

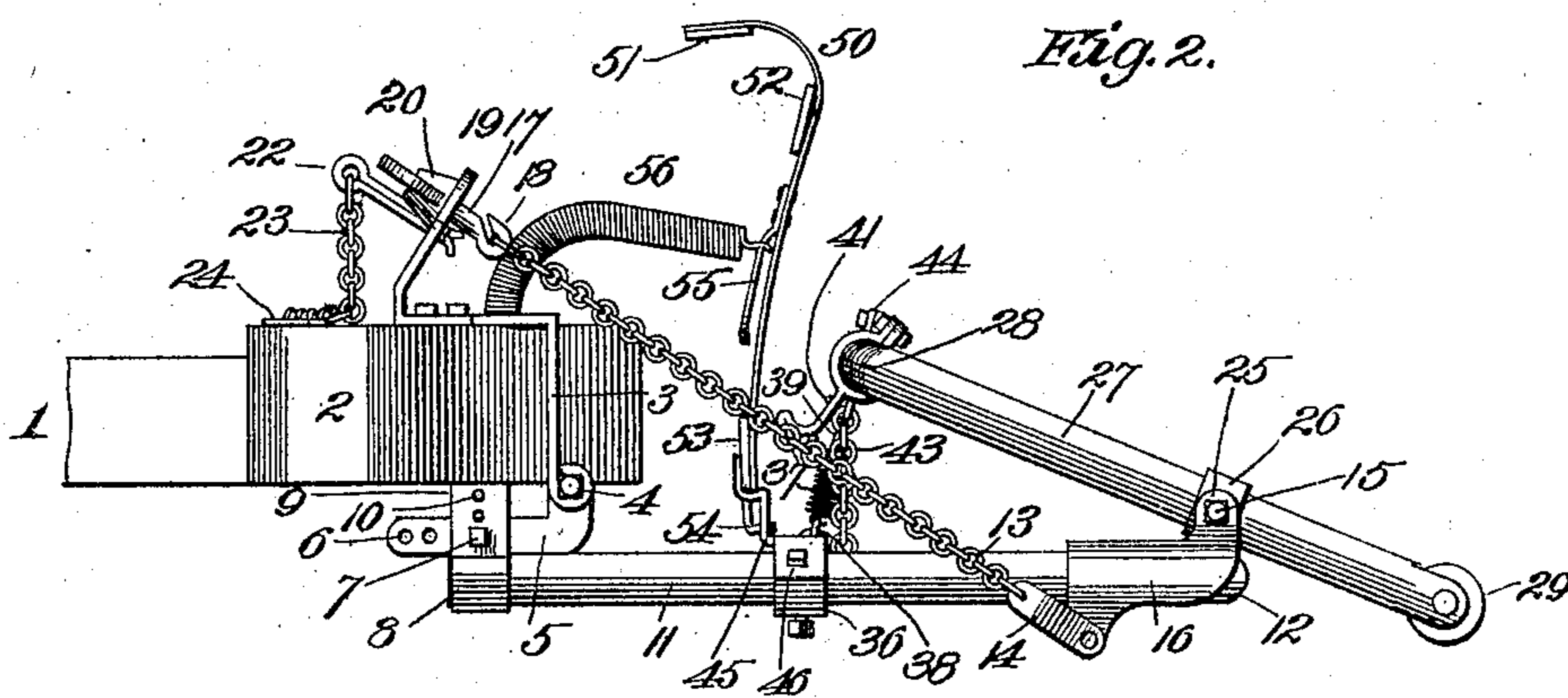
