

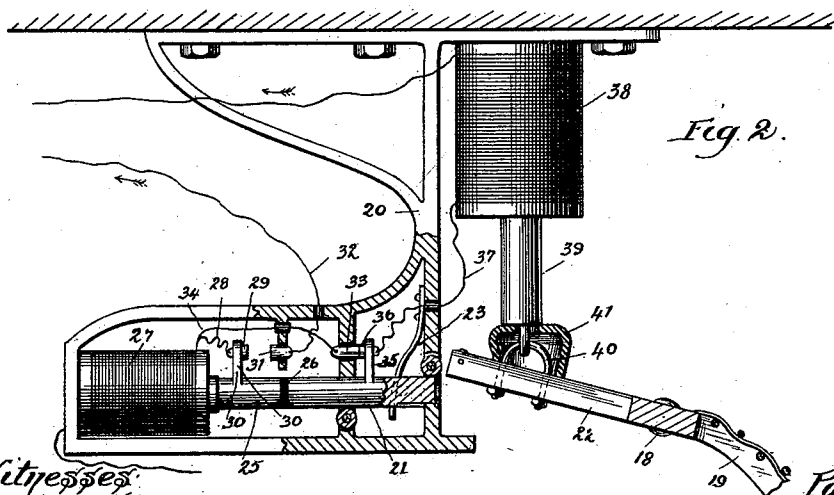
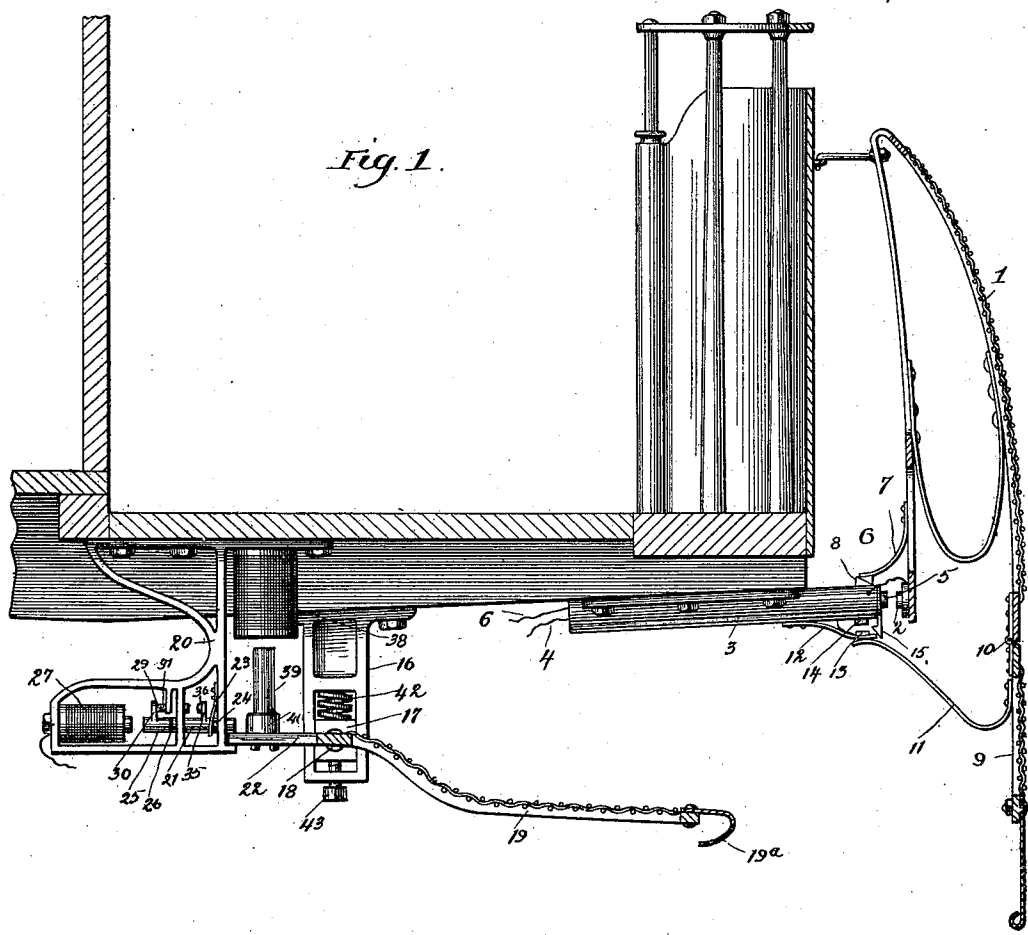
(No Model.)

