

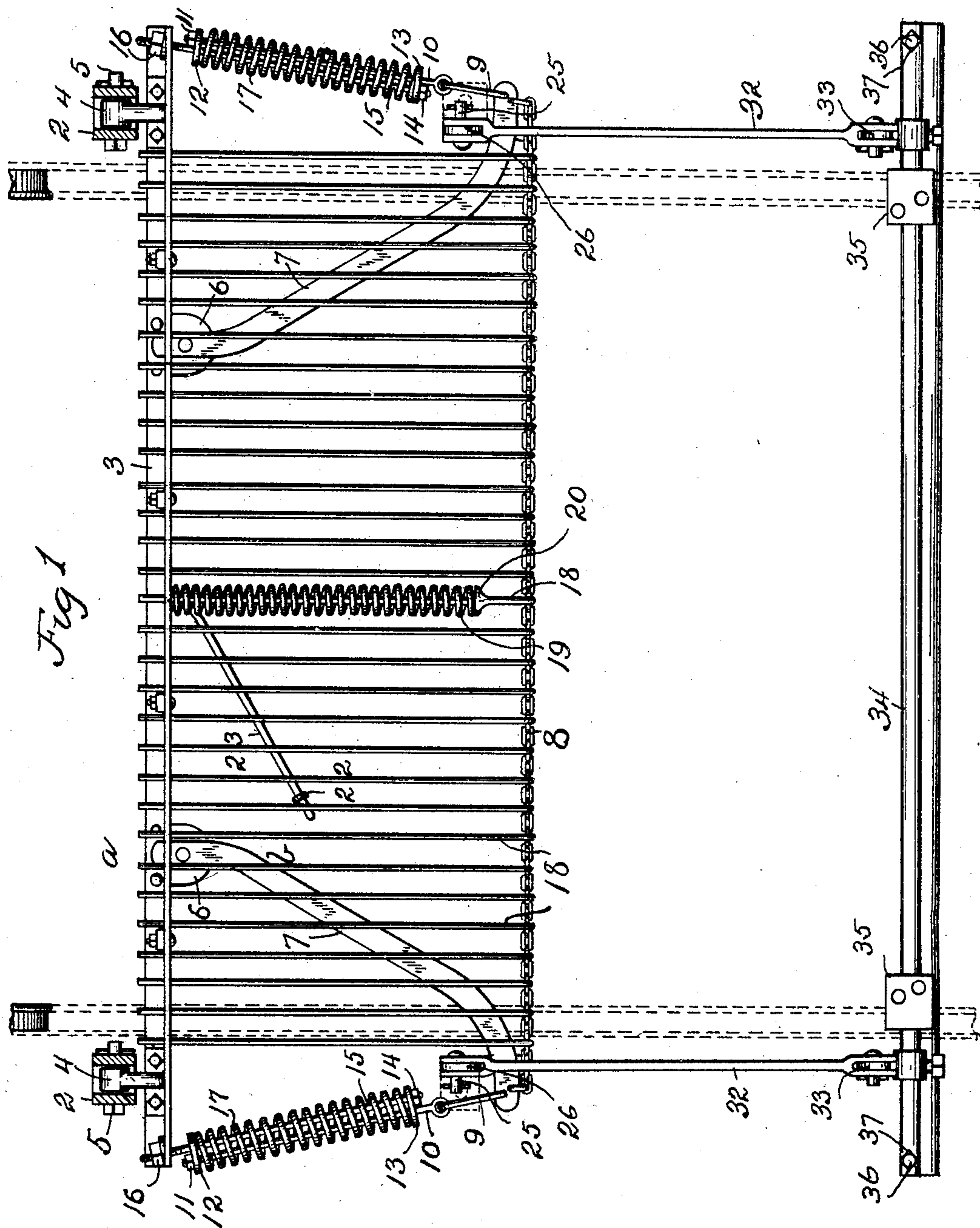
No. 782,805.

PATENTED FEB. 14, 1905.

R. ANDLAUER;
CAR FENDER.

APPLICATION FILED MAR. 21, 1904.

3 SHEETS—SHEET 1.



WITNESSES:

P. E. Hamilton.
L. R. Barker.

INVENTOR

Raymond Andlauer
By Warren D. House
His Attorney

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3 SHEETS—SHEET 2.

