

No. 690,738.

Patented Jan. 7, 1902.

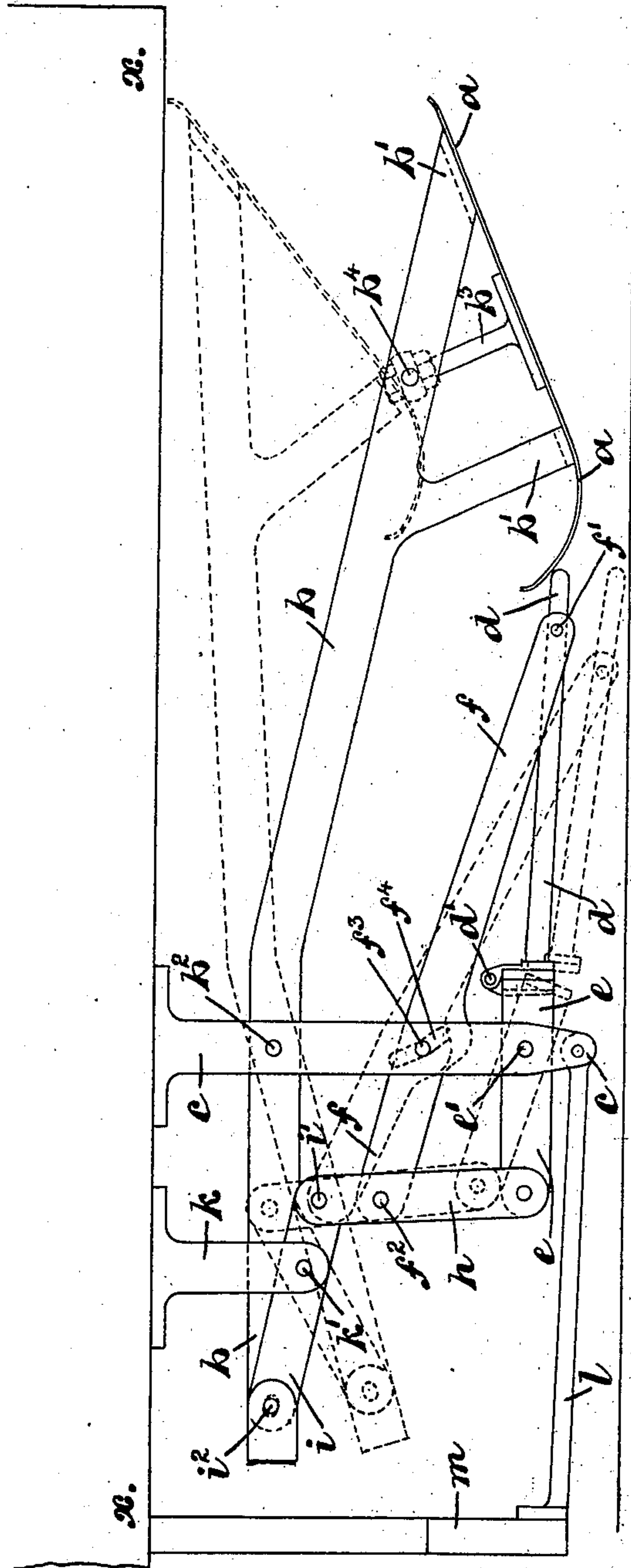
G. KIRBY.
RAILWAY VEHICLE LIFE GUARD.

(Application filed June 15, 1901.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



WITNESSES:

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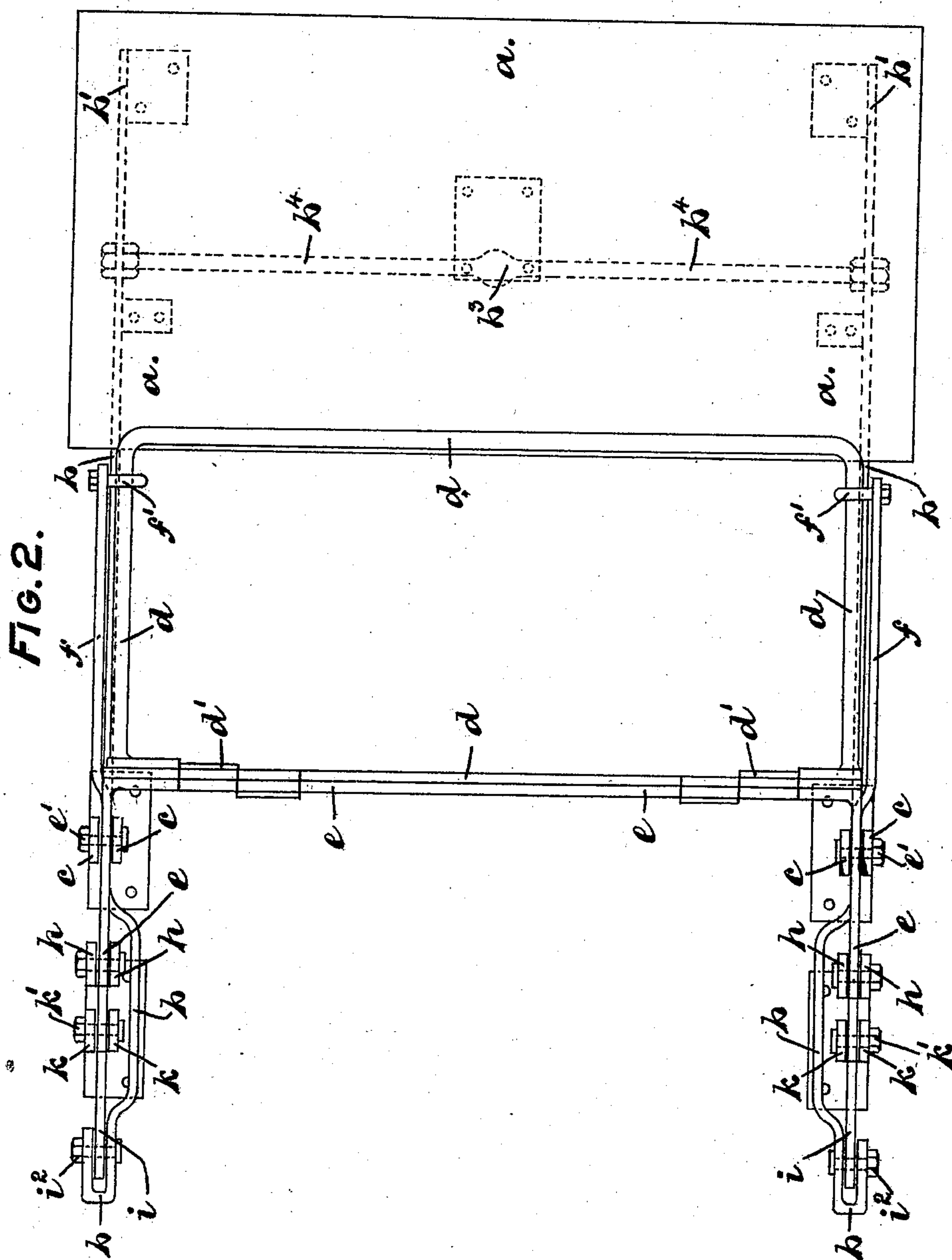
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UNITED STATES PATENT OFFICE.

GEORGE KIRBY, OF KIRKDALE, LIVERPOOL, ENGLAND.

RAILWAY-VEHICLE LIFE-GUARD.

SPECIFICATION forming part of Letters Patent No. 690,738, dated January 7, 1902.

Application filed June 15, 1901. Serial No. 64,711. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KIRBY, a subject of the King of England, and a resident of Kirkdale, Liverpool, in the county of Lancaster, England, have invented new and useful Improvements in Railway-Vehicle Life-Guards, of which the following is a specification.

This invention has reference to guards used on the front or end or ends of electrically-driven and other vehicles or locomotives for preventing people being run over when knocked down or falling in a street, road, or other railway-track; and it has for its object and effect to provide improvements in connection with life-guards by which not only will a person not be run over or killed under such conditions, but will not be seriously hurt or injured by the guard itself.

The invention is illustrated in the drawings hereto annexed, in which—

Figure 1 is a side elevation of the apparatus, and Fig. 2 is a plan of the apparatus viewed from below.

According to this invention one part of the guard apparatus is adapted to catch or pick up a fallen person, and this part is movable in relation to the horizontal plane, the movement being effected by an actuating device disposed in front or advance of it—the pick-up part—and which, therefore, first strikes the body, and this latter device is adapted to be raised as it comes in contact with the body and the movement so obtained transmitted to the pick-up or catcher or guard proper, so as to lower it onto or near the ground. Normally the actuating portion will lie comparatively near the ground and is inclined from the rear part to the front parts in an upward direction to provide such an incline above as will cause it to be raised with little pressure when striking the body, so as to avoid hurting it—that is to say, the incline is such that it will easily and quickly ride up over the body on small pressure being applied to it. In one arrangement the automatic actuating part—that is, the part which comes in contact with the body—may consist conveniently of a light metallic or other light material inclined as described and carried on the end of a lever of the first order supplied from the vehicle or locomotive, and the opposite end

of this lever operates the pick-up part or guard proper, which according to one arrangement is lowered at its leading end and in some cases also simultaneously raised at the back end, the movement it receives being such that the leading end will in all cases when actuated come onto or very close to the road-surface. It may in some cases be provided with rollers or slides, which come in contact with the road.