2 Sheets—Sheet 1.

P. JONES.
CAR FENDER.

No. 578,104.

Patented Mar. 2, 1897.



Witnesses
H. B. Hallock.
J. S. Williamson

Inventor
Paul Jones
by Geo. H. Holgate
Attorney

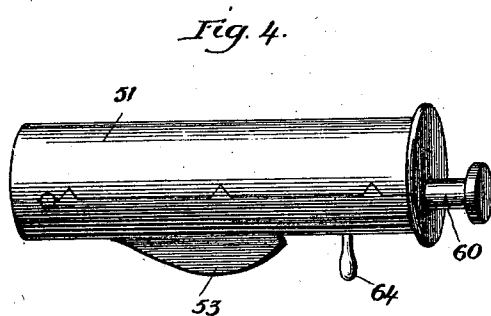
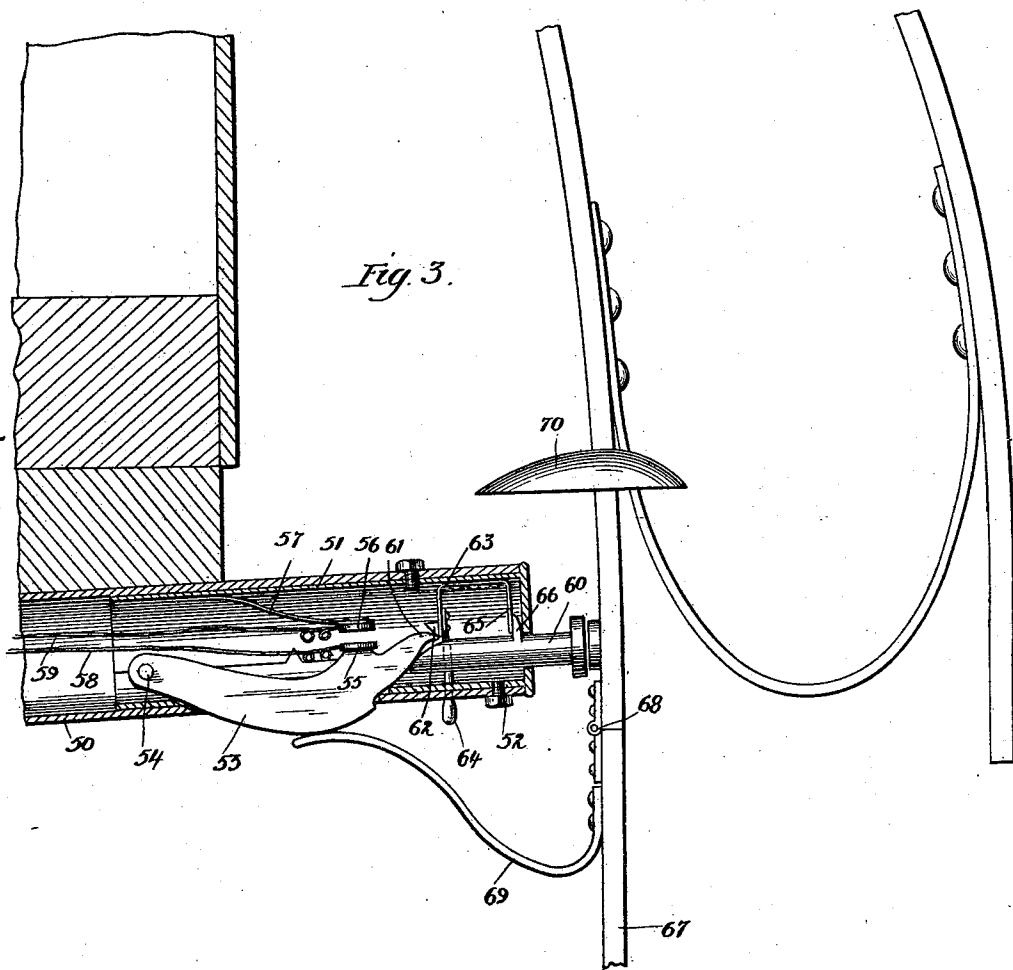
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UNITED STATES PATENT OFFICE.

