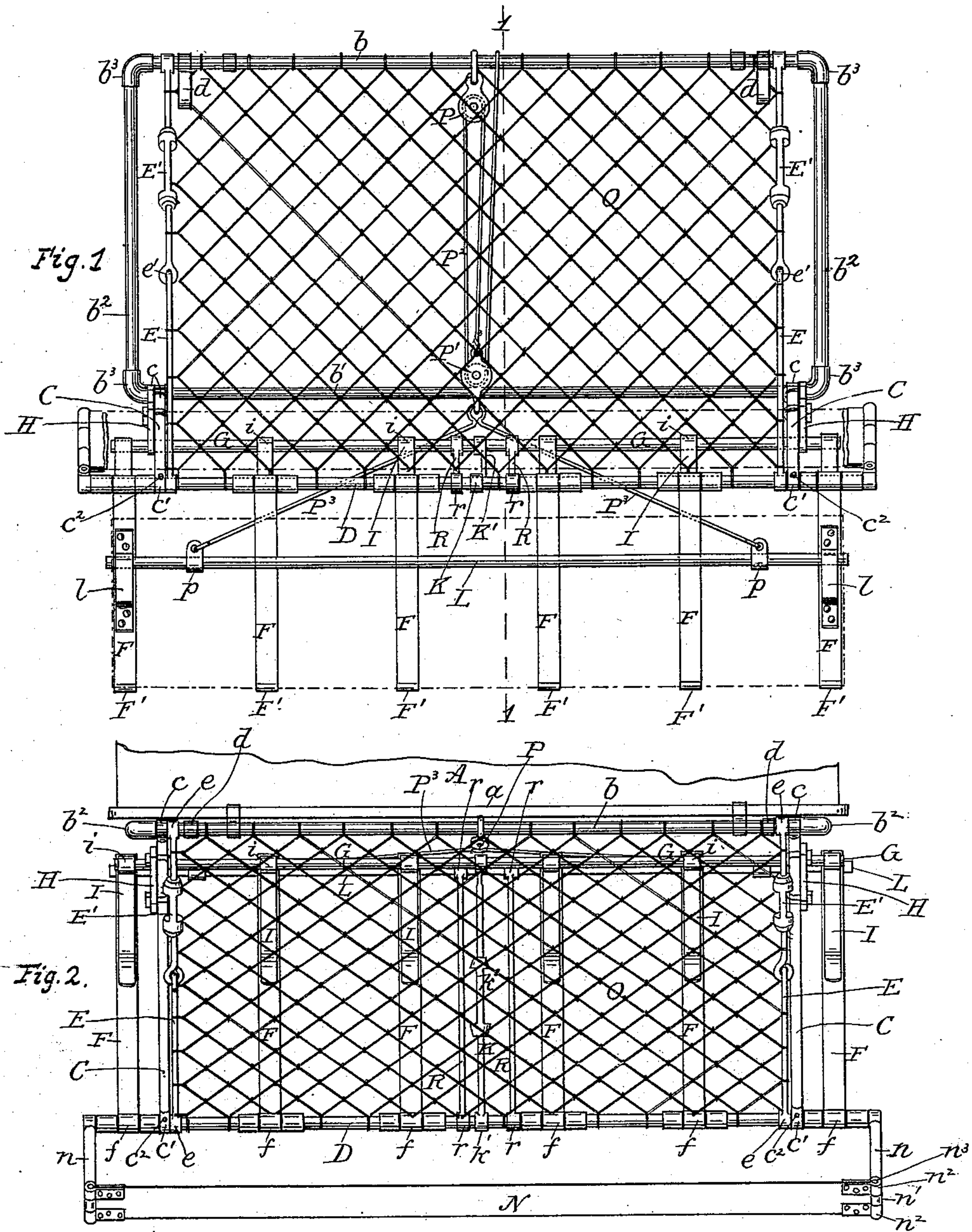


L. DEDERICK.  
CAR FENDER.

No. 549,500.

Patented Nov. 12, 1895.



