No. 768,277. PATENTED AUG. 23, 1904.

W. L. GREEN.

FENDER FOR CARS OR OTHER VEHICLES.

APPLICATION FILED JAN. 26, 1904.

NO MODEL. 3 SHEETS—SHEET 1.

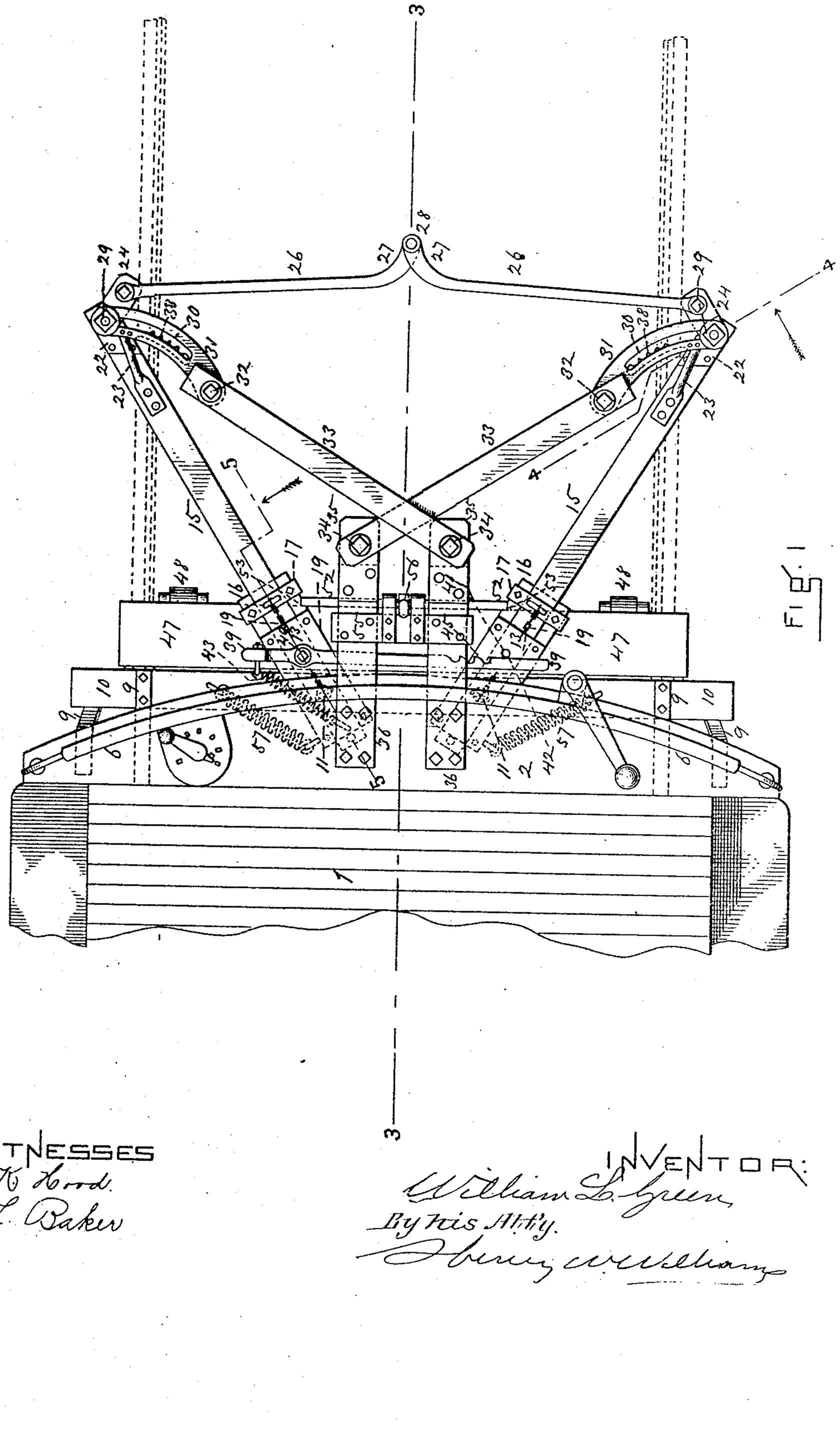

FIG. 1

WITNESSES
A. K. Hood.
E. L. Baker

INVENTOR:
William L. Green
By his Att'y.
Henry C. Williams

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NO MODEL. 3 SHEETS—SHEET 2.

