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CAR FENDER AND TRIP.

No. 538,591. Patented Apr. 30, 1895.

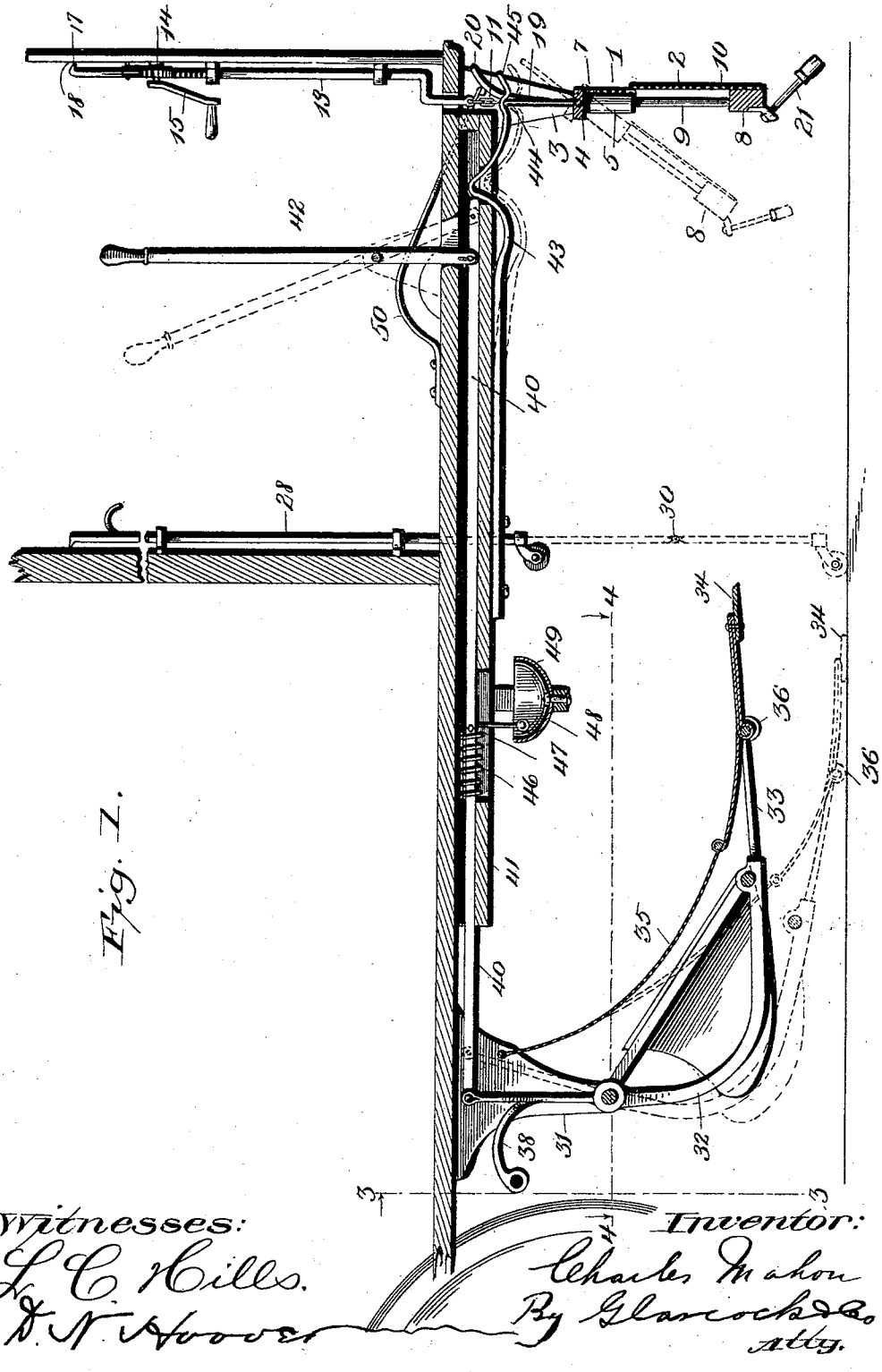

Fig. 1.

