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APPARATUS FOR STOPPING VEHICLES.

APPLICATION FILED FEB. 3, 1920.

1,356,922. Patented Oct. 26, 1920.

Fig. 1,

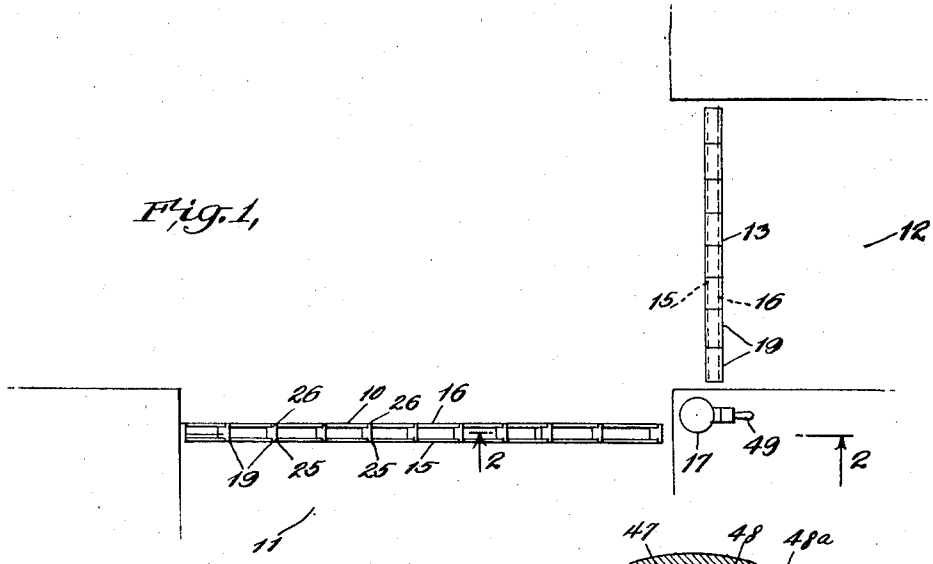
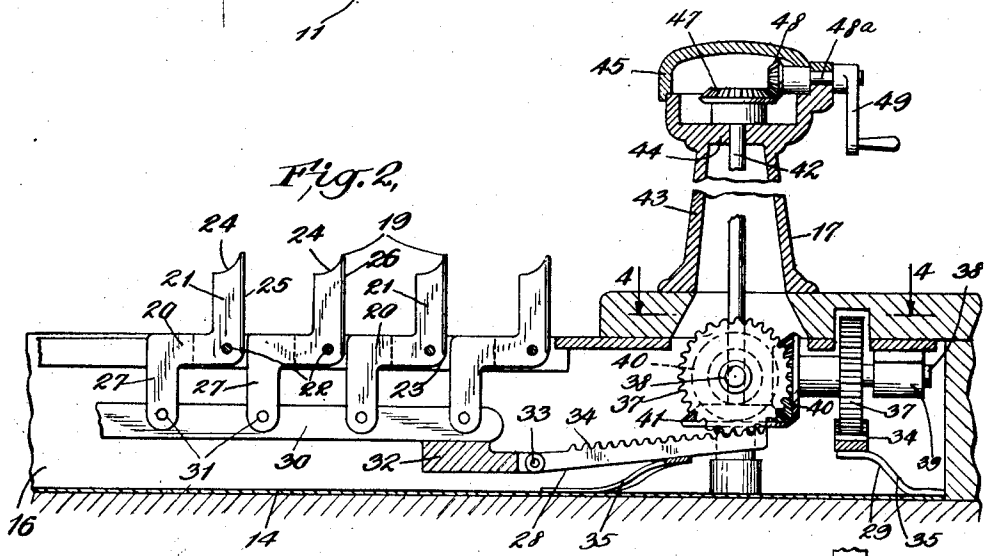


