PORTABLE TRAFFIC CONTROL DEVICE

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ABSTRACT
An oversize replica of a flagman is pivotally mounted on a trailer adjacent a roadway for movement between an operative position where visible to traffic to be controlled and a knock-down position flat on the bed of the trailer and not visible to passing motorists. A traffic control gate carrying a traffic warning signal is pivotally mounted with respect to the replica to move from position in which the warning is visible to oncoming motorists and in which the gate extends across at least a portion of the roadway to physically prevent traffic thereon to position vertically up behind the replica to effectively obscure the warning sign behind it. A remotely operated control cable and switch control this movement of the gate so that more than one such device can be operated from a central location at the same time thus to control one, two or even more roadways from said location. Warning lights blink amber when the gate is up and clear of the roadway and separate warning lights blink red when the gate is in blocking relationship to a portion of the roadway.

8 Claims, 6 Drawing Figures
PORTABLE TRAFFIC CONTROL DEVICE

BACKGROUND OF THE INVENTION:

Construction projects adjacent to public roadways and highways often necessitate the intermittent closing of the roadways to permit passage of construction vehicles across such roadways. Customarily, and by law in many states, a live flagman or signalman must stand adjacent the roadway to be closed, and display alternately a "stop" sign and a "slow" sign to stop traffic on the roadway or to slow it down.

Such flagmen are often difficult to see in time to stop or to slow down, and in the past, much property damage, injury and even loss of life to motorists, construction vehicle operators, and the flagmen themselves has resulted. Use of one person to stop traffic in each direction at every roadway is very expensive and wasteful of manpower.

"Stop and go" lights are sometimes installed at such locations; but unless the location is to be permanently established for a very long period, such a solution is economically and practically impossible.

Warning signs and even stop signs of oversize dimension are often set up along roadways, highways and particularly freeways to warn of the necessity for slowing down and stopping, but these devices are not subject to being changed from minute to minute as the need for controlled cautious traffic flow and the need for interrupting the traffic flow changes. Also, some means other than turning these signal devices on their sides is needed to quickly disable them so they are not in the view of the public along the roadway during periods when construction is not taking place.

What is needed is a sign which is readily recognizable for a considerably longer distance down the highway than is a man-held sign; a device which can be erected in condition for use substantially instantaneously and can be removed from the view of the people on the controlled roadway substantially instantaneously when the construction work or other need for controlling the roadway ceases at the end of a working day, for example, a device which actually places a physical barricade or barrier to travel down the roadway when such travel is to be temporarily completely stopped, but avoids the risk of personal injury to the traffic signal control operator and to the motorist while at the same time avoiding the possibility of extensive property damage; and a device which can be operated remotely from a point of vantage where traffic coming in two or more directions can be observed and controlled and from a point where the operator can be sheltered from inclement weather.

BRIEF SUMMARY OF INVENTION:

A portable traffic control device includes a trailer adapted to be towed by a car or a truck, and an oversize replica of a flagman pivotally mounted thereon to be visible from the rear of the trailer when in an upright position and to be unidentifiable as a traffic control device or as a representation of a person when in a knock-down position lying in parallel adjacent relationship to a flat bed of a trailer. A traffic control gate or barrier arm is pivotally mounted in adjacent relationship to the oversize mannequin or replica and moves to knock-down position with the mannequin to also be unidentifiable as a warning device when in such knock-down position. When the mannequin is upright, and the trailer is parked adjacent a roadway to be controlled, this gate is movable from horizontal position outwardly from the mannequin to block at least a portion of the roadway to vertical position generally behind the mannequin. The gate can carry a normal "stop sign" which will be fully visible when the gate is in the horizontal, traffic blocking position. When the gate is in its vertically upright position behind the oversized mannequin, the stop sign is substantially shielded by the figure of the mannequin.

Lights are provided which flash amber when the gate or barrier is in the upright position and traffic to be allowed to proceed with caution and lights are provided which flash red when the barrier is in the horizontal or traffic blocking position. Power means, a bank of batteries mounted on the trailer in the form of the invention as shown, provide the energy to operate the barrier and the lights, and a remotely positioned switch and a cable connect to the device so that device can be controlled from a remote location.