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Fig. 2.

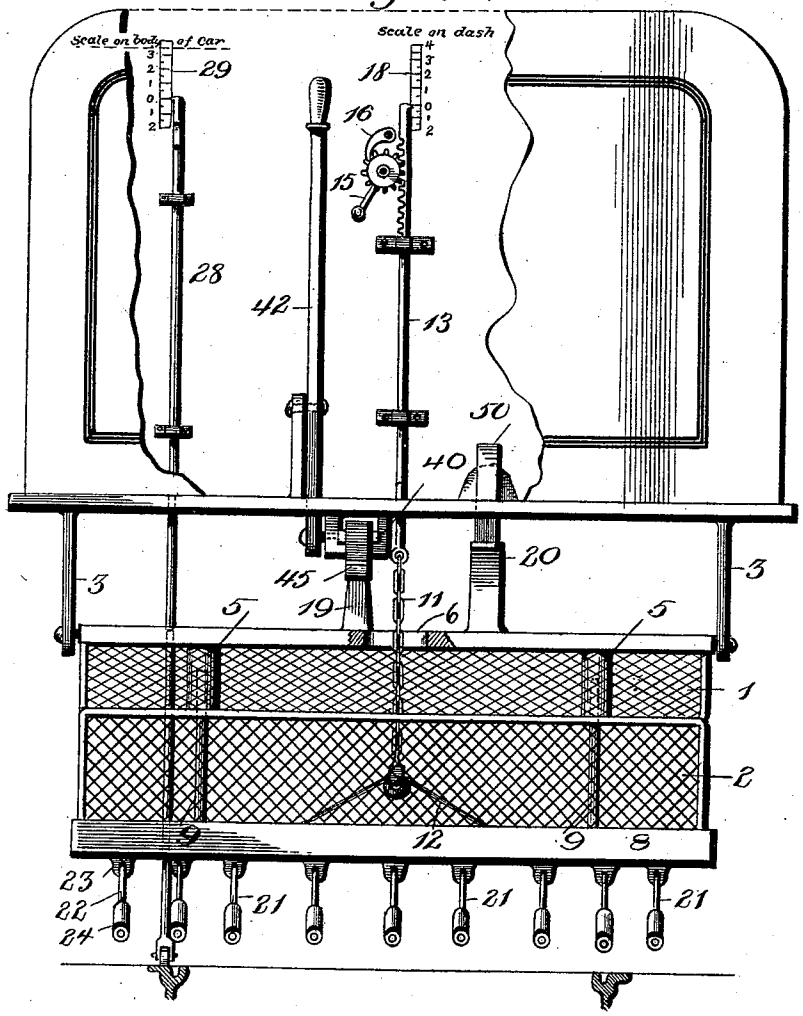

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Fig. 3.

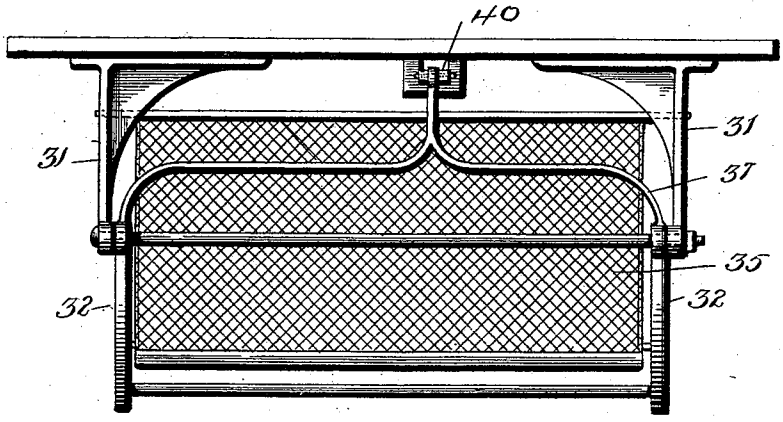

Fig. 4.