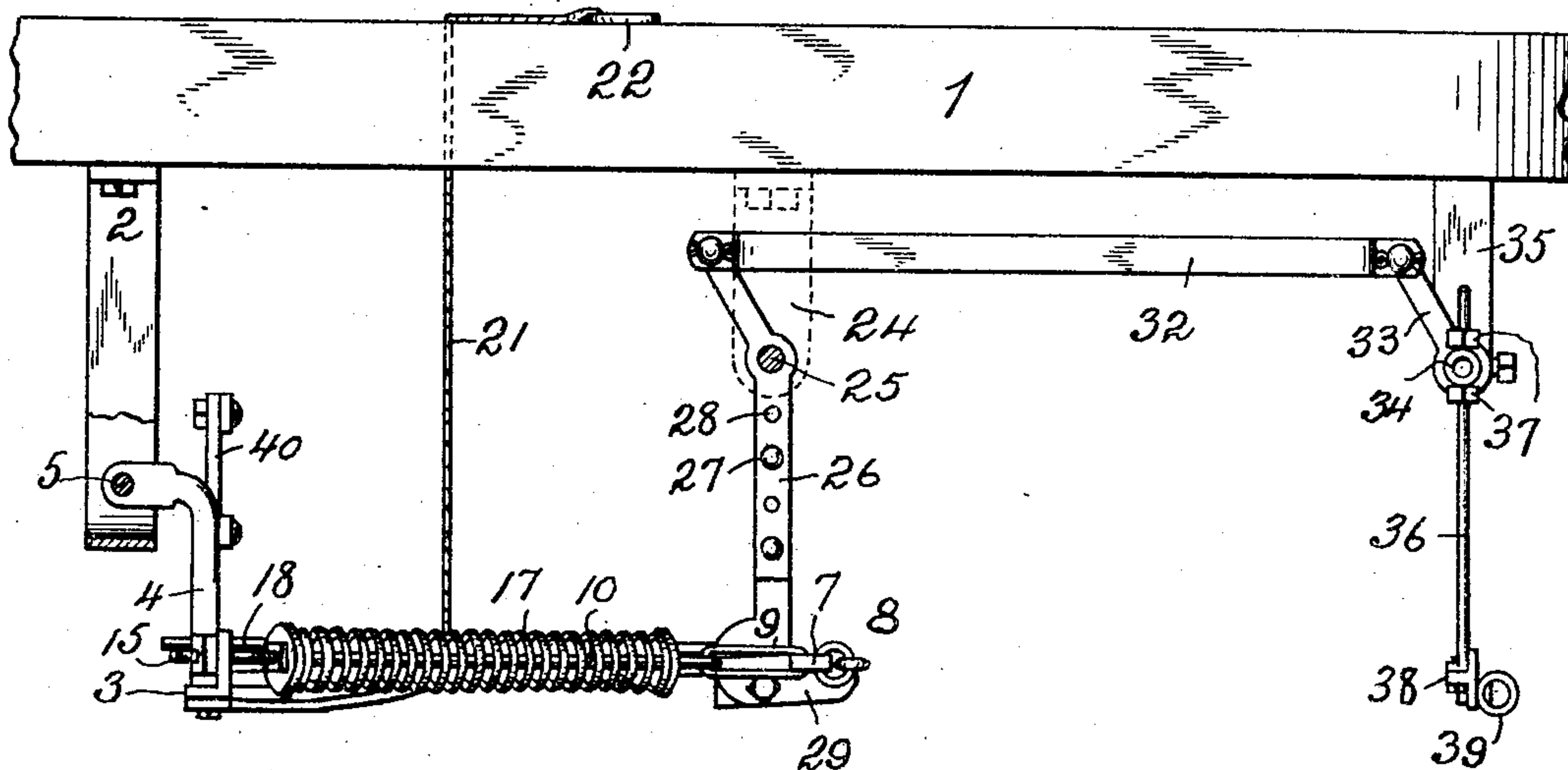


Fig 2

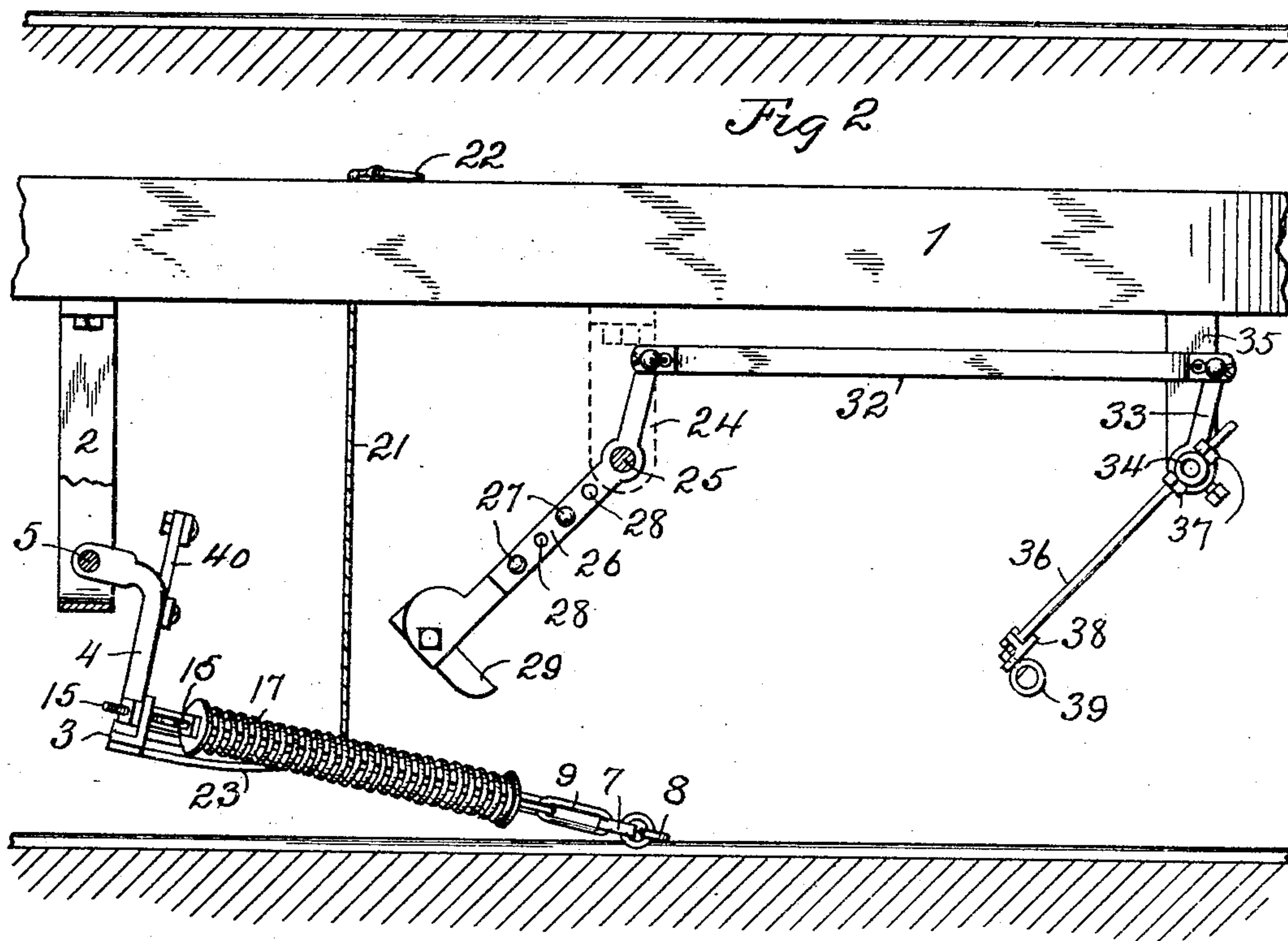


Fig 3

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UNITED STATES PATENT OFFICE.

RAYMOND ANDLAUER, OF KANSAS CITY, KANSAS, ASSIGNOR OF TWO-THIRDS TO HENRY CHICK AND ANTHONY L. CLARK, OF KANSAS CITY, MISSOURI.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 782,805, dated February 14, 1905.

Application filed March 21, 1904. Serial No. 199,059.

To all whom it may concern:

Be it known that I, RAYMOND ANDLAUER, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented new and useful Improvements in Car-Fenders, of which the following is a specification.

My invention relates to improvements in street-car fenders.

The object of my invention is to provide a street-car fender which can be relied on for picking up a person or other object that may be upon the car-track and prevents that person or object from being run over by the car.

