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No. 754,331.

PATENTED MAR. 8, 1904.

MANUEL ESPINOSA DE LOS MONTEROS.

WHEEL FENDER.

APPLICATION FILED DEC. 4, 1903.

NO MODEL.

Fig. 1.

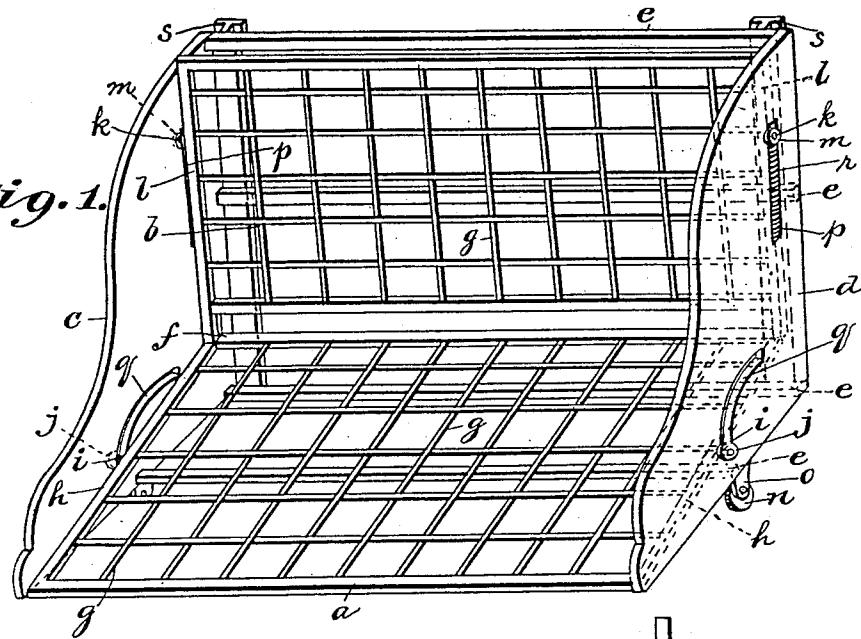


Fig. 3.

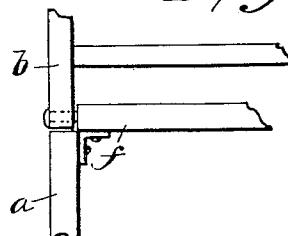
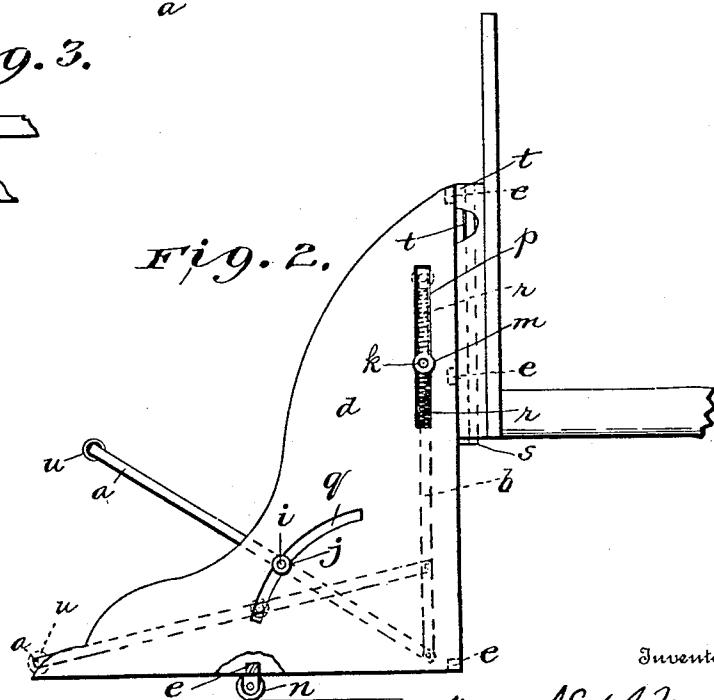


Fig. 2.



