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GUARD FOR TRAM CARS AND OTHER VEHICLES.

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Patented Jan. 4, 1916.

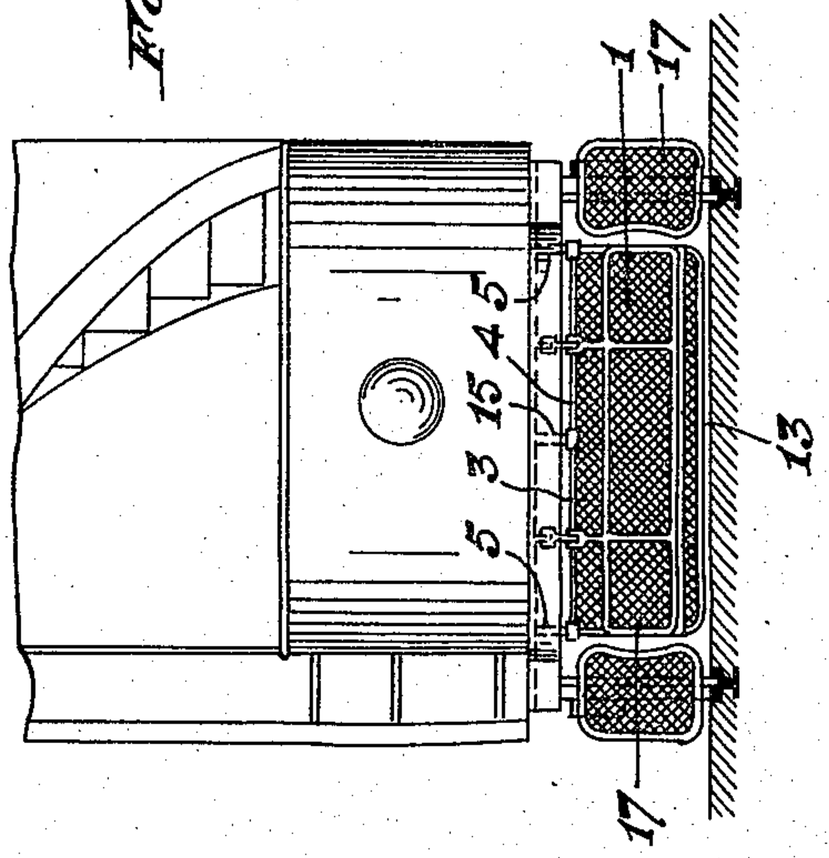

Fig. 2.