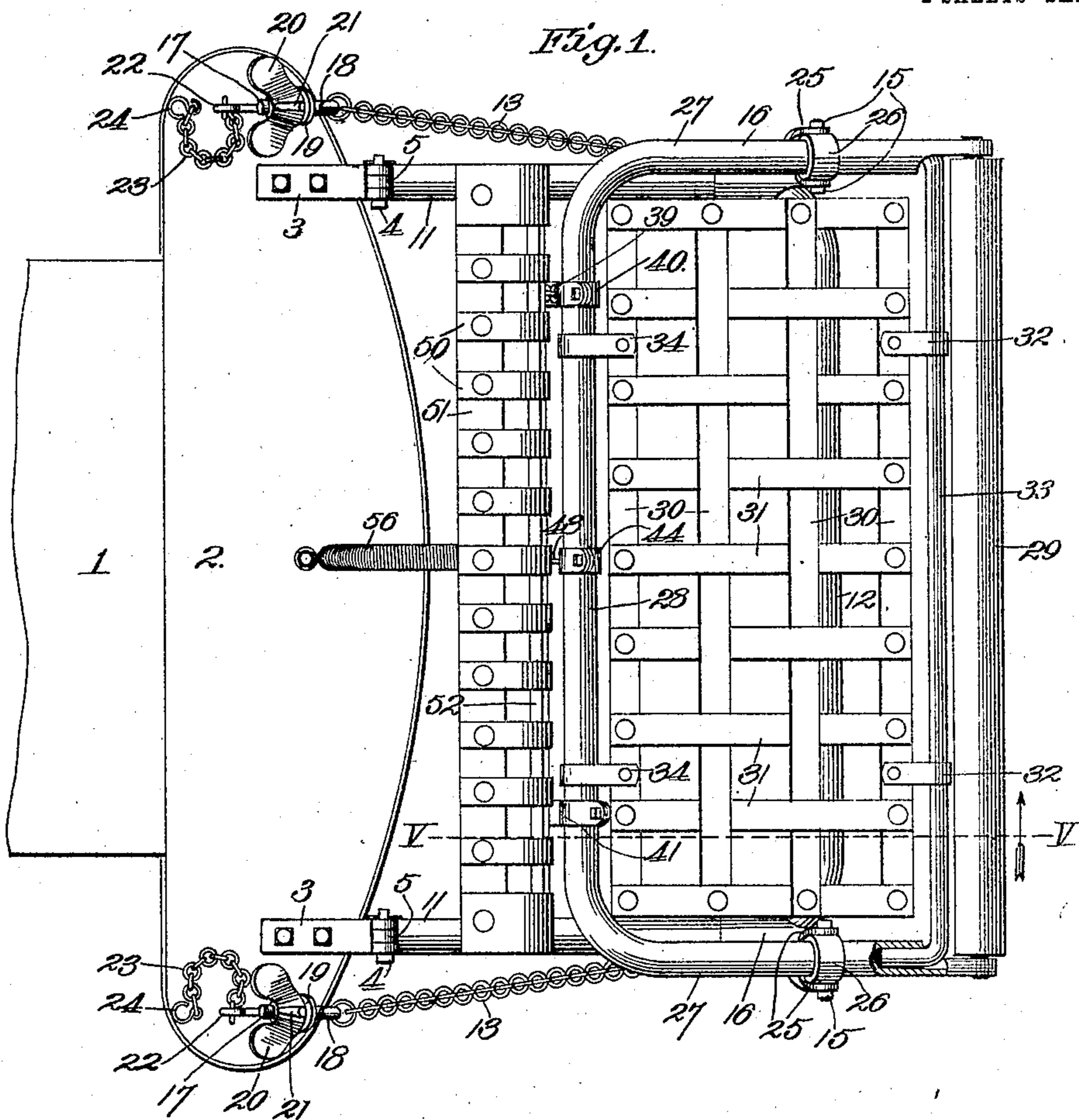
No. 806,294.

