Oct. 25, 1932. L. J. WHITE 1,884,447

VEHICLE BARRIER

Filed April 25, 1932 2 Sheets-Sheet 1

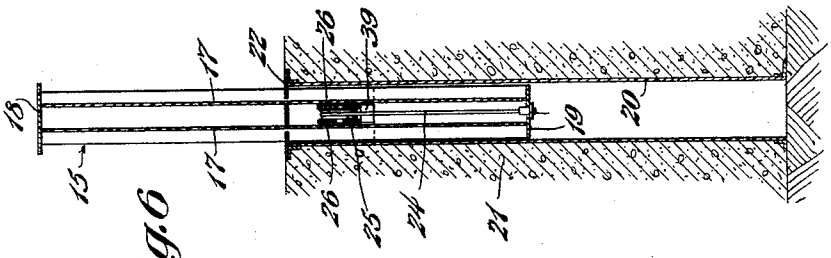



Fig. 6

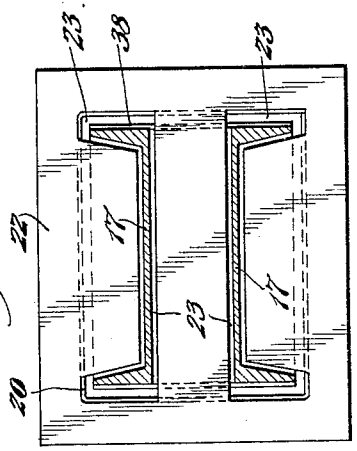



Fig. 5




Fig. 1

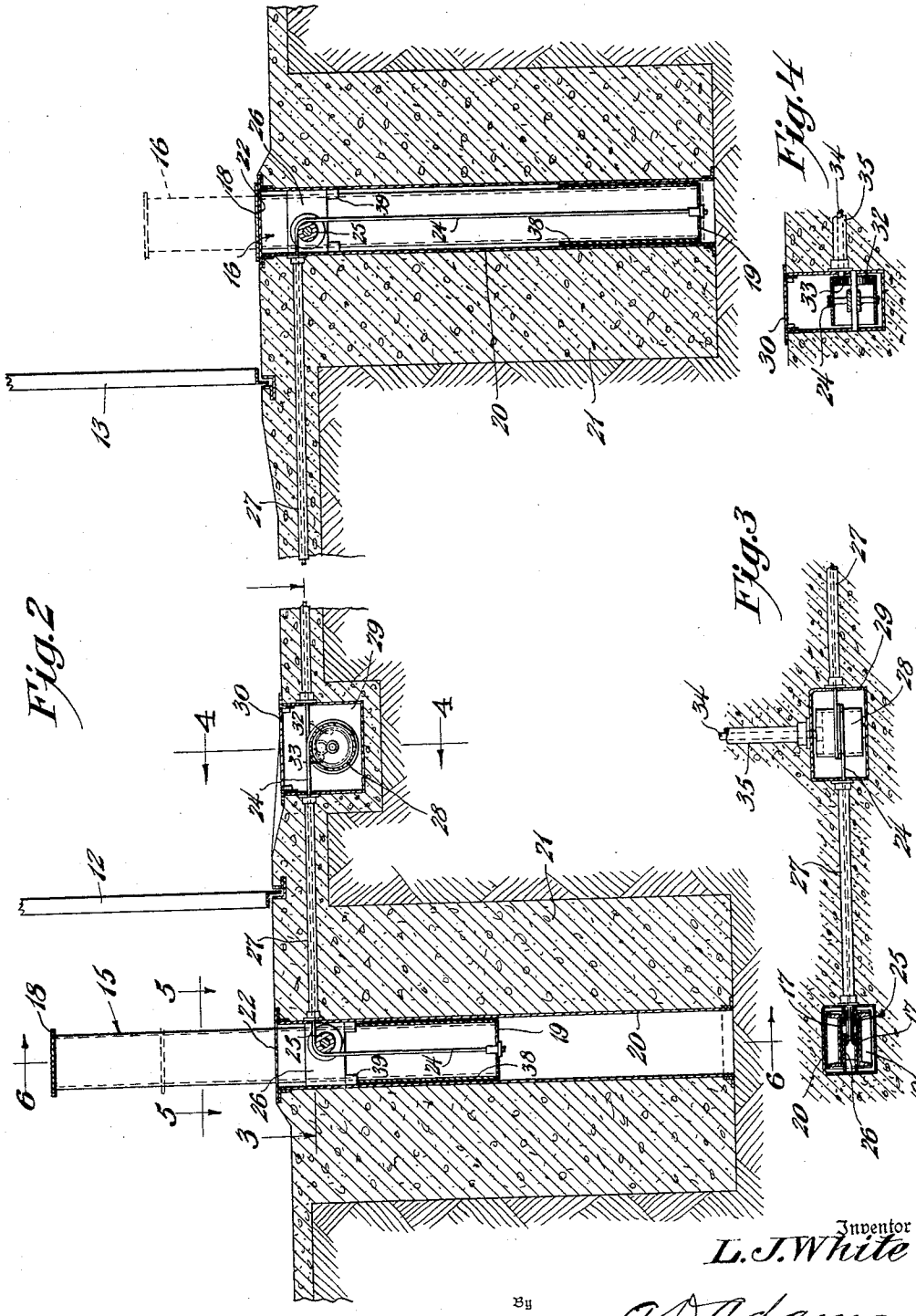
Inventor
L. J. White

By
A. D. Adams
Attorney

Oct. 25, 1932. L. J. WHITE 1,884,447

VEHICLE BARRIER

Filed April 25, 1932 2 Sheets-Sheet 2




Inventor
L. J. White

By
A D Adams

Attorney

Patented Oct. 25, 1932

1,884,447

# UNITED STATES PATENT OFFICE

LLOYD J. WHITE, OF SAN ANTONIO, TEXAS, ASSIGNOR TO SOUTHERN PRISON COMPANY, OF SAN ANTONIO, TEXAS, A CORPORATION OF TEXAS

## VEHICLE BARRIER

Application filed April 25, 1932. Serial No. 607,460.

This invention relates to vehicle barriers or safety stops and, among other objects, aims to provide stop members adapted to be projected, at will, into the path of traffic for the protection of gate entrances and the like. More specifically, the idea is to provide counterbalanced, vertically movable columns or barrier members adapted to be elevated and lowered alternately in the path of vehicles at spaced gate entrances to prevent vehicles of any kind from crashing the gates. Furthermore, the invention provides remote controlled pairs of barriers specially adapted for use in connection with vehicle locks which provide entrances to prison enclosures or yards, the purpose being to prevent mutinying or escaped prisoners from commandeering motor trucks, tractors or, even, locomotives and crashing the gates so as to afford an avenue of escape for all of the prisoners.

Other objects and advantages of the invention will appear in the specification, when considered in connection with the accompanying drawings, wherein:

Fig. 1 is a plan view disclosing one embodiment of the invention applied to a vehicle lock for a prison yard or the like;

Fig. 2 is a sectional view taken on the line 2—2 in Fig. 1;

Fig. 3 is a sectional view taken on the line 3—3 in Fig. 2;

Fig. 4 is a sectional view taken on the line 4—4 in Fig. 2;

Fig. 5 is a sectional view taken on the line 5—5 in Fig. 2; and

Fig. 6 is a sectional view taken on the line 6—6 in Fig. 2.