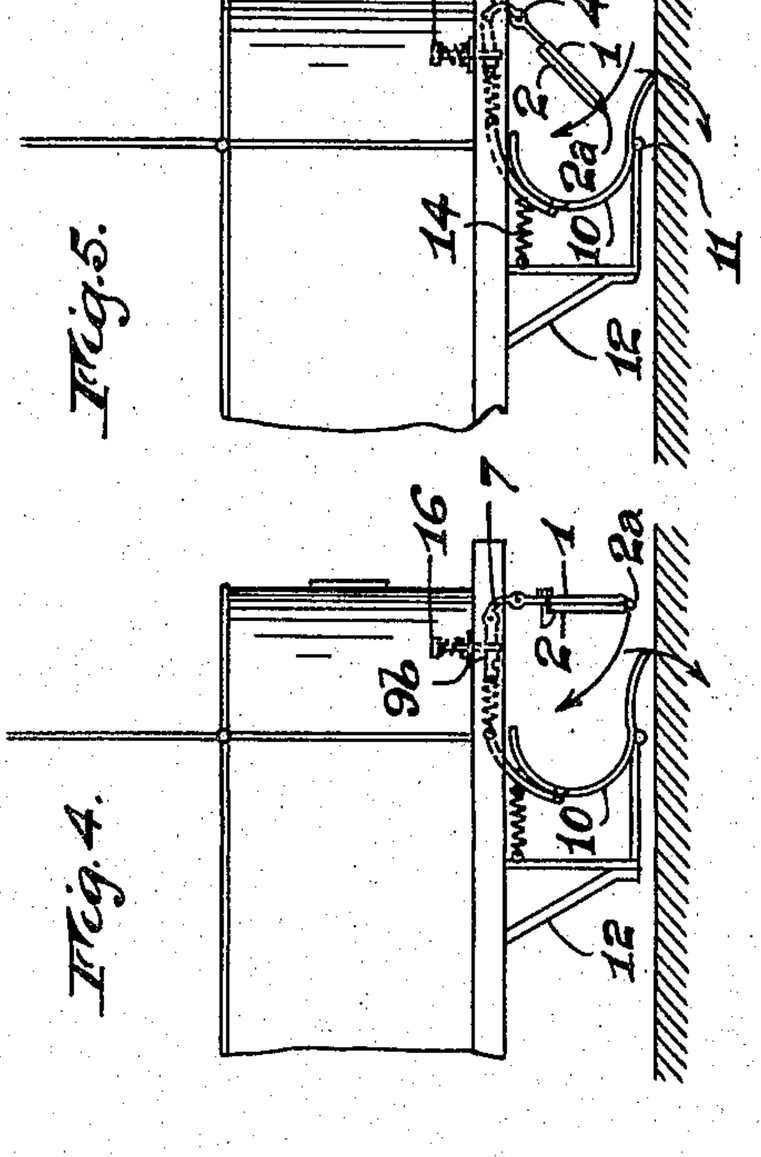

Fig. 5.

Fig. 4.