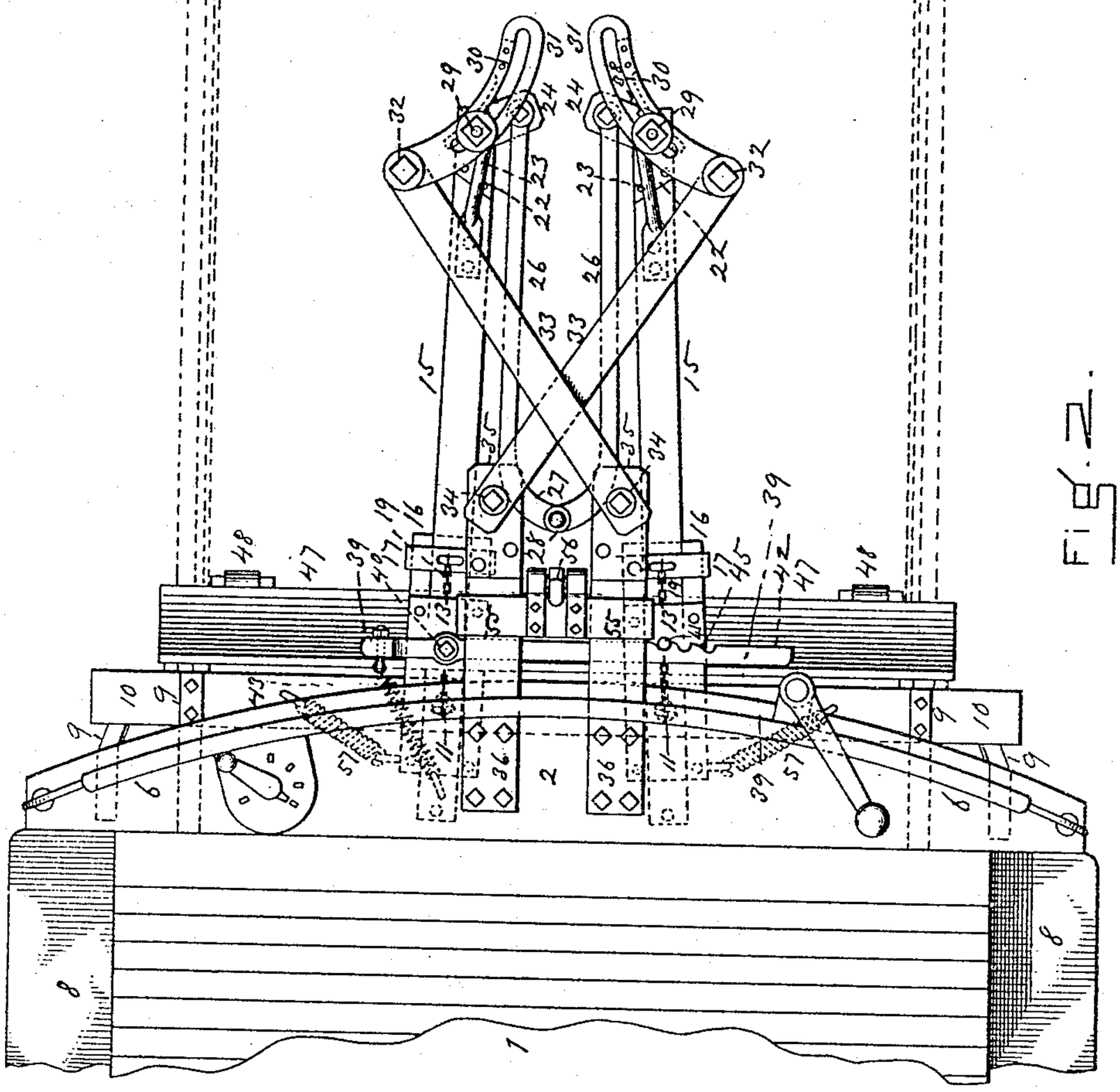

Fig. 2.

WITNESSES:
A. K. Hood.
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INVENTOR:
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NO MODEL. 3 SHEETS—SHEET 3.