Fig. 2,



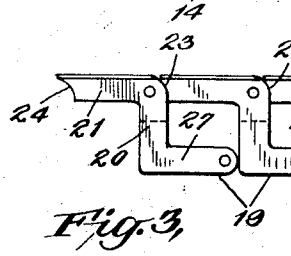


Fig. 3,

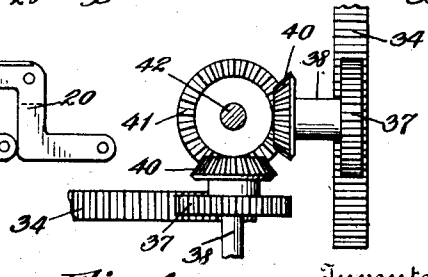


Fig. 4

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APPARATUS FOR STOPPING VEHICLES.

1,356,922. Specification of Letters Patent. Patented Oct. 26, 1920.

Application filed February 3, 1920. Serial No. 356,080.

To all whom it may concern:

Be it known that I, JOHN J. KEENAN, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in an Apparatus for Stopping Vehicles, of which the following is a full, clear, and exact specification.

This invention relates more particularly to an improved form of the apparatus disclosed in Patent No. 1,203,006, dated October 31, 1916, and is designed primarily for employment especially on highways whereby automobiles, autotrucks and like vehicles as well as runaway animals may be stopped when traveling faster than a given speed or in event of the vehicle continuing its travel following the occurrence of an accident. The invention resides mainly in the provision of a plurality of guard elements each composed of two integral rightangular members adapted to be pivoted within a trough arranged across a highway so that one of the members will lie normally flush with the surface of the highway while the second member is disposed interiorly of the trough and so that when swung accordingly the first mentioned member will extend vertically above the highway while the second named member lies flush with the highway. The first mentioned members of the guard elements are of lengths so that when vertically positioned they will obstruct passage of a traveling vehicle on the highway in emergency, and the second mentioned member of each element is of sufficient length to bridge the space between its other member when vertically disposed and the vertically disposed member of the next adjacent guard element.

Other objects of the invention are to provide on the second named member of each guard element an extension which depends into the trough; and to provide in association with the depending extensions mechanism for causing all of the guard elements to be swung simultaneously back and forth whereby the corresponding rightangular members of the elements will be alternately raised and lowered to and from positions flush with the highway.

With these and other objects in view the invention will be hereinafter more fully described with reference to the accompanying drawing forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, and will then be pointed out in the claims at the end of the description.

In the drawing, Figure 1 is a fragmentary view showing two intersecting highways with a plan of two of my improved apparatuses for stopping vehicles applied thereto.

Fig. 2 is an enlarged fragmentary view showing a detail section, partly broken away, taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged view showing an elevation of a number of the guard elements used in each apparatus, and

Fig. 4 is a fragmentary view showing a plan of the parts of the apparatus taken on the line 4—4 of Fig. 2.

In practising the invention I provide a trough, as 10, across a single highway, as 11, and where a second highway, as 12, intersects the other highway a similar trough, as 13, may be provided thereacross, in order that two of the apparatuses may be used for stopping a vehicle or an animal when traveling at a prohibitive speed from either direction. Each of the troughs may be made with a base plate 14 and side walls 15, 16, and the troughs are countersunken in the highways so that the top edges of their side walls are slightly below the surface of the highway. At the intersection of the highways I preferably provide at the adjacent ends of the troughs a station or housing, as 17, and both of the troughs lead to the interior of the station.