PAUL JONES, OF CINCINNATI, OHIO.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 578,104, dated March 2, 1897.

Application filed July 15, 1896. Serial No. 599,267. (No model.)

To all whom it may concern:

Be it known that I, PAUL JONES, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

My invention relates to a new and useful improvement in car-fenders, and has for its object to arrange a scoop in front of the truck-wheels of a car and provide means for so controlling an electric circuit as to automatically bring said scoop into proper relative position to the road-bed over which the car is passing to pick up a person who may be run down by the car, and also to provide means for holding said scoop in positive contact with the ground when once brought into position, so as to preclude the possibility of its riding over the person. The difficulty which has heretofore been attendant upon the use of scoops of all descriptions applied to the front of a car for the purposes of a fender has been that when said scoop was supposed to be in its operative position the oscillations of the car caused the outer end of the scoop to swing vertically to such an extent as to render it next to useless. In overcoming this difficulty my invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a section of a portion of a car having my improvement applied thereto, and Fig. 2 an enlarged detail section of the mechanism for bringing the scoop into operative position and retaining it in said position; Fig. 3, a slight modification of the arrangement of the contact-points and their actuating mechanism, and Fig. 4 a detail perspective of the casing adapted to carry these points and fit within the housing.

In carrying out my invention I arrange a buffer-frame 1 at the front of the car by at-

taching the same to the dashboard of the car in any convenient manner, and the rear portion of this frame is provided with contact-points 2, (but one of which is shown,) and upon the underside of the platform are bolted housing-tubes 3, through which pass the wires 4, the outer ends being connected to the contact-points 5, carried by said tubes, and the wires 6, also passing through said tubes, are connected to the contact-points 2, so that when the buffer-frame is forced inward by an obstruction these contact-points are brought into conjunction with each other, so as to cause a current to pass through the circuit.

I will not here enter into a detailed description of the buffer-frame, as its construction may be of any design adapted for use in connection with my present improvement, and this construction forms no part of my present invention.

When the contact-points 2 have been forced against the contact-points 5, it is essential that they be there held in order that the circuit may remain closed for the purpose hereinafter set forth, and this I accomplish by providing latch-springs 7, the noses of which are adapted to engage with the lugs 8 upon the outer ends of the tubes when the buffer-frame is forced inward, thereby preventing the outward movements of said frame. A shield 9 is hinged at 10 to the outer end of the buffer-frame, so as to have an inward swinging movement, and this shield may be held from being swung inward by the oscillations of the car by any suitable springs. (Not shown.)

A plate-spring 11 is secured to the edge of the shield and is bent inward and upward, so as to bear upon the under side of the contact-spring 12, the latter having a contact-point 13 near its outer end, so that when the shield is swung inward by a sufficient force the spring 11 will force the spring 12 upward and bring the point 13 into contact with the point 14, which is carried by the tube 3, it being understood that there is a contact-point 14 and a spring 12 upon each of the tubes 3, which latter are two in number, one upon each side of the car.

When the spring 12 is swung upward, its outer end will be engaged by the spring-latch

15, whereby the points 13 and 14 will be held in contact, so as to maintain a closed circuit in the same manner as that described in connection with the points 2 and 5, and for the same purpose.

From the under side of the platform depend two hangers 16, (but one of which is shown,) and in each of these hangers is arranged a box 17, the latter having journaled therein the trunnions 18, which serve to support the scoop 19 in such manner that said scoop may swing vertically. The outer end of this scoop is provided with a sheet-metal shoe 19^a, preferably of steel, and so bent as to readily ride over the road-bed when in contact therewith, thereby preventing injury to the outer end of the scoop. A metal frame 20 is bolted to the under side of the platform and projects downward, being so formed as to act as a housing for the trip mechanism, which latter consists of a rod 21, guided in suitable bearings in said frame and having its outer end projecting beyond said frame and within the field of movement of the extension 22, formed with the scoop, so that when said extension is in the position shown in Fig. 1 it will be there locked by said rod, thus holding the outer end of the scoop in an elevated position above the road-bed. The rod 21 is normally held forward by the spring 23, the free end of which bears against the point 24, projecting from said rod.

