Sept. 8, 1942. E. S. FRASER 2,295,205

HIGHWAY TRAFFIC BARRIER

Filed Dec. 21, 1939 2 Sheets-Sheet 1

Fig. 1.

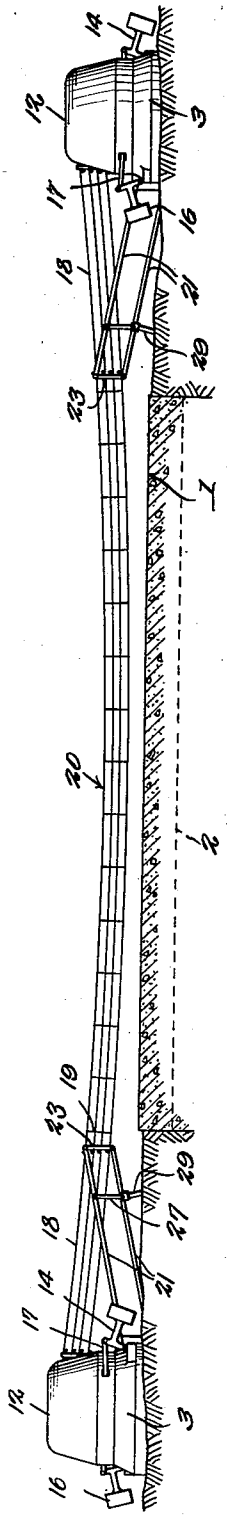


Fig. 5.

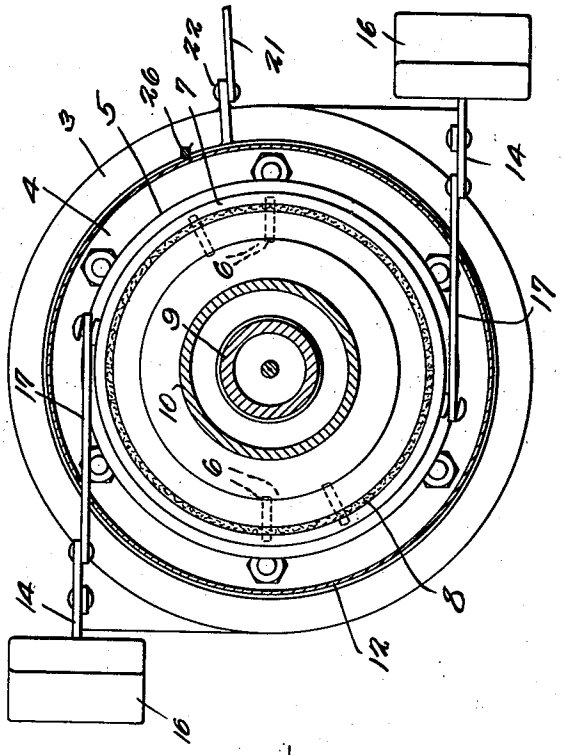
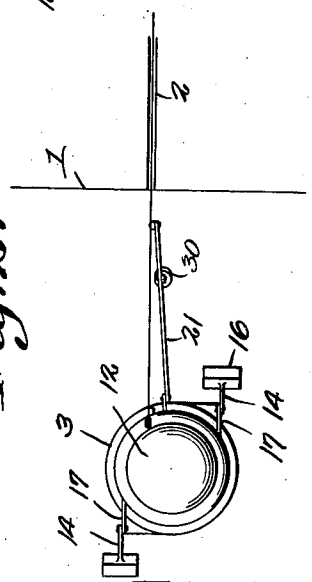


Fig. 2.