For the purpose of obstructing the travel of a vehicle or animal in each trough I provide a series of upwardly and downwardly adjustable guard elements 19 which are arranged in a row in close proximity to each other so that they extend entirely across the highway. The guard elements of each series are of similar formations, and each element is substantially L-shaped to provide two integral rightangularly disposed members 20 and 21. The members 21 serve as posts, while the members 20 serve as bridging plates when the guard elements are adjusted to the positions, shown in Fig. 2, when the apparatus is operated to obstruct passage along the highways, as will be hereinafter more fully explained. The juncture of the members 20 and 21 of each of the L-shaped

guard elements are pivoted, at 22, to the upper parts of the side walls 15 and 16 of its respective trough so that the members or posts 21 will lie flush with the surface of the highway when each apparatus is operated to allow travel of vehicles and animals, and the members or plates 20 of the guard elements will then protrude downwardly into the trough. The members or posts 21 of the guard elements are of lengths so that they extend suitable heights when adjusted to vertical positions upwardly from the highway, and the guard elements of each series are spaced apart at distances so that the free end of each post will slightly overlap the next adjacent post when the posts are flush with the highway. The pivoted corner of the post 21 and plate 20 of each guard member may be cut in a curved fashion, as at 23, and the free end of each post may be concaved, as at 24, in order to allow the overlapping parts of the posts to lie in the similar relative plane when flush with the highway. Protruding laterally in opposite directions from the upper edge of the post 21 of each guard element may be flanges, as 25 and 26, which overhang the post so as to rest upon the upper edges of the side walls of the respective trough of the post, in order to prevent sagging of the posts when closed upon the trough as well as to withstand the weight of traveling vehicles or animals. The members or plates 20 of the guard elements are of lengths to fill the gaps between the members or posts 21 as well as being of widths to close the entrances to the troughs when the posts are raised above the highway to prevent the hoof of an animal or the foot of a person from accidentally passing into the troughs of the apparatuses. Depending into the trough from the underside of the free end part of the plate 20 of each guard element is a bifurcated or slotted extension or arm 27, and all of these extension are of similar lengths.

Serving to permit the guard elements 19 together with the extensions 27 of each of the apparatuses to be adjustably moved for raising and lowering the posts 21 and the plates 20 to and from flush positions with the highway I provide mechanisms, as 28 and 29, so that if desired the guard elements of each apparatus may be alternately operated from the single station 17. These mechanisms are preferably constructed of similar parts, and each mechanism has a bar 30 extending lengthwise of the lower part of each of the troughs 13 as well as being movably disposed in the slots of the extensions 27. The free ends of the arms or prongs of the slotted extensions 27 of each apparatus are pivoted, as at 31, to spaced parts of each of the bars 30, and extending from the end of each bar which is opposed to the station 17 may be a lug or arm 32. To the lug 32 of each of the bars is pivoted, at 33, one end of a rack or toothed bar 34, and both racks are of lengths so that their second ends protrude under the station 17 for being moved back and forth in rightangular directions relative to each other. The rack 34 of each mechanism may be movably supported by a spring strip, as 35, or otherwise, and both springs are provided in the troughs of the apparatus for normally forcing the free end parts of the racks yieldingly upward. In mesh with each of the racks is a toothed wheel or gear 37 held on the central part of a stud 38, and one end of each of the studs is journaled in a bearing, as 39, suitably provided in the troughs. The studs 38 are disposed rightangularly so that their second ends are in spaced relation, and on the second end of each stud is a bevel gear 40. The bevel gears 40 of the mechanisms are in mesh with a bevel gear 41 held on the lower part of a common shaft 42 having its lower end journaled in the bottom of the station or housing 17. The station may be composed of a hollow body or post 43 with an apertured plate 44 across its upper end, and on the post is a hollow head, as 45. The shaft 42 is of a length so that its other end extends into the hollow head 45, and the upper part of the shaft is rotatably disposed through the aperture of the plate 44 of the post 43 of the station. On the end of the shaft 42 within the hollow head 45 of the station is a bevel gear 47 which meshes with a bevel gear 48 provided on a short shaft 48^a journaled in the wall of the hollow head of the station so as to extend in a lateral direction some distance from the station, and on this second end of the shaft 48^a may be a crank handle 49 to allow a person to revolve the shaft 48^a.