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## UNITED STATES PATENT OFFICE.

MANUEL ESPINOSA DE LOS MONTEROS, OF MEXICO, MEXICO.

## WHEEL-FENDER.

SPECIFICATION forming part of Letters Patent No. 754,331, dated March 8, 1904.

Application filed December 4, 1903. Serial No. 183,735. (No model.)

*To all whom it may concern:*

Be it known that I, MANUEL ESPINOSA DE LOS MONTEROS, a citizen of Mexico, residing at the city of Mexico, in the federal district of Mexico, in the Republic of Mexico, have invented new and useful Improvements in Wheel-Fenders, of which the following is a specification.

My invention relates to wheel-fenders adapted to be attached to the front of moving vehicles, more especially to electric cars; and its object is to provide a wheel-fender so constructed as to unfailingly pick up any obstruction in the way of the wheels and when so picked up to be sure to retain it upon the fender.

A further object is to provide a wheel-fender simple and cheap in construction and having few parts, yet strong and durable.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and to the accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment thereof is illustrated in the accompanying drawings, in which—

Figure 1 represents a view in perspective, showing the fender open for the reception of any obstacle. Fig. 2 represents a side elevational view showing the fender in both open and closed positions, and Fig. 3 is a detail view of the hinged connection between the two portions of the collector.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, it is seen that the fender is composed of two principal parts, a hinged collector, comprising a bottom *a* and back *b*, and an outside frame in which said collector is hung, comprising two side pieces *c* and *d* and rods *e*, which connect and brace said sides rigidly to allow for the proper working of the collector.

The bottom and back *a* and *b* of the collector are formed, preferably, of an outer framework of light steel; but said framework may be of any material which has the required strength and rigidity. They are preferably of a rectangular form, although any desired configuration may be used, the back *b* being so attached to the bottom *a* at each end of its inner edge *f* as to form a hinged joint and be capable of folding in toward the bottom under proper conditions. Within the framework on each of these parts is a lattice-work formed, preferably, of thin strips of sheet-iron *g*, which are interwoven one with another and are spaced such distances apart as may be deemed convenient or necessary. This lattice-work may also be formed of wire rope, or even hemp rope, tightly drawn, if so desired, the main object being to form a light and serviceable back or base for the collector. Securely attached to each of the side bars *h* of the bottom *a* at approximately their centers and projecting outwardly therefrom are axles or bearing-rods *i*, provided with an enlarged outer end *j*. These axles are preferably circular in section and formed of hard steel, although any convenient cross-section may be used, and they may be formed of any metal capable of standing considerable wear. A similar pair of bearing-rods *k* project from the side bars *l* of the back *b* toward the upper end thereof. Upon each of these four axles may be placed antifriction-rollers *m*, if so desired, although my fender will perform its work in an entirely satisfactory manner without such aid to its working parts. It is noted that by thus supporting the collector-section *a* and *b* at approximately the centers their outer ends are given a perfectly free and unobstructed movement.

The side pieces of the fender *c* and *d* are preferably formed of sheets of light steel, the connecting-braces *e* being of a similar material, although any suitable material may be used for these parts which is possessed of the required rigidity and strength. These braces are preferably four in number, two being placed at the back and two on the bottom, as shown. About the center of the bottom of each side piece depends a friction-wheel *n*, which rests in a drop-bearing *o* of ordinary

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construction. These wheels *n* are adapted to run on the ground or on the tracks in the case of electric cars, and thus prevent injury to the fender by striking the ground.

