G. A. PARMENTER.

LIFE GUARD FOR RAILWAY CARS.

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Fig. 1.

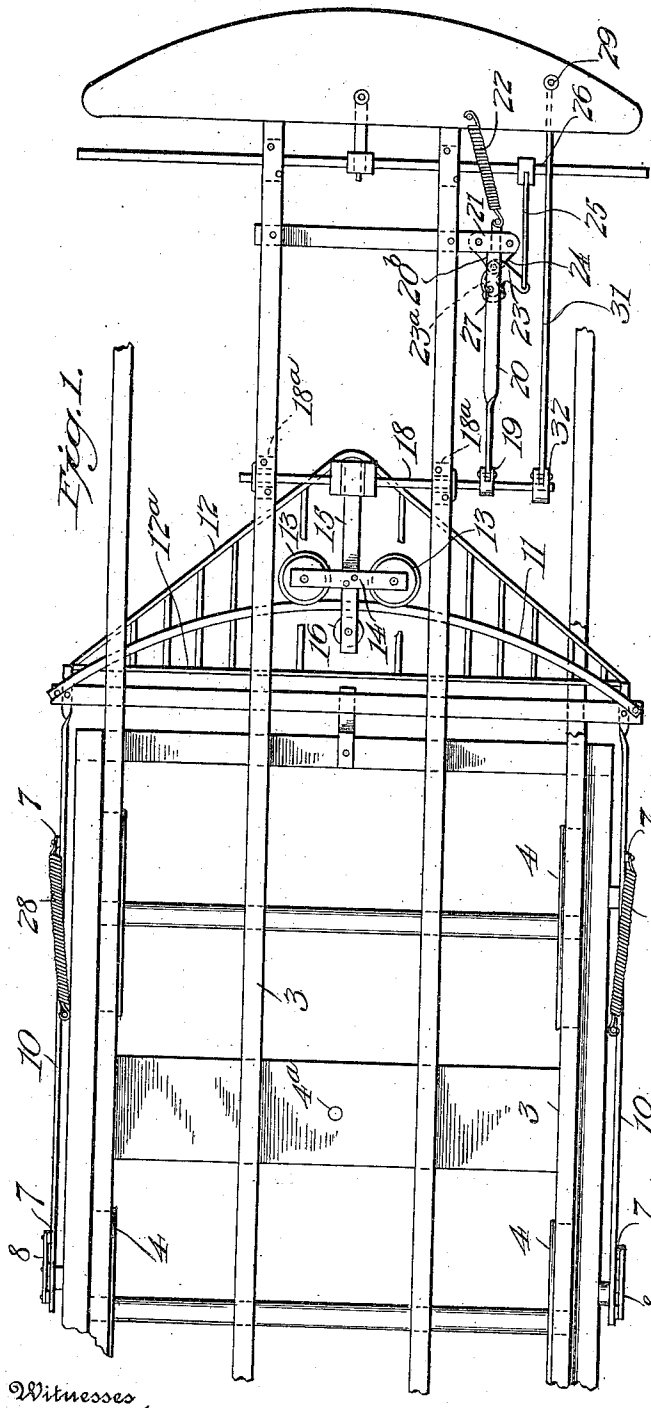
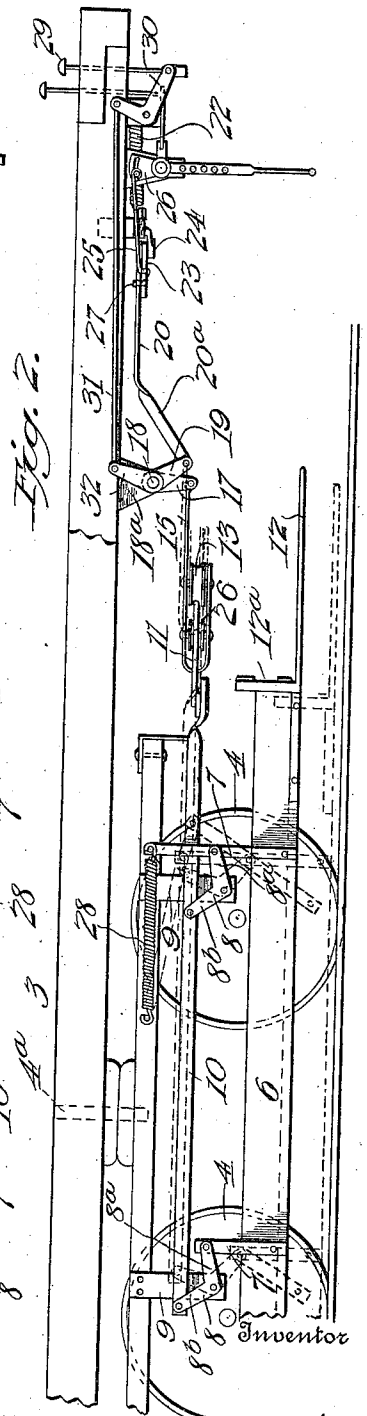