PATENTED DEC. 5, 1905.

E. H. SCHULZE.
STREET CAR FENDER.

APPLICATION FILED MAY 17, 1905.

2 SHEETS—SHEET 1.



Witnesses

Frank R. Glou.
H. C. Rodgers.

Inventor
E. H. Schulze
Hopper atty.

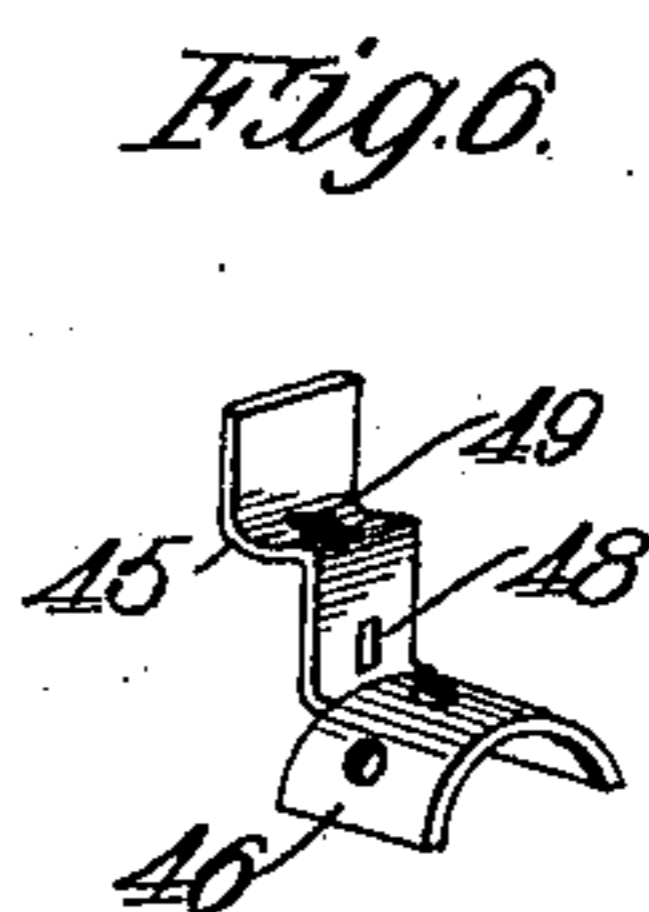
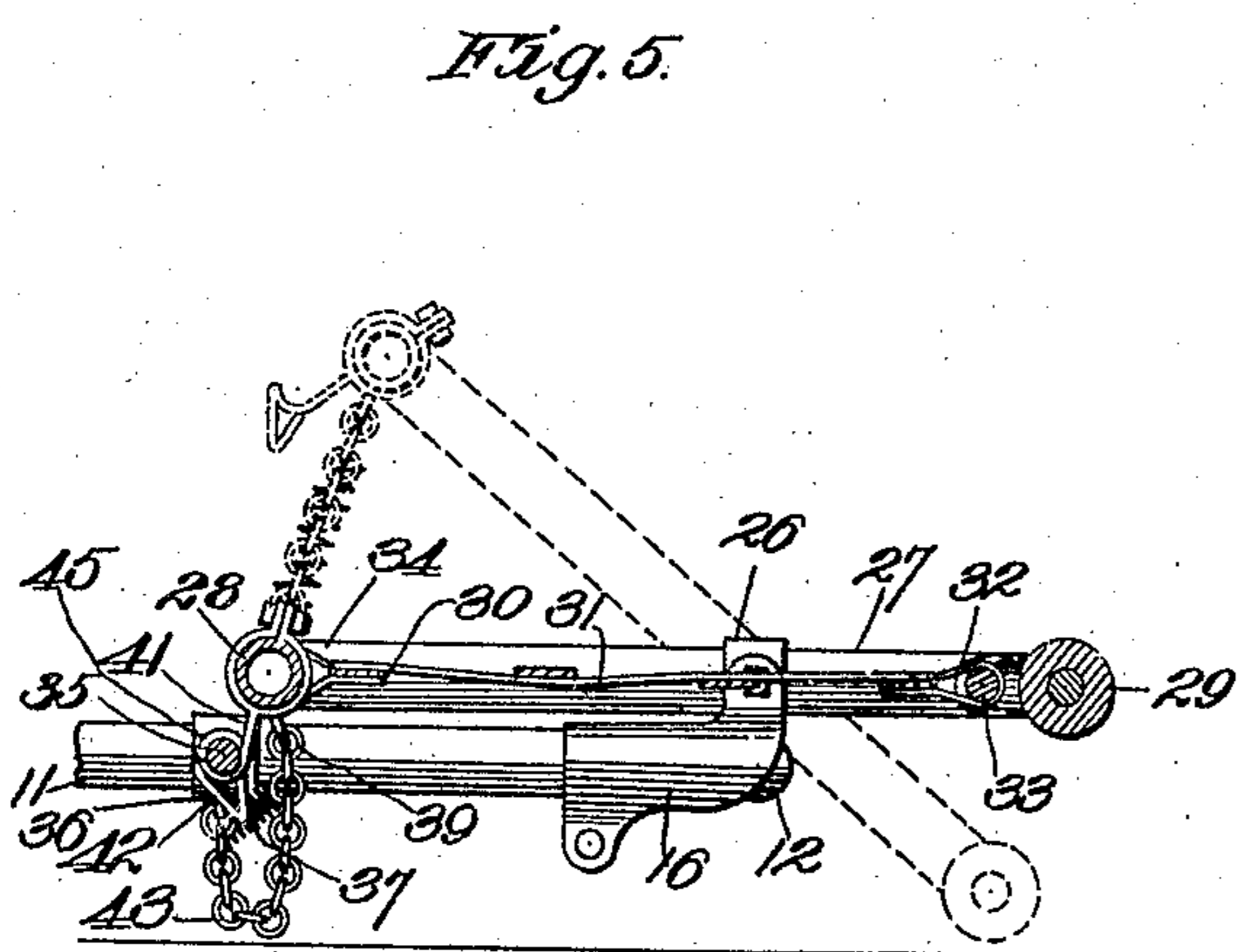
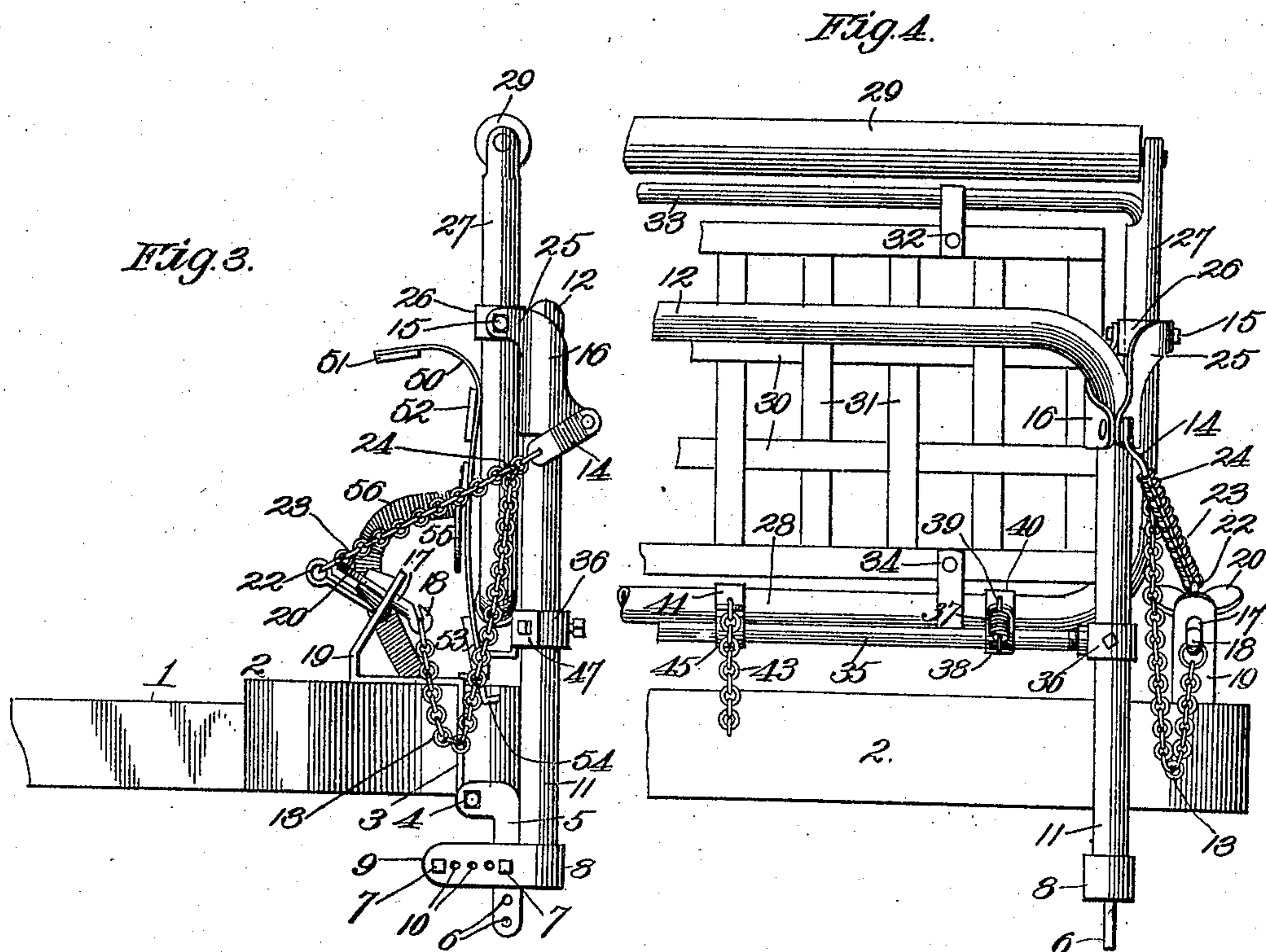
By