Referring now to the drawings, the automatic operating device shown consists of a light inclined plate *a*, carried on the bifurcated ends *b'* of two levers *b*, one on each side of the vehicle-body *x*, these levers being supported by brackets *c* on the car through hinge-fulcrum *b''*. The inclined plate *a* is also supported in the case shown in the center by a central strut *b'''*, fixed on the cross-bar *b''''*, carried by the two levers *b*.

The pick-up or guard frame is designated *d* and consists of a rectangular frame of bars or tubes with wire or other suitable material within it and supported by it. This frame is supported at the back edge by hinges *d'* from a second movable frame *e*, the side members of which are supported on fulcrum *e'* in the brackets *c*, fixed on the vehicle. The forward end of the frame *d* is supported and its position controlled by a lever *f* at each side, the forward end of each of which has a loop or eye *f'* fitting over and adapted to slide on the frame-bar *d*, while the other end is fixed by a pin *f''* in a link *h*, which is supported from the car by a lever *i* at each side, connecting together the upper ends of the links *h* and the back ends of the levers *b* by pins *i'* *i''* and carried from the vehicle by brackets *k* and fulcrum-pins *k'*, while the side levers *f* are also supported in their centers by pins *f'''*, fixed in the bracket *c*, the holes in the levers *f* through which the pins *f'''* pass having inclined slots *f''''*. These slots are provided in order to allow levers *f* to move in relation to the brackets *c* and take the position shown in dotted lines. In the drawings the lower ends of the brackets *c* are further supported from the vehicle by horn-bars *l*, carried from the cross-bar *m* on it.

The brackets *c* *k* may be of double iron or steel bars, as shown by the drawings, the upper ends being flanged, as shown, and fixed on the under side of the vehicle or locomotive

body or frame, and the levers *b i f*, as well as the links *h* and frame *e*, may be of simple iron or steel bars. The fulcra and hinges specified may consist of bolts and nuts, as shown, 5 with a thimble fitting over the bolts in the holes in the bars and levers through which they pass, so as to serve as distance-pieces and to enable the bolts to be drawn tightly up without nipping the bars, and joints should be 10 quite free.

The normal position of the parts is that shown in the full lines in the drawings, while the position of actuation is that shown in dotted lines. In action when the inclined plate 15 *a* comes in contact with a body it rides up over it and lifts the lever *b*, and this movement actuates the pick-up frame or guard *d*—that is, lowers its front end into the position shown in dotted lines—through the levers *i*, 20 links *h*, levers *f*, and frame *e*, and slightly before the leading edge of the frame *d* will have reached the body the frame *a* will have moved its maximum point, as the back and lower portion is disposed just in front of or in about 25 the same vertical plane as the leading edge of the frame *d*; but in no case will the plate *a* leave the body until it is caught by the frame *d*.

What is claimed in respect of the herein-described invention is—

30 1. A vehicle or locomotive life-guard, comprising levers *b* having an inclined front end

a, fulcra *b*², a pick-up frame *d* hinged at a point behind its leading end, and levers *f* supporting the front end of said frame, and connected with the back portion of the levers *b* 35 through levers *i*, whereby when the forward ends of the levers *b* are raised, the forward ends of the supporting-levers *f* and the frame *d* are lowered; substantially as described.

2. In a vehicle or locomotive life-guard, the 40 combination of pick-up frame *d*, frame *e*, hinges *d'*, connecting frame *e* and pick-up frame *d*, supporting-brackets *c*, and hinges *e'* connecting the brackets and frame *e*, and means for lowering and raising the said 45 frame *e*.

3. In a railway vehicle or locomotive life-guard, the combination with a pick-up frame *d*, frame *e*, hinges *d'* connecting the frame *e* and pick-up *d*, brackets *c*, and hinges *e'* connecting brackets *c* and frame *e*, levers *f* supporting the front end of the pick-up *d*, and supported by brackets *c*, by hinges *f*³, and slots *f*⁴, and links *h* connecting the back ends of said levers *f*, and frame *e* together; sub- 55 stantially as set forth.

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

GEORGE KIRBY.

Witnesses:

JNO. W. BROWN,
GEO. E. GODDING.