Witnesses. *Charles Selkirk.*  
*A. Selkirk Jr.*

*Levi Dederick,*  
Inventor  
by *Alex. Selkirk.*  
Attorney.

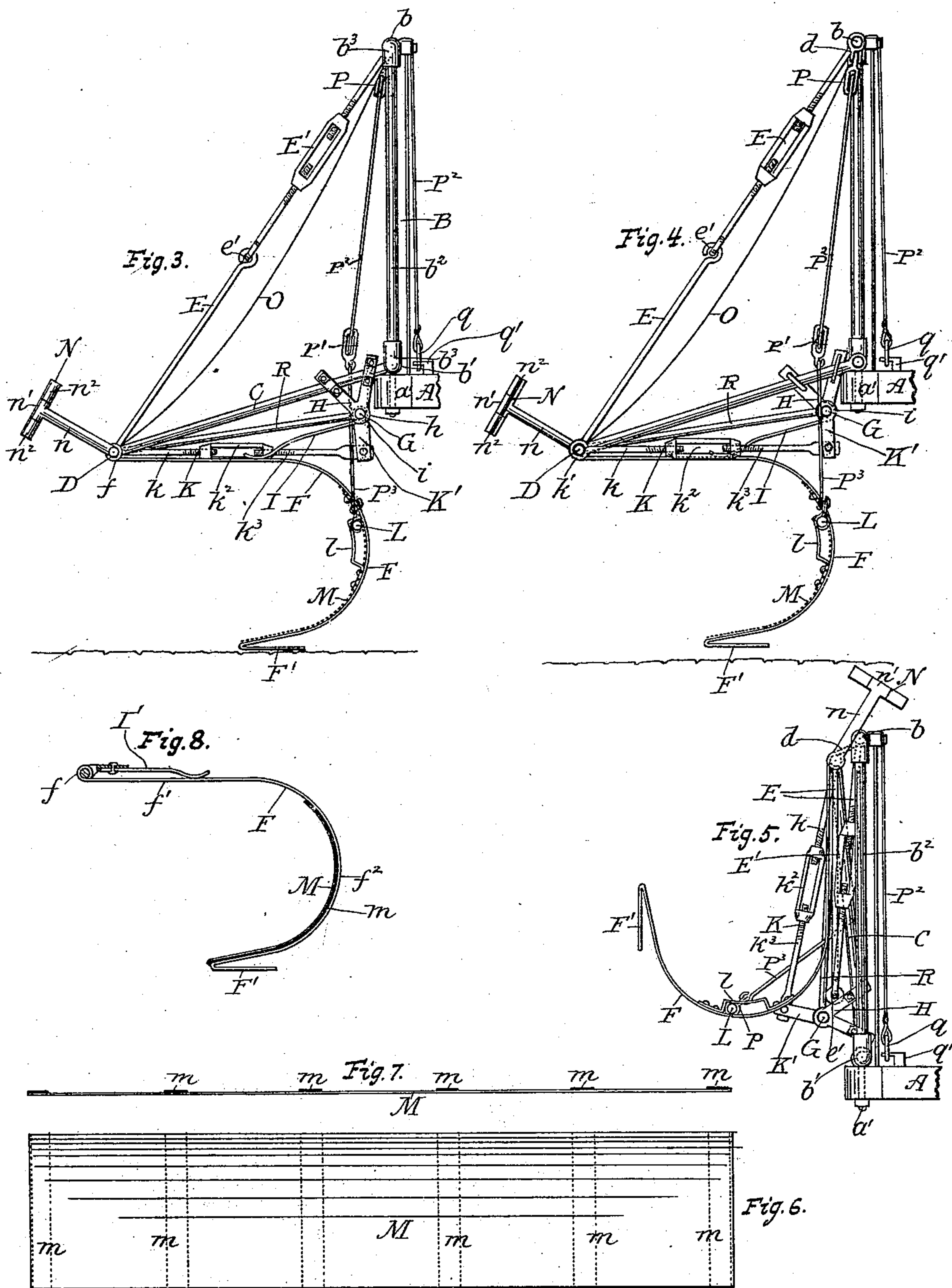
(No Model.)