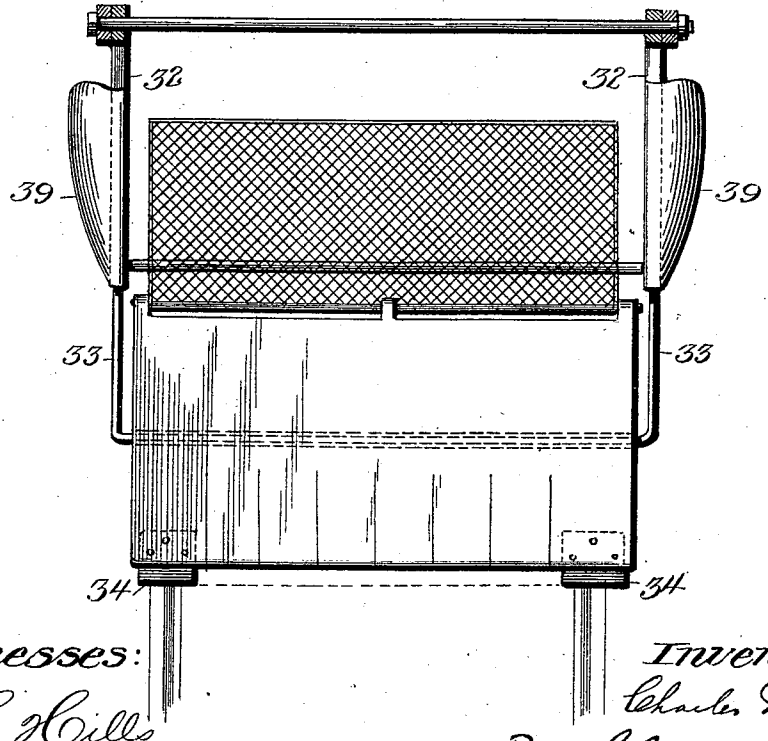

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Fig. 5.

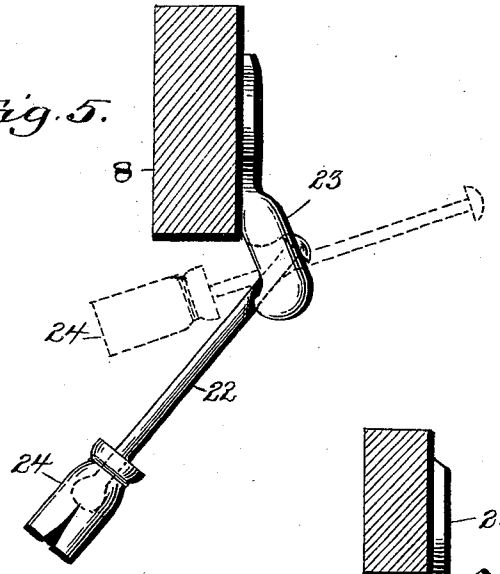


Fig. 6.

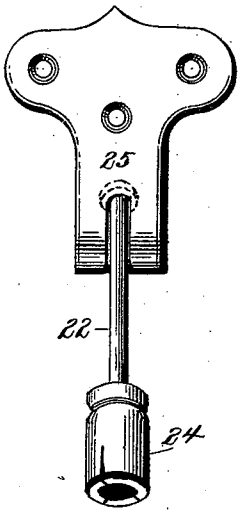


Fig. 7.

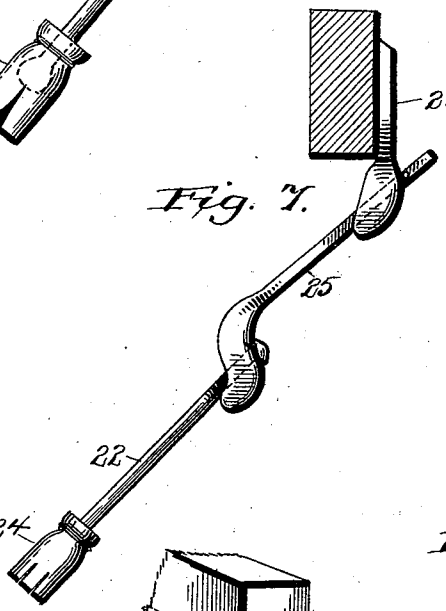


Fig. 8.

