

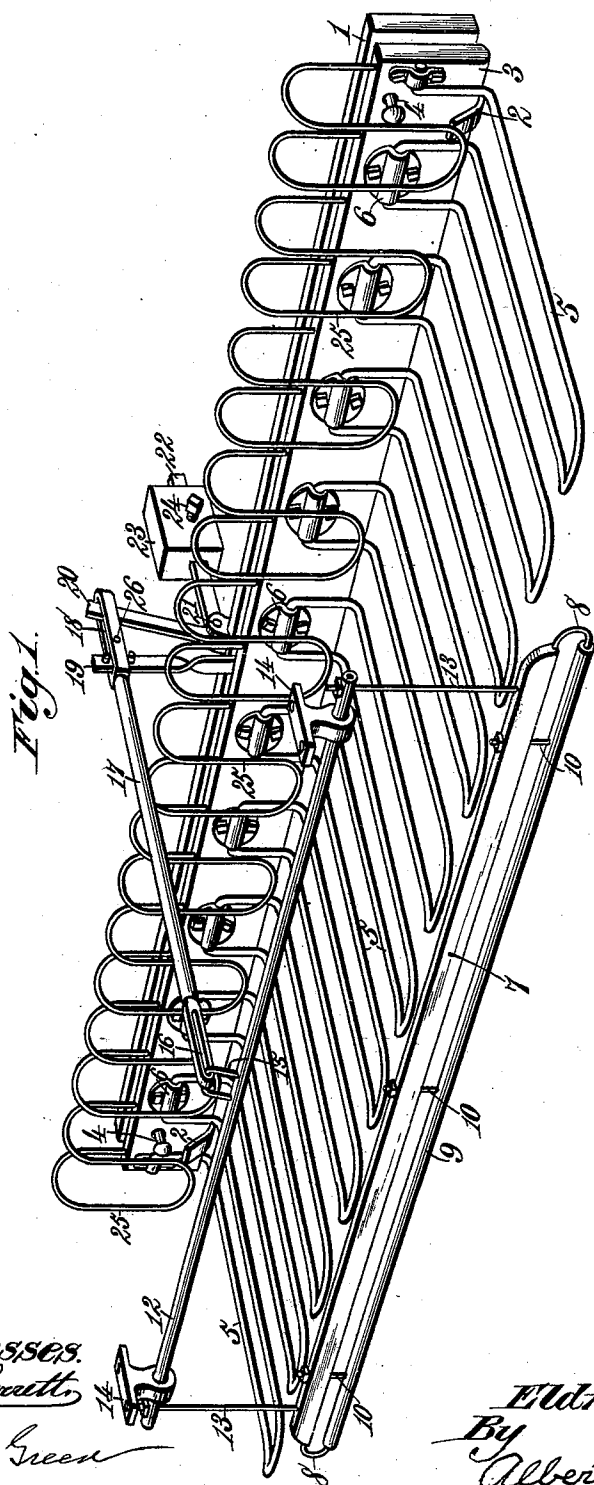
(No Model.)

2 Sheets—Sheet 1.

E. J. SMITH.
PICK-UP CAR FENDER.

No. 540,927.

Patented June 11, 1895.



Witnesses.

Robert Smith

Thos. A. Green

Inventor.

Eldridge J. Smith.

By

Albert B. Norris.

Atty.