When two of the apparatuses are employed at intersecting highways they are alternately operated by partially turning the handle 49, and the shaft 48, bevel gear 47 and bevel gear 46 will be partially revolved. The vertical shaft 42, bevel gear 41 and bevel gears 40 will then be partly revolved for also partly revolving the studs 38, and as these studs are at right angles to each other the gears 37 will be partially revolved in opposite directions. The racks 34, arms 32 and bars 30 will thereby be moved also in opposite directions, and the extensions 24 will be likewise swung for swinging the guard elements 19 so that the posts 21 of one of the apparatus will be raised to extend vertically above one highway, while the posts of the other apparatus will be lowered to positions flush with the surface of the second highway. The upturned posts of one apparatus will then obstruct one of the highways to passage of vehicles and animals and passage along the other highway may be similarly closed by operating the handle 49 reversely which in turn will again operate both apparatuses

for lowering the posts of the first mentioned apparatus and raising the posts of the other apparatus across the other highway.

In the foregoing description, I have embodied the preferred form of my invention, but I do not wish to be understood as limiting myself thereto as I am aware that modifications may be made therein without departing from the principle or sacrificing any of the advantages of this invention, therefore, I reserve to myself the right to make such changes as fairly fall within the scope thereof.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In an apparatus for stopping vehicles, the combination with a trough having side walls adapted to be arranged across a highway so that the upper edges of the walls are below the surface of the highway, of a plurality of guard elements, each comprising a post having oppositely protruding lateral flanges as well as having on one of its ends a right angular disposed plate, the junctures of the posts and plates being pivoted within the trough so that the flanges of the posts will movably rest on the upper edges of the side walls of the trough and so that the posts will lie flush with the surface of the highway while the plates of the elements are disposed interiorly of the elements and the guard elements being adapted to be swung whereby the posts will extend vertically above the highway with the plates lying flush with the highway.

2. In an apparatus for stopping vehicles, the combination with a trough having side walls adapted to be arranged across a highway so that the upper edges of the walls are below the surface of the highway, of a plurality of guard elements, each comprising a post having oppositely protruding lateral flanges as well as having on one of its ends a right angular disposed plate, and an extension protruding into the trough from the underside of the plate of each guard element, the junctures of the posts and plates being pivoted within the trough so that the flanges of the posts will movably rest on the upper edges of the side walls of the trough and so that the posts will lie flush with the surface of the highway while the plates of the elements are disposed interiorly of the elements, and the guard elements being adapted to be swung whereby the posts will extend vertically above the highway with the plates lying flush with the highway.

3. In an apparatus for stopping vehicles, the combination with a trough having side walls adapted to be arranged across a highway so that the upper edges of the walls are below the surface of the highway, of a plurality of guard elements, each comprising a post having oppositely protruding lateral flanges as well as having on one of its ends a right angular disposed plate, the junctures of the posts and plates being pivoted within the trough so that the flanges of the posts will movably rest on the upper edges of the side walls of the trough and so that the posts will lie flush with the surface of the highway while the plates of the elements are disposed interiorly of the guard elements being adapted to be swung whereby the posts will extend vertically above the highway with the plates lying flush with the highway, and mechanism associated with the guard elements, operable for swinging the elements in unison back and forth whereby the posts and plates will be alternately raised and lowered to and from positions flush with the highway.

4. In an apparatus for stopping vehicles, the combination with a trough having side walls adapted to be arranged across a highway so that the upper edges of the walls are below the surface of the highway, of a plurality of guard elements, each comprising a post having oppositely protruding lateral flanges as well as having on one of its ends a right angular disposed plate, and an extension protruding into the trough from the underside of the plate of each guard element, the junctures of the posts and plates being pivoted within the trough so that the flanges of the posts will movably rest on the upper edges of the side walls of the trough and so that the posts will lie flush with the surface of the highway while the plates of the elements are disposed interiorly of the elements and the guard elements being adapted to be swung whereby the posts will extend vertically above the highway with the plates lying flush with the highway, and mechanism associated with said extensions, operable for swinging the guard elements in unison back and forth whereby the posts and plates will be alternately raised and lowered to and from positions flush with the highway.

