No. 845,110. PATENTED FEB. 26, 1907.

W. T. McLAUGHLIN.

CAR FENDER.

APPLICATION FILED NOV. 16, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

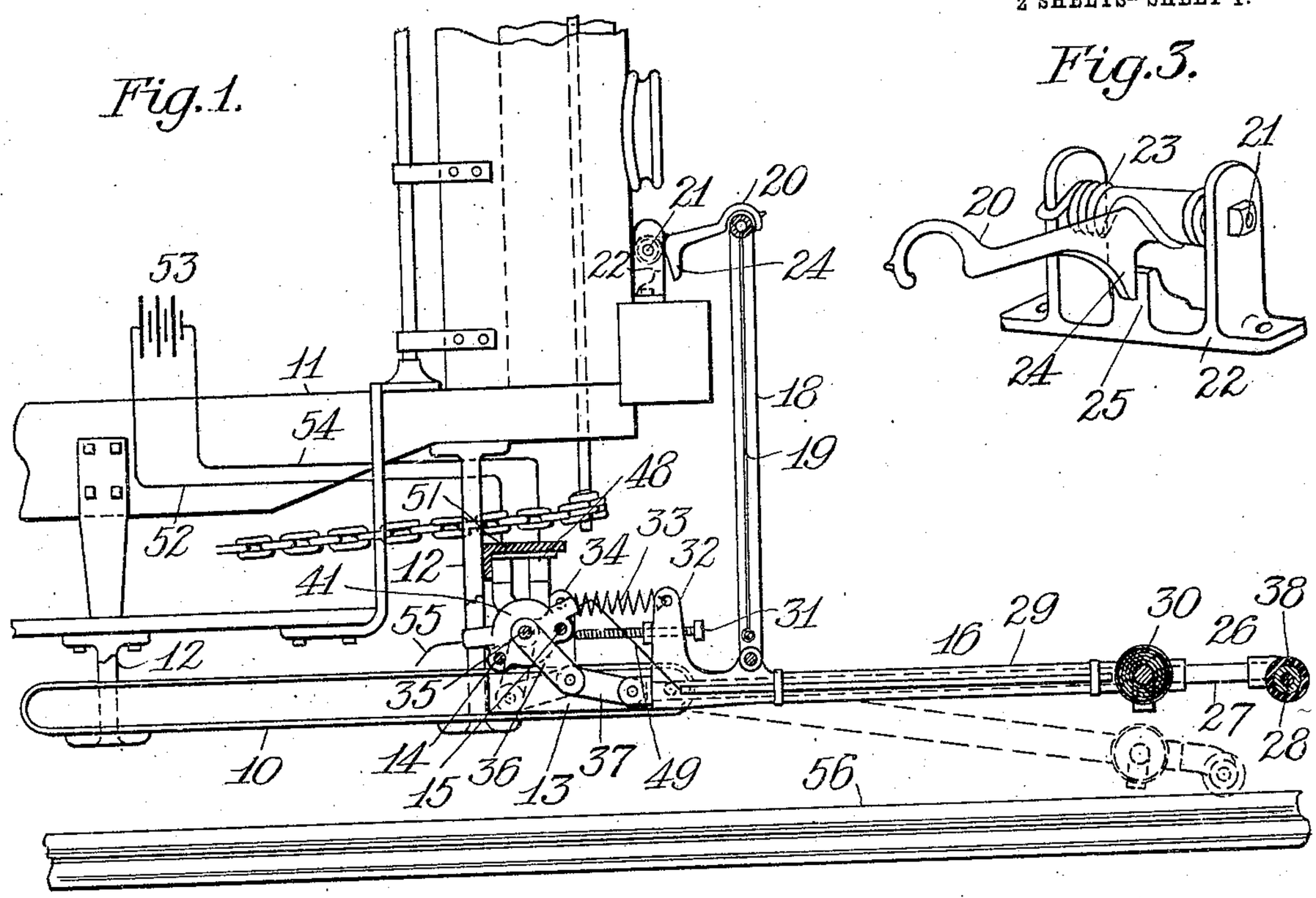


Fig. 3.