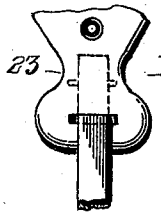


Fig. 9.

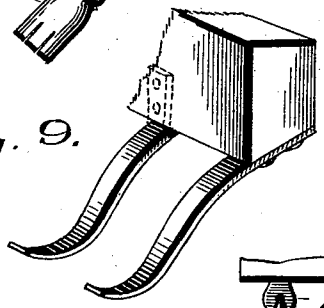


Fig. 10.

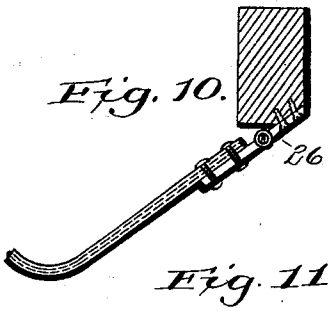
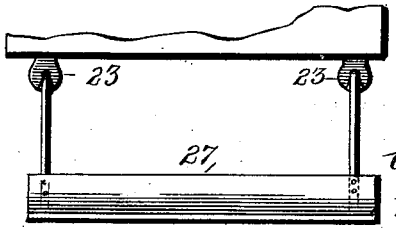


Fig. 11.



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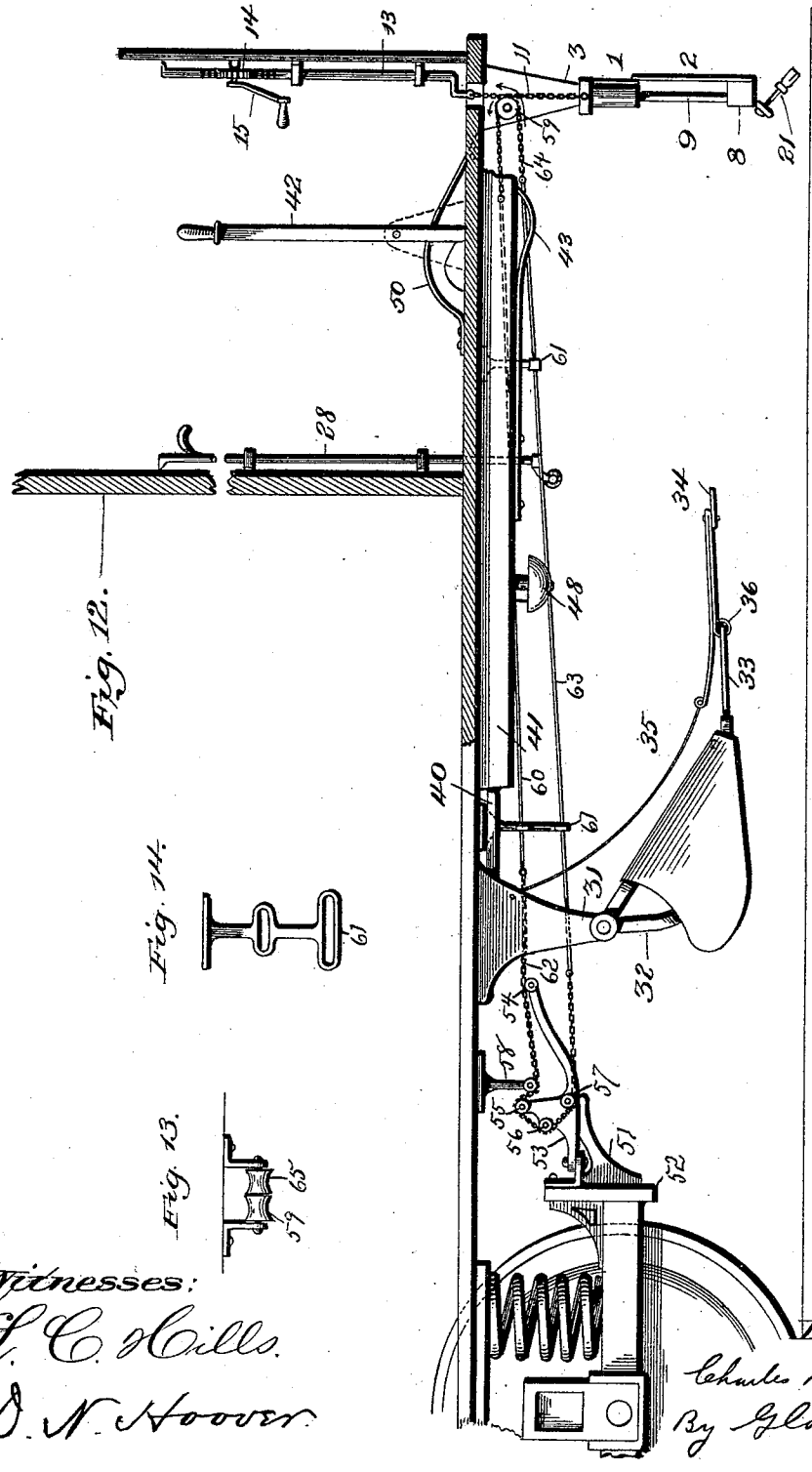