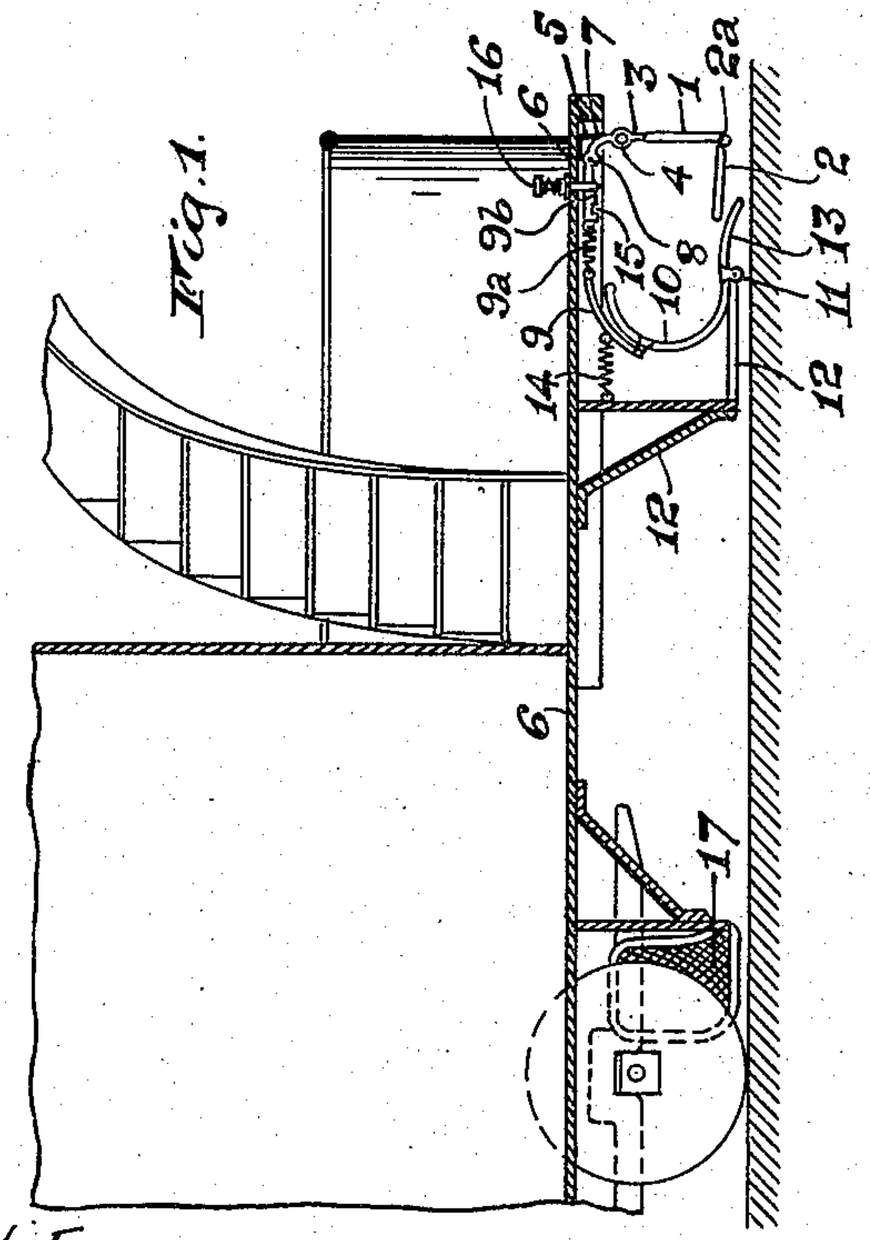

Fig. 1.

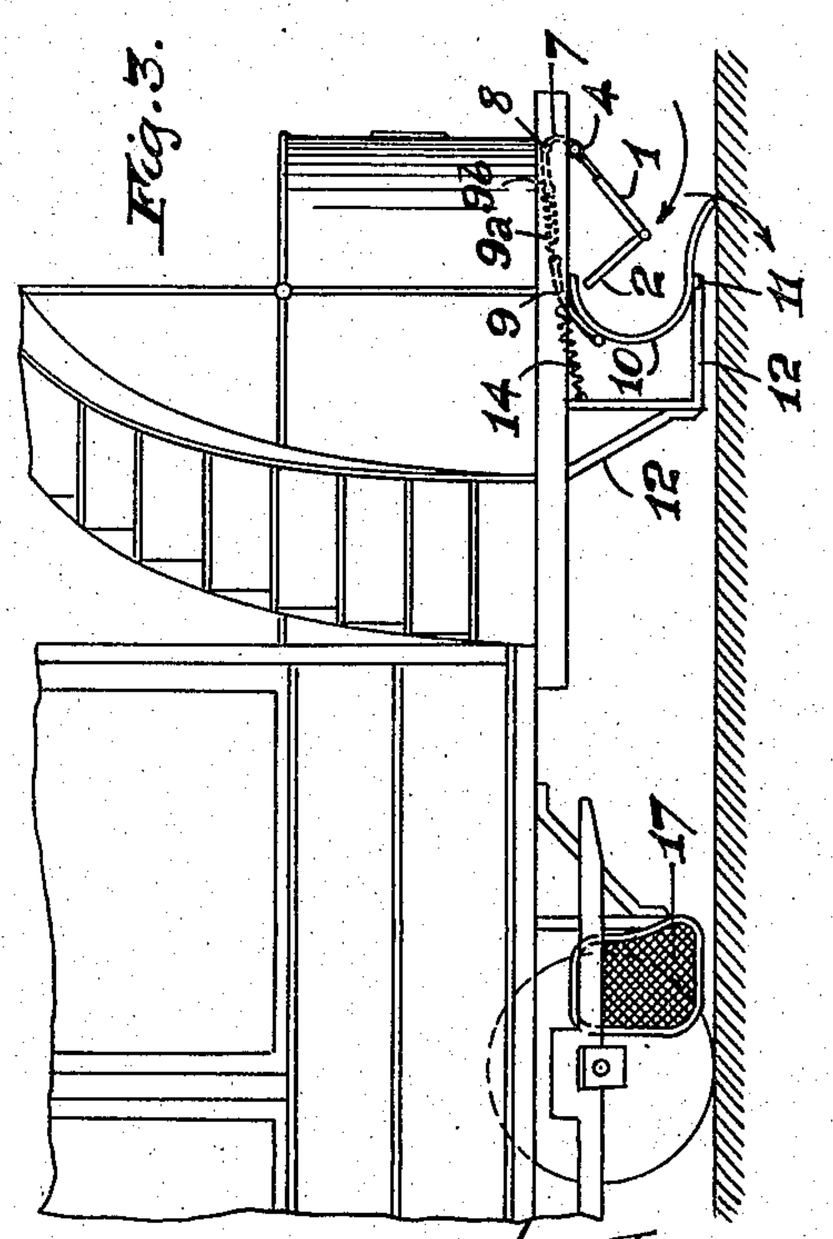

Fig. 3.