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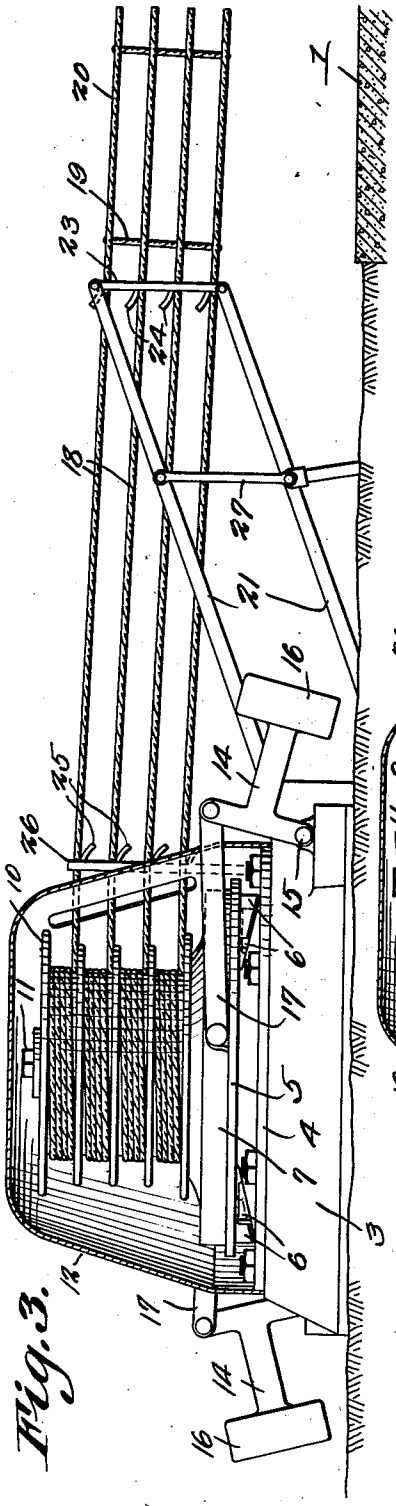


Fig. 3.