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2 SHEETS--SHEET 2.



Witnesses
Frank R. Glor.
H. C. Rodgers.

Inventor
E. H. Schutze.
By *George F. Porter* atty.

UNITED STATES PATENT OFFICE.

ERNIST H. SCHULZE, OF KANSAS CITY, MISSOURI.

STREET-CAR FENDER.

No. 806,294.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed May 17, 1905. Serial No. 260,891.

To all whom it may concern:

Be it known that I, ERNIST H. SCHULZE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Street-Car Fenders, of which the following is a specification.

This invention relates to street-car fenders of that character embracing a frame normally inclined downward and forward and adapted as the weight of a person tripped by and falling upon the frame is imposed thereon rearward of its pivotal point to swing upward at its front end and sustain said person until the motion of the car is arrested.

To the best of my knowledge all of the fenders of the character named which are in practical use are objectionable, because their forward ends in hilly cities must be disposed at approximately ten inches above the trackway, and as they have no downward movement below the plane at which they are set are efficient only in picking up half-grown children or adults and because when swung upward and secured in inoperative position they project so far beyond the ends of the car that the coupling of two cars together is impossible and because when so folded they take up an undesirable amount of space when the cars are stored in car-barns for the night, attempts on the part of the motorman to run a car close up to the one ahead of it invariably resulting in breakage or injury to the fenders should the motorman fail to arrest the car at the proper time.

The object of my invention is to produce a fender of the character described which will efficiently and reliably pick up small children as well as larger persons.

A further object is to produce a fender of such character which when folded upward to inoperative position will permit two cars to bump together or be coupled together without injury to the fenders, and thus in the aggregate save the railway company a large amount of money in the course of a year.

To these ends the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a top plan view of a street-car equipped with a fender embodying my invention disposed in normal or operative position. Fig. 2 is a side view of the same. Fig. 3 is a

side view with the fender occupying its inoperative position. Fig. 4 is a front view of the car equipped with a fender embodying my invention disposed in its inoperative or folded position. Fig. 5 is a vertical longitudinal section taken on the line V V of Fig. 1 with the tilting or pick-up frame in dotted lines in the position which it assumes on striking a person and in full lines in the position which it assumes after catching such person to hold him safely until the car is stopped. Fig. 6 is a detail perspective view of a bracket forming part of the fender.

In the said drawings, 1 indicates a platform of an electric or other car, and 2 the segmental bumper thereof.

3 indicates a pair of inverted-L-shaped brackets, having their horizontal arms secured rigidly to the upper side of the bumper by preference and their vertical arms depending to about the plane of the lower side of the bumper and provided with horizontal bolts 4, to which are pivoted the angle-plates 5, provided with one or more holes 6 for the reception of bolts 7, carried by the upwardly-projecting arms 9 of spring-clamps 8, said arms having a plurality of holes 10 for the reception of said bolts 7.

