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RAILWAY SAFETY APPLIANCE

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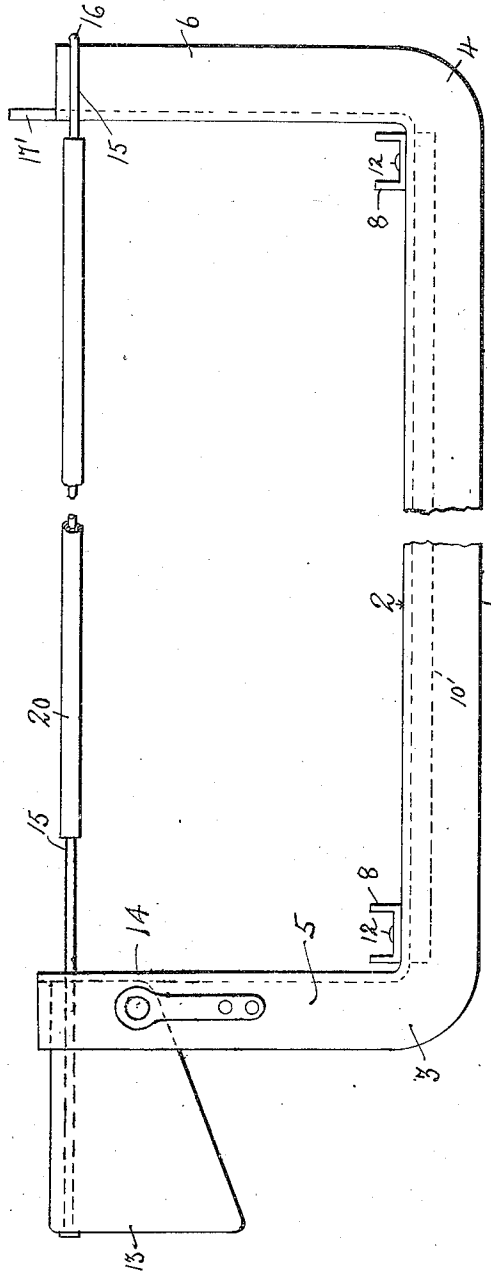


Fig. 1.

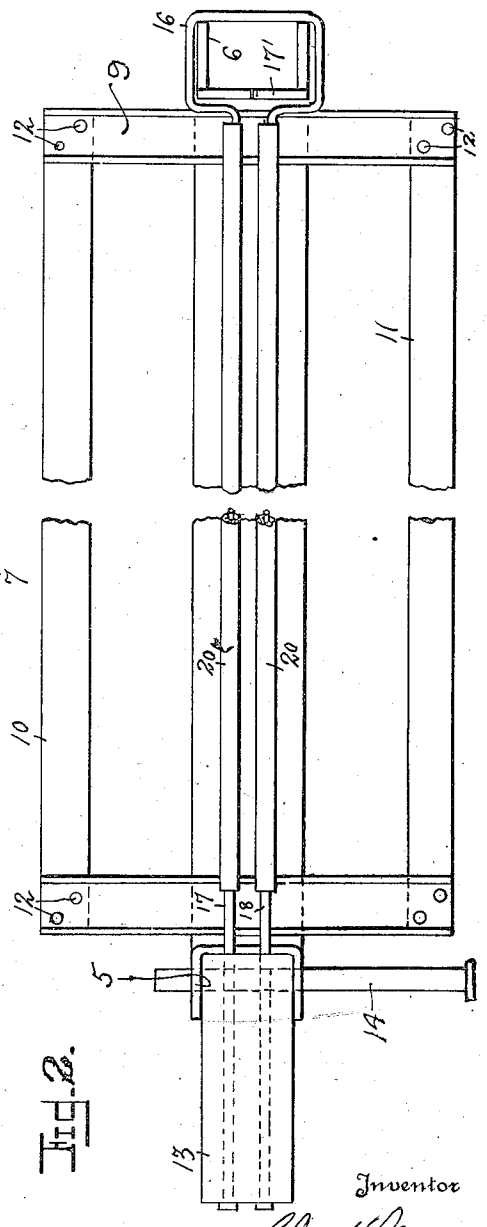


Fig. 2.