Fig. 2.

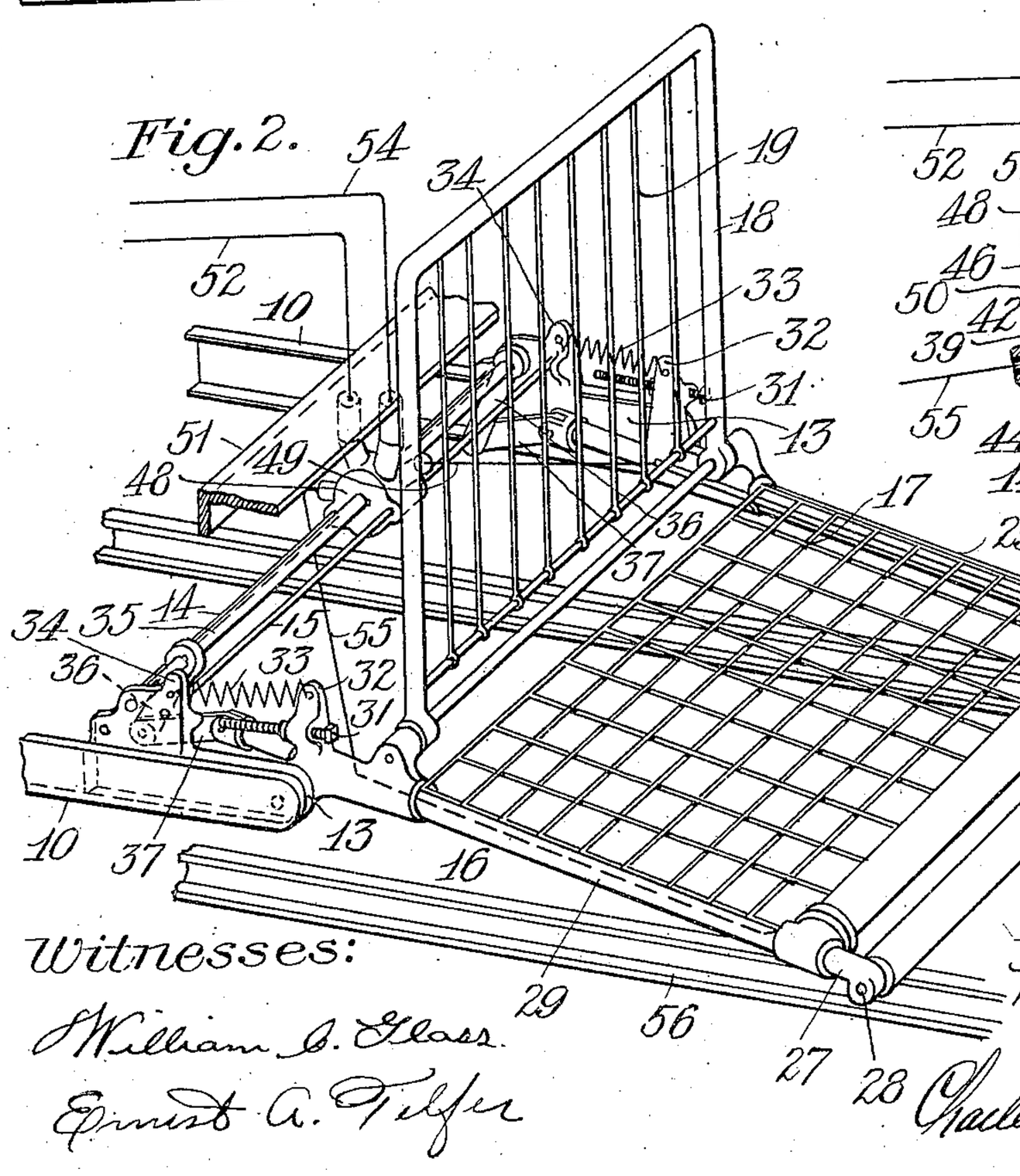