11 indicates arms clamped rigidly at their rear ends in clasps 8 and preferably connected at their front ends by a cross-bar 12, arms 11 and bar 12 in practice being preferably formed by bending a gas-pipe to U form.

By securing bolts 7 in different holes 6 and 10 it is obvious that the U-frame above mentioned may be caused to project a greater or less distance beyond the front end of the car and occupy a position at varying distances from the trackway. By this adjustment the frame can be adapted for use in level or hilly cities and for use upon cars having platforms of varying heights.

For the purpose of supporting the front end of the U-frame at varying distances from the trackway I provide an extensible and contractible connection, the same preferably consisting of a chain 13 at each side of the frame, the forward ends of the chains being preferably attached to links 14, pivoted to the frame or to brackets 16, carried thereby. The rear ends of the chains engage the hook ends 18 of bolts 17, extending through stationary brackets 19, bolted rigidly upon the bumper near its ends, wing-nuts 20 engaging said bolts and bearing against the rear sides of said brackets 19 to secure the bolts at the de-

sired point of adjustment, and in order to prevent the jolting of the car from turning said nuts backward, and thereby permitting the front end of the U-frame to sag below the proper plane, said nuts are provided with grooves 21, engaged by spring-cotters 22 or their equivalents detachably carried by brackets 19.

To support the U-frame in its folded or inoperative position, as shown in Figs. 3 and 4, short chains 23 are attached to suitable points—for instance, the eyes of the cotters 22—and terminate at their opposite ends in hooks 24 for engagement with links of chains 13, as shown clearly in Fig. 3. At the front end of the arms 11 of the U-frame and preferably projecting from brackets 16 are the upwardly-projecting ears 25, pivoted to opposite sides of collars 26 upon the sides or arms 27 of a tilting or pick-up frame of any suitable type. The said pivots are in the form of clamping-bolts 15 in order that they may be utilized for securing collars 26 at the desired point of adjustment on said tilting frame, which in its preferred form is of the type shown. The pick-up frame shown has the rear ends of its arms or sides 27 connected by a cross-bar 28 and their front ends connected by a roller 29, preferably of rubber, arms 27 and cross-bar 28 being formed from a single piece of pipe. The bed of said frame preferably consists of resilient strips 30 and 31, the opposite ends of the longitudinally-extending strips being riveted to the front and rear cross-strips, said bed being suspended at its front end by clips 32 from a cross-bar 33, hooked into arms 27, and at its rear end by clips 34, engaging cross-bar 28, this construction constituting a spring or resilient bed for the person to fall and lie upon until the car is arrested. The pick-up frame for the purpose of more reliably catching small children is preferably pivoted forward of its center on bolts 15 in order that a child tripped by said frame and falling thereon shall impose the greater part of his weight rearward of said pivotal point, this being invariably the case if the car is moving at a fair speed, because the car will move forward perhaps a foot by the time the upper part of the child's body strikes the bed, and in order that the frame thus pivoted forward of its center shall have its front end normally depressed such end will be yieldingly depressed, preferably by having the greater part of the weight of the frame forward of pivots 15. To hold the front end of the frame normally at a predetermined height, cross-bar 28 has a spring connection with the cross-rod 35, carried by collars 36, adjustably mounted on the arms of the first-named pivoted frame, this spring connection preferably comprising a retractile spring 37, connected at its lower end by a short chain 38 to rod 35 and at its upper end by a short chain 39 to a clasp 40, secured on

cross-bar 28 of the pick-up frame, this type of connection yieldingly limiting the downward movement of roller 29 and at the same time permitting said connection to fold or double up more conveniently than if the spring was employed without the flexible or chain extensions 38 and 39, this folding or doubling action occurring when the fender is folded upward to inoperative position, at which time cross-bar 28 and rod 35 are very close together.