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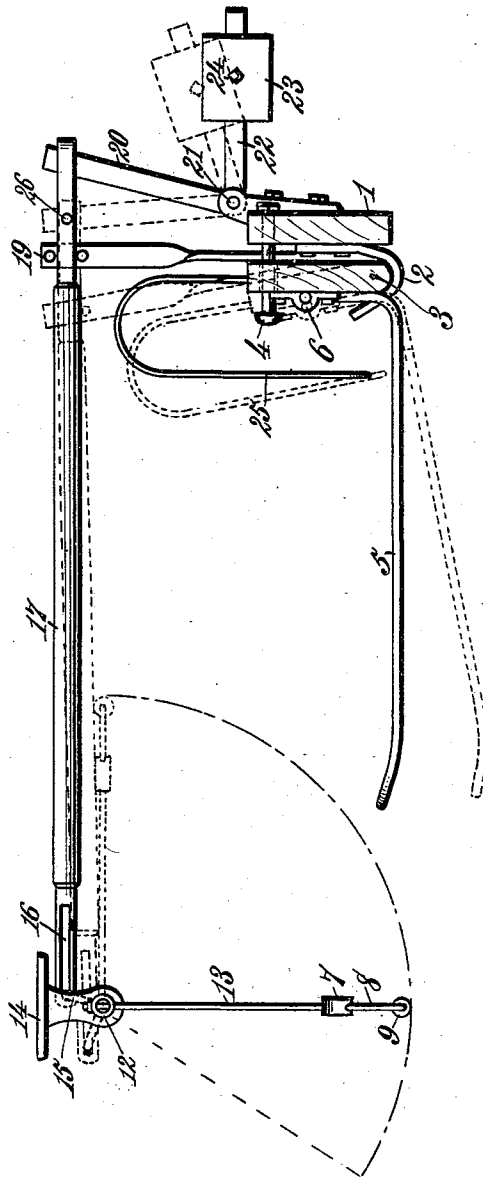
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Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

ELDRIDGE J. SMITH, OF WASHINGTON, DISTRICT OF COLUMBIA.

PICK-UP CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 540,927, dated June 11, 1895.

Application filed March 4, 1895. Serial No. 540,487. (No model.)

To all whom it may concern:

Be it known that I, ELDRIDGE J. SMITH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Pick-Up Car-Fenders, of which the following is a specification.

This invention relates to that type of take-up car-fenders wherein a plurality of independent inherently elastic fingers are mounted upon and project forward from a suitable support beneath the car-body, and are adapted to move vertically for the purpose of placing their front ends or points against or in juxtaposition to the road-way or surface traversed to take up a person or object encountered by the car in its travel, as in Letters Patent No. 523,551, dated July 24, 1894.

In the practical operation of car-fenders of the character referred to, or any other fender arranged on the car-truck beneath the car-body and projecting forwardly, the person or object encountered and picked up is liable to come with more or less violence in contact with or against the transverse fender-support. This is dangerous and liable to injure the person picked up, and for such reasons car-fenders of this class are objectionable in a measure. Further, in car-fenders which normally stand elevated from the road-way or surface traversed, and are dropped automatically by the action of a pendent-feeler or guard, the automatic mechanism is more or less complicated and the fender requires to be manually reset after being released and dropped against or in juxtaposition to the road-way. This is also more or less objectionable, in that it requires the care and attention of the driver, gripman, or other attendant, and by carelessness, or inadvertence, failure to reset the fender mechanism may result.

The objects of my present invention are to avoid all the objections alluded to; to provide a new and improved buffer for preventing the person or object picked up by the fender from striking the fender-support or car-truck beneath the car-body; and to provide novel mechanism for automatically resetting the fender after it has dropped and is freed from the person or object encountered and picked up, or after the fender has been caused to drop by any cause.

To accomplish all these objects, my invention involves the features of construction, the principles of operation, and the combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of a car-fender embodying my invention and detached from the car. Fig. 2 is a side elevation showing by full lines the position of the parts in their normal position and by dotted lines the position of the parts when the fender is dropped to pick up a person or object, also showing by dotted lines the feeler or guard swung forward to gain access to the fender-fingers.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, which omit the car-truck, and the car-body, as it is not deemed necessary to illustrate or specifically describe the same, as the invention is susceptible of application to a railway car of any construction, whether now in existence, or to be hereafter built.

The numeral 1 indicates a bar or beam corresponding to the pilot-board of a grip or other car. This bar or beam is designed to be fixed in a rigid position to a part of the car-truck beneath the car-body, and is provided, near each end, with a hanger 2, projecting forwardly and under the finger-supporting bar or beam 3. The stationary or rigid bar or beam is provided at its upper portion, near each end, with a horizontal bolt 4, extending through an orifice in the upper portion of the finger-supporting bar or beam, in such manner that the latter is susceptible of rocking or oscillating on the hangers 2, while it is retained in proper operative position through the medium of such hangers and the bolts 4. The orifices through which the bolts pass must be of such dimensions or size as to permit the finger-supporting bar or beam to oscillate or rock, as above stated.