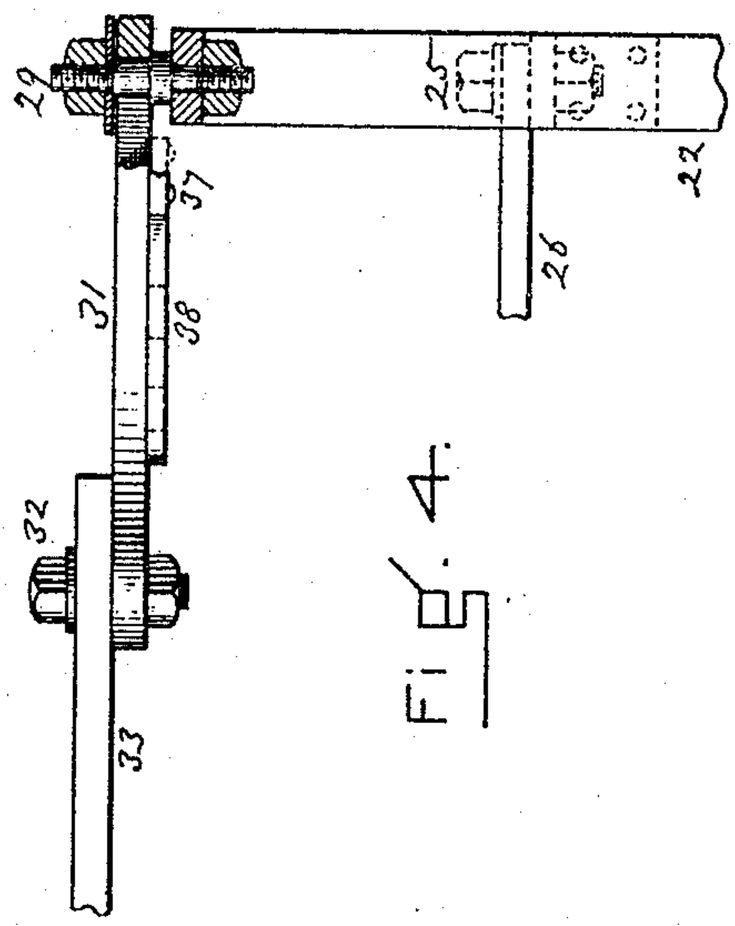

Fig. 4.