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# UNITED STATES PATENT OFFICE.

LEVI DEDERICK, OF ALBANY, NEW YORK.

## CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 549,500, dated November 12, 1895.

Application filed October 11, 1894. Serial No. 525,614. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI DEDERICK, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented new and useful Improvements in Car-Fenders, of which the following is a specification.

My invention relates to fenders for cars; and it consists in the combinations of devices and elements hereinafter particularly described, and specifically set forth in the claims.

The objects of my invention are to provide the ends of electric-motor cars, cable-cars, or other cars with a simple means by which persons lying on the railway-bed may be transferred into a receptacle without injury and be retained therein until the movement of the car is stopped; also to provide means by which a person standing on the road-bed may be lifted off the ground and be transferred to a dash-fender, while a child on the road-bed may be turned down on the same and be transferred to the receptacle, to be removed when the car is stopped; and, further, to provide particular combinations of devices by means of which my invention may be embodied in car-fenders which at the will of the driver may be raised from an operative situation to one for mere carriage until required to be used, and then be instantly dropped at will to position required for receiving or catching and holding a person, whether standing or lying on the road-bed. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation of a car-fender embodying the essential features of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation illustrating the apparatus in position for operation, with a person on the road-bed, whether lying down or standing. Fig. 4 is a sectional view of the same when the raking-fingers are elevated above the surface of the road-bed, taken at line 1 in Fig. 1. Fig. 5 is a side elevation showing the apparatus folded against the dash-board. Fig. 6 is a view of the finger-apron detached from the fingers. Fig. 7 is an upper side edge view, showing the stiffening-pieces of the apron; and Fig. 8 is a view

of a hook-form finger with apron applied, and showing a modified form of pressure-spring.

Similar letters refer to similar parts throughout the views.

In the drawings, A represents an end platform of a car and *a* is a dashboard of the same. To this platform a suitable framework B is secured, by any suitable means, for holding the operating parts of my car-fender in position and condition ready to be dropped for operations for catching a person and holding him safely from injury and for raising the operating parts to an idle position, ready to be dropped for use. This framework B may be made of any suitable material and with any preferred form of construction, and may form the whole or a part of the framework of the dashboard-frame, or it may be independent of the dashboard, as may be preferred, and be attachable and removable at will.

My preferred form of construction of the framework B is shown in Fig. 1 to be composed of the top horizontal piece *b*, bottom horizontal piece *b'*, and the vertical end pieces *b<sup>2</sup> b<sup>2</sup>*, all preferably of iron or steel tubing and connected together by elbows *b<sup>3</sup>*, as generally employed for securing tubes together, with an angular form of arrangement. This frame may be secured to the platform, so as to be removable at will by any suitable means, and preferably by eye-form bolts *a'*, holding the lower horizontal member or piece *b'* of the frame to the platform-timber, while the upper horizontal piece or member *b* may be secured to the dash-rail by bolts, hooks, clips, or other known suitable means.

C C are arms provided each with an eye *c* at its rear end, by which eyes the said arms are pivoted to the lower horizontal member *b* of the frame B. These arms are extended forwardly from the said frame member *b'* to a suitable distance, and is secured by its forward end to the horizontal finger-bar D by any suitable means, yet preferably by means of eyes *c'*, connected or secured to the forward ends of said arms and receiving the said finger-bar, which may be secured from turning in the said eyes *c'* by means of a pin or key *c<sup>2</sup>* or other suitable devices.

E E are adjustable suspension-rods, which are provided at their ends with eyes *e e*, by



means of which the said suspension-rods are pivoted, respectively, to the upper member  $b'$  of the frame B and the finger-bar D, as shown in Fig. 1. Although these suspension-rods may be made adjustable in reference to their length by any suitable means, yet I prefer to employ turnbuckles  $E'$  for that purpose, as shown in Fig. 1. When it is intended to fold the parts of this fender together in front of the dashboard, when the fender is to be idle at the rear end of the car, I provide in each suspension-rod E a suitable joint  $e'$  at such a point in the length of each of the said rods, which will allow the rods to fold toward each other when the finger-bar is moved from position shown by full lines in Fig. 4 to that indicated by dotted lines in the same figure, while the arms C C are holding the said finger-bar at a given distance from the lower member  $b'$  of the frame B.