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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LIFE-GUARD FOR RAILWAY-CARS.

1,068,444. Specification of Letters Patent. Patented July 29, 1913.

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To all whom it may concern:

Be it known that I, GEORGE A. PARMENTER, citizen of the United States, residing at Boston, Massachusetts, have invented certain new and useful Improvements in Life-Guards for Railway-Cars, of which the following is a specification.

My present invention relates to improvements in life guards for railway cars of the type having swinging bogies or trucks, and has among other purposes for its object to provide around the sides and front of the truck a rigid frame or guard normally carried at some little distance above the road-bed but capable of being dropped automatically in case an obstacle is encountered on the track, such guard including, at its front, a pick-up or scoop carried by the guard.

I have also aimed to provide a guard of this type which, while serving to pick up any movable object such as a prostrate person, will yield and rise to enable it to pass over any rigid obstruction on the track, such as a projecting brick or stone, so as to avoid injury to the guard.

With these and other objects in view, the invention includes the novel features of construction and arrangement and combination of parts hereinafter described ad more particularly defined by the appended claims.

An embodiment of my invention is illustrated in the accompanying drawing, in which—

Figure 1 is a plan view showing a sufficient portion of a guard frame and track wheels and axles in outline to illustrate the manner of applying the invention; and Fig. 2 is a side elevation thereof.

Referring by reference characters to this drawing, the numerals 3 designate the sills of the car and 4 the wheels of the front truck, which is swiveled to the car body on the axis indicated at 4^a, the details of the truck frame and pivotal connections not being shown, as these form no part of my invention, which is more clearly illustrated by the omission of the detailed parts of the car.

At the sides of the truck and outside of the wheels I provide sideboards 6 which are suspended by links 7 from arms 8^a of bell crank levers 8, which bell crank levers are pivotally supported by hangers 9 depending from the top bars of the truck frame, these hangers being representative of any suitable supporting means carried by the frame of the truck. The arms 8^b of the bell crank levers on each side are connected by longitudinal bars or rods 10 which, at their forward ends, are connected to the extremities of a cross or radius bar 11 which is curved on an arc concentric with the pivotal axis 4^a of the truck. This curved bar is acted upon by mechanism hereinafter described to normally hold it pressed to the rear, thereby holding the bell crank levers in the position indicated in full lines in Fig. 2, so as to hold the side bars 6 elevated. The side bars carry, at their forward ends, a rigid scoop or pick-up device which comprises a substantially horizontal projecting portion 12 and a vertical portion 12^a. This vertical portion preferably extends straight across the track while the portion 12 may be conveniently made of wedge shape so that an object striking it near the side will be pushed to one side of the track.