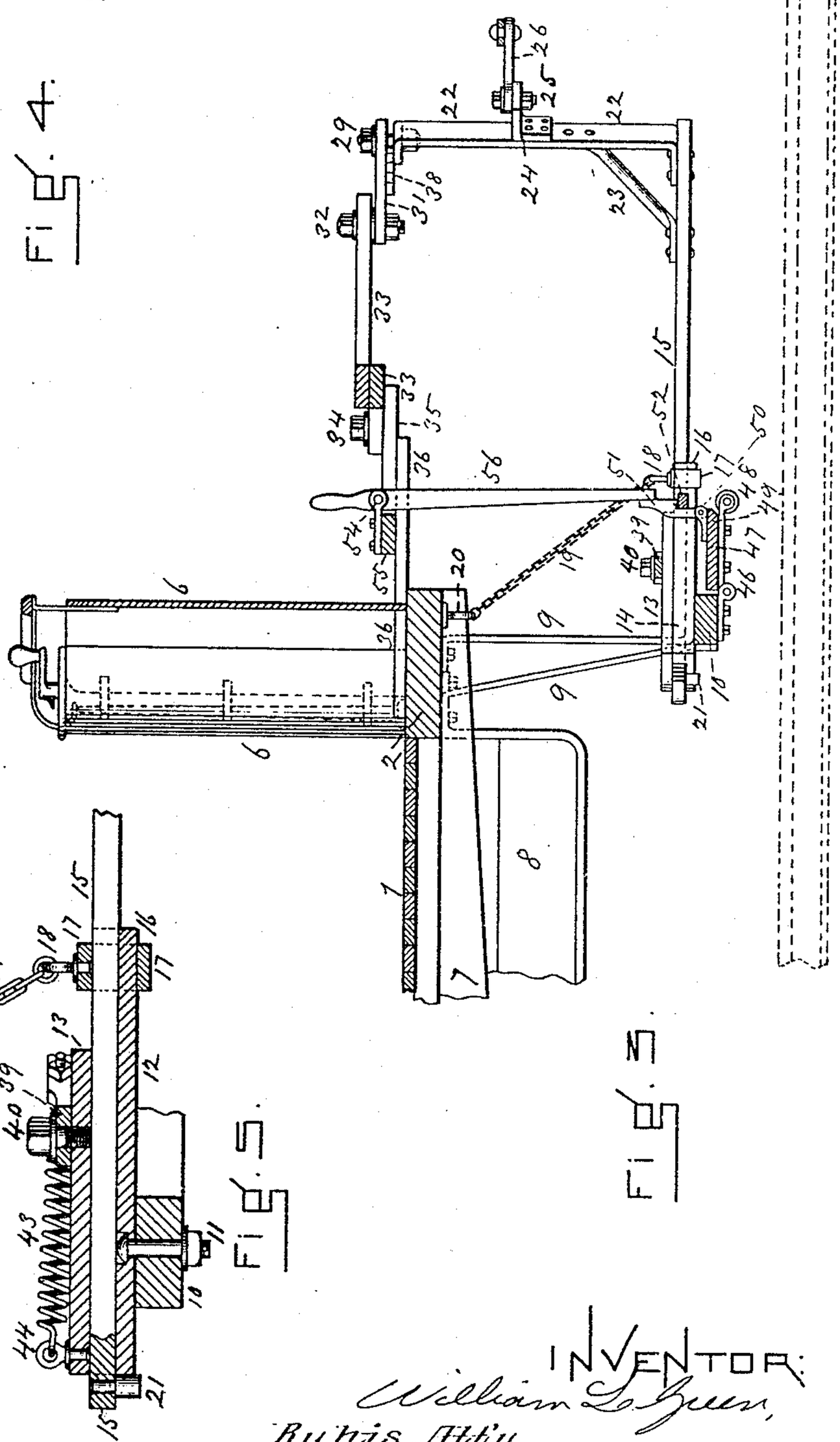

Fig. 5.

Fig. 6.

WITNESSES:
A. K. Hood.
C. L. Baker

INVENTOR:
William L. Green,
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Henry C. Williams

No. 768,277. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM L. GREEN, OF WALTHAM, MASSACHUSETTS.

FENDER FOR CARS OR OTHER VEHICLES.

SPECIFICATION forming part of Letters Patent No. 768,277, dated August 23, 1904.

Application filed January 26, 1904. Serial No. 190,696. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. GREEN, a citizen of the United States, residing in Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Fenders for Cars or other Vehicles, of which the following is a specification.

This invention relates to fenders adapted more particularly for street-railway cars which are propelled by power other than horse-power. In most car-fenders if a person standing on the track is struck by the fender he falls, landing either on the fender or on the pavement. In case he lands on the fender he is liable in many fenders to roll or fall off onto the pavement.

This invention has for its principal object to produce a fender in which when a person standing on the track is struck the impact of the fender causes its parts to immediately embrace, partially surround, and grasp the body of the person at a point below the shoulders while he is still substantially erect and hold him in that position until the car has been stopped by the motorman. By this means the person who is thus grasped cannot fall and thereby bring his head in contact with the fender or bumper or bumper-guard, if there is one, and of course cannot fall and strike the pavement.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved fender applied to a car, a portion of which is illustrated in its ordinary or normal position. Fig. 2 is a similar view showing the fender in the position assumed when grasping or holding a person who was standing on the track and touched by the fender. Fig. 3 is a vertical section taken on line 3, Fig. 1. Fig. 4 is a vertical section taken on line 4, Fig. 1. Fig. 5 is a vertical section taken on line 5, Fig. 1.

Similar characters of reference indicate corresponding parts.

1 represents a portion of the floor or platform of a street-car, 2 is the forward portion of the platform or the bumper, 6 is the dashboard, 7 one of the beams, and 8 the steps, all constructed substantially as usual. Dotted lines in the figures indicate the location of the track.

Rigidly supported by suitable hangers or bars 9 at its opposite ends is the ordinary horizontal cross-bar 10, located below the platform, as shown in Fig. 3. Swiveled at 11 to the cross-bar at points a short distance from and on opposite sides of the center, near their rear ends, are boxes or housings consisting of the lower horizontal portions 12, the parallel upper portions 13, and the side walls 14, Figs. 1, 2, 3, and 5, whereby a slideway is provided between the upper and lower portions and between the said walls of the boxes for the reception of the two forwardly-extending bars 15. The lower portion 12 of each box is extended forward at 16 to accommodate a strap 17, which is connected by an eye 18 and chain 19 with suitable eyes or staples 20, Fig. 3, secured centrally to the body of the car. These chains and straps operate to support the forward end of the boxes, and hence the sliding bars 15. (See Fig. 5.) These bars 15 are prevented from withdrawing from the boxes by suitable stops 21, which extend downward from the rear ends thereof behind the boxes.