The inner end of the rod 21 has secured thereto the armature 25, which latter is insulated from the rod by the disk 26, located therebetween, and the inner end of this armature is within the magnetic field of the electromagnet 27, the latter being supported within the frame 20. The loop-circuit which includes the contact-points 2 and 5 and 13 and 14 also includes the magnet 27, by which arrangement, when said circuit is closed by the inward movement of the buffer-frame, the magnet is vitalized, thus attracting its armature 25, which will withdraw the rod 21 from engagement with the extension 22, whereby the scoop will be free to swing downward.

The circuit which includes the magnet 27 passes over the wire 28, which is connected to the contact-point 29, carried by a lug 30, formed upon the armature, and when said armature is in the position shown in Fig. 1 this point is in contact with the point 31, from which leads the wire 32 to the motor-circuit, so that it will be seen that when the armature is attracted by its magnet and the point 29 drawn out of contact with the point 31, as shown in Fig. 2, the loop formed by the wire 32 will be opened, and in order that the passage of the current through the magnet 27 may not be interrupted I provide a contact-point 33, which is connected by the wire 34 to said magnet, and form upon the rod 21 a lug 35, which carries a point 36, from which

latter leads the wire 37 to the solenoid 38. Therefore when the armature is drawn forward, as before described, separating the points 29 and 31, this same movement will bring the points 33 and 36 into contact, thus maintaining the uninterrupted flow of the current through the magnet 27 over the wire 34. The solenoid 38 is secured to an extension of the frame or in any other suitable manner to the under side of the car, and the core 39, adapted to be attracted within said solenoid, is loosely connected to the extension 22 by a staple 40, as clearly shown in Fig. 2, and said core is normally held in a vertical position by a rubber plug 41, which latter will permit the necessary movements of the core when drawn within the solenoid, as will be readily understood.

From this description the operation of my improvement will be obviously as follows: Should a person be struck by the buffer-frame or the shield depending therefrom, the circuits in which the magnets are included would be closed, as before described, and maintained so closed by the engagement of either the latch 6 with the lug 8 or the spring 12 with the latch 15, thereby vitalizing first the magnet 27, which would immediately attract its armature, causing the rod 21 to release the extension 22 of the scoop, and at the same time breaking the loop-circuit by the separation of the points 29 and 31 and closing the loop-circuit in which the solenoid is included by bringing together the points 33 and 36, with the obvious result of energizing said solenoid. When the solenoid is thus vitalized, it will attract the core 39, drawing it within the bobbin, thereby elevating the extension 22 and depressing the outer end of the scoop, so as to bring the shoe 19^a into contact with the road-bed. Now as the contact-points 2 and 5 or 13 and 14, as the case may be, are held in contact after once closing the circuit it is obvious that both the magnet 27 and the solenoid will remain vitalized, whereby the magnet will retain its armature in the retracted position and the solenoid its core in the elevated position, thus firmly holding the outer end of the scoop in contact with the road-bed with sufficient force to overcome the tendency of said scoop to swing upward by the oscillations of the car. By the outer end of the scoop being thus held in contact with the road-bed it is obvious that it will scoop up a person with which it comes in contact without the possibility of failure, which is of the greatest importance in a life-saving device, as the failure of the scoop to properly work would result in the certain death of the person run down by the car.

One of the principal features of my present improvement is that the scoop is both released and brought into position by the operations of an electric current, which, as is well known, will perform its functions in an infinitely

short space of time, and as the car running at a high rate of speed traverses a considerable distance even in the fraction of a second the necessity of a quick-operating scoop is evident.

In practice the boxes 17 may be made adjustable by the interposition of the springs 42 between said boxes and one wall of the housing in which they slide and the bolts 43, the latter being threaded through the lower portion of the housing, so that their ends bear against said boxes to force them upward against the action of the springs.