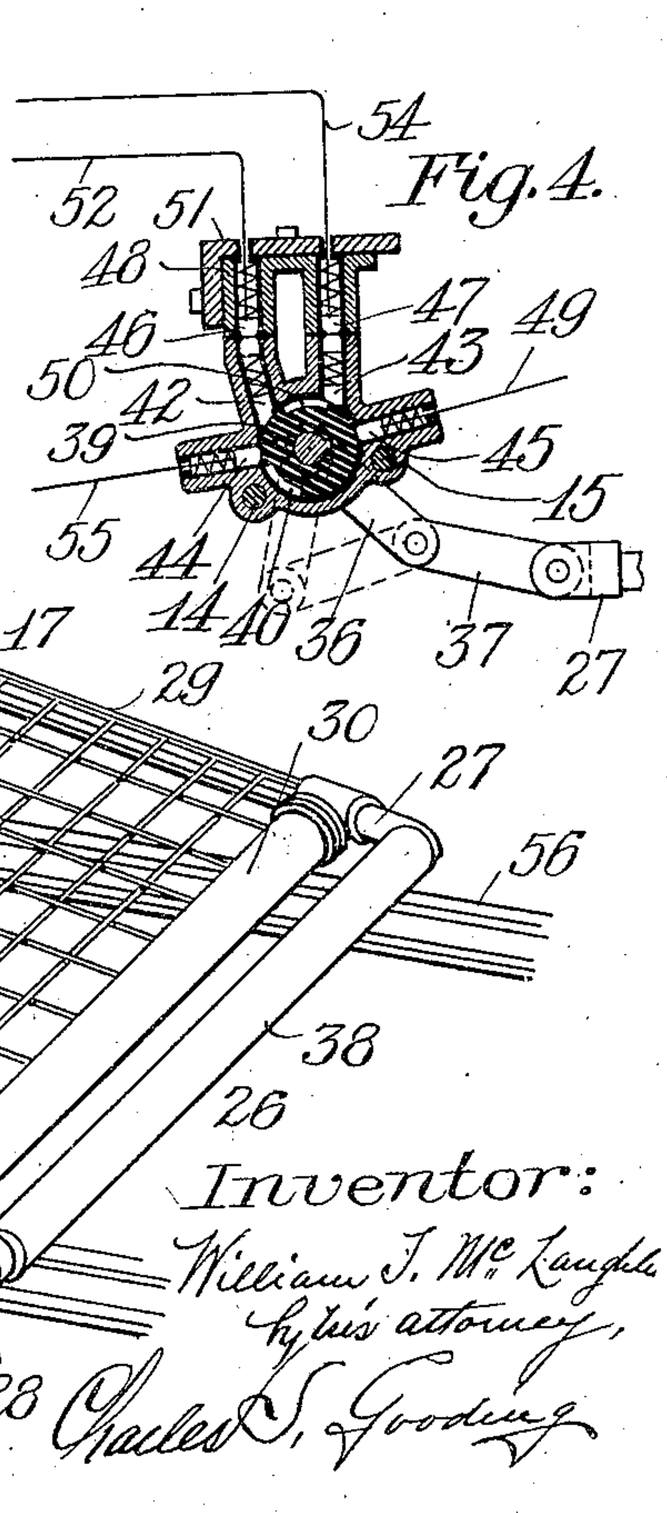