The pick-up fender is composed of a plurality of independently-movable inherently-elastic fingers 5, each composed of a single piece of elastic rod or wire, bent centrally between its extremities into approximately U-shape, and having the extremities or ends bent upwardly and pivotally engaged with

eyes or sockets 6, bolted or otherwise rigidly secured to the bar or beam 3. This bar or beam is designed to normally stand perpendicular, as shown by full lines, Fig. 2, and to oscillate or swing to the position indicated by dotted lines, for the purpose of swinging the fender-fingers and placing their front ends or points against or in juxtaposition to the roadway or surface traversed, so that the fingers will pass under and pick up a person or object encountered by the car as it travels. The elastic fender-fingers are inherently elastic; they are designed to work independent of one another; and they are curved longitudinally, as illustrated in Fig. 2, all as described in the Letters Patent hereinbefore referred to.

The pendent-guard or feeler, which releases the finger-supporting bar or beam 3, and permits the fender-fingers to drop, is composed of a transverse bar or beam 7, having at its ends the segmental or curved metal rods 8 to which the extremities of a rod 9 are secured, which rod is preferably composed of a tube of steel or other metal. The rod or tube 9 is sustained at intervals along its length through the medium of bolts 10, secured to the bar or beam 7, and this bar or beam is suspended from the ends of a rock-shaft 12 through the medium of hanger-rods 13 secured to the bar or beam 7 and to the rock-shaft. The rock-shaft is journaled, near its end portions, in brackets or bearings 14, adapted to be bolted or otherwise suitably secured to the car-body at the under side thereof.

The rock-shaft 12 is provided centrally between its extremities, with a loop or yoke 15, arranged in a longitudinal slot 16 at the forward end of a connecting rod 17, which, at its rear end, is provided with a longitudinal slot 18. The slot 16 extends horizontally through the connecting rod 17, and the slot 18 extends vertically through said rod, for the purpose of receiving the upper extremity of an arm or post 19 and the upper end of one arm, 20, of a bell-crank lever which is pivoted at its angle, as at 21, to a bracket on the stationary or rigid beam 1. The other arm, 22, of the lever is provided with a weight 23, preferably adjustable along the length of the arm 22 through the medium of a set-screw 24. The arm 20 normally lies against the rear end of the slot 18, and the arm or post 19 normally lies against the front end of said slot, while the loop or yoke 15 normally lies against the front end of the slot 16, all in such manner that if a person or object is encountered by the pendent-guard or feeler, the latter is swung rearward, the rock-shaft 12 is turned in its bearings 14, the connecting-rod 17 is drawn forward, and the bell-crank lever is operated to lift the weight 23, and the arm or post 19 is released, so that the fender-fingers can drop against or in juxtaposition to the roadway or surface traversed. When the pendent-guard or feeler is released from restraint, and the person or object has been removed from the fender proper, the power of

the weight, due to gravity, swings the arm 22 of the bell-crank lever downward, and thereby moves the connecting-rod 17 rearward, and the front end of the slot 18, acting on the arm or post 19, restores the fender-supporting bar or beam 3 to its perpendicular, or approximately perpendicular position, thereby automatically resetting the fender without the exercise of any attention or care on the part of the driver, gripman, or other attendant or person.

A person or object encountered or picked up by the fender is liable to strike the finger-supporting bar or beam with more or less violence, and this is dangerous and likely to result in injury to the person picked up. To avoid this I arrange a buffer in front of the supporting-bar or beam, in such manner as to prevent concussion between the moving bar or beam and the person or object encountered, in that the buffer yieldingly receives the person or object, and practically prevents forcible contact with the finger-supporting bar or beam. The buffer, as here illustrated, is composed of a plurality of independent, inherently elastic fingers 25, each consisting of a single piece of elastic rod or wire, bent centrally between its extremities into approximately U-shape, and having the end portions bent approximately parallel with the U-shaped portion, so that such extremities can be secured to a suitable support while the U-shaped body portions lie in front of the finger-supporting bar or beam.