5. In an apparatus for stopping vehicles, the combination with a trough having side walls adapted to be arranged across a highway so that the upper edges of the walls are below the surface of the highway, of a plurality of guard elements, each comprising a post having oppositely protruding lateral flanges as well as having on one of its ends a rightangular disposed plate, the junctures of the posts and plates being pivoted within the trough so that the flanges of the posts will movably rest on the upper edges of the side walls of the trough and so that the posts will lie flush with the surface of the highway while the plates of the elements are disposed interiorly of the elements and the guard elements being adapted to be swung whereby the posts will extend vertically above the highway with the plates lying

flush with the highway, a rack associated with the guard elements, and means operable for moving the rack back and forth whereby the posts and plates will be alternately raised and lowered to and from positions flush with the highway.

6. In an apparatus for stopping vehicles, the combination with a trough having side walls adapted to be arranged across a highway so that the upper edges of the walls are below the surfaces of the highway, of a plurality of guard elements, each comprising a post having oppositely protruding lateral flanges as well as having on one of its ends a rightangular disposed plate, an extension protruding into the trough from the underside of the plate of each guard element, the junctures of the posts and plates being pivoted within the trough so that the flanges of the posts will movably rest on the upper edges of the side walls of the trough and so that the posts will lie flush with the surface of the highway while the plates of the elements are disposed interiorly of the elements and the guard elements being adapted to be swung whereby the posts will extend vertically above the highway with the plates lying flush with the highway, a rack connected to the extensions, and means operable for moving the rack back and forth whereby the posts and plates will be alternately raised and lowered to and from positions flush with the highway.

7. In an apparatus for stopping vehicles, the combination with a trough arranged across a highway, of a plurality of guard elements, each comprising two integral rightangular members having their junctures pivoted within the trough so that one of the members will lie normally flush with the surface of the highway while the second member is disposed interiorly of the trough and so that when swung accordingly the first mentioned member will extend vertically above the highway while the second named member lies flush with the highway.

8. In an apparatus for stopping vehicles, the combination with a trough arranged across a highway, of a plurality of guard elements, each comprising two integral rightangular members having their junctures pivoted within the trough so that one of the members will lie normally flush with the surface of the highway while the second member is disposed interiorly of the trough and so that when swung accordingly the first mentioned member will extend vertically above the highway while the second named member lies flush with the highway, and an extension depending into the trough from the second mentioned member of each guard element.

9. In an apparatus for stopping vehicles, the combination with a trough arranged across a highway, of a plurality of guard elements, each comprising two integral rightangular members having their junctures pivoted within the trough so that one of the members will lie normally flush with the surface of the highway while the second member is disposed interiorly of the trough and so that when swung accordingly the first mentioned member will extend vertically above the highway while the second named member lies flush with the highway, and mechanism associated with the guard elements, operable for swinging all of the elements simultaneously back and forth whereby the corresponding rightangular members of the elements will be alternately raised and lowered to and from positions flush with the highway.

10. In an apparatus for stopping vehicles, the combination with a trough arranged across a highway, of a plurality of guard elements, each comprising two integral rightangular members having their junctures pivoted within the trough so that one of the members will lie normally flush with the surface of the highway while the second member is disposed interiorly of the trough and so that when swung accordingly the first mentioned member will extend vertically above the highway while the second named member lies flush with the highway, an extension depending into the trough from the second mentioned member of each guard element, and mechanism associated with the depending extensions, operable for swinging all of the guard elements simultaneously back and forth whereby the corresponding rightangular members of the elements will be alternately raised and lowered to and from positions flush with the highway.

This specification signed and witnessed this 2d day of February, A. D. 1920.

JOHN J. KEENAN.

Witnesses:

J. FREDERICK CRYER,

A. SCUTT.