My invention provides a downwardly-swinging apron the construction of which causes its forward end when dropped to move closely along the track and surface of the ground.

My invention provides, further, means for supporting the forward end of the apron normally at some distance above the track and means actuated by striking an object for releasing the apron from its supporting means, thus permitting it to fall and to move closely to and along the track and surface of the ground.

My invention provides, further, a swinging fender or apron which is capable of both lateral and vertical swinging movement, resilient means being employed to resist the lateral movement of the apron in either direction.

My invention provides, further, an apron having a flexible forward end whereby the apron at the said end may be made to travel closely along the surface of the ground irrespective of irregularities therein.

The specific novel features of construction are hereinafter fully described and claimed.

In the accompanying drawings, which illustrate my invention, Figure 1 represents a plan view of the fender mechanism, a portion of which is shown in horizontal cross-section. Fig. 2 is a side elevation view, a portion of one of the apron-supports being broken away, the fender-apron being shown in the raised position. Fig. 3 is a view similar to that shown in Fig. 2, the fender being shown in the lower position. Fig. 4 is a forward end elevation

view, some of the parts being broken away and the apron being shown in the raised position. Fig. 5 is an inner side elevation view of one of the swinging arms which supports the apron in the raised position. Fig. 6 is a vertical cross-section view of a portion of the mechanism, taken on the dotted line *a b* of Fig. 1. Fig. 7 is a rear elevation view of one of the swinging apron-supporting arms.

Similar characters of reference indicate similar parts.

1 denotes the car-platform, to the under side of which the apron is pivotally supported in the following manner.

Secured to the under side of the platform 1 are two U-shaped supporting-brackets 2. Below the said brackets 2 is a transverse horizontal rear member 3, comprising, preferably, an angle-bar 3, to the rearwardly-extending horizontal portion of which are secured the lower ends, respectively, of two upwardly-extending arms 4, the upper ends of which are rearwardly turned and pivotally mounted, respectively, upon the transverse bolts 5, extending one through each of said brackets 2. Upon the rear member 3 are rigidly secured two forwardly-extending plates 6, (see Figs. 1 and 6,) to which are respectively secured the rear ends of two horizontal forwardly-extending laterally-swinging arms 7, the forward ends of which are secured, respectively, to the ends of a horizontal transverse flexible member 8, disposed in advance of the rear member 3 and comprising, preferably, a chain or other similar pliable device.

In order to normally stretch the flexible member 8 taut, any desirable means may be employed, but preferably a resilient means which will permit lateral movement relative to the track of the flexible member 8. In the drawings I have shown a preferred means for stretching the chain and at the same time permit lateral movement thereof and also rearward swinging of the arm 7. Referring particularly to Figs. 1, 2, and 3, 9 indicates two links connected, respectively, one each to the outer ends of the arms 7. To each link 9 is connected the forward end of a rearwardly-extending bolt 10, the rear end of which is

screw-threaded and has mounted thereon a nut 11, which bears upon the rear side of a plate 12, provided with a hole through which the bolt 10 extends. Upon the bolt 10 is mounted, near the forward end, a plate 13, upon the forward side of which rests a nut 14, mounted upon the screw-threaded forward end of a rod 15, which extends through holes provided in the plates 12 and 13 and the screw-threaded rear end of which extends through a hole provided in the adjacent end of the vertical side of the rear member 3. Upon the said rod 15 and bearing against the rear side of the member 3 is a nut 16. Encircling the two rods 10 and 15 is a coil-spring 17, one end of which bears against the plate 12 and the other end of which bears against the plate 13. The tension of the coil-spring 17 at one side of the apron corresponds to the tension of the spring 17 at the other side of the apron, and the arms 7 are thus swung normally to a position in which the apron will be in a mediate position with respect to the track. If the arm 7 should strike an object at the outside of the track, the apron would be swung laterally in the opposite direction and prevent injury thereto, which might otherwise occur if lateral movement could not be imparted to the apron. Supported upon the rear member 3 and the flexible member 8 is provided any body-supporting means suitable for catching and retaining thereupon any object passed under by the flexible member 8. The body-supporting means which I prefer to employ comprises a plurality of forwardly-extending bars 18, the forward ends of which are secured at intervals to the flexible member 8, each bar being formed around one side of an adjacent link of the chain 8. The rear ends of the bar 18 are slidably mounted in transverse holes provided therefor in the vertical side of the rear member 3. To normally force the bars 18 to the forward position, (shown in Fig. 1,) I employ a coil-spring 19, which encircles one of the middle bars 18. The rear end of the coil-spring 19 bears upon the forward side of the rear member 3, and the forward end of said coil-spring rests against a shoulder 20, provided on the said middle bar 18 near its forward end. To swing the apron upwardly to the position shown in Fig. 2, I provide a flexible device, such as a rope or chain 21, the upper end of which extends through the platform 1 and has secured to it above the said platform a ring 22. The lower end of said rope or chain 21 is secured to a horizontal bar 23, extending transversely under the bars 18 and having its rear end secured to the rear member 3. The main portion of the apron consists in the members 3 and 8, arms 7, and bars 18, the accessory parts thereof being the springs 17 19, bars 10 and 15, and links 9.