Fig. 4.



Witnesses:

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Ernest A. Tilfer

Inventor:

William J. McLaughlin

by his attorney,

Charles S. Gooding

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2 SHEETS—SHEET 2.

Fig. 5.

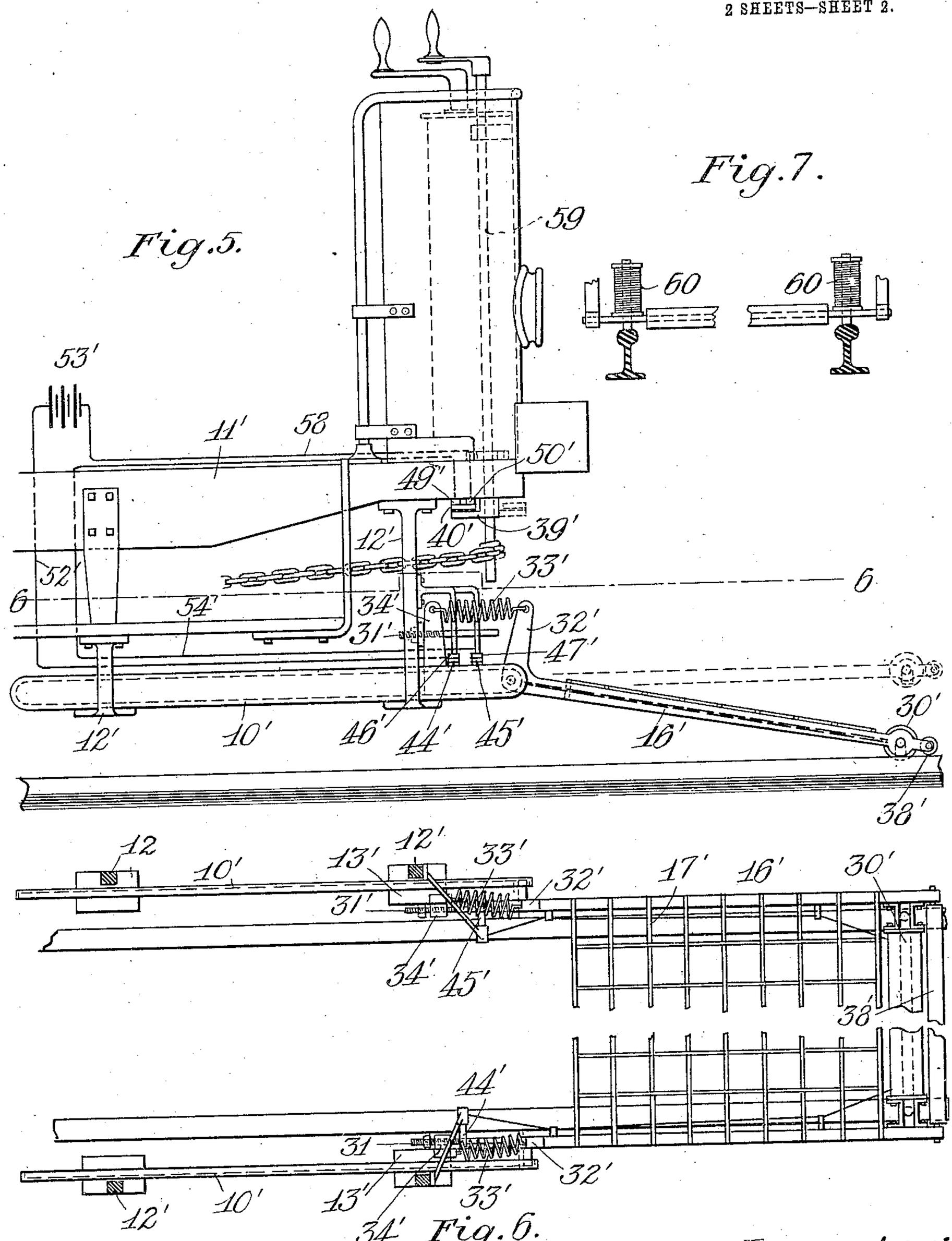

Fig. 7.

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM T. McLAUGHLIN, OF JAMAICA PLAIN, MASSACHUSETTS.

CAR-FENDER.