To the forward end of each bar is securely bolted an upright 22, braced with the bar 23, and to each upright at a point about midway of its height is secured a bracket 24. These two brackets have pivotally secured to them at 25 the opposite ends of a toggle-joint 26, the inner ends of whose parts are curved outward at 27 to their pivotal connection 28, so that the central pivot in the joint is a little forward of the center—that is, of a longitudinal line drawn through the toggle. The upper ends of the uprights 22 are provided with pivot-pins 29, which extend into curved slots 30 in segments 31, the opposite ends of said segments being pivoted at 32 to the forward ends of two crossing bars 33, the rear ends of which are pivoted at 34 to the forward portions of two substantially parallel rigid horizontal supports 35, resting on and secured to the horizontal arms 36, bolted to the portion 2 of the car-body. Secured to the under sur-

face of each segment 31, by means of a pivot 37, is a spring 38, Fig. 4, notched, as shown in Figs. 1 and 2, the notches appearing under the slots 30 and being preferably V-shaped, serving to retain against ordinary force the pins 29 in position in the slots. 39 represents a latch or locking lever, pivoted at 40 to the top 13 of one of the boxes, Fig. 5, and 41 is a vertical pin extending up from the top of one of the other boxes. A spring 43, extending from the rear end of this latch to an eye 44, secured to the box, holds the forward plain end 42 of the latch normally against the pin 41. Teeth 45 are provided for the purpose below specified.

Secured to the under side of the cross-bar 10 near its opposite ends are hinges 46, whose forward leaves are secured to and support a swinging guard 47, the forward edges of said hinges being provided with rolls 48, as indicated in Figs. 1, 2, and 3. To the upper surface of this guard is secured a plate 49, to which is hinged at 50, Fig. 3, a catch 51, which rests normally on a short horizontal spreader-bar 52, Figs. 1 and 3, whose ends abut against and hold normally apart the forward ends of the boxes, which support the bars 15 by means of small notches 53 in the inner edges of said boxes. Pivotally secured at 54 to a cross-bar 55, secured to and resting on the horizontal supports 36, is a tripping-lever 56, whose lower end extends down next the catch 51.

The operation of the device is as follows: The fender being in the position indicated in Fig. 1, a person standing on the track in front of an approaching car provided with this fender will be struck by the toggle 26. The effect is of course that the joint of the toggle is pushed rearward toward the car, at first slightly spreading or forcing apart the bars 15 and their boxes 12 13 14 on the pivots 11, thus releasing the spreader-bar 52, which is held at its end by friction only in the notches 53 in the boxes. The joint of the toggle having operated to release the parts from the spreading bar (which drops to the ground) by this slight outward pressure the continued rearward movement of the joint of the toggle produced by striking the person presses said joint in beyond the center, drawing the forward ends of the bars 15 toward each other, being aided by the springs 57, until the parts are in the position indicated in Fig. 2, the pivots 29 having moved along the slots 30 and over the teeth on the springs 38. In this position it will be seen that the person stands flanked by the two parts of the toggle 26 and the bars 15, while in front and behind him are the crossed bars 33 and the segments 31. He is therefore almost entirely surrounded, being confined by the said parts, which are at such a height that they grasp his body below the shoulders, so that he is supported in a substantially erect position and cannot fall to the pavement, and thus become injured, or fall upon the fender with a great probability of injury, especially to the head, while the motorman is stopping the car. During the above-described operation and at the time that the bar 52 is freed and dropped the dropping of the bar releases the catch 51, thereby causing the guard 47 to swing down and constitute a wheel-guard, the roll 48 traveling over the road-bed or track. As the bars swing inward the teeth 45 on the latch 39 are brought into engagement with the pin 41, thus locking the parts in the above-described closed position aided by the springs 57, Figs. 1 and 2, whose opposite ends are secured to the rear portions of the boxes and to the cross-bar 10. If desirable, the motorman can release the bar 52, and hence cause the wheel-guard 47 to swing down by reaching over the dashboard and pushing forward the handle of the lever 56, thus knocking the catch 51 off the bar 52. To restore the parts to their original position, the bars 15 are spread until the toggle holds them rigidly and the spreader-bar 52 is picked up and restored to its original position.

