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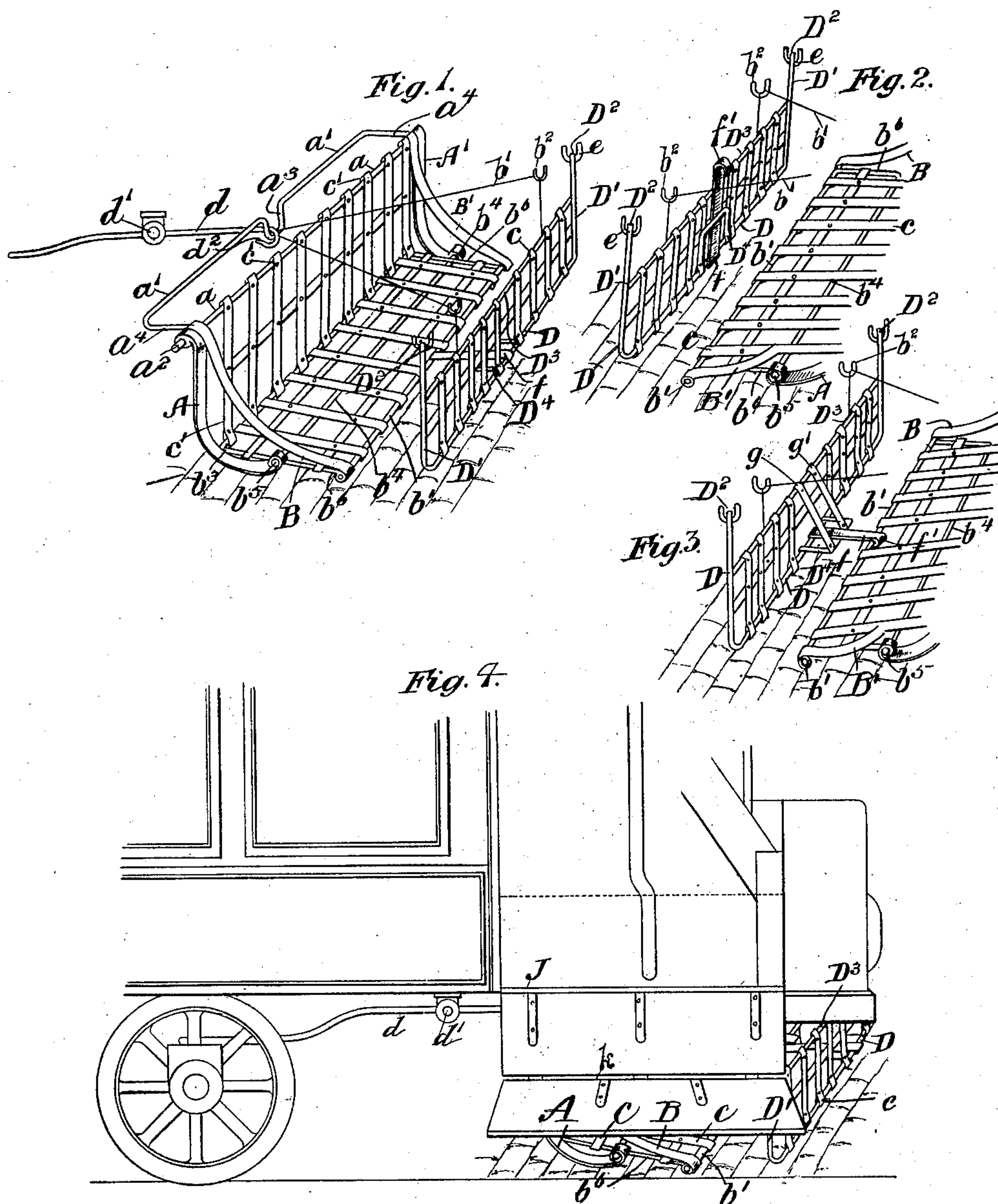
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LIFE SAVING GUARD FOR TRAM CARS OR THE LIKE.

APPLICATION FILED DEC. 15, 1902.

NO MODEL.



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# UNITED STATES PATENT OFFICE.

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OF ONE-HALF TO JOHN INGRAM, OF RUTHERGLEN, SCOTLAND, AND  
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## LIFE-SAVING GUARD FOR TRAM-CARS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 737,914, dated September 1, 1903.