No. 845,110. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed November 16, 1906. Serial No. 343,717.

To all whom it may concern:

Be it known that I, WILLIAM T. McLAUGHLIN, a citizen of the United States, residing at Jamaica Plain, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Car-Fenders, of which the following is a specification.

This invention relates to improvements in car-fenders of that type in which there is a pivoted fender-body which is normally held raised and which may be actuated so as to contact with the ground; and the object is to provide a fender of the character described which shall be instantaneous in operation and which may be operated either automatically or may be manually controlled.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a side elevation, partly in section, of my improved fender as applied to a car, said car being broken away and the electric wiring of the fender being shown diagrammatically. Fig. 2 is a perspective view of the fender, partly broken away. Fig. 3 is an enlarged detail perspective view of the latch for retaining the vertical frame in its normally raised position. Fig. 4 is an enlarged detail vertical section, partly in elevation, of the switch, the stationary terminals, and part of the mechanism which operates said switch. Fig. 5 is a side elevation of a modified form of my fender as applied to a car, said car being broken away to save space in the drawings. Fig. 6 is a plan section, partly broken away, taken on line 6 6 of Fig. 5. Fig. 7 is a front elevation showing a modified form of magnets, the rails being shown in section.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, referring now to Figs. 1 to 4, inclusive, 10 10 are guides or ways channel-shaped in cross-section, each being mounted on a car 11 by means of brackets 12 12. Two blocks 13 13 are slidably mounted in the guides 10 10, said blocks being rigidly connected by rods 14 and 15, the opposite ends of which terminate in said blocks, respectively. A fender body or frame 16 is pivotally mounted on the blocks 13 13 with its axis extending transversely of the car 11. A suitable netting 17 is stretched across the frame 16. A second frame 18, provided with a suitable netting 19, is pivotally mounted on the frame 16 and is adapted to be normally held in a substantially vertical position, as shown in Figs. 1 and 2, by means of a latch 20, said latch being pivoted at 21 to a bracket 22, said bracket being fast to the car 11. A torsional spring 23 is adapted to normally hold the latch 20 in engagement with the upper cross-bar of the frame 18. A stop 24, formed on the latch 20, is adapted to engage a stop 25, formed on the bracket 22, when the frame 18 is withdrawn from engagement with the latch 20. As the frame 16 is rocked on its pivots the latch 20 is adapted to rock on its pivot 21 and the spring 23 is adapted to hold said latch in engagement with the frame 18 during such time. A slidable member 26, comprising two side rods 27 27 and a rod 28, connecting said side rods at their front ends, is slidably mounted on the fender body or frame 16, said rods 27 being slidably arranged in tubes 29 29, forming the side members of the frame 16. The tubes 29 29 are connected at their front ends by an electromagnet 30. Two stop-screws 31, adjustably mounted on opposite sides of the frame 16, are adapted to limit the upward movement of said frame, said screws having screw-threaded engagement with ears 32 32, formed on said frame. Two springs 33 33 are fast at one pair of ends to the ears 32 32 and at the other pair of ends to two ears 34 34, formed on the blocks 13 13, said springs being adapted to hold the frame 16 in its normally raised position, as shown in full lines, Fig. 1. A rock-shaft 35, journaled in suitable bearings in the blocks 13 13, has fast thereto two arms 36 36, which are connected to the rods 27 27 by links 37 37. A roll 38, preferably formed of soft iron covered with rubber, is journaled on the rod 28. A commutator 39, formed of insulating material, is fast to the rock-shaft 35 and has mounted thereon two segmental contact-plates 40 and 50. When the roll 38 is moved toward and away from the electromagnet 30, a rocking movement is imparted to the shaft 35, and therefore to the commutator 39, fast to said shaft. Said shaft also acts to prevent cramping of the slidable member 26 in case of pressure being applied to one end only of the roll 38. A casing 41, mounted on the rods 14 and 15, incloses the commutator 39. Two terminals 42 and 43 are mounted in the