I will now describe the mechanism employed to support the apron in the position shown in

Fig. 2 and mechanism for releasing the apron therefrom.

To the under side of the platform 1 at a point nearly above the member 8 and at each side of the apron are secured two brackets 24. To each bracket 24 is pivotally mounted, by means of a bolt 25, a vertical-swinging arm 26, comprising, preferably, two separate overlapping pieces adjustable lengthwise of each other and secured together by means of two bolts 27, extending through transverse holes 28, provided therein. Several holes 28 may be provided through the two pieces comprising the arm 26, thus enabling the said pieces to be adjusted lengthwise and secured together in different positions for the purpose of lengthening or shortening the arm 26, as the case may require. Upon each of the arms 26 is pivotally mounted a pawl 29, adapted when the parts are in the position shown in Fig. 2 to have its forward end swing upwardly by means of the forward end of the adjacent arm 7 and to then fall to a horizontal position and support upon its upper side the said arm 7 of the apron, thus preventing the apron from falling until the arm 26 has been swung to the position shown in Fig. 3. Upon the inner side of each arm 26 is provided a projection 30, positioned so as to prevent the pawl 29 from moving below the position occupied in Fig. 5. To limit the upward movement of the pawl 29 upon each arm 26, I provide a projection 30 on the inner side of the said arm, positioned so as to prevent the pawl from passing a perpendicular position. To swing the arms 26 to the position shown in Fig. 3, thus releasing the apron and permitting it to fall, the following mechanism is provided: To the upper end of each arm 26 above the bolt 25 is pivotally secured the rear end of a horizontal bar 32, the forward end of which is pivotally secured to the upper end of a crank-arm 33, rigidly secured at its lower end to one end of a horizontal rock-shaft 34, the respective ends of which are pivotally mounted in transverse openings provided in the lower ends of two brackets 35, the upper ends of which are secured, respectively, to the under side of the platform 1. A supplemental fender is mounted upon and oscillatory with the rock-shaft 34. This supplemental fender comprises two vertical rods 36, the upper end of each of which is screw-threaded and extended through a hole in the rock-shaft 34. Lock-bolts 37 are provided upon each rod 36 and are disposed one above and one below and bearing upon the rock-shaft 34. By changing the positions of the nuts 37 on the rods 36 the supplemental fender may be vertically adjusted. Secured to the respective lower ends of the two rods 36 is a transverse bar 38, to the forward side of which may be secured a horizontal resilient tube or other resilient member 39. A vertical transverse guard 40 of any suitable construction may be

supported vertically upon the rear member 3 to prevent any one caught upon the bars 18 from passing rearwardly therefrom.

In operating my invention the parts are disposed as shown in Fig. 2, with the arms 7 resting upon the pawls 29. A person or other object upon striking the supplemental fender comprising the vertical rods 36 and horizontal bar 38 will swing the said fender, bars 32, and arms 26 to the position shown in Fig. 3, thus releasing the pawls 29 from the arms 7 and permitting the apron to fall by gravity, so that the flexible member 8 and the forward ends of the bars 18 will rest upon the surface of the ground and top of the rails. The person or object will thus be caught upon the upper sides of the flexible chain or member 8 and the bars 18, the pliable nature of the forward part of the apron preventing any portion of the person or object passing under the apron. By permitting the rearward movement of the bars 18 against the resiliency of the spring 19 injury to the apron is obviated. After the person or object picked up by the apron has been removed therefrom the apron may be elevated to a position shown in Fig. 2 by seizing the ring 22 and pulling upwardly upon the rope or chain 21. The arms 26 having been swung previously by gravity to the position shown in Fig. 2, the arms 7 of the apron will swing the forward ends of the pawl 29 upwardly until the said arms are above the said pawls 29, at which time the pawls will fall to the horizontal position, after which the apron may be permitted to descend and rest upon the upper edges of said pawls.