For the purpose of automatically securing the pick-up frame in approximately a horizontal position or in the proper position to retain thereon the person picked up, a resilient hook 41 is secured to cross-bar 28 and has its head beveled, as at 42, so that when the rear end of the pick-up frame is depressed said beveled head will engage rod 35 and spring forward under such engagement until the rod is passed, when the hook will spring back to its original position, and therefore underlie the rod, this relation of parts holding the pick-up frame with its rear end depressed until the car is brought to a standstill and the person is removed from said frame. The motorman or conductor then springs hook 41 forward from engagement with rod 35 to effect the release of the pick-up frame and permit it to swing back to its original position, as shown in Fig. 2. To guard against such depression of the front end of the pick-up frame as will result in forcible contact with the trackway, rods 28 and 35 are connected by a chain 43 or other non-elastic connection, such chain by preference being attached to collars 44 and 45, secured, respectively, upon said rods 28 and 35.

45 indicates stair-shaped brackets carried by the first-named U-frame, the lower tread or horizontal portion of said brackets terminating in segmental bases 46, secured rigidly on collars 36 by cap-screws 47 engaging said collars. The lower risers of said brackets are provided with apertures 48 and the upper tread portions with slots 49.

A resilient guard composed of inverted-hook-shaped slats and horizontal connecting-bars 51, 52, and 53 is provided with depending forwardly-disposed hooks 54, extending down through slots 49 and through apertures 48, the upper tread portions of the stair-shaped brackets partially sustaining the weight of said guard, with the lower and upper risers preventing forward and rearward movement of the lower end of said guard.

55 is a loop or hook rigidly secured centrally of the guard, and 56 is a coil-spring engaging said loop or hook 55 at one end and secured firmly at its opposite end to the upper side of the bumper midway its length, this spring exerting a constant upward and rearward pull on the guard when the latter occupies its operative position, as shown in Fig. 2, and exerting an upward and forward pres-

sure on the guard when the latter is raised to inoperative position, as shown in Fig. 3. In the former case the spring by practically carrying the weight of the guard assists in raising the fender to inoperative position. In the latter case the spring holds the guard pressed against the tilting frame, and therefore away from the front end of the car, so as to prevent it pounding against the latter, and not only making considerable noise, but marring the finish of the car.

In practical operation the pick-up frame occupies the position shown in Figs. 1 and 2, so that on striking a person, large or small, its front end shall be depressed, spring 37 yielding to permit such action to take place. As the weight of the person picked up is imposed back of the pivotal point, the frame operates pivotally until its hook 41 snaps under rod 35, and thereby locks said frame in such position that the person caught cannot involuntarily roll off, it being understood in this connection that the resilient guard-frame sustains in a greater or less degree the impact of the person caught and prevents serious injury which would follow contact with the bumper. Now as the car is stopped and the person is removed or gets off the fender the motorman or conductor releases the pick-up frame from rod 35, as hereinbefore explained. When it is desired to couple two cars together or when the car is to be run into the barn, the front end of the pick-up frame is grasped and lifted, this action first causing it to assume the position shown in full lines, Fig. 5, the continued upward movement then causing the entire fender to swing upward upon pivot-bolts 4. In this lifting operation the spring 56 assists the operator because it practically carries the entire weight of the guard, and the hooks are automatically withdrawn from apertures 48, reengaging said apertures automatically as the fender is again lowered to operative position. The fender is secured in the position shown in Figs. 3 and 4 by engaging the hook 24 of chain 23 with one of the links of chain 13, as shown most clearly in Fig. 3. In such position the bumpers of two cars may come together without injury to the fender, as will be readily understood.

To remove the fender it is only necessary to remove bolts 4, disengage chain 13 from hooks 18, and spring 56 from the bumper. The fender can then be placed upon the rear end of the car, it being understood that each end of the car may be equipped with brackets 3 and 19, though of course said brackets may also be removed, if desired. It is preferred, however, to provide each bumper with brackets 3, as when so equipped the fender can be moved from one end of the car and secured to the opposite end in less time than if it was necessary to change the brackets 3 from one bumper to another.

The fenders now in use which are provided

with the tilting pick-up frame are so connected to the car that it is impracticable to move them from one end to the other, and consequently each end must be provided with a fender. My improvement permits the fender to be changed from one end to the other so quickly that the change can be made at the end of each trip. Of course where the cars traverse a loop at both ends of the system there is no necessity of changing the fender from one end to the other of the car, because the same end is always the front end. By having the collars 26 and 36 adjustable, as hereinbefore explained, it is possible to vary the balance of the pick-up frame as desired—that is to say, it can be projected more or less beyond the front end of the U-shaped supporting-frame, as will be readily understood.

