause it has been swung out of position.

As represented in Fig. 6, the arm b' , to which the mirror is attached, is hinged to a bar k to permit it to swing forwardly without disturbing the bar k , as shown in dotted lines, while the bar k is itself hinged to the support f to swing in the opposite direction, together with the arm b' and the reflector, as also shown in dotted lines. In this structure, as in the former one explained, the hinge-pintles are provided with springs tending to hold the parts in their normal position and to return them to their normal position when for any cause they have been forced by an obstruction out of such position.

In the form shown in Fig. 7 the arm b^2 , carrying the reflector, forms one leaf of the three-part hinge, the movement being quite similar to that shown and described in Figs. 1 to 5, inclusive.

In the form shown in Fig. 8 the arm b^3 , carrying the reflector, is straight, and the two-part hinge is attached by means of a yoke or clip l to a standard m , so that the three-part hinge is set at an angle of forty-five degrees to the longitudinal axis of the car or at such other angle as may be desired to put the mirror in the proper position to disclose the movements at the rear end of the car.

In Fig. 9 a similar structure is shown in which the three-part hinge is clamped by a split bearing n to the standard m .

In the form shown in Fig. 10 the reflector a is pivotally secured to one leaf of the two-part hinge, as at o , and is held in its normal position by means of springs p to permit it to be swung forwardly out of its normal position when hit by an obstruction, while the mirror and the leaf of the hinge to which it is pivoted may swing together in the opposite direction when hit by an obstruction. In this case, as in the two preceding, the support is the standard m and the hinge is clamped to it. This provides for raising and lowering the reflector to suit the heights of different motormen and permits the adjustment of the reflector to the proper angle with great accuracy.

The particular manner of pivoting the reflector to the spring is represented in Fig. 11, where the leaf of the spring is shown as provided with branches or lugs between which the inner edge of the mirror-frame is received.

In the form represented in Fig. 12 the mirror is secured to an arm b^4 , the inner end of which is extended laterally and received between the upper and lower branches of a bifurcated base-piece. It is drawn inwardly and held in position against bearing-pins r r' between the branches of the bifurcated base q by springs s s' , connected with the opposite ends of the extended inner portion of the arm b^4 and with the base q . When held normally

by the springs s s' on the bearing r r' , the reflector stands at the proper angle to disclose the movements of persons at the rear of the car, while it may be swung in either one or the other of the pins r r' as a fulcrum and against the tension of one of the springs s s' into either of the two positions shown in Fig. 13 when meeting with an obstruction.

To permit the tilting of the reflector in a vertical plane to suit the slanting line of vision from the reflector down to the step of the vehicle—trolley-car, for example—at the opposite end of the vehicle the socket on the reflector-support, which embraces the standard m , may be made with a bore larger than the standard, as shown in Figs. 14 and 15, and may be tilted and held in its tilted position by means of set-screws t t' , arranged two on one side of the socket and one on the opposite side of the socket and intermediate of the two.

The forms which I have herein presented are some of many arrangements which may be resorted to for securing the reflector in position to disclose to the motorman the movement of passengers at the rear and at the same time permit it to be temporarily thrown out of its normal position without danger of damage or breakage when meeting with an obstruction. I do not, therefore, wish to limit myself strictly to the structure herein shown and described; but

What I claim is—

1. A reflector for vehicles comprising a reflector proper and springs for maintaining the reflector in its normal position with respect to the vehicle while permitting the reflector to be swung in each of two opposite directions out of its normal position under impact.

2. A reflector for vehicles comprising a reflector proper, a hinged support for connecting the reflector with the vehicle and a spring for maintaining the reflector and its support in the normal position with respect to the vehicle while permitting the reflector and its support to be swung out of normal position under impact.

3. A reflector for vehicles comprising a reflector proper, a support on the vehicle, a double-hinge connection intermediate of the reflector and its support and springs for holding the said hinges in position to maintain the reflector in its normal position while permitting it to be swung out of its normal position, substantially as set forth.

4. A reflector for vehicles comprising a reflector proper, means for supporting the reflector on the vehicle and springs for maintaining the reflector in its normal position while permitting it to be swung in each of two opposite directions out of normal position under impact, each spring being free to act at full strength to restore the reflector to its normal position.

5. A reflector for vehicles comprising a reflector proper, a hinged support for connect-

ing the reflector with the vehicle, a spring for
maintaining the reflector and its support in
normal position with respect to the vehicle
while permitting them to swing under impact,
5 the said reflector being provided with a yield-
ing cushion on the part exposed to impact.

In testimony that I claim the foregoing as

my invention I have signed my name, in pres-
ence of two witnesses, this 16th day of July,
1901.

HAROLD P. BROWN.

Witnesses:

FREDK. HAYNES,
B. B. SEWARD.