I prefer to secure the buffer-fingers to the oscillating or rocking finger-supporting bar or beam, so that when the fender-fingers drop against or in juxtaposition to the roadway or surface traversed, the buffer-fingers move forward to the position indicated by dotted lines in Fig. 2.

The buffer-fingers are preferably located, respectively, directly in front of the eyes or sockets 6, but they may be otherwise located or placed without altering the spirit of the invention.

In the arrangement illustrated in the drawings, the independent, inherently elastic buffer-fingers are suspended entirely in front of all parts of the car-truck, and in front of the finger-supporting bar or beam 3, so that they constitute a yielding resistance for the person or object picked up by the fender, thereby preventing the bar or beam, or parts of the car-truck, from violently striking a person picked up.

As regards the improved buffer, it may be used in connection with a pick-up fender of any construction located beneath a car-body; but, preferably, this buffer is used in combination with and is located in juxtaposition to the rear end portions of a plurality of fender-fingers, adapted to be automatically released, so that they can drop against, or in juxtaposition to the roadway or surface traversed by the car, for the purpose of picking up a person or object encountered on the track.

The arrangement of the loop or yoke 15 of the rock-shaft 12, in the slot 16 of the connecting-rod 17, provides a loose connection between the rock-shaft and the connecting-rod, so that it is possible to swing the suspended guard or feeler forward without imparting any lengthwise movement to the connecting-rod. This enables the pendent-guard or feeler to be moved out of the way when it is desired to gain access to the fender-fingers for any purpose whatever, as for example to remove the person or object picked up by the fender. The feeler or guard is shown by dotted lines swung forward in Fig. 2.

The weight 23 must be sufficient to overbalance the weight of the finger-supporting bar or beam, the fender-fingers, and the buffer-fingers if the latter are mounted on the fender-supporting bar or beam. I have found a weight of ten pounds sufficient in a fender, actually applied to a car and made according to my invention.

I have illustrated the bell-crank lever 20, 22, pivoted to a bracket mounted on the rigid bar, or beam 1, but I do not confine myself to this manner of supporting the bracket, as it may be suspended from the car floor and the rigid bar or beam 1 dispensed with, in which event the hangers 2 can be secured to some support equivalent to the rigid bar or beam.

The front extremities of the bolts 4 are preferably provided with nuts which can be suitably adjusted to limit the forward swinging motion of the finger-bar or beam 3, so that the latter will move the required distance to place the front extremities of the fender fingers in contact with the surface traversed.

The upper ends of the hanger-rods 13 are provided with nuts which can be properly adjusted for the purpose of placing the pendent guard, or feeler, in any desired position relatively to the surface traversed. The hanger-rods also permit the pendent-guard, or feeler, to be readily removed and replaced.

The fender fingers are designed to drop to the roadbed by gravity, but their dropping motion can be accelerated, if desired, by a positive movement, as for instance by a bolt or pin 26 extending through the slot 18, in rear of the arm or post 19 and adapted to strike and push the latter forward.

The number of buffer fingers 25 can be increased or diminished to any suitable extent. If a strip of metal or wood be arranged to extend the entire length of the buffer and be secured to the lower ends of the buffer-fingers, the number of fingers can be reduced to three or four.

The counterbalance weight which I use in preference to a spring can be adjusted to any position to secure any desired surplusage of overbalance.

Having thus described my invention, what I claim is—

1. The combination with an oscillating or rocking fender-carrying-bar or beam, and a pick-up fender composed of a series of inher-

ently elastic fingers extending from the oscillating or rocking fender-carrying-bar or beam, of a buffer composed of a plurality of elastic, pendent fingers secured to said fender-carrying-bar or beam and hanging down in front thereof in juxtaposition to the rear end portion of the fender fingers, substantially as described.