Fig. 12.

Fig. 14.

Fig. 13.

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UNITED STATES PATENT OFFICE.

CHARLES MAHON, OF WASHINGTON, DISTRICT OF COLUMBIA.

CAR-FENDER AND TRIP.

SPECIFICATION forming part of Letters Patent No. 538,591, dated April 30, 1895.

Application filed March 11, 1895. Serial No. 541,314. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MAHON, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a certain new, useful, and valuable Improvement in Car-Fenders and Trips, of which the following is a full, clear, and exact description.

My invention has relation to trips for car fenders and it consists in the novel construction and arrangement of its parts as hereinafter described.

The object of my invention is to provide a pivoted trip adapted to be used with any suitable fender, the length of said trip adapted to be readily adjusted perpendicularly by the operator, and thus compensate for the different levels of the car floor to which the trip is attached, and hence the trip can always be maintained at a certain distance above the track.

The further object of my invention is to provide for the oscillating movement of the body of the car on its trucks when in motion. This is done by attaching to the lower end of the trip suitable fingers that have an upward play, but when in contact with an obstruction on the surface of the track are substantially rigid. Thus I provide a trip which is at all times sensitive to obstructions, but not so should it come in contact with the surface of the track.

In the accompanying drawings, Figure 1 is a perpendicular sectional view of the front part of a car having my fender-trip and a suitable fender attached thereto. Fig. 2 is the front end view of a car having my trip attached thereto. Fig. 3 is a rear view of the fender used. Fig. 4 is a top view of the fender used. Figs. 5, 6, 7, 8, 9, 10, and 11 are detail views of the trip-finger and modifications and will be explained hereinafter. Fig. 12 is a side view of the front end of the car, partly in section, showing a device for automatically raising and lowering the adjustable section of the trip. Figs. 13 and 14 are detail views of parts used in Fig. 12.

The trip consists of two parts, the pivoted section 1, and the pendent section 2. The section 1, is horizontally pivoted in the bearings 3, 3, which are secured to the under side of the bottom of the car. Said section consists of the bar 4, which is provided with the downwardly projecting sleeves 5, 5, one at or near each end of the bar at equal distances from the center thereof. The center of the said bar is provided with the elongated perforation 6. The front of the section is covered with the wire netting 7, or its equivalent.