In the modification shown in Figs. 3 and 4 I have illustrated means for utilizing but two contact-points, which are adapted to be closed by the rearward thrust of the buffer-frame or the swinging of the shield, and the construction of this modification is as follows: The housing 50, which is located in all respects in the same manner as the housing 3, has a casing 51 fitted therein, which latter is preferably made in two halves by casting or otherwise, and so arranged that when slipped within the housing the halves will be held together and the bolts 52 serve to prevent the withdrawal of this casing. A lever 53 is pivoted at 54 within the casing and carries a contact-point 55, adapted to work in conjunction with the contact-point 56, the latter being upon the spring 57 to prevent injury to said contact-points. The wires 58 and 59 lead to and from the contact-points for the purpose described in connection with the wires 4 and 6. A buffer-pin 60 is passed through the head of the casing and has its inner beveled end arranged in contact with the beveled end of the lever 53, so that when said point is forced upward this lever will be elevated, thereby bringing the contact-point 55 into contact with the point 56, thus closing the circuit and causing the scoop to operate, as before described.

When the lever 53 has been forced upward, as just described, the toe 61 thereon will enter into engagement with the latch 62, carried by a spring 63, thereby holding said lever in its elevated position, which will retain the point in contact until said lever has been released by the manipulation of the shield 64, the disengagement of the latch 62 from the toe 61, as will be readily understood. The buffer-pin will be retained to its normal position when the buffer-frame releases its pressure thereon by the spring 65, which presses against the lug 66, formed upon said point. In this construction the shield 67 is hinged at 68 to the buffer-frame and carries the spring-arm 69, the inner end of which presses against the under side of the lever 53, which projects through the casing, and the housing is clearly shown by this arrangement. When the shield is sprung rearward, the arm 69 will press the lever upward, bringing about the same result as though said lever were forced upward by the buffer-pin 60. Undersome circumstances

this construction is advocated in that there are fewer contact-points and comparatively less liability of disengagement of the mechanism by the accumulation of dust or snow, and in order that the buffer-pin may be further protected from such accumulation a shield 70 is secured to the buffer-frame immediately upon the protruding end of the buffer-pin.

Having thus fully described my invention, what I claim as new and useful is—

1. A car-fender consisting of a scoop so pivoted as to guard the truck-wheels of the car, means for holding said scoop in its elevated position, a magnet for releasing said scoop, a solenoid for depressing the outer end of the scoop and means for closing the circuit in which said magnet and solenoid are included, as specified.

2. A car-fender consisting of a scoop pivoted to the car, a latch-rod for holding said scoop in its elevated position, a magnet for withdrawing said rod from engagement with the scoop, a core carried by the scoop, a solenoid adapted to attract said core and means for closing the circuit in which said magnet and solenoid are included, as shown and described.

3. In a car-fender, the combination of a scoop pivoted to the car, a latch-rod for holding said scoop in its elevated position, an armature carried by said rod, a magnet for attracting said armature, a core loosely mounted upon an extension of the scoop, a compressible plug for holding said core normally in its proper relative position to said extension, a solenoid arranged to attract said core, and a buffer-frame adapted to close the circuit in which said magnet and solenoid are included when coming in contact with an obstruction, as shown and described.

4. In a car-fender, the combination of a buffer-frame, carrying contact-points, contact-points located upon the car, means for holding the contact-points upon said buffer-frame against the contact-points upon the car when said frame comes in contact with an obstruction, a circuit in which said contact-points are located, a magnet also located in said circuit, an armature arranged within the magnetic field of said magnet, a point carried by said armature, a rod connected to but insulated from said armature, a point carried by said rod, points 31 and 33, arranged to act in conjunction with the points carried by the armature and rod respectively, a solenoid adapted to be energized when the armature has been attracted by its magnet, a core arranged to be drawn within the solenoid, a scoop pivoted to the under side of the car having an extension to which the core is loosely attached and a compressible plug adapted to hold said core in its proper relative position to said extension, substantially as and for the purposes set forth.

5. In combination with the scoop of a car-

fender of the character described, a lever 53, carrying a contact-point 56, carried by a swing, a buffer-pin 60, arranged to force said lever upward, an arm 69, carried by a depending shield, also adapted to force said lever upward, and a latch for retaining the points in contact as specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

PAUL JONES.

Witnesses:

S. S. WILLIAMSON,
JAS. S. MYERS.