The radius bar 11 is normally held pushed back to retain the side bars and scoop elevated through the medium of a pair of pulleys or wheels 13 carried by a cross bar 14 which, in turn, is connected to a longitudinally movable link 15 operated in the manner hereinafter described. These pulleys or wheels are preferably grooved so as to prevent their slipping off from the curved bar, and it will be seen that as the truck swings in rounding curves the wheels roll upon the curved bar, maintaining the parts constantly in a uniform operating position whether the car be running upon a straight track or around a curve. The bar 15 is extended to the rear across the curved bar 11 and at its rear end is provided with a small wheel 16 acting on the rear side of the curved bar. The bar 15 is pivotally connected at its front end to an arm 17 depending from a rock shaft 18 journaled in suitable hangers 18^a depending from the sills of the car. This rock shaft 18 carries near one end an arm 19 to which is connected the rear end of a longitudinally movable bar 20, which bar is adapted also to have a slight lateral movement. This lateral movement may be permitted either by having its pivot a loose pivot or by using an angle bar having a vertical portion indicated at 20^a of sufficient elasticity to permit lateral motion of the front end. This bar 20 corresponds to the bar 17 disclosed in Reissue Letters Patent of the United States #13,172, granted to me November 22, 1910, and I prefer to use in connection therewith the holding and re-

leasing mechanism described and claimed in said Letters Patent. This consists in having the forward portion of the bar provided with a shoulder or off-set 20^b which is designed to rest behind and engage a shoulder formed practically by the edge of the guide 21, the forward end of the bar being held with its shoulder in locking engagement with the guide by a diagonally arranged spring 22. The forward end of the bar 20 is moved laterally to disengage its locking shoulder by a bell crank lever 23 pivoted on a bracket 24, one arm of this bell crank lever being connected by a link or rod 25 with an upwardly extending arm or portion 26 carried by the top bar of the swinging trip frame near one side or end thereof. The other arm of the bell crank lever is provided with an elongated slot 23^a which is engaged by a pin 27 carried by the bar 20. Normally the pin lies near the rear end of the slot, and when the trip frame is swung rearwardly the pull upon the link 25 will rock the bell crank lever and cause the slotted arm to swing outward toward the side of the car and through the pin connections pull the bar 20 sufficiently to one side to disengage the locking shoulder. The slot in the arm of the bell crank lever is made of sufficient length to allow full forward movement of the bar to drop the scoop and side bars. While the weight of the scoop and the side bars will, under ordinary conditions, be amply sufficient to cause it to drop with sufficient quickness, yet the spring, by its diagonal arrangement, will not only tend to hold the bar in locking position, but will also assist the gravity action. It will thus be seen that should an object be encountered upon the track such as a prostrate person, the trip frame will be swung rearwardly, and the scoop and side bars released and allowed to drop to pick up such person.

It is desirable, in wheel guards or fenders of the trip and drop scoop type, that the scoop or pick-up device should be lowered into the closest possible proximity to the roadbed in order to prevent a person being wedged beneath the scoop and the roadbed or pavement. Heretofore, so far as I am aware, it has not been possible to lower a scoop into exceedingly close proximity due to the liability of encountering a rigid obstacle, such as a projecting brick or paving stone, which would result in the destruction of the scoop or pick-up device. It will be noticed that while I have a rigid scoop dropped with a substantially vertical movement, yet by reason of the links 7 which connect the side bars to the arms of the bell crank levers 8, if any rigid obstruction were encountered by the scoop 12, after it had been dropped or lowered the tendency would be to throw the latter backward, swinging the links 7 rearward, and this rearward movement, by reason of the arcs through which the lower ends of the links 7 swing, would cause the side bars and scoop to rise sufficiently to pass over such a rigid obstruction. While the weight of the side bars and scoop might be sufficient to prevent such rearward motion and rise on encountering a movable body, such as a prostrate person, yet I prefer to provide means for exerting pressure in addition to that exercised by the action of gravity, and for this purpose I extend the forward link 7 on one or both sides upward above their pivots, and to the upwardly extended ends of these I connect springs 28 which are adapted to be placed under tension by any tendency of the upper ends of the links to move forward.