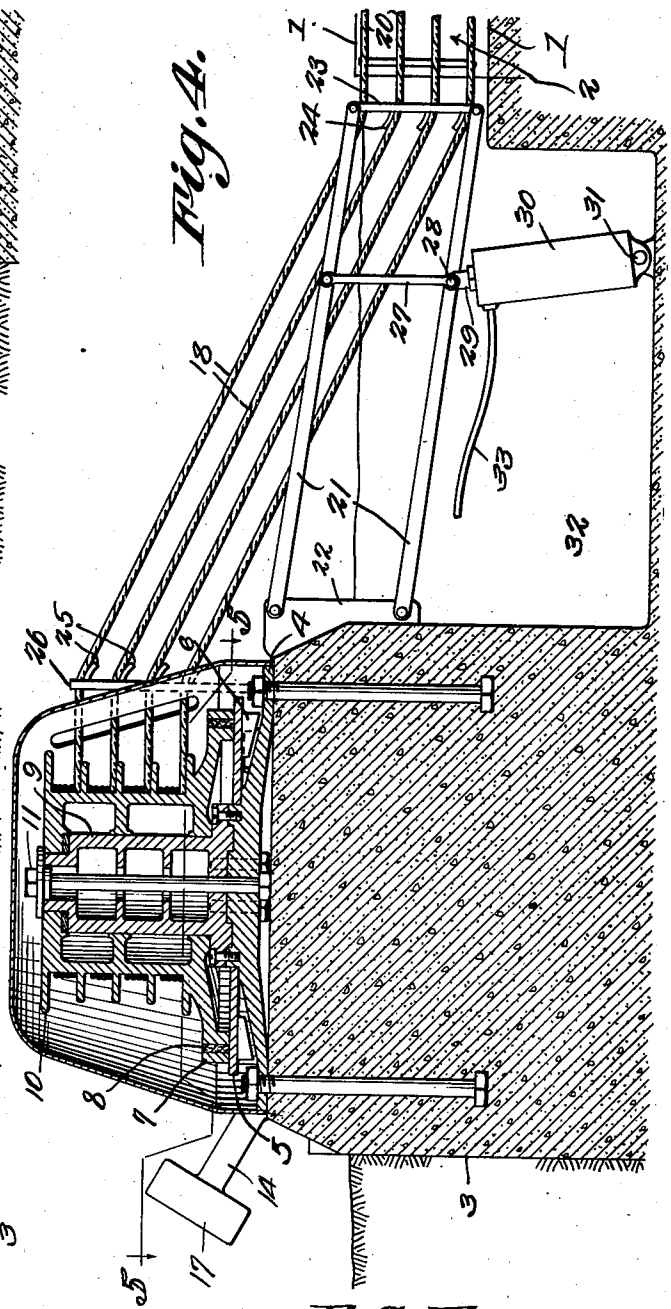


Fig. 4.

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UNITED STATES PATENT OFFICE

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HIGHWAY TRAFFIC BARRIER

Edwin Stanton Fraser, Tallahassee, Fla.

Application December 21, 1939, Serial No. 310,423

6 Claims. (Cl. 39—1)

This invention aims to provide a flexible barrier, adapted to extend across a roadway at a place of danger, for instance near a railroad track, for the purpose of stopping gradually and definitely, a vehicle which may be advanced against the barrier. The invention aims to provide novel means for mounting, operating and controlling the barrier.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:

Fig. 1 shows in elevation, a device constructed in accordance with the invention;

Fig. 2 is a top plan, somewhat diagrammatic in nature;

Fig. 3 is a vertical sectional view wherein parts remain in elevation, the gate being raised;

Fig. 4 is a vertical sectional view showing the gate depressed;

Fig. 5 is a section on the line 5—5 of Fig. 4.

The numeral 1 marks a roadway, provided with a transverse slot 2. On each side of the roadway 1 there is a foundation 3, there being a pit 32 between the foundation 3 and the roadway 1.

A base plate 4 is secured on top of each foundation 3. A turntable 5 is mounted to rotate on the base plate 4. The turntable 5 and the base plate 4 are supplied with lugs 6 which interengage, under some instances, to limit the rotation of the turntable. The turntable 5 has an upstanding rim 7. Within the rim 7 is disposed a friction shoe 8.

A fixed hollow shaft 9 is secured to the base plate 4. A multi-sheave drum 10 is mounted to rotate on the shaft 9 and is held thereon, against upward movement, by a retainer 11, engaged at its lower end with the base plate 4. The working parts of the device may be contained within a removable housing 12, surrounding the base plate 4 and supported on the foundation 3.

Oppositely-disposed T levers 14 are supplied. The T levers 14 are fulcrumed at 15 on the foundation 3. Weights 16 are carried by the shanks of the T levers 14. The outer ends of links 17 are pivoted to the upper ends of the heads of the T levers 14, the inner ends of the links being pivoted to the turntable 5. The links 17 work through openings in the housing 12.

Flexible elements 18 are wound about the drum 10 and extend outwardly through one of the openings in the housing 12. Above the roadway 1, the flexible elements 18 are joined together, as shown at 19, to form a flexible gate 20 which, when depressed, will enter the slot 2 of the roadway 1.

A gate depressor is provided, and including radius arms 21 having their inner ends pivoted to an ear 22 on the foundation 3, for vertical swinging movement. The outer ends of the radius arms 21 are pivoted to a connection 23 having inclined guides or shoulders 24, under which the flexible elements 18 pass. The flexible elements 18 pass, also, above guides or shoulders 25 on a vertical post 26 carried by the foundation 3. The upper end of an intermediate tie 27 is pivoted to the uppermost radius arm 21, the lower end of the tie being connected by a pivot element 28 with the lower radius arm 21. The pivot element 28 connects to the lower radius arm 21, a piston plunger 29, mounted to reciprocate in a cylinder 30, pivotally mounted at 31 in the pit 32. The numeral 33 marks a source of fluid air pressure supply for the cylinder 30.