My invention may be variously modified without departing from its spirit.

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

1. In a fender, the combination with a rear member, of a transverse flexible forward member, a body-supporting means supported by said members, two laterally-swinging arms pivoted to said rear member and connected to said flexible member, and resilient means for swinging apart the free ends of said arms.

2. In a fender, the combination with a rear member, of two arms pivoted to said rear member, a transverse chain connected to the free ends of said arms, a body-supporting means supported by said rear member and said chain, and resilient means for swinging laterally the free ends of said arms.

3. In a fender, the combination with a rear member, of a transverse flexible forward member, a body-supporting means disposed between and supported by said members, and resilient means for normally stretching taut said flexible member.

4. In a fender, the combination with a rear member, of two laterally-swinging arms pivoted at their rear ends to said rear member, a transverse flexible member connected to the

forward ends of said two arms, a body-supporting means supported by said rear and said flexible members, and two springs connected respectively to said rear member and to said arms and normally forcing the free ends of said arms apart.

5. In a fender, the combination with a rear member, of two laterally-swinging arms pivoted at their rear ends to said rear member, a chain connecting said arms at their forward ends, a body-supporting means supported by said chain and said rear member, and means for normally forcing apart the forward ends of said arms.

6. In a fender, the combination with a rear member, of two laterally-swinging arms pivoted at their rear ends to said rear member, a chain connecting the forward ends of said arms, a body-supporting means supported by said chain and said rear member, and resilient means normally forcing apart the forward ends of said arms.

7. In a fender, the combination with a rear member, of two laterally-swinging arms pivoted at their rear ends to said rear member, a chain connecting the forward ends of said arms, a body-supporting means supported by said chain and said rear member, two springs, and means connected with said rear member and said arms by which the outer or forward ends of said arms are normally forced apart.

8. In a fender, the combination with an apron the forward end of which is flexible and movable vertically and laterally, of means for normally stretching taut the said forward end, means for raising said forward end, means for supporting the forward end of the apron in the raised position, and means actuated by striking an object for releasing the apron from said supporting means.

9. In a fender, the combination with a transverse rear member, of a flexible transverse forward member, a body-supporting means supported by said members, two arms pivoted at their rear ends to the rear member and connected at their forward ends respectively to the forward member, and means normally forcing the forward ends of said arms apart.

10. In a fender, the combination with an apron comprising a transverse, pivotally-supported rear member, a flexible transverse forward member, a body-supporting means supported by said members, two arms pivoted at their rear ends to the rear member and connected at their forward ends respectively to the forward flexible member, and resilient means normally forcing the forward ends of said arms apart, of means for upwardly swinging the apron, means for supporting the apron in the raised position, and means for releasing the apron from said supporting means.

11. In a fender, the combination with an apron comprising a transverse, pivotally-supported rear member, a flexible transverse forward member, a body-supporting means sup-

ported by said members, two arms pivoted at their rear ends to the rear member and connected at their forward ends respectively to the forward flexible member, and resilient means normally forcing the forward ends of said arms apart, of means for upwardly swinging the apron, means for supporting the apron in the raised position, and means actuated by striking an object for releasing the apron from said supporting means.

12. In a fender, the combination with a transverse rear member, of a flexible transverse forward member, and a plurality of forwardly-extending body-supporting members connected at their forward ends to the flexible member and movably connected at their rear ends to the rear member.

13. In a fender, the combination with a transverse rear member, of a flexible transverse forward member, a plurality of forwardly-extending body-supporting members connected at their forward ends to the flexible member and movably connected at their rear ends to the rear member, and means for normally stretching taut the said flexible member.

14. In a fender, the combination with a transverse rear member, of a flexible transverse forward member, a plurality of forwardly-extending body-supporting members connected at their forward ends to the flexible member and movably connected at their rear ends to the rear member, and resilient means for normally stretching taut the said flexible member.

15. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending body-supporting members, connected at their forward ends to the flexible member and movably connected at their rear ends to the rear member, two arms pivoted at their ends to the rear member, and at their forward ends respectively to the ends of the flexible member, and resilient means for forcing apart the forward ends of the said arms for stretching taut the flexible member.

16. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, and a plurality of forwardly-extending bars secured at their forward ends to the flexible member and loosely connected at their rear ends to the rear member.

17. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars secured at their forward ends to the flexible member and connected at their rear ends to the rear member, and means for normally stretching taut the flexible member.

18. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars secured at their respective ends to the said members, and resilient means for normally stretching taut the flexible member.

19. In a fender, the combination with a trans-

verse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars secured at their respective ends to the said members, two arms pivoted at their rear ends to the rear member, and connected respectively at their forward ends to the ends of the flexible member, and means for normally forcing apart the forward ends of said arms.

20. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars secured at their respective ends to the said members, two arms pivoted at their rear ends to the rear member and connected respectively at their forward ends to the ends of the flexible member, and resilient means for normally forcing apart the forward ends of said arms.

21. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars having their rear ends slidably mounted upon the rear member and their forward ends connected to the flexible member, means for forcing said bars forward, and means for normally stretching taut the flexible member.

22. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars slidably mounted upon the rear member and connected to the forward member, and resilient means for normally stretching taut the flexible member.

23. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars slidably mounted upon the rear member and connected to the flexible member, means for normally forcing said bars forward, and resilient means for stretching taut the flexible member.

24. In a fender the combination with a transverse rear member, of a flexible transverse forward member, body-supporting means slidably mounted upon the rear member and connected to said flexible member, and resilient means for normally stretching taut the flexible member.

25. In a fender, the combination with a transverse rear member, of a transverse flexible forward member, a plurality of forwardly-extending bars slidably mounted upon the rear member and connected to the flexible member, means for normally forcing said bars forward, two arms pivoted to the rear member and connected respectively to the ends of the flexible member, and resilient means for forcing the forward ends of said arms apart.

26. In a fender, the combination with a transverse rear member, of a plurality of forwardly-extending bars loosely mounted upon the rear member, links connecting in series the forward ends of said bars and loosely connected to said

bars, and resilient means for normally forcing the forward ends of said bars apart.

27. In a fender, the combination with a transverse rear member, of a transverse chain, resilient means for stretching said chain taut, and a body-supporting means mounted upon said chain and the rear member.

28. In a fender, the combination with a transverse rear member, of a body-supporting means transversely movable and supported by said rear member, a transverse chain upon which said body-supporting means is mounted, and resilient means for normally stretching taut said chain.

29. In a fender, the combination with a transverse rear member, of a flexible transverse forward member, a plurality of bars connected to said flexible member and slidably mounted upon the rear member, a spring for forcing said bars forward, resilient means for stretching taut said flexible member, means for raising said flexible member and the forward ends of said bars, and releasable means for supporting the said flexible member and the said bars in the said raised position.

30. In a fender, the combination with a transverse rear member, of a plurality of forwardly-extending bars slidably mounted at their rear ends upon the rear member, a chain to which the forward ends of the bars are connected, a spring for forcing said bars forward, two arms pivoted to said rear member and connected respectively to the ends of said chain, and resilient means for swinging said arms apart.

31. In a fender, the combination with a transverse rear member, of means for pivotally supporting said member so that it may swing upward and downward, means for so swinging the said rear member, a transverse flexible forward member, a body-supporting means supported by said members, two laterally-swinging arms pivoted at their rear ends to said rear member and supporting said flexible member, and means for normally swinging apart the forward ends of said arms.

32. In a fender, the combination with a transverse rear member, of means for pivotally supporting said member so that it may swing upward and downward, a flexible transverse forward member, a plurality of forwardly-extending bars slidably mounted upon the rear member and connected to the flexible member, means for normally forcing said bars forward, and means for elevating said rear member.

33. In a fender, the combination with a transverse rear member, of means for pivotally supporting said member so that it may swing upward and downward, a flexible transverse forward member, means for normally stretching taut said flexible member, a plurality of forwardly-extending bars slidably mounted upon said rear member and connected to the flexible member, resilient means for forcing said bars forward, and means for elevating said rear member.