F F are elastic hook-form fingers, made, preferably, of spring-steel about two inches, more or less, in width and one-quarter of an inch in thickness, and having each with its forward end an eye  $f$  receiving the finger-bar D, on which the said fingers F articulate. These fingers are each preferably made with a straight horizontal portion  $f'$  between the eye  $f$  and the hook portion  $f^2$  in each finger. The forward end or nose of the said hook portion is extended to a point about twelve to fifteen inches forward of the bow of the said hook portion  $f^2$ .  $F'$  is a shoe made, preferably, integral with the nose end of said hook portion, and may be welded thereto or be secured thereto by rivets, or be formed with the said nose end by bending the metal back on itself, as shown. These shoes  $F'$  are calculated to ride on the surface of the road-bed and carry the said nose ends of the hook portions of the said fingers, and thereby prevent them from digging into the soil or engaging with paving-stones or other objects in the track of the said fingers.

G is a horizontal rock-bar arranged parallel with the lower member  $b'$  of the frame B and relatively a little below the same, and it is preferably suspended from the rear end portions of the arms C C by means of brackets H, provided each with an eye  $h$  for receiving said bar and secured to said arms by bolts, clips, or other suitable means.

I I are pressure-springs, in number corresponding with the number of fingers F employed in the car-fender. These springs I are calculated to hold the hook portions of said fingers down to the surface of the road-bed, when they are in an operative position with the shoes of the same running on the surface of the road-bed. These springs may be made of any suitable metal or substance, yet I prefer to form them of spring-steel with a slightly-curved shape and having their rear ends provided with a suitable eye  $i$  for receiving the bar G and holding with the same without turning. For this purpose the bar G may be of square form with the eyes  $i$  in said

springs of corresponding form and size, or the said bar may be made round and the eyes  $i$  be the same in form and size, in which a pin or key may be employed to hold the one from turning in relation to the other, while the bar G itself will be free to turn in the eyes  $i$ .

K is an adjustable tension-holding rod for forcing the springs I I down on the backs of fingers F F with a greater or less degree of tension, as may be required. This tension-holding rod consists of the short rod  $k$ , provided at one end with an eye  $k'$ , which loosely receives the horizontal bar D and having its opposite end connected by means of a screw-thread with the turnbuckle  $k^2$  and the short rod  $k^3$  working with said turnbuckle and pivoted to the arm  $K'$ , which arm is rigidly secured to the horizontal bar G, preferably at a point about at the middle of the length of the said bar. When this turnbuckle  $k^2$  is turned in a proper direction, this adjustable tension-holding rod will be lengthened and will force the arm  $K'$  rearwardly, and thereby turn rod or bar G in direction suitable for forcing the pressure-springs I I down on the backs of the fingers F, and when said turnbuckle is revolved in the reversed direction the rod K will be shortened and draw the arm  $K'$  forwardly, and thereby turn bar G in direction to raise the springs I and reduce their pressure on the said fingers.

L is a lifting-bar arranged horizontally and within the bows of the fingers F F and against the same. This lifting-bar is secured by its outer ends with the outer fingers F by means of an oblong loop  $l$ , suitably secured to the said fingers. This loop  $l$  allows each of the fingers F to freely and independently articulate on the bar D when the shoe ends of the said fingers are moving in contact with the rough surfaces of the road-bed over which the car is run.