When not in use, the fender can be slid back by means of the slideways in the bars 12 13 14, first folding the parts into the closed position indicated in Fig. 2.

In case a bar 15 or bracket 24 is struck by a team they will slide back by means of said slideway and prevent breakage of the fender.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a fender, a pair of bars extending horizontally forward from and pivotally connected with the car or vehicle, and with their forward ends in a normally open or spread position; and mechanism connecting the forward portions of the said bars and adapted to be pushed rearward by contact with a person in front thereof, and by such rearward movement to draw the forward ends of said bars toward each other and on opposite sides of said person, for the purpose set forth.

2. In a fender, a pair of bars extending horizontally forward from and pivotally connected with the car or vehicle, and with their forward ends in a normally open or spread position; and mechanism connecting the forward portions of the said bars and adapted to be pushed rearward by contact with a person in front thereof, and by such rearward movement to draw the forward ends of said bars toward each other and on opposite sides of said person, said bars and connecting mechanism being located at such heights as to support said person below the shoulders, for the purpose set forth.

3. In a fender, a pair of bars extending horizontally forward from and pivotally connected with the car or vehicle, and with their forward ends in a normally open or spread position; a pair of crossed bars pivotally connected with the car or vehicle at their rear ends; mechan-

ism intermediate of the forward ends of said crossed bars and the spread-bars whereby indirect pivotal connections are provided between the outer ends of said sets of bars; and mechanism connecting the forward portions of said normally spread-bars and adapted by being moved rearward to draw said forward portions toward each other, and to draw the forward portions of the crossed bars toward each other in a less degree, for the purpose set forth.

4. In a fender, the normally spreading horizontal bars 15 pivotally connected near their rear ends with the car or vehicle; the toggle-joint 26 pivotally connected with the forward ends of said bars; and mechanism for holding said bars normally spread at their forward portions, for the purpose set forth.

5. In a fender, the normally spreading horizontal bars 15 pivotally connected near their rear ends with the car or vehicle; the toggle-joint 26 provided with the forwardly-extending portions 27 at the joint; the uprights 22 extending from the said bars; the brackets 24 on said bars and pivotally connected with the opposite ends of said toggle; and mechanism for holding said bars normally spread at their forward portions, for the purpose set forth.

6. In a fender, the spreading bars 15; the boxes 12, 13 and 14 supporting said spreading bars and pivotally connected at their rear ends to the car or vehicle, and provided with notches 53; the crossed bars 33 pivotally connected at their outer ends with the car or vehicle; the uprights 22 connecting the outer ends of the spreading bars and crossed bars; the slotted segments 31 pivotally connected at their opposite ends with said crossed bars and uprights; the brackets 24 extending from the uprights; the toggle 26 connecting said brackets; a rod or bar extending from one box to the other for the purpose of holding them apart, and its ends resting in said notches; and springs operating to hold the spreading bars in engagement with the bar in the notches, for the purpose set forth.

7. In a fender, the boxes 12, 13, 14 pivotally connected with the car or vehicle; the spreading bars 15 sliding in said boxes, the uprights 22 extending from said bars; the toggle 26, 27 connecting the uprights; the spring-latch 39 provided with the teeth 45 and swiveled to one of the boxes and extending over the other; and the pin 41 extending from the box which is under the free end of the latch, and normally against the plain edge thereof, and adapted to be brought into engagement with the teeth on said latch when the fender is closed, for the purpose set forth.

8. In a fender, a pair of bars extending horizontally forward from and pivotally connected with the car or vehicle, and with their forward ends in a normally spread position; another pair of bars pivotally connected with and extending forward from the car or vehicle, the said pairs of bars being at different heights; substantially vertical connections between the outer ends of said pairs of bars; and a toggle extending substantially horizontally from one of the said vertical connections to the other, for the purpose set forth.

9. In a fender of the character described, the upper cross-bar 55 supported by the car or vehicle; the lower cross-bar 10 supported by the car or vehicle; the wheel-guard 47 pivotally supported by the cross-bar 10, the catch 51 hinged to said wheel-guard; the tripping-lever 56 extending down from the cross-bar 55 next to said catch; spreading bars adapted to be operated by the impact of the fender upon a person; and the spreader-bar 52 supported by said spreading bars, and itself normally holding up the catch, substantially as and for the purpose set forth.

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

WILLIAM L. GREEN

Witnesses:
HENRY W. WILLIAMS,
A. K. HOOD.