I prefer to provide, in connection with the apparatus hereinbefore described, means by which the device may be reset from the platform, using for this purpose a foot treadle 29 connected at its lower end to a bell crank lever 30 which, in turn, is connected by a rod 31 with a lever arm 32 on the rock shaft 18. The depression of this treadle through the connections described rocks the shaft 18 to swing the arm 17 backward, and this through the link or bar 15, cross bar 14 and pulleys, pushes back upon the radial bar, lifting the scoop and side bars until the forward end of the bar 20 springs into locking engagement with the guide 21. In order to cause equal pressure on both sides of the curved bar and effect an equal lifting action on the scoop and side bars on each side, thereby preventing any tendency to list or strain the parts, I use the cross bar 14 and two pulleys or wheels as hereinbefore described.

Having thus described my invention what I claim is:

1. The combination with a car body having a swiveled truck, of a life guard supported from the truck to have movement toward and from the track, a tripping device carried by the car body, operating connections between said tripping device and life guard for lowering the guard, and means for permitting the entire guard to move rearwardly and upwardly on encountering a rigid obstruction without affecting the tripping device.

2. In combination with a railway car, a guard located in proximity to the wheels of the truck, upwardly extending links pivotally connected to said guard at their lower ends, and devices to which the upper ends of said links are pivotally connected, said devices being movable to raise and lower the links and guard, substantially as described.

3. In combination with a railway car, levers carried on opposite sides thereof with means for operating them, a guard, and links pivotally supporting said guard from said levers, substantially as described.

4. In combination with a railway car, levers carried on opposite sides thereof, with means for operating them, a guard, links pivotally supporting said guard from said levers, and spring means for resisting swinging of said links.

5. In combination with a railway car, bell crank levers carried on opposite sides thereof, a guard in proximity to the car wheels, swingable links supporting the guard from said bell crank levers, and means connected to said bell crank levers for controlling the movement thereof.

6. In combination with a railway car, bell crank levers carried on opposite sides thereof, a guard in proximity to the car wheels, swingable links supporting the guard from said bell crank levers, one of said levers having an upwardly extending portion, a spring acting on said upwardly extending portion, and means connected to said bell crank levers for controlling the movement thereof, substantially as described.

7. The combination with a car body and swiveled truck frame, of a guard comprising side bars adjacent the wheels of the truck, bell crank levers pivotally supported from opposite sides of the truck frame, and having arms supporting said side bars, longitudinally movable rods connected to the other arms of said bell crank levers, a curved bar connecting the forward ends of said longitudinally movable rods, and means for controlling the lowering of the guard acting on said movable bar.

8. The combination with a car body and swiveled truck frame, of a guard comprising side bars adjacent the wheels of the truck, bell crank levers pivotally supported from opposite sides of the truck frame and having arms supporting said side bars, longitudinally movable rods connected to the other arms of said bell crank levers, a curved bar connecting the forward ends of said longitudinally movable rods, a cross bar, a pair of rollers carried by said cross bar and bearing against said curved bar on opposite sides of the center of the car, and guard elevating and lowering means having connections for acting on said cross bar.

9. The combination with a car body and its truck, of a life guard supported from the truck to have vertical movement toward and from the track, a tripping device carried by the car body, operating connections between said tripping device and life guard for effecting the lowering of the guard, and means for permitting the entire guard to move rearwardly and upwardly from its lowered position on encountering a rigid obstruction, without affecting the tripping device.

10. In combination with a railway car, a scoop or guard capable of vertical movement and capable also of rearward and upward movement independent of said vertical movement, and yielding means tending to resist such rearward and upward movement.

11. The combination with the truck frame of a car, of a guard inclosing the wheels and including side bars, bell crank levers pivoted to the truck frame and supporting the side bars, longitudinal bars connecting the bell crank levers on each side, a cross bar connecting said longitudinal bars, means acting against said cross bar to normally hold said side bars against movement, and a device for releasing said holding means.

12. The combination with a car body and swiveled truck frame, of a guard inclosing the wheels and including side bars, bell crank levers pivoted to the truck frame and supporting the said side bars, longitudinal bars connecting the bell crank levers on each side, means for normally holding said bars against movement, and a tripping device carried by the car body for freeing said bars.

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

GEORGE A. PARMENTER.

Witnesses:
JAMES M. SPEAR,
EDWARD N. GODING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."