M is a concave form apron, made of any suitable flexible material, such as rubber, canvas, or network of cord, as may be preferred; yet preference is given to the use of duck-canvas. This apron is made with a length about equal to the length of the lifting-bar L and with a width which will be sufficient to cover over the bow portion of the fingers F from the nose of each upwardly past the said bar L, as indicated by dotted lines in Figs. 1 and 3. It is secured in place by its outer ends being secured to the outer end fingers of the series of fingers F by any suitable means, so that all the fingers between the outer end fingers may freely articulate independent of each other. The lower margin portions of this apron are stiffened against being raised from a horizontal line by any suitable means, yet preferably by means of metallic stiffening pieces  $m m$ , (indicated by dotted lines in Fig. 6 and shown by full lines in Fig. 7,) secured to said apron from its rear sides by rivets or other known devices. This apron when in place in the bows of the several fingers F guards the openings between



each pair of neighboring fingers, so that persons received in front of said fingers will be held from passing back between the same.

N is a tripping-strap, which extends horizontally from one side of this safety-fender to the other, as shown by full lines in Fig. 2. This tripping-strap may be made of any suitable flexible material, such as rubber or canvas, and is secured by any suitable means in place relatively at an angle with its lower edge in advance of its upper edge, and at a short distance above the surface of the road-bed, when this fender is in situation for operation, and it is held by its ends connected with suitable brackets, and preferably by brackets  $n n$ , secured to the respective ends of bar D and extended forwardly, and having with each an eye  $n'$ , by means of which the holding end pieces  $n^2$  of said strap may be secured by a pin  $n^3$ , as shown in Fig. 2.

O is a flexible dashboard-fender, calculated to prevent persons standing on the track and tripped into it by the action of the tripping-strap when falling rearwardly toward the dashboard from striking the dashboard of the car. Although this dashboard-fender may be made of any suitable fabric, yet preference is given to the use of a net-form fender made of heavy cord or light rope, with meshes about four inches, more or less, by which a person on this fender may readily grasp some one of the many mesh-cords and hold with the same until the car is stopped.

The lifting-bar L is provided with a suitable mechanism for raising it to a short distance—say two or three inches—above the plane of the surface of the road-bed, as illustrated in Fig. 4, and my preferred mechanism consists of the sleeves  $P P'$ , rope  $P^2$ , and flexible connecting-piece  $P^3$ , preferably of wire-rope, having its ends secured to the lifting-rod L, by means of eyes  $p p$ , Fig. 1, and a tripping-piece  $q$ , secured to the long end of the rope  $P^2$ , and holding with a suitable finger  $q'$  secured to the platform at any place conveniently near the feet of the driver.

R R are connecting-bars arranged preferably at each side of the adjustable tension-holding rod, and having their ends provided with eyes  $r r$  for receiving, respectively, the bars D and G and holding them at one given distance apart.

Although the finger-pressure springs I I are shown in Figs. 2 and 3 to be arranged over the rearward portions of the fingers F and made of strip-form steel, yet they may be made in the form of spiral springs and be arranged between the backs of said fingers and straight arms secured to the bar G, as are springs I, or these pressure-springs may be made substantially in the form of springs I, Fig. 3, but be secured rigidly to the bar D and be extended rearwardly over the forward portions of said fingers F, with their rear ends pressing down on the backs of the same, as spring I'. (Shown in Fig. 8.)

Although the suspension-rods E are de-

scribed as being jointed so as to allow the bar D, with its fingers F articulating on the same, to be folded up and back against the dashboard of the car, yet they may be in the form of stiff rods when it is preferred that said bar and fingers, when idle, shall be in situation shown in Fig. 4; and although the turnbuckles in said suspension-rods E are employed for the purpose of depressing or elevating the forward ends of the fingers F and bar D, on which they articulate, yet, if preferred, these turnbuckles may be dispensed with when the forward ends of the said fingers are to be at one given distance from the plane of the surface of the road-bed.

The brackets  $n$  of the tripping-strap N may be made with a spring-like form, so as to be elastic and capable of holding the said strap taut, or when the said brackets are made with a rigid form of construction the slack at times occurring in the strap may be readily taken up by setting the holding-end pieces  $n^2$  at one end of the strap inwardly to the extent required, or the strap may be made sectional, with parts secured together by lacings, which may be taken up from time to time, as may be required, to keep the strap taut.