Referring particularly to the drawings, the illustrated embodiment of the invention is there shown as being applied to a vehicle lock 10 forming the entrance to a prison yard surrounded by walls 11. It will be understood, however, that such barriers are capable of many other uses. In this instance, the vehicle lock has a pair of alined gates 12 and 13 adapted to be opened and closed alternately either manually or mechanically to permit vehicles to pass through the lock and into the prison yard over the roadway 14 in much the same manner as a boat passing through a canal lock. It is quite common to provide such vehicle locks in prison yards to guard against the escape of prisoners. It will be understood that the entrance gate 12 is first opened to permit a vehicle to pass into the lock, and then closed. After the gate 13 is closed or, as it closes, the gate 12 is opened to permit the vehicle to pass into the prison yard where prisoners may be exercising or at work. For the purpose of this illustration, the gates 12 and 13 may be considered as being slidable vertically to open and close. In some installations of locks of this character, prisoners have been known to mutiny and commandeer vehicles to crash both gates from the outside. A locomotive might be used very effectively for this purpose if a spur track runs into the prison yard. It is the main purpose of this invention to provide means effectively to prevent the crashing of the gates by any type of vehicle or a locomotive.

Referring to Figs. 1 and 2, the gates 12 and 13 are shown as being guarded or protected by barriers in the form of a pair of vertically projecting columns 15 and 16, column 15 being arranged adjacent to and on the outside of gate 12 in the path of approaching vehicles; while the column 16 is arranged adjacent to the gate 13 on the inside of the prison yard. While the plunger-like columns may be made of many different shapes and designs, they are here shown as being fabricated of pairs of connected channel beams 17 suitably secured together at their upper and lower ends by end plates 18 and 19, the arrangement being such that the columns are more or less rectangular and the webs of the channel beams extend in the direction of the traffic to afford considerable bending resistance. Each of the columns, which may be of any desired height or length, is shown as being guided to be raised or lowered in a vertical metal casing 20 of such depth that, when either of the columns is lowered, to its bottom, its top plate 18 will lie flush with the roadway or ground. These casings are preferably embedded in concrete, shown at 21 in Fig. 2, so that the casings cannot be bent when a projected col-

umn is struck a severe blow. To prevent dirt or trash from entering the casings, they are shown as being covered by plates 22 which have guide slots 23 for the channel beams 17.

It is desirable that the two columns shall be easily manipulated to project one above the ground so as to constitute a vehicle stop or barrier, while the other one is lowered; in other words, so that they may be operated when the lock gates 12 and 13 are successively opened and closed. For this purpose, the two columns are connected and counterbalanced by means of a cable 24 secured at its ends to the lower ends of the columns, passing over guide pulleys or sheaves 25 journaled in transverse plates 26 near the upper ends of the casings 20; thence, through underground conduits 27 and being wound on drum 28 conveniently journaled in a housing 29. The housing 29 is here shown as being arranged inside of the vehicle lock and has a manhole cover 30 to afford access to it.

The arrangement is such that the drum 28 may be rotated in either direction to raise and lower the columns or barriers alternately. They are suspended by the cable 24 so that both columns are normally supported at a height of about two feet above the level of the driveway, protecting both gates. While the drum 28 may be power-driven and controlled from a remote station, it is shown as being manually operable by an attendant in a watchtower 31. To this end, the drum has an internal ring gear 32 driven by a pinion 33 on a shaft 34 which extends through an underground housing or conduit 35 to a point below the watchtower. The shaft 34 is geared to be driven by a vertical shaft 36 extending into the watchtower and geared to be operated by a hand wheel 37 which may be mounted on a control panel, pedestal or the like (not shown). The arrangement is such that the guard or operator in the tower may observe the position of both barriers and control the traffic passing through the lock without leaving his station or coming in contact with either the drivers of vehicles or the prisoners.

To limit the movement of the columns, beams 17 are conveniently provided with vertical connecting plates 38 welded or otherwise secured to their flanges near the lower ends (Figs. 2 and 5). The upper ends of these plates are arranged to strike stop lugs or projections 39 which may be welded to the casings 20 below the sheave brackets or plates 26 (Fig. 2). Thus, the operator in the tower may turn the hand wheel 37 in either direction to the limit of its movement and be assured that one of the columns is projected to the limit of its height, while the other one is flush with the ground at its top.