Application filed December 15, 1902. Serial No. 135,250. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM THOMSON GOUDE ELLIS, traveler, a subject of the King of the United Kingdom of Great Britain and Ireland, and a resident of 3 Victoria Quadrant, Cathcart, Glasgow, Scotland, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

With my improved fender a person or object falling in front of the car first comes in contact with a tripping-frame in advance of the actual life-saving scoop. The tripping-frame is pushed in by the person or object against which it comes in contact, which causes the scoop to drop automatically and run on the ground. The person or object is gathered up by the scoop, which is bag-shaped, the momentum of the car causing the person or object to be deposited at the back of the scoop. The weight of the person or object at the back of the scoop causes the front of the scoop to clear the ground.

My invention consists in the novel features of construction hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved fender adapted to be suspended beneath the end of a car-platform, the scoop and tripping-frame being coupled together. Fig. 2 is a detail perspective view of the same looking from the back, the scoop and tripping-frame being uncoupled. Fig. 3 is a similar view showing the scoop and tripping-frame coupled. Fig. 4 is a side elevation of part of a car provided with my fender and showing the location of the latter beneath the platform and my folding step used in conjunction with the fender.

My fender is adapted to be suspended by suitable brackets or eyebolts (not shown) from the bottom of the platform of the car at either end thereof and comprises a scoop and a tripping-frame located in front of and normally coupled to the scoop to uphold the lat-

ter. The scoop is provided with upper and lower pivoted frames. The upper frame is constructed with a front rod *a*, formed with spindles *a*<sup>2</sup>, (which are received by the brackets or eyebolts above referred to,) and a rear rod *a*<sup>1</sup>, formed with a depending crank *a*<sup>3</sup>, and bent side arms *a*<sup>4</sup>, rigidly fixing the rear rod *a*<sup>1</sup> to the front rod *a*. The lower frame is constructed with a front rod *b*<sup>1</sup>, a rear rod *b*<sup>2</sup>, an intermediate rod *b*<sup>4</sup>, formed with spindles *b*<sup>5</sup>, and side rods *b*<sup>6</sup>.

*A* and *A*<sup>1</sup> are side hangers fixed at their upper ends to the front rod *a* of the upper frame and receiving the spindles *b*<sup>5</sup> of the lower frame, whereby the latter is pivoted thereon.

*B* and *B*<sup>1</sup> are strips extending from the front rod *a* of the upper frame to the front rod *b*<sup>1</sup> of the lower frame for limiting the downward movement of the front part of the lower frame. The lower frame is covered with strips *c*, of balata belting or other suitable material, preferably laced, as shown.

*c*<sup>1</sup> are elastic connections at the back of the scoop, having their upper ends secured to the front rod *a* of the upper frame and their lower ends secured to the rear rod *b*<sup>2</sup> of the lower frame. These elastic connections *c*<sup>1</sup> have a tendency to normally tilt up the rear part of the lower frame, and thereby lower the front part thereof, so that it will abut the ground when the lower frame is released.

In advance of the scoop is located my tripping-frame, which is constructed with a lower rod *D*, having upturned side arms *D*<sup>1</sup>, formed with hooks *D*<sup>2</sup> at their upper ends, whereby the tripping-frame is suspended from beneath the bottom of a car-platform by means of eyelets *e*, which are of an elongated shape, so as to allow the top of the tripping-frame to move up and down. The side arms *D*<sup>1</sup> of the tripping-frame are braced by an upper rod *D*<sup>3</sup>. This frame is also provided with laced strips *c* as a covering. Pivoted centrally to the lower rod *D* of the tripping-frame is an inwardly-projecting trip *D*<sup>4</sup>, supported at its inner edge by elastic connections *g* *g*<sup>1</sup>, secured to the upper rod *D*<sup>3</sup> of the tripping-frame. *f* is a catch having a hook *f*<sup>1</sup> and also