5 The closed sides *c* and *d* are approximately triangular in shape, as shown, and have cut in each of them two openings or slots, as follows: one straight vertical slot *p*, situated in the upper rear corner of the triangular plate, 10 and a second curved approximately horizontal slot *q* in the lower central portion of the triangular plate. When the collector is fitted between the side pieces, the axles or bearing- 15 rods *i* and *k* project, respectively, through the slots *q* and *p*, the enlarged ends of the axles being entirely on the outside of said side pieces and securely holding the collector therebetween. To the lower end of the slot *p* in each of the side pieces *c* and *d* is securely fastened the lower end of a strong spring *r*, preferably of spiral form, its upper end being also securely fastened to the axles *k*. Obviously 20 this spring may be fastened in any approved manner, and I do not wish to limit myself to the particular manner described. The tension 25 of this spring is such that it exactly supports the weight of the collector, its normal position therefore being extended.

The whole fender is fastened in some convenient manner to the front of the vehicle or car on which it is to be used. The means here shown are ordinary T-bars *s*, secured in a vertical position to the rear edge of each of the sides, these T-bars slipping down into 35 slots *t*, formed on the front of the vehicle or car, the fender being disconnected by raising the same vertically from out of the slots *t*.

The operation is as follows: The fender being in its normal position, as shown in Fig. 1, 40 an obstruction on the road is picked up by the bottom *a*, which, as shown, has a forward slant adapted to such work. This additional weight on the bottom of the collector over-balances the tension of the springs *r*, which 45 as they collapse draw the back *b* down the slots *p* after them. Owing to the hinged connection between the back *b* and bottom *a* and the free movement given to the outer ends thereof by their means of support, this downward movement of the back draws the bottom 50 rearwardly through the slots *q* and causes the front of the bottom to tilt up and assume a rearward slant, thus preventing the obstruction contained thereon from slipping off again, 55 the position assumed being shown in Fig. 2.

If so desired, the front of the bottom *a* may be covered with a rubber buffer *u* to break the force of the blow, this being especially desirable where human beings are liable to be 60 picked up by the fender.

Obviously my invention may be used in widely-varying forms and some features thereof may be used without others.

Therefore without limiting myself to the 65 construction shown and described nor enumer-

ating equivalents, I claim, and desire to obtain by Letters Patent, the following:

1. A wheel-fender comprising a frame provided with closed sides, a tilting collector within said frame, formed of two sections pivoted together and means in said sides for movably supporting each of said collector-sections, substantially as described. 70

2. A wheel-fender comprising a frame provided with closed sides, a tilting collector 75 within said frame, formed of two sections pivoted together and slots in said sides in which said collector-sections are movably supported, substantially as described.

3. A wheel-fender comprising a tilting collector formed of two sections pivoted together, each provided with bearings projecting from their sides, and side sections each provided with slots in which said bearings rest, whereby 80 said collector-sections are movably supported, substantially as described. 85

4. A wheel-fender comprising a tilting collector formed of two sections pivoted together, side sections adapted to movably support said collector-sections, and supporting means on 90 said collector-sections so arranged that the outer ends thereof have free movement, substantially as described. 95

5. A wheel-fender comprising a frame provided with closed sides, a tilting collector 95 within said frame, formed of two sections pivoted together, each provided with bearings projecting approximately centrally from their sides, and slots in said closed sides in which 100 said bearings rest, whereby said collector-sections are movably supported with their outer ends having free movement, substantially as described. 105

6. A wheel-fender comprising a frame provided with closed sides, a tilting collector 105 within said frame formed of two sections pivoted together, each provided with a pair of bearings projecting approximately centrally from their sides, two pairs of slots in said closed sides in which said bearings rest, whereby 110 said collector-sections are movably supported, and means carried by said closed sides adapted to maintain said collector normally in an untilted position, substantially as described. 115

7. A wheel-fender comprising a frame provided with side sections, a tilting collector within said frame formed of two sections pivoted together, slots in said side sections in which 120 said collector-sections are movably supported and springs in said sides adapted to maintain said collector normally in an untilted position, substantially as described.

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

MANUEL ESPINOSA DE LOS MONTEROS.

Witnesses:

AGUSTIN MONTES DE OCA,  
SAM E. DE LOS MONTEROS.