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GUARD FOR TRAM-CARS AND OTHER VEHICLES.

1,166,744. Specification of Letters Patent. Patented Jan. 4, 1916.

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To all whom it may concern:

Be it known that I, SAMUEL CROMARTY, a subject of the King of Great Britain, and a resident of Aberdeen, Scotland, have invented certain new and useful Improvements in Guards for Tram-Cars and other Vehicles, of which the following is a specification.

This invention relates to guards for tram-cars and other vehicles, and has for its object to provide an automatic guard of improved construction.

According to this invention the guard consists of a swinging front member suspended from the floor or frame of the car at the front thereof, and a swinging scoop or the like member mounted on suitable brackets or equivalent at the rear of the front member and connected to such front member by means of spring or other suitable connections at the top thereof, while a rearwardly extending flange or extension frame on the lower edge of the front member overlaps the lower edge of the scoop or the like member. In a modification, the rearward extension frame is pivotally connected to the swinging front member and provided with catches or the like whereby it may be folded up against the swinging front member, a releasable retention mechanism being provided for holding the front member in its rearwardly deflected position after the guard has been actuated, such retention mechanism being releasable by the driver.

The invention is illustrated in the accompanying drawings, in which—

Figure 1. is a fragmentary section through the front portion of a tram car fitted with a guard in accordance with this invention, the guard being provided with a releasable retention device. Fig. 2. is a front end view of Fig. 1. Fig. 3. is a view analogous to Fig. 1., but in elevation, and showing the automatic or re-setting type of guard. Fig. 4. is a fragmentary detail showing the guard as in Fig. 1. arranged to be non-automatic, and Fig. 5. is a similar view showing the action of the front guard depressing the forward edge of the scoop closely into contact with the ground.

In carrying out the invention, the front member consists of an open rectangular frame 1 having at the bottom thereof a rearwardly extending flange part or extension frame 2, also consisting of an open frame, which may be suitably curved from front to rear, and these open frames are fitted with suitable netting or the like of wire, cord, or other suitable material. Extending from the top of such rectangular frame are two, or more, rods 3 or the like provided with bushes or sleeves, or the like pivotal elements, adapted to work on a horizontal bar 4 suitably suspended by brackets 5 from the floor or frame 6 of the car at the front thereof, and extending upward beyond such shaft are extensions 7 of the said rods, such extensions being joined at their extreme upper ends 8 to a pair (or more than two) of arms or rods 9, which extend forwardly from the upper end of the scoop 10 or like member, which latter consists of an open frame curved from front to rear and normally carried at a suitable angle, this frame being provided with a convenient net covering as in the case of the front guard member. At, or about, the center thereof the frame of this scoop member is provided with a cross bar 11 which is suitably pivoted on a bracket 12, or equivalent, projecting or depending from the front or floor of the car or from other convenient part thereof, so that the scoop may pivot about the axis of the cross bar 11. The front end 13 of this scoop member is arranged to project beneath the afore-mentioned extension frame 2 on the front member 1, and in the normal position of the guard members, Figs. 1. and 2., the said extension 2 may rest on the front part 13 of the scoop member. The upper, or rear, end of the scoop member is provided with a suitable spring or springs 14 connected to some part of the car, by means of which that end is drawn toward the rear so that the front end 13 is normally pulled upward against said extension frame 2. The upper connections between the front and scoop members have a suitable intervening spring, or springs, 9^a, connected to the rods 7 or to arms 9^b jointed at 8 thereto, so as to give sufficient play and resiliency, and the whole arrangement is such that, on the front guard member 1 being pressed backward by any object in the path of the car, as in Fig. 3., the scoop member 10 is automatically lowered in such manner as to receive such object, and the parts may thereafter resume their normal positions, the object being held out of all danger by the

said scoop member or tray, and inclosed between the front guard 1 and the scoop member 10. If desired, the front guard member or gate 1 may be used without the rearward extension 2, the guard in both cases resetting itself automatically to the normal position after operation if no locking mechanism is fitted as hereinafter described. The scoop member 10 may be carried in any suitable manner from the car, the particular arrangement shown in the drawings being merely by way of example. A catch mechanism such as a knee joint or the like element is preferably formed on the front horizontal bar 4, or the pivotal connection of the front guard 1 therewith, to prevent such front guard from swinging forward.