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RAILWAY SAFETY APPLIANCE.

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This invention relates to a railway crossing guard or gate.

An important object of the invention is to provide a device of the above mentioned character, which is strong, and is adapted to check the travel of a rapidly traveling automobile, with the least injury to the automobile and the device.

A further object of the invention is to provide a railway crossing guard so constructed that a plurality of yielding opposing forces are applied to the traveling vehicle, when contacting with the guard, to properly check the travel of the same.

A further object of the invention is to provide a device of the above mentioned character which is simple in construction, strong, durable and not liable to disarrangement.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of a railway crossing guard embodying my invention, and,

Figure 2 is a plan view of the same.

Like characters indicate like parts throughout the several views and in the specification, in which I provide: A standard 2, which comprises a channel beam bent at its ends, as at 3 and 4, into respective uprights 5 and 6, which channel beam is provided with its flanges extending downward along its base portion and outward along its upright portions, and the base portion 7 of which is embedded within the roadway.

Mounted within the bent portions 3 and 4, at the ends of the channel beam 2, are cross channel beams 8 and 9, which cross channel beams are connected at their terminals by channel beams 10 and 11, the channel beams 10 and 11 being likewise embedded within the roadway and the whole being suitably welded together or affixed together as by bolts 12. Pivotally mounted in the upright 5 between the flanges of the channel beam is a weight 13, carried by a shaft 14. Extending through the weight 13 are the terminals of a gate 15, the gate 15 being formed from a piece of high grade spring alloy, preferably of the nature of piano wire which has a suitable yield and high tensile strength, and a resistance to impacting shocks; which wire 15 is bent intermediate its ends as at 16, in the form of an arc, and which when in its lowermost position will embrace the upright 6 of the beam 2, which upright 6 is provided at its upper portion with a concave plate 17′, adapted to prevent a sharp edge contacting the arcuate end 16 of the gate, the gate comprising side portions 17 and 18.

The weight member 13 when in a lowered position fits closely on its inner end against the web of the upright 5, thereby bringing any stress upon the gate and consequent stress upon the weight, against the web rather than upon the bearing 14, and the terminals of the wire 15 are inserted within the practically solid weight member 13 by passing therethrough and being suitably welded, so that any longitudinal or side stress will not sheer the wire terminals at their point of junction with the weight 13. The end 16 is so spaced and arranged relative to the upright 6 that upon the impact of a car striking the side 17, of the gate, that the side 17 will yield with a spring or buffer like action until it reaches the side 18; and when the traveling car engages the side or arm 18, it will yieldingly oppose the travel of the same, and both arms 17 and 18 will ultimately function to stop the car.

By reason of the round shape of the wire 15 and its small diameter, not only is the weight of the gate materially reduced, but snow, ice, and weather conditions will have no appreciable influence upon its operation, and the area of the top of the weight 13 is designed to be substantially that of the lodgment area of the wire 15, so that in the case of a heavy fall of snow, any of the snow lodging upon the gate will be counterbalanced and will not therefore interfere with the effective operation. By reason of the wide, skeleton base formed by the member 2, the cross members 8 and 9 and the connecting members 10 and 11, the same being embedded within the roadway, an impact of a car traveling at high velocity, against the gate, will be with a portion of the car over the member 10, so that it will be practically

impossible for the car to tip the gate; and in the event of a terriffic impact, any sliding of the whole frame will in no manner interfere with the operation of the gate. The side elements 17 and 18 are preferably encased for a short distance within a cushioning element 20, which is preferably an ordinary rubber hose for outdoor use. The top of the upright 6 is provided with a point or guide 17′, which point serves as a guide for the gate, that is to say; should the gate become slightly sprung or be vibrating in its downward passage, the taper top 17′ will automatically align it and cause it to pass over the upright 6, into the proper position.