The section 2, consists of the bar 8, having the guides 9, 9. Said guides are perpendicular and enter at their upper ends the sleeves 5, 5, of section 1. The bar 8, is horizontal and extends a short distance beyond each rail of the track. The section 2, is also provided with a wire netting 10, or its equivalent. It is preferable that parts 10, and 7, be of wire netting as it practically presents a wall, and is light, and open so that the trip cannot be affected by wind. The part 2, is held up by the flexible support 11, which is preferably a chain, and can form a joint at any point. The said chain is preferably connected at its lower end to a flexible strip 12, which is secured at each end to the bar 8, the end of the chain having a lateral play along the said strip 12, in order that the chain might automatically seek the center of gravity of the section 2, and hence always raise said section evenly and prevent the binding of the uprights 9, 9, in the sleeves 5, 5.

The upper end of the chain 11, is connected to the lower end of the rod 13. Said rod is adapted to be moved up and down and the device here employed to move said rod consists of a gear cut in the rod and a gear wheel 14, journaled to the dash of the car, said gear wheel engaging the gear in the rod. The wheel 14, is provided with a crank arm 15, by which it is operated, and the ratchet 16, is adapted to engage the gear of the wheel and hold the same in a stationary position. The rod 13, is provided with an indicator point 17. Said point passes over the face of the scale 18, which is located on the dash board. Thus the section 2, of the strip is supported.

The bar 4, is provided with the lug 19, which is preferably perpendicular, and the lug 20, which is perpendicular for a short distance and then curving slightly to the front. The function of these lugs will be explained hereinafter.

The fingers 21, which are secured to the lower end of the section 2, may be of any con-

struction that will produce the desired result. Sheet 4, of the drawings shows several modifications in the construction of these fingers. Fig. 5 shows a finger consisting of a rigid rod 22, secured in a perforation of the casting 23. Said perforation flares or is wider in front than in the rear and the head on the rod prevents the rod from falling out. The lower end of the rod is provided with a flexible covering 24. The rod normally hangs as represented in the heavy lines of Fig. 5; but it may assume the position as shown in the dotted lines. Fig. 6 is a front view of Fig. 5. Fig. 7 is a side view of a rigid finger showing an extension 25. Said extension may assume a similar position in its casting as that indicated by the dotted lines in Fig. 5. Fig. 8 is a front view of the casting 23, used in Fig. 7. Fig. 9 shows a modification of a spring finger. The fingers are slightly curved up at their lower ends; but it will be seen that said fingers can have an upward play. Fig. 10 shows a finger consisting of the hinge 26, secured to the cross rod 8. A flexible strip is secured to the other part of the hinge and said flexible strip is stiffened by wire rods run through the same as indicated by the dotted lines. Said finger is also curved up slightly at its lower end. Fig. 11 shows a finger which may extend all the way across the track, said finger having castings 23, and the rigid rods located therein, the lower ends of the rods being connected by the trip 27. The said trip is also slightly curved up as shown. In all these modifications it will be observed that the finger is inclined to the front and will normally rest at an angle to the track; but the lower ends of the fingers have an upward play should they come in contact with the surface of the track; but should an obstruction be encountered the fingers are substantially rigid and the trip will be swung to the rear. Thus should the car while in motion have oscillatory movement enough on its trucks to bring the fingers in contact with the surface of the track, the upward play of the fingers will compensate therefor and the trip will not be operated.

A second indicator is adapted to be used in conjunction with the vertically adjustable trip. This second indicator consists of the rod 28, which is adapted to move perpendicularly in suitable guides secured to the body of the car. The lower end of the indicator is provided with a friction roller or equivalent which is adapted to run on the track when the said indicator is lowered as indicated by the dotted lines in Fig. 1. The upper end of the indicator passes over a scale 29 which is secured to the body of the car. When the car is empty and not in motion, if it is desired that the trip be made sensitive (say a distance of two inches between the track and the fingers) then the scale on the dash should be arranged so that the indicator shall register zero, and the second indicator when on the track will also stand at zero on its scale. This second indicator is adapted to show the proximity of the body of the car to the surface of the track, as this distance varies according to the weight of the load on the car. As the car fills should the indicator 28 register one above zero, when the indicator 17, is at zero it shows that the ends of the fingers are one inch nearer the surface of the track than they should be and the operator will elevate the indicator to the numeral 1 on its scale. When the indicator 28 is not in use it is drawn up and secured to the body of the car and the roller will be up under the floor of the car as shown in heavy lines in Fig. 1. Said indicator 28 may be provided with the joint 30, which permits the lower part of the indicator to swing to the rear should it come in contact with an obstruction on the track.