Where, therefore, it is desired that the guard should be automatic, that is to say, capable of readjusting itself after being operated, the arrangement would be that shown in Fig. 3., or with the rear frame 2 removed. But if it be desired that the guard should be positively re-set, after actuation, by the driver, a releasable retention mechanism is provided and the rearward extension frame 2 either eliminated or, preferably, pivotally connected to the front guard or gate 1. This is the arrangement shown in Figs. 1., 4., and 5. In this form the rearward frame 2 is pivoted at 2^a to the front guard 1, in such manner, that it may be either let down to the position shown in Fig. 1. or folded against the front guard 1, as in Fig. 4., catches of any suitable description being provided for retaining the extension 2 in this folded position. The extensions 7 of the rods 3 are in this case pivotally connected to a toothed element 9^b, having one, or more, recesses 15 with which a spring controlled or other catch 16 of any suitable pattern is adapted to engage, as in Fig. 5. Supposing the extension 2 folded up, when the front guard 1 has been actuated and the toothed element 9^b drawn forward through the hook or loop end of the spring catch 16, such catch then retains the front guard 1 and the forward part of the scoop member 13 in their operated positions, as indicated in Fig. 5. Consequently, the guard in this form will not re-set itself. To effect this the driver operates the catch 16 by means of his foot, with the type of catch shown, to release it from the tooth 15, thus allowing the spring 14 to re-set the mechanism. In place of arranging the spring catch 16 to be operated through a foot stud by the driver, as shown, such catch may be arranged to be released by him in any other manner, say, by means of a rod pulled upward. Where a retention device such as the catch 16 is provided for rendering the guard non-automatic, and it is desired that the guard should be automatic, means may be provided for throwing the catch mechanism 16 out of action. If desired, permanent guards or shields 17 may be also provided in front of the rear car wheels.

When the invention is applied to motor vehicles other than rail cars the guard members are preferably mounted in such manner that they are automatically turned to face in the same direction as the steering wheels of the car.

I claim:—

1. In a wheel guard for cars, a bracket member depending from the under side of the car, a curved scoop member pivotally connected to the bracket adjacent the center of the scoop, a guard member pivotally supported in front of the scoop, elastic means for connecting the scoop and guard, elastic means adapted to normally overcome the tension of the first mentioned elastic means for holding the scoop in a raised position.

2. In a wheel guard for cars, a bracket depending from the underside of the car, a curved scoop mounted adjacent the central portion thereof, a front guard pivotally supported adjacent the scoop, means for connecting the scoop and guard, whereby movement of the guard produces a relative movement of the scoop, an extension frame pivotally connected to one end of the guard, said frame adapted to fall into engagement with the scoop when the scoop is operated, and resilient means for returning the scoop to its normal position.

3. In a wheel guard, a bracket supported under the car, a scoop pivotally supported on the bracket, an arm having one of its ends connected to the scoop, its opposite end extending under the upper edge of the scoop, a guard pivotally supported under the forward portion of the car, resilient means for connecting the guard and arm, and manually operated means for releasing the guard at the will of the operator.

4. In a wheel guard, a bracket supported under the car, a scoop pivotally supported on the bracket, a front guard supported adjacent the scoop, a rod having one of its ends connected to the scoop adjacent the upper edge thereof, the opposite end of the said rod extending beyond the upper edge of the scoop, resilient means for connecting one end of the said rod to the guard, and resilient means connecting said rod and said bracket member.

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

SAMUEL CROMARTY.

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