34. In a fender, the combination with a transverse rear member, of means for pivotally supporting said member, so that it may swing upward and downward, a flexible transverse forward member, a plurality of forwardly-extending bars slidably mounted upon said rear member and connected to said forward member, a spring-actuated means for forcing said bars forward, two arms pivotally connected to the rear member and connected respectively to the ends of the flexible member, resilient means for normally forcing apart the forward ends of said arms, means for upwardly swinging the said rear member, the flexible member and the said bars, means for supporting them in the raised position, and means for releasing them from said supporting means.

35. In a fender, the combination with an apron comprising a transverse rear member, a flexible forward transverse member, a plurality of bars slidably mounted upon the rear member and connected to the forward member, means for forcing said bars forward, means for normally stretching taut said flexible member, of means for swinging upward the forward ends of said bars and said flexible member, and releasable means for supporting said bars and said flexible member in the raised position.

36. In a fender, the combination with an apron comprising a transverse rear member, a flexible forward transverse member, a plurality of bars slidably mounted upon the rear member and connected to the forward member, means for forcing said bars forward, means for normally stretching taut said flexible member, of means for swinging upward the forward ends of said bars and said flexible member, and releasable means actuated by the striking of an object for supporting the said bars and the said flexible member.

37. In a fender, the combination with an apron comprising a rear transverse member, a plurality of forwardly-extending bars slidably supported at their rear ends upon the rear member, a chain connecting the forward ends respectively of the said bars, means for forcing said bars forward, resilient means for stretching said chain, of means for raising the said chain and the forward ends of said bars, means for supporting the said bars and chain in the raised position, and means actuated by the striking of an object for releasing the bars and chain from said supporting means.

38. In a fender, the combination with an apron comprising a rear transverse member, a plurality of forwardly-extending bars slidably supported at their rear ends upon the rear member, means for forcing said bars forward, a chain connecting the forward ends respectively of said bars, two arms pivotally connected to the rear member and connected respectively at their forward ends to the ends of said chain, resilient means for forcing said arms apart, of means for raising said apron,

means for supporting said apron in the raised position, and means actuated by striking an object for releasing the apron from the supporting means.

5 39. In a fender the combination with an apron comprising a transverse rear member, a flexible forward member, a body-supporting means mounted on said members, resilient
10 means for normally stretching taut said flexible member, of means for vertically swinging said apron, means for supporting said apron in the raised position, a supplemental fender disposed in advance of said apron, and means
15 for releasing the apron from the supporting means when the supplemental fender is properly moved.

40. In a fender, the combination with a vertically and laterally movable apron, of resilient means for normally preventing lateral move-
20 ment of the apron, means for moving said apron upwardly, means for supporting the apron in the raised position, and means actuated by striking an object for releasing the apron from the supporting means.

25 41. In a fender, the combination with an apron vertically and laterally movable, of resilient means for resisting lateral movement in either direction of the apron, means for supporting the apron when it is swung to a raised
30 position, a supplemental fender disposed in advance of said apron, and means by which the apron is released from the supporting means when the supplemental fender is properly moved.

35 42. In a fender, the combination with a vertically and laterally movable apron, of resilient means for resisting lateral movement in either direction of the apron, a swinging arm, a pawl

mounted thereon and adapted to engage with and support the apron when the apron is up- 40
wardly swung and the swinging arm is properly positioned, and means actuated by the striking of an object for swinging the said swinging arm to a position in which the pawl will be released from the apron, thus permit- 45
ting the apron to move downwardly.

43. In a fender, the combination with a vertically and a laterally movable apron, of resilient means for resisting lateral movement in either direction of the apron, a swinging arm 50
provided with means for automatically engaging and supporting the apron when the arm is in the proper position, means for so raising the apron and means actuated by striking an object for swinging the said arm to a position in 55
which the apron will be released and permitted to fall.

44. In a fender, the combination with a vertically and laterally movable apron, resilient means normally resisting lateral movement in 60
either direction of the apron, a swinging arm provided with means for engaging and supporting the apron when the apron is upwardly moved and the swinging arm is in the proper position, a swinging supplemental fender, and 65
means connected with said supplemental fender for moving said swinging arm to and fro upon a corresponding movement of the supplemental fender.

In testimony whereof I have signed my name 70
to this specification in the presence of two subscribing witnesses.

RAYMOND ANDLAUER.

Witnesses:

WARREN D. HOUSE,
HENRY F. ROSE.