casing 41 and are insulated therefrom. Two other terminals 44 and 45 are also mounted in the casing 41 and insulated therefrom. Two terminals 46 and 47 are mounted in a casing 48 and insulated therefrom, and said casing is mounted on a cross member 51, said cross member being supported at its opposite ends on two of the brackets 12 12. The terminal 46 is connected by a wire 52 to one of the terminals of a source of electrical current 53, and the other terminal of said source of electrical current is connected by a wire 54 to the terminal 47. The terminal 44 is connected by a wire 55 to one end of the electromagnet 30, and the other end of said electromagnet is connected by a wire 49 to the terminal 45. When the contact-plate 40 is in contact with the terminals 42 and 44 and the contact-plate 50 is in contact with the terminals 43 and 45, said contact-plates are adapted to complete a circuit from the source of electrical current 53 to the electromagnet 30, thereby energizing said electromagnet.

The operation of the form of my invention hereinbefore specifically described is as follows: Assuming that the parts occupy the position shown in full lines, Fig. 1, and that the car 11 is moving toward the right, if a person is standing on the track in front of the car the roll 38 strikes the person, and the slidable member 26 is held stationary by contact with said person, while the car 11 continues to advance, thereby causing the frame 16 to advance toward the roll 38. The contact-plates 40 and 50 are so arranged as to instantly complete the circuit to the electromagnet 30 as soon as the person has been struck by the roll 38. The magnet 30 thereupon being energized attracts the roll 38 toward it with an instantaneous movement, and at the same time said magnet is itself instantly drawn by its magnetism toward the rails 56 56, the springs 33 33 yielding, and thereby permitting the roll 38 to roll along the ground or the rails 56 56, as shown in dotted lines, Fig. 1. Consequently the person falls onto the upper side of the frame 16 onto the netting 17 and is prevented from striking the car itself by the netting19, which acts as a cushion. When it is desired to push the fender beneath the car 11 when it is out of use, the latch 20 may be lifted out of engagement with the frame 18, and said frame may then be folded down onto the frame 16. The frames 16 and 18 may then be pushed toward the left, the blocks 13 13 sliding in the guides 10 10. As this is being done the terminals 42 and 43 of course move out of contact with the terminals 46 and 47, respectively, thus completely disconnecting the circuit.

Referring now to Figs. 5 and 6, showing a modified form of my fender, 10′ 10′ are two guides or ways supported on the car 11′ by means of brackets 12′ 12′. Two blocks 13′ 13′, slidably arranged in the guides 10′ 10′, are provided with ears 34′ 34′. A frame 16′, having a suitable netting 17′ stretched thereacross, is pivotally mounted on the blocks 13′ 13′ and is adapted to be normally held in the position shown in dotted lines, Fig. 5, by two springs 33′ 33′, said springs being fast at one pair of ends to two ears 34′ 34′ and at the other pair of ends to two ears 32′ 32′, formed on the frame 16′. Two stop-screws 31′ 31′, having screw-threaded engagement with the ears 34′ 34′, are adjustable with relation to said ears. Said stop-screws are adapted to limit the upward movement of the frame 16′ and may be adjusted to determine the normal position of the frame 16′. An electromagnet 30′, fast to the frame 16′ at its front end, is connected by suitable wiring to two contact-plates 44′ and 45′, supported on the blocks 13′ 13′, respectively. Two stationary contact-plates 46′ and 47′, mounted on the brackets 12′ 12′, are adapted to contact with the contact-plates 44′ and 45′, respectively. The contact-plate 46′ is connected by wire 52′ to one of the terminals of a suitable source of electrical current 53′. The contact-plate 47′ is connected by a wire 54′ to the contact-plate 49′. A second contact-plate 50′ is connected by a wire 58 to the second terminal of the source of current 53′. A contact-plate 40′ is mounted on an arm 39′ and is insulated therefrom. The arm 39′ is last to a rotary brake-shaft 59, said brake-shaft being the means for actuating the usual brakes of the car. A roll 38′ is journaled on the frame 16′ at its front end.