pivoted to the lower rod D within the trip D<sup>4</sup> and extending across the latter, so as to have its hook f' engaged with the front rod b' of the lower frame to uphold the scoop in normal position from the tripping-frame, as shown in Figs. 1 and 3. When the tripping-frame is detached from the scoop, the catch f is elevated by the elastic connections g g' and the trip D<sup>4</sup> to the position shown in Fig. 2. d is a governor-rod for controlling the scoop and tripping-frame, so that they may retain their set distance from the ground, (despite the oscillation of the car,) pivoted to a bracket d', secured to the bottom of the car-body, one end of the said rod being connected, by means of its hook d<sup>2</sup>, with the crank a<sup>3</sup> on the rear rod a' of the upper frame and the other end being secured to any convenient stationary part of the car—say the truck or axle, as shown in Fig. 4. In advance of the scoop the tripping-frame is similarly suspended from the bottom of the car by means of flexible connections b', such as wires or chains, fastened to the upper rod D<sup>3</sup> of the tripping-frame and passing through the eyelets b<sup>2</sup>, secured to the bottom of the car and around the crank a<sup>3</sup> of the rear rod a' of the upper frame, which is controlled by the governor-rod d. By supporting the tripping-frame in this manner it is prevented from striking the ground when the car-body is depressed for this reason. It is obvious that when the hooked end of the governor-rod is depressed the distance from the eyelet b<sup>2</sup> to the governor-rod is greater. Consequently the flexible connection b' is pulled along with the governor-rod, which means that the short depending end of the cord lifts the tripping-frame, and when the governor-rod lifts the tripping-frame is lowered.

In order to readily gain access to the fender and avoid any liability of the car-steps striking a person or object, I employ folding steps, as shown in Fig. 4. k are hinges whereby the step-sections are hinged together, and J are hinges by which the upper section is hinged to the platform, the lower section being folded up against the upper section and both sections being turned upward to the position indicated by dotted lines, so as to leave the under side of the platform clear.

The tripping-frame being hooked to the lower frame of the scoop by the catch f, as soon as a person or an object is struck by the tripping-frame the catch f is moved rearwardly and hook f' raised by the elastic connections g g' lifting the trip D<sup>4</sup>, on which the catch f is held down. The front rod b' of the pivoted lower frame of the scoop being released, the front part of the lower frame will drop to the ground automatically, and the elastic connections c', suspended from the upper frame, will lift the rear part of the lower frame. When the person or object is deposited onto the rear part of the lower frame, the weight will overbalance the front part of the lower frame and lift the latter, simultaneously causing the

two side hangers A and A' to abut the ground and slide thereon, thus acting as runners. The rear rod a' of the upper frame on which the side hangers are supported prevents the latter from bumping on the ground to any extent by reason of the rear rod a' abutting against the bottom of the car-body and holding the side hangers A and A' rigidly forward.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A car-fender comprising a scoop, a tripping-frame adapted to be suspended in advance of the scoop, and a spring-catch pivoted to the base of the tripping-frame and detachably connecting the tripping-frame with the scoop to uphold the scoop by the tripping-frame.

2. A car-fender comprising a scoop, a tripping-frame adapted to be suspended in advance of the scoop, a trip pivoted to the base of the tripping-frame, having elastic connections extending from the top of the tripping-frame, and a catch pivoted to the base of the tripping-frame, extending across the trip and detachably connecting the tripping-frame with the scoop to uphold the scoop by the tripping-frame.

3. A car-fender scoop comprising an upper frame, side hangers, a lower frame pivoted to the side hangers, elastic connections between the upper frame and the rear part of the lower frame, and the side strips connecting the upper frame with the front part of the lower frame.

4. A car-fender scoop comprising an upper frame having a front rod, a rear rod formed with a crank and arms connecting the rear rod with the front rod, a pivoted lower frame having front, rear, intermediate, and end rods, the side hangers connecting the front rod of the upper frame with the intermediate rod of the lower frame, the side strips connecting the front rod of the upper frame with the front rod of the lower frame and elastic connections extending from the front rod of the upper frame to the rear rod of the lower frame.

5. A car-fender tripping-frame comprising a lower rod having side arms formed with suspending-hooks, an upper rod, a trip pivoted to the lower rod, elastic connections extending from the trip to the upper rod of the tripping-frame, and a catch having a hook, pivoted to the base of the tripping-frame and extending across the trip.

6. A car-fender comprising a scoop having an upper frame, a governor-rod connected with the scoop, a tripping-frame suspended in advance of the scoop, and flexible connections between the tripping-frame and upper frame of the scoop.

7. A car-fender comprising a scoop having an upper frame, a governor-rod connected with the scoop, a tripping-frame suspended in advance of the scoop, means for detachably connecting the tripping-frame with the



scoop to uphold the scoop by the tripping-frame, and flexible connections between the tripping-frame and the upper frame of the scoop.

- 5 8. A car-fender comprising a scoop, a governor-rod connected with the scoop, a tripping-frame suspended in front of the scoop,

and flexible connections between the tripping-frame and the governor-rod.

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Witnesses:

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JOHN ALEXANDER DICKIE.