By my above-described improvements the portion of this invention which is calculated to rake over the road-bed for picking up and holding in safety a person lying on the road-bed may be readily folded up against the car front or platform when the apparatus is to be idle at the rear end of the car, and when at the front of the car the rake-fingers may be readily elevated and held at a few inches above the surface of the road-bed as long as the road-bed in front of the running car is clear of persons or objects on the same, and be readily dropped to the road-bed whenever the car approaches a person or object lying on the same, for catching and holding the person safe from injury and until the car is stopped, while a person standing on the track will, by the sudden striking of the tripping-strap against his legs, have them knocked from under him, when he will fall rearwardly on the dashboard-fender and be there retained free from liability of injury until the car is stopped, while a person on the track and another standing on the same may be caught and safely held at the same time from injury.

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

1. In a car safety fender, the combination with a bar which is supported at a distance forward of the front of a car platform and transversely to the same, and a series of hook-form fingers which are relatively wholly in front of the platform and articular each independently of the other, with said bar, and having their straight portions running rearwardly, from said bars toward the said platform, with their bow portions relatively forward of a vertical line drawn at the front of



said platform, and curving downwardly and forwardly, of pressure springs in number corresponding with said fingers and pressing downwardly on the backs of the latter for holding their nose ends to the surface, substantially as and for the purposes set forth.

2. In a car-safety fender, the combination with a bar which is supported in front of the platform of the car, of hook form fingers articulating with said bar, each independently of the other, and provided each with shoe F', at its nose portion, and pressure springs bearing on the backs of said fingers and calculated to force the said shoes down on the surface of the ground or road-bed, substantially as and for the purposes set forth.

3. In a car-safety fender, the combination with a car front or platform, of a finger bar jointed with the same, and supported relatively parallel with it and extending relatively across the track on which the car runs, of a series of elastic hook form fingers secured loosely on said finger bar and having their bow portions rearward of said finger bar and curving downwardly and forwardly to the surface of the road bed relatively in front of the platform, and pressure fingers bearing on the upper sides of the said hook-form fingers, substantially as and for the purposes set forth.

4. In a car safety fender the combination with a car-platform of a finger bar arranged at a distance in front of the same and jointed with it so as to be capable of vertical vibrations, a series of hook form fingers jointed independently and at short distances apart with the said finger-bar and extended rearwardly from the same with their bow portions relatively forward of the platform, of a flexible apron which extends across the bow portions of the said series of fingers and lying against the concave sides of the same and suitably secured to each finger so that the said apron may be reinforced from its rear side at lines at a short distance apart, and springs calculated to exert a downward pressure on the backs of said fingers whereby the nose ends of the said fingers and the lower margin edge of said apron may be held down to the surface of the road-bed while the said fingers are capable of being each vertically vibrated independently of the others, substantially as and for the purposes set forth.

5. In a car-safety-fender the combination with a concave form apron of flexible material, applied and secured against the concave sides of a series of hook-form fingers, to cover the openings between each adjacent pair of fingers in said series, of the metallic stiffening pieces described, secured to the rear side of said apron, substantially as and for the purposes set forth.

6. In a car-safety fender, the combination with a finger bar suitably supported in front of a car, and a series of hook form fingers jointed with said finger bar so that each of said fingers may articulate freely and independently of the others on said bar, of a con-

cave form apron of flexible material, and metallic stiffening pieces applied and secured against the concave front sides of said fingers, substantially as and for the purposes set forth.

7. In a car safety fender the combination with a finger bar suitably supported at a distance forward of the platform of a car, a series of hook form fingers each articulating independent of the others with said bar and extending rearwardly from said bar and relatively to within a short distance from the front of the said platform, and a concave flexible apron applied against the concave sides of said fingers so as be reinforced at short intervals by said fingers, of a bar suitably supported relatively in front of the platform and parallel with the finger bar, and pressure springs in number corresponding with that of the fingers and rigidly secured to said parallel bar, with each bearing downwardly on the back of the finger directly beneath, substantially as and for the purposes set forth.