While one embodiment of the invention has been illustrated and described in detail as applied to vehicle locks for prisons, it will be apparent that such barriers, with or without obvious mechanical changes, may be used to control entrances or approaches of various kinds.

Obviously, the present invention is not restricted to the particular embodiment thereof herein shown and described. Moreover, it is not indispensable that all the features of the invention be used conjointly, since they may be employed advantageously in various combinations and sub-combinations.

What is claimed is:

1. In combination with a roadway entrance having a gate, a vehicle stop protecting the gate comprising a plunger-like member mounted below the roadway to be projected upwardly into the path of a vehicle; and remote controlled means for operating the stop.

2. In combination with a roadway having a gate, a vehicle stop in front of the gate comprising a plunger-like member mounted below the roadway to be projected vertically upwardly into the path of a vehicle; a casing beneath the surface of the roadway providing a guide for said member; operating means connected to the member; and remote controlled means for raising and lowering the member.

3. In combination with a roadway entrance, a pair of spaced barriers comprising counterbalanced vertical columns arranged to be projected in the path of vehicles; and remote controlled means for raising and lowering said columns, one of the columns being arranged to be lowered substantially flush with the roadway surface, while the other is projected above the surface.

4. In combination with a vehicle entrance to enclosures having spaced gates, a pair of counterbalanced vehicle stops normally projected into the path of the vehicles so as to protect said gates; and operating means for said stops connected to move one of them out of the path of an approaching vehicle and the other into the path of a vehicle.

5. In combination with a vehicle lock having spaced gates, a pair of movable vehicle stops adjacent to the gates; and remote operating means connected to both stops to move one at a time out of the path of an approaching vehicle.

6. In combination with a vehicle lock having spaced gates, providing an entrance to a walled enclosure, a pair of counterbalanced, plunger-like vehicle stop members arranged adjacent to the gates; and remote controlled means for raising one of the stop members and simultaneously lowering the other.

7. In combination with a vehicle lock having spaced gates providing an entrance to a walled enclosure, a pair of counterbalanced, plunger-like vehicle stop members arranged adjacent to the gates; vertical guide casings for said stop members anchored below the

surface of the roadway; and a single, remote controlled means connected to raise one of the stop members and simultaneously lower the other.

8. In combination with a vehicle lock for prison enclosures and the like having spaced gates, a pair of vertical casings embedded in the ground adjacent to the gates; a fabricated steel column constituting a vehicle stop slidably mounted in each of said casings; a single cable connecting the columns so that one counterbalances the other and arranged normally to suspend both columns in the path of vehicles approaching both gates; a drum over which said cable is wound; and remote controlled means for operating the drum so as to project one of the columns above its normal suspended position and lower the other column so that its upper end lies substantially flush with the surface.

9. In combination with a vehicle lock for prison enclosures and the like having spaced gates, a pair of vertical casings embedded in the ground adjacent to the gates; a heavy steel column constituting a vehicle stop slidably mounted in each of said casings; a single cable connecting the columns so that one counterbalances the other and arranged normally to suspend both columns in the path of vehicles approaching both gates; a drum over which said cable is wound; gearing connected to the drum; an underground shaft for operating the drum through said gearing; and manually operable means connected to the shaft arranged at a remote controlled station and adapted to raise one of the columns above its normal suspended height and to lower the other column below the path of an approaching vehicle.

10. In combination with a vehicle lock providing an entrance to a walled prison enclosure and having spaced gates, a pair of counterbalanced, plunger-like columns constituting vehicle stops to protect the gates; vertical casings providing guides for the columns anchored in the ground below the roadway; counterbalancing means including a cable connected to the lower ends of the barriers and trained over sheaves journaled in the casings adjacent to their upper ends; an underground winding drum over which said counterbalancing cable is wound; operating means for the winding drum including a manually operable member arranged at a remote control station and connected to impart raising movement to one of the columns and simultaneous lowering movement to the other column out of the path of a vehicle approaching the adjacent open gates; and means associated with the columns and their casings to limit the vertical movement of both columns.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

L. J. WHITE.