The resilient wire or rod being bent upon itself, provides the spaced arms or rods 17 and 18, which are resilient. These rods are suitably stiff so that they are self-supporting against undue bending due to their own weight. Further, there is no rigid supporting means arranged between the arms 17 and 18 and hence when the traveling vehicle contacts with one arm 17, this arm is flexed laterally, serving to yieldingly oppose the travel of the vehicle, which engages the arm 18 in succession, which exerts a further yielding opposing action of the traveling vehicle. It is thus seen that the two arms will function in succession to oppose the travel of the vehicle. Since these arms are resilient, when struck by a vehicle, and after the pressure is removed therefrom, they will ordinarily return to their normal position, and the guard will not be destroyed or rendered inoperative, in the stopping of the vehicles, under ordinary conditions.

The guard is raised and lowered by turning the shaft 14. This may be turned by any suitable means.

Claims:

1. In railway crossing guard, a generally U-shaped anchor member having upstanding posts, a gate member pivotally mounted upon one post and having a part to embrace the other post.

2. In railway crossing guard, a generally U-shaped anchor member having upstanding posts, a movable gate member connected with one post and having a loop to embrace the other post and means to support the gate member so that it may be raised and lowered.

3. In railway crossing guard, a generally U-shaped anchor member having upstanding posts, a generally U-shaped gate member provided at one end with a socket adapted to embrace one post, and means pivotally supporting the opposite end of the gate member and connected with the other post.

4. A railway crossing guard, comprising a gate member including a resilient metal rod bent upon itself forming horizontally spaced resilient arms and a loop at one end thereof, a pivoted support secured to the arms at the end thereof remote from said loop, said arms being self-supporting against undue bending due to their weight, and an anchor element arranged to be received within the loop.

5. A railway crossing guard, comprising a gate member including a pair of laterally spaced resilient arms, means for supporting one end of the arms so that said arms may be raised and lowered, said arms being substantially self-supporting against undue bending due to their weight, an anchor element spaced from the supporting means, and means for effecting a detachable locking connection between the opposite ends of the arms and the anchor element when said arms are lowered.

6. A railway crossing gate for obstructing the passageway of vehicles, comprising a gate member embodying a pair of laterally spaced resilient rods, a support secured to one end of the rods, the rod which is the nearest to a colliding vehicle having its intremediate portion permenently laterally flexible in the direction of travel of such vehicle, the rods returning to the normal position upon the removal of the lateral pressure due to the vehicle, a loop carried by the opposite ends of the resilient rods and an anchor element arranged to be received within the loop when said rods are lowered.

7. A railway crossing gate for obstructing the passageway of vehicles, comprising a gate member embodying a pair of laterally spaced resilient rods, means for supporting one end of the rods as that they may be raised and lowered, the intermediate portion of each rod being laterally flexible in the direction of travel of a vehicle colliding with the same, said rod returning to the normal position upon removal of the lateral pressure due to the vehicle, an anchor positioned near the opposite ends of the resilient rods, and means whereby the ends of said rods and anchor may have detachable locked engagement when said rods are lowered.

8. A railway crossing guard for obstructing the passageway of vehicles comprising a gate member which is self-supporting against undue bending due to its own weight, said gate member embodying a pair of laterally spaced restraining elements, each element having its intermediate portion freely laterally flexible so that said elements may be engaged in succession by a colliding vehicle without the destruction of the gate member, means for supporting one end of the gate member so that it may be raised and lowered, an anchor arranged near the opposite end of the gate member and means for effecting a detachable locking engagement between the adjacent end of the gate member and said anchor.

9. In a railway crossing guard, a pair of spaced upstanding members arranged upon opposite sides of the roadway, a connecting member extending across the roadway and rigidly connecting the upstanding members to retain them in the spaced relation, a gate member having connection with one upstanding member so that it may be raised and lowered, and means for effecting a detachable interlocking engagement between the opposite end of the gate member and the other upstanding member.

In testimony whereof I affix my signature.

CHARLES H. GAGE.