8. In a car-safety fender, the combination with a car platform, of a frame which is attachable at will to said platform, a finger bar arranged parallel with said frame and forward of the same, forwardly extended arms which serve as a joint connection between the said finger-bar and the lower horizontal member of the said frame, suspension rods which connect the said finger-bar with the upper member of the said frame, of a series of hook form fingers secured to said finger bar with their bow portions curving downwardly and forwardly, and capable of moving in contact with the surface of the road-bed when carried forward by the car, substantially as and for the purposes set forth.

9. In a car safety-fender, the combination with a frame secured to the platform of a car, a finger-bar forward of said platform and parallel with said frame, connecting bars securing said finger-bar with said frame, a series of hook form fingers articulating by their head ends on said finger bar, and pressure springs applied to the backs of said fingers, substantially as and for the purposes set forth.

10. In a car-safety fender the combination with a frame secured to the platform of a car, forwardly projected arms pivoted with said frame and capable of being turned from an inclined to a vertical position and the reverse, a finger-bar supported by the forward ends of said arms, suspension rods which are jointed at near the middle of their length and are pivoted, each, by one end with the finger bar and by the opposite end with the upper portion of the frame and a series of hook-form fingers which are loosely jointed with said finger bar and have their hook portions curved downwardly and forwardly, of mechanism adapted to hold said finger bar folded adjacent to the dash of the platform of the car, substantially as described for the purposes set forth.

11. In a car safety-fender the combination



with a vertical frame, secured to the platform, a finger bar and connecting arms which are jointed with said finger bar and said frame, of suspension rods which are adjustable in their length and connect the finger-bar with the upper portion of said frame, substantially as and for the purposes set forth.

12. In a car safety fender the combination with a finger-bar, arms which hold said bar jointed to the platform of a car, a series of hook form fingers loosely secured, by their head ends, to said finger-bar and having their hook-portions curving downwardly and forwardly, of a horizontal lifting-bar arranged in the bows of the said fingers and loosely secured with one or more of said fingers by means of one or more oblong loops, secured to the same, mechanism adapted to hold said lifting bar and the series of fingers up to a given distance above the surface of the road-bed, and a tripping mechanism which may be operated at will for releasing the said holding mechanism and permit the said fingers to drop to the surface of the road-bed substantially as and for the purposes set forth.

13. In a car safety-fender, the combination with a horizontal rock-bar arranged parallel with a finger bar, brackets serving as bearings in which the said horizontal rock bar may freely turn, a series of hook form fingers jointed with said finger bar, a corresponding number of pressure springs rigidly secured to said rock bar, and mechanism for increasing or lessening at will the pressure of the said springs on the backs of the said fingers, substantially as and for the purposes set forth.

14. In a car safety fender the combination

with a finger bar, a series of hook form fingers articulating independently of each other on said bar a rock-shaft arranged parallel with said finger-bar, springs rigidly secured to said rock shaft and bearing on the backs of the said fingers and mechanism, described, for operating said rock shaft, substantially as and for the purposes set forth.

15. In a car safety fender, the combination with a horizontal bar which is arranged parallel with the line of the front of the car and is secured forward of the same and a dash-board or front of the car and extending rearwardly and upwardly and at an angle to the dash-board or front; of a tripping strap arranged parallel to the lower margin edge of said fender and at a short distance above the plane of the surface of the roadbed, substantially as and for the purposes set forth.

16. The combination with a car-front of a dual car fender formed by the combination of a series of hook-form fingers which are secured to a finger bar and have their bow portions extended rearwardly and curved forwardly and downwardly for raking over the surface of the road-bed, and the flexible dash board fender described, arranged at an angle and between the finger bar and car front, and the tripping strap described, arranged relatively forward of said finger bar and at a short distance above the surface of the road bed substantially as and for the purposes set forth.

LEVI DEDERICK.

Witnesses:

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CHARLES SELKIRK.