As above stated any style of fender may be used in conjunction with my trip. The fender used here is of the pivoted style. It is mounted in the bearings 31, 31, secured to the under side of the car, and consists of the arms 32, 32, which curve down and extend to the front. Said arms are suitably braced and connected together. The rods 33, 33, are secured in the forward ends of the said arms. Said rods extend to the front and support the front end of the fender.

The front end of the fender consists of a sheet of metal suitably attached to the rods, 33, 33, and the extreme front end of the fender is preferably tipped with leather 34, or other suitable flexible material. The front edge of the sheet of metal is slit at intervals (see Fig. 4), so that the edge may conform to the contour of the track. The rear end of the sheet of metal is connected by the wire netting 35, with the bearings 31, 31. The front ends of the rods 33, 33, are connected by a cross rod which passes under the sheet of metal and on this cross rod is journaled the friction rollers 36, which are adapted to come in contact with the rails of the track when the fender is lowered and thus relieve the fender of wear. The arms 32, 32, are connected above the pivot point by the bail 37, see Fig. 3, and a weighted arm 38, is secured to the bail and extends on the opposite side of the pivot point from the fender and is adapted to counteract the weight thereof. The braces of the arms 32, 32, are provided with the throw offs 39, 39.

The rear end of the rod 40, is pivotally connected to the bail of the fender. Said rod passes forward, and is supported by the plank 41, which is suspended from the bottom of the car. The lower end of the lever 42, is pivotally connected to the front part of the rod 40. Said lever 42, is fulcrumed above the floor of the car and is adapted to be operated by the man in charge of the car. The front end of the rod 40, bears against the knuckle in the spring 43. Said spring is secured at its rear end to the under side of the board 41, and the said knuckle passes up through a perforation in said board, and holds back the said rod 40.

The front end of the said spring extends down and is provided with the recess 44, adapted to receive the upper end of the lug 19, when the trip is in its normal position. The extreme end 45, of said spring extends up and forms a guide for the said lug 19, after the trip has been swung to the rear and is about to assume its normal position. The rod 40, is surrounded by the coil spring 46, which bears at its rear end against a stationary point and at the other end against a lug on said rod. The tendency of this spring 46, is to throw the rod 40, forward. The tendency of the spring 43, is to bear down, and when the lug 19, which supports the free end of said spring is removed the spring flies down and assumes the position as indicated by the dotted lines Fig. 1. As the rod 40, passes forward the lug 47, engages the stem of the bell clapper 48, and as the said lug passes beyond the stem the clapper flies back and strikes the bell 49, thus notifying the operator that the fender is against the ground.

A strap spring 50, is secured at one end to the floor of the car, and is arched up and passes at the other end down through the floor of the car and bears at the extremity against the lug 20, on the bar 4. The operator by pressing with his foot on the spring 50, will tilt the trip which will release the free end of the spring 43, and it in turn allowing the rod 40, to pass forward and the fender to fall against the ground. The spring 46, is of sufficient strength to keep the fender firmly against the ground.

When the fender is down and the operator desires to raise it, he simply pushes the upper end of the lever 42, forward. The lug 19, will then elevate the spring knuckle 43. The end of the said lug will enter the recess 44, and the said knuckle will hold the rod 40, back in place.