The operation of the modified form of my fender above described is as follows: Assuming the car 11′ to be moving toward the right with the frame 16′ raised, as shown in dotted lines, Fig. 5, if the motorman sees a person on the track he applies the brakes of the car by rotating the brake-shaft 59, thereby bringing the contact-plate 40′ into contact with the contact-plates 46′ and 47′, thus completing the circuit to the electromagnet 30′, thus energizing said magnet and causing said magnet and the frame 16′, to which it is fast, to be drawn downwardly against the tension of the springs 33′ 33′ to the position shown in full lines, Fig. 5. The roll 38′ rolls along the ground and striking the person causes said person to fall upon the netting 17′, and said person is thereby prevented from being run over by the car. When the fender is not in use, it may be pushed back beneath the car 11′, the blocks 13′ 13′ sliding in the guides 10′ 10′.

In Fig. 7 I have shown the modified form of magnet arrangement in which two magnets 60 60 are substituted for the single magnet 30′, said magnets 60 60 being arranged vertically.

Having thus described my invention, what

I claim, and desire by Letters Patent to secure, is—

1. The combination with a car of a fender mounted thereon and movable relatively thereto, an electromagnet mounted on said fender, an electric switch in circuit with said electromagnet, and a source of electrical current in circuit with said electromagnet and said switch.

2. The combination with a car of a fender comprising in its construction a member movable relatively to said car, an electromagnet mounted on said member, a second member movable relatively to said first member, an electric switch in circuit with said electromagnet, and a source of electrical current in circuit with said electromagnet and switch, said second member being operatively connected to said switch.

3. The combination with a car of a fender comprising a member pivotally mounted thereon with its axis extending transversely thereof, a second member slidably mounted on said pivoted member, an electromagnet mounted on said pivoted member, an electric switch in circuit with said electromagnet, said switch being operatively connected to said second member, a source of electrical current in circuit with said switch and said electromagnet, and means to hold said pivoted member normally raised.

4. The combination with a car of a fender comprising a member pivotally mounted thereon with its axis extending transversely thereof, a second member slidably mounted on said pivoted member, an electromagnet mounted on said pivoted member, an electric switch in circuit with said electromagnet, said switch being operatively connected to said second member, a source of electrical current in circuit with said switch and said electromagnet, means to hold said pivoted member normally raised, and a stop adapted to limit the upward movement of said pivoted member.

5. The combination with a car of a fender comprising a member pivotally mounted thereon with its axis extending transversely thereof, a second member slidably mounted on said pivoted member, an electromagnet mounted on said pivoted member, an electric switch in circuit with said electromagnet, said switch being operatively connected to said second member, a source of electrical current in circuit with said switch and said electromagnet, means to hold said pivoted member normally raised, and an adjustable stop adapted to limit the upward movement of said pivoted member.

6. The combination with a car of a fender comprising in its construction a horizontally-pivoted member arranged with its axis extending transversely of said car, means to normally hold said member in a raised position, an electromagnet mounted on said member, a source of electrical current in circuit with said electromagnet, and a switch in circuit with said electromagnet and said source of electrical current.

7. The combination with a car of a fender comprising in its construction a horizontally-pivoted member arranged with its axis extending transversely of said car, means to normally hold said member in a raised position, a stop adapted to limit the upward movement of said member, an electromagnet mounted on said member, a source of electrical current in circuit with said electromagnet, and a switch in circuit with said electromagnet and said source of electrical current.

8. The combination with a car of a fender comprising in its construction two guides mounted on said car, two blocks slidably arranged in said guides, respectively, a member pivotally mounted on said blocks, an electromagnet mounted on said member, a source of electrical current in circuit with said electromagnet, and a switch in circuit with said electromagnet and said source of electrical current.