The cylinder 30 and associated parts may be replaced by an electrical mechanism, the showing of Fig. 4 being unchanged. Under such circumstances, the part 30 is the coil of a solenoid magnet, the part 29 being an armature responsive to the coil, and the element 33 representing a part of the circuit of the magnet coil.

When the parts are arranged as shown in Fig. 4, the gate 20 has been carried down into the roadway slot 2, at the will of an operator, responsive to the radius arms 21 and the mechanism shown at 29—30. Traffic then can proceed freely over the roadway 1. When the parts are arranged as shown in Fig. 4, the lugs 6 of the turntable 5 and the base plate 4 are in engagement.

When the mechanism shown at 30—29 is released, the flexible elements 18 are reeled on the drums 10, the gate 20 and the gate depressor 21—23 being raised by the cables.

With the parts arranged as shown in Fig. 3, the lugs 6 of the turntable 5 and of the base plate 4 are spaced apart.

When a vehicle encounters the gate 20, the gate and the flexible elements 18 are bowed forwardly, and slide off the guides 24 and 25 of Fig. 4. The

drum 10 is rotated until the lugs 6 of the turntable 5 and of the base plate 4 come into engagement and, thereafter, the rotation of the turntable 5 is stopped. The drum 10 continues to rotate and pay off the flexible elements 18, but such a rotation of the drum is controlled, owing to the presence of the friction shoe 8.

The ordinary operation of the device comprises the raising and lowering of the gate 20, between the positions shown in Figs. 3 and 4; but if a vehicle strikes the gate 20, the flexible elements 18, the drum 10 and associated parts afford an efficient means for checking gradually, the forward movement of the vehicle.

Having thus described the invention, what is claimed is:

1. In a traffic control, drums mounted for rotation on opposite sides of a highway, means for retarding the rotation of the drums, a flexible element wound about the drums, a gate interposed in the flexible element, and means under the control of an operator for depressing the gate, said means having shoulders, the flexible element passing in a continuous length detachably beneath the shoulders, for release therefrom under vehicle impact.

2. In a traffic control, drums mounted for rotation on opposite sides of a highway, means for retarding the rotation of the drums, a flexible element wound about the drums, a gate interposed in the flexible element, a radius arm mounted for vertical swinging movement, a guide carried by the radius arm and retaining the flexible element detachably, for release under vehicle impact, and means under the control of an operator for raising and lowering the radius arm, the flexible element and the gate.

3. In a traffic control, a parallelogram frame comprising pivotally connected parts, one of said parts being an inner end member of the frame, means for mounting the frame at its outer portion for vertical swinging movement, means under the control of an operator for swinging the frame downwardly, a gate, flexible elements connected to the gate and mounted on the end member for release under vehicle impact, and means for automatically drawing upon the flexible elements, to raise the gate and the frame.

4. In a vehicle control, a turntable mounted for rotation, a drum mounted for rotation, a retarding, slip-connection between the turntable and the drum, a gate, a flexible element connected to the gate and wound about the drum, means releasable from a lowered position for lowering the gate, the flexible element being releasably engaged with said means, for detachment under vehicle impact, and mechanism for rotating the turntable automatically, to draw upon the flexible element and raise the gate and said means.

5. A traffic control, constructed as set forth in claim 4, and wherein said mechanism comprises a lever and a fulcrum therefor, a weight carried by the lever, and a link pivoted to the lever and to the turntable.

6. In a traffic control, a drum mounted for rotation on one side of a highway, means for retarding the rotation of the drum, a flexible element wound about the drum, a gate interposed in the flexible element, means for mounting the flexible element at the opposite side of a highway, a radius arm mounted for vertical swinging movement, a guide carried by the radius arm and retaining the flexible element detachably, for release under vehicle impact, and means under the control of an operator for raising and lowering the radius arm, the flexible element and the gate.

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