The trip is provided with a device for automatically raising and lowering the same. This device consists of a bracket 51, which is secured to the cross plank 52. Said plank is secured to the trucks of the car and is substantially stationary perpendicularly. The bracket 51, has pivoted to it the rear end of the casting 53. Said casting is adapted to have a lateral play on its pivot point. The casting 53, is provided with the front roller 54, and the rear rollers 55, 56, and 57. There is a space of about nine inches between the roller 54, and the rear rollers. The downwardly projecting arm 58, is secured to the under side of the floor of the car between the front roller 54, and the rear rollers, but nearer the rear rollers as shown in Fig. 12. The lower end of the said arm is preferably provided with a friction roller as shown. The chain 11, which is secured at its lower end to the adjustable part of the trip passes up over a roller 59, and is secured to the end of the rod 60. Said rod passes through suitable guides 61, 61, and is attached at its rear end to the chain 62. Said chain passes over the rollers 54, 55, 56, and 57, and under the arm 58. The other end of the chain is secured to the rear end of the rod 63. The said rod 63, passes through the lower part of the guides 61, and the other end of said rod is secured to the chain 64, which passes under the roller 65, Fig. 13 and is secured to the lower end of the indicator rod 13.

In operation the device acts as follows:— When the car is unloaded and at a standstill the part of the chain 62, which is between the rollers 54, and 55, is straight and as the car fills, the arm 58 depresses and bears down on the chain 62, and as the said chain is connected through rod 63, with a stationary point, the rod 60, is drawn back and the chain 11, elevated which in turn draws up the adjustable section of the trip. As the car unloads the arm 58, elevates which allows the adjustable section of the trip to fall. This it will be seen that the fingers of the trip will always be at the same distance above the surface of the track. As the car passes around curves the body of the car will not be in a straight line with the trucks. Therefore the lateral play of the bracket 53, will permit the rods 60, and 63, and the chain 62, to be at all times in a straight line. When the car has an oscillatory motion on its trucks the arm 58, will depress the chain and the trip fingers will be elevated and lowered. The ringing of the bell, which takes place every time the fender is lowered will notify the motorman of the fall of the fender, even though he did not observe the obstruction on the track, or hear the noise made by the fender scraping the ground; which might be the case owing to the noise of the car and the noise in the street.

If it is desirous at any time to keep the fender out of use, the hand lever above the floor of the car can be secured in any suitable manner to prevent its moving and thus the fender cannot drop.

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

1. In combination with a fender trip a finger secured to the trip, said finger inclined forward and at an angle to the track, said finger having an upward play but being substantially rigid when in contact with an obstruction on the track, as set forth.

2. An adjustable fender trip consisting of a pivoted section and a perpendicularly adjustable section, a flexible connection connecting the adjustable section with a suitable operating means located above the floor of the car, as set forth.

3. In combination with a perpendicularly adjustable fender trip having an indicator adapted to rise and fall with the adjusting of the trip, a scale acting in conjunction with said indicator; an independent indicator sounding rod, having a vertical play and adapted to rest at its lower end on the track, a scale acting in conjunction with said second indicator sounding rod, as set forth.

4. In combination with a pivoted fender trip a device for operating the trip consisting of a spring fixed at one end to a stationary point and arched up, the other end of the spring bearing against the trip and adapted when the spring is pressed to operate the trip, as set forth.

5. In combination with a fender adapted to come in contact with the ground and in so doing to send a rod forward, a spring fixed at one end to a stationary point and having a knuckle normally adapted to abut against the end of said fender rod, a pivoted trip adapted normally to support the free end of said spring, and thus keep the fender up, as set forth.

6. A fender adapted to come in contact with the surface of the track, consisting of arms connected to the body of the car, said arms supporting a sheet of metal which extends to the front, said sheet having slits cut in its front edge and thus permitting the edge of the sheet to assume the contour of the track, as set forth.

7. An adjustable pivoted fender trip, a connection secured to the trip and connecting a suitable operating means located above the floor of the car, said connection being flexible in the axis of the pivotal points of the trip, as set forth.

8. A fender trip, adapted to be raised and lowered, a device for raising and lowering the trip said device being substantially stationary perpendicularly and connected to the trip and adapted to be automatically operated by the elevation and depression of the body of the car, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES MAHON.

Witnesses:

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PATRICK J. WALSHE.