2. The combination with an oscillating or rocking fender-carrying-bar or beam, and a pick-up fender composed of a series of inherently elastic fingers pivotally connected with and extending from the oscillating or rocking fender-carrying-bar or beam, of a buffer composed of a plurality of inherently elastic fingers each made of a piece of rod or wire bent into approximately U-shape, secured to the said fender-carrying-bar or beam, and hanging down in front thereof, substantially as described.

3. The combination with a swinging pick-up fender composed of a series of independent, inherently elastic fingers located beneath a car-body, of a buffer composed of a plurality of inherently elastic buffer-fingers, each composed of a piece of rod or wire bent into approximately U-shape and suspended in juxtaposition to the rear end portions of the fender-fingers, substantially as described.

4. The combination with an oscillating or rocking fender-support, and a swinging pick-up fender composed of a series of elastic fingers mounted on said support, of a buffer carried by the oscillating or rocking support and projecting in front thereof, substantially as described.

5. The combination with an oscillating or rocking fender-support, and a swinging pick-up fender mounted on the oscillating or rocking support, of a buffer carried by said support and composed of a plurality of inherently elastic fingers, each made of a piece of rod or wire bent into approximately U-shape and hanging in front of the support, substantially as described.

6. The combination in a car-fender, of a stationary or rigid bar or beam provided at its lower portion with hangers, a finger-carrying bar or beam pivotally supported by said hangers, bolts or rods secured to the stationary or rigid bar or beam and extending through orifices in the finger-supporting bar or beam, a plurality of inherently elastic fender-fingers mounted on the finger-supporting bar or beam, and means for holding and releasing the finger-supporting bar or beam, so that when released it can oscillate or rock on the hangers of the stationary or rigid bar or beam, substantially as described.

7. The combination of a transverse bar or beam adapted to oscillate or rock, a plurality of inherently elastic fingers independently pivoted to said oscillatory bar or beam, a suspended guard or feeler which releases and permits the bar or beam to rock forward when an object is encountered by the guard or feeler, and automatically operating mech-

anism which automatically rocks the bar or beam back and restores the fingers to their normal position when the object picked up is removed from the fingers, substantially as described.

8. The combination in a car-fender, of an oscillating or rocking fender-supporting bar or beam, a pick-up fender mounted on said bar or beam, an upwardly projecting arm or post, a pivoted weight-carrying lever, a connecting-rod having a slotted rear end portion engaging said arm or post and said weight-carrying lever, a rock-shaft provided with a suspended guard or feeler, and a loose connection between the rock-shaft and the connecting-rod, substantially as described.

9. The combination of a transverse bar or beam adapted to oscillate or rock and provided with an arm or post, a plurality of fingers extending from the bar or beam, a lengthwise moving rod which engages the arm or post of the bar or beam and normally holds the latter in its normal position with the fingers elevated from the surfaces traversed, a suspended guard or feeler which shifts the rod forward and permits the bar or beam to rock and place the fingers in juxtaposition to the surface traversed, and a weighted lever acting on the said lengthwise moving rod and serving to shift the same rearward and automati-

cally restore the bar or beam and fingers to their normal position when the object picked up is removed from the fingers, substantially as described.

10. A pendent swinging feeler or guard for releasing a car-fender, consisting of a rock-shaft, hanger-rods attached to the rock-shaft, a bar or beam supported by said rods and having bent or curved rods at its ends, and a rod secured at its ends to said bent or curved rods and located below the said bar or beam, substantially as described.

11. The combination with a swinging car-fender, and retaining devices for holding the same elevated from the surface traversed, of a pendent-swinging feeler or guard connected with said retaining devices and composed of a rock-shaft, hanger-rods attached to said rock-shaft, a bar or beam supported by said rods and having bent or curved rods at its ends, and a rod secured at its ends to said bent or curved rods and located below said bar or beam, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELDRIDGE J. SMITH.

Witnesses:

ALBERT H. NORRIS,
NATHAN H. ROBBINS.