9. The combination with a car of a fender comprising a pivoted member slidably arranged with relation to said car, said member being provided with a suitable netting, a second member pivotally mounted on said first member with its axis extending transversely of said car, said second member being provided with a suitable netting, a latch pivotally mounted on said car, said latch adapted to hold said second member in a substantially vertical position, and a spring adapted to normally hold said latch in engagement with said second member when said pivoted member is rocked on its pivot.

10. A car-fender comprising in its construction two guides, two blocks slidably mounted in said guides, respectively, a member pivotally mounted on said blocks, a rock-shaft journaled on said blocks, a slidable member mounted on said pivoted member, a pair of arms fast to said rock-shaft, a pair of links operatively connecting said arms to said slidable member, an electromagnet mounted on said pivoted member, an electric switch adapted to complete a circuit to said electromagnet, said switch adapted to be actuated by said rock-shaft, and means for holding said pivoted member normally raised.

11. A car-fender comprising in its construction two guides, two blocks slidably mounted in said guides, respectively, a member pivotally mounted on said blocks, a rock-shaft journaled on said blocks, a member slidably mounted on said pivoted member, a pair of arms fast to said rock-shaft, a pair of links operatively connecting said arms to said slidable member, an electromagnet mounted on said pivoted member, a casing supported on said blocks, two terminals

mounted in said casing and insulated therefrom, a commutator fast to said rock-shaft, a segmental contact-plate mounted on said commutator adapted to contact with said terminals, and means for holding said pivoted member normally raised.

12. A car-fender comprising in its construction two guides, two blocks slidably mounted in said guides, respectively, a member pivotally mounted on said blocks, a rock-shaft journaled on said blocks, a member slidably mounted on said pivoted member, a pair of arms fast to said rock-shaft, a pair of links operatively connecting said arms to said slidable member, an electromagnet mounted on said pivoted member, a casing supported on said blocks, two terminals mounted in said casing and insulated therefrom, a commutator fast to said rock-shaft, a segmental contact-plate mounted on said commutator adapted to contact with said terminals, means for holding said pivoted member normally raised, and a stop adapted to limit the upward movement of said pivoted member.

13. The combination with a car of a fender-body movable relatively thereto, electromagnetic means for actuating said fender-body, an electric switch, a source of electrical current in circuit with said electromagnetic means and said switch, and a member movable toward and away from said fender-body, said member adapted to actuate said switch.

14. A car-fender comprising in its construction two guides, two blocks slidably mounted in said guides, respectively, a member pivotally mounted on said blocks, a rock-shaft journaled on said blocks, a slidable member mounted on said pivoted member, a pair of arms fast to said rock-shaft, a pair of links operatively connecting said arms to said slidable member, electromagnetic means for actuating said pivoted member, and an electric switch adapted to complete a circuit to said electromagnetic means, said switch being adapted to be actuated by said rock-shaft.

15. A car-fender comprising in its construction two guides, two blocks slidably mounted in said guides, respectively, a member pivotally mounted on said blocks, a rock-shaft journaled on said blocks, a slidable member mounted on said pivoted member, a pair of arms fast to said rock-shaft, a pair of links operatively connecting said arms to said slidable member, and means for holding said pivoted member normally raised.

16. A car-fender comprising in its construction two guides, two blocks slidably mounted in said guides, respectively, a member pivoted on said blocks, a rock-shaft journaled on said blocks, a member slidably mounted on said pivoted member, a pair of arms fast to said rock-shaft, a pair of links operatively connecting said arms to said slidable member, an electromagnet adapted to actuate said pivoted member, a casing supported on said blocks, two terminals mounted in said casing and insulated therefrom, a commutator fast to said rock-shaft located within said casing, a segmental contact-plate mounted on said commutator adapted to contact with said terminals, and means for holding said pivoted member normally raised.

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

WILLIAM T. McLAUGHLIN.

Witnesses:
LOUIS A. JONES,
ANNIE J. DAILEY.