From the above description it will be apparent that I have produced a street-car fender embodying the features of advantage enumerated as desirable and which is obviously susceptible of modification in various particulars without departing from the principle of construction involved.

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

1. A street-car fender comprising a supporting-frame, a pick-up frame pivotally mounted on the supporting-frame and having a bed to receive and carry a person, and a yielding connection between the pick-up frame and the supporting-frame to prevent the front end of the pick-up frame dropping below a predetermined plane.

2. A street-car fender, comprising a pivoted frame a tilting or pick-up frame carried by the pivoted frame and provided with a bed, yielding means for preventing the front end of the tilting or pick-up frame from swinging below a predetermined plane, and means for positively limiting the downward movement of the front end of the tilting or pick-up frame.

3. A street-car fender, comprising a pivoted frame, a tilting or pick-up frame carried by the pivoted frame and provided with a bed, yielding means for preventing the front end of the tilting or pick-up frame from swinging below a predetermined plane, a resilient hook secured to the rear end of the tilting or pick-up frame, and a rod carried by the pivoted frame for engagement by said hook at times.

4. A street-car fender, comprising a supporting-frame, a tilting or pick-up frame pivotally mounted on the supporting-frame and provided with a bed, yielding means for preventing the front end of the tilting or pick-up frame from swinging below a predetermined plane, and a guard carried by the supporting-frame in rear of the tilting or pick-up frame.

5. A street-car fender comprising a supporting-frame, a pick-up frame pivotally

mounted on the supporting-frame and having a bed, means for preventing the front end of the pick-up frame dropping below a predetermined plane, and a yieldable guard independently carried by the supporting-frame in rear of the pick-up frame.

6. A street-car fender, comprising a pivoted frame, a tilting or pick-up frame carried by the pivoted frame and provided with a bed, yielding means for preventing the front end of the tilting or pick-up frame from swinging below a predetermined plane, a guard carried by the pivoted frame between the bumper of the car and the tilting or pick-up frame, and a flexible spring secured to the car and to said guard.

7. A street-car fender comprising a supporting-frame pivotally hung on the car, a pick-up frame pivotally mounted on the front end of the supporting-frame and provided with a bed, a yielding connection between said frames to prevent the front end of the pick-up frame dropping below a predetermined plane, and a flexible connection between the supporting-frame and the car.

8. A street-car fender comprising a supporting-frame pivotally hung on the car, a pick-up frame pivotally mounted on the front end of the supporting-frame and having a bed, a yielding connection between said frames to prevent the front end of the pick-up frame from dropping below a predetermined plane, and an extensible flexible connection between the supporting-frame and the car.

9. A street-car fender, comprising a pivoted frame, a tilting or pick-up frame carried by the pivoted frame and provided with a bed, yielding means for preventing the front end

of the tilting frame from swinging below a predetermined plane, and a flexible connection between a point fixed with relation to the car, and the pivoted frame to secure the latter in its upright or inoperative position.

10. A street-car fender, comprising a pivoted frame, a tilting or pick-up frame carried by the pivoted frame and provided with a bed, yielding means for preventing the front end of the tilting or pick-up frame from swinging below a predetermined plane, means for securing the pivoted frame in its upright or inoperative position, a guard between the car and tilting or pick-up frame and supported from and having pivotal relation with the pick-up frame, and means for holding said guard pressed yieldingly forward when the pick-up frame occupies its upright or inoperative position.

11. A street-car fender, comprising a pivoted frame, a tilting or pick-up frame carried by the pivoted frame and provided with a bed, yielding means for preventing the front end of the tilting or pick-up frame from swinging below a predetermined plane, means for securing the pivoted frame in its upright or inoperative position, a guard between the car and tilting or pick-up frame and supported from and having pivotal relation with the pick-up frame, and a spring connected at one end to the guard and having a fixed relation at its other end with the car.

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

ERNIST H. SCHULZE.

Witnesses:

ED. BRUGGER,
G. Y. THORPE.