IN THE DRAWINGS:

FIG. 1 is a rear elevational view of the trailer and the enlarged replica of a flagman in front view positioned thereon and showing a traffic control gate or barrier in the "stop" or traffic blocking position, with other positionings of the gate indicated in dotted lines;

FIG. 2 is a rear elevational view of the trailer of FIG. 1 but with the replica removed and with the gate situated in its upright or non-traffic control location taken as on the line 2—2 in FIG. 3;

FIG. 3 is a side elevational view of the replica and trailer of FIG. 1 but showing the gate in the upright or non-traffic control position taken as on the line 3—3 in FIG. 2;

FIG. 4 is a top plan view of the trailer, replica and gate as seen in FIG. 1;

FIG. 5 is a fragmentary vertical sectional view taken on the line 5—5 in FIG. 2; and

FIG. 6 is a schematic representation of an electrical control circuit of the invention.

DESCRIPTION OF PREFERRED EMBODIMENT:

A trailer 10 includes an open flat body 11, a trailer hitch 12 of any usual or preferred construction, two rear supporting wheels, 13,13, and a forward support foot 14 which can be downwardly situated when the trailer is to be parked for controlling traffic on a roadway and can be moved out of the way when the trailer is to be transported to another location for use.

An oversize replica 16 of a flagman can be made of plywood or other suitable material and can be painted to have the same reflective and other markings on its "clothing" as would be worn by a real flagman. As shown, this replica or mannequin 16 is fixedly mounted with respect to a rectangular superstructure 18 which is pivotally mounted on a rectangular foot portion 20 as at 22 to move from the upright position as seen in FIG. 3 in full lines to the position as seen in dotted lines in that figure. Permanent legs 24 can be situated on the trailer body 11 to receive an upper portion of the superstructure 18 and to support its weight when it is in the knock-down position. This superstructure and the replica 16 can be moved manually from upright position, to the knock-down position. Situated on a horizontally extending bar 26, which forms an upper por-
tion of superstructure 18, are amber warning lights 28,28 and red stop lights 30,30.

A traffic control gate or barrier arm 32 having a portion 34 which is horizontal when blocking traffic and an offset portion 36 is pivotally mounted as at 38 to the superstructure 18.

An electric motor 40 is mounted on the trailer body 11, and a winch 42 is carried by the motor drive shaft 44 of that electric motor. A cable 46 is wound around the winch and extends to the outer end of the offset portion 36 of barrier arm 32, it being fastened thereto as at 48.

Connected to the gate 32 by spacers 50,50 is a “stop” sign 52.

A battery pack 54 is situated on the trailer body 11 and provides power to the electric motor 40 and to the warning lights and stop lights at appropriate times in a manner to be described. A remote switch 56 is connected by a control cable 58 to the remainder of the portable traffic control device.

OPERATION:

With the parts positioned as seen in FIG. 2, the remote switch 56 is thrown to the “stop” position, and power is applied to electric motor 40 in such a manner as to allow the winch to unwind the cable 46 allowing gravity to carry the gate or barrier arm to position as seen in FIG. 1. When the barrier arm reaches that position, it contacts a microswitch 60 which is fixedly mounted on the superstructure 18, and power to the motor 40 is interrupted.

At the time the switch was first placed in the “stop” position, power was applied to stop lights 30,30 and to a stop light 62 located on the outer end of the normally horizontal portion 34 of barrier arm 32. These lights are energized as long as the switch 56 is in the “stop” position.

When this switch is moved to the “caution” position, power to the stop lights is interrupted, and power is fed to the amber warning lights 28,28. This power continues to the warning lights as long as the switch is in the “caution” position. Simultaneously power is fed to the electric motor 40 in an opposite direction to cause the winch to wind up the cable 46, thus causing the gate 32 to move from the position as seen in FIG. 1 back to the position as seen in FIG. 2. When this position is achieved, the offset portion 36 of the gate contacts a microswitch 64, and power to the motor 40 is interrupted.

It is to be noted that the electric motor 40 is of the backpack variety, so that when the power is shut off by putting the switch in an “off” position or because of power failure, the gate will remain in whatever position it finds itself. The gate is powered in the “up” direction only, but is allowed to go toward the “down” position under the action of gravity at the rate at which the motor allows the winch to unwind the cable. However, in the event of a power failure, and in order to clear the gate from the roadway, the gate can be manually lifted up to position as seen in FIG. 2 and temporarily or permanently pinned into place. This will merely cause the cable 46 to go slack. Should it be desired to manually position the gate in a down or “stop” position, the cable connection 48 to the gate will be removed.

A main reason for the effectiveness of the present device is the additional distance down the highway at which a motorist can identify the enlarged replica of the flagman or mannequin. Normally, when traveling at high speeds, a motorist is hard put to get slowed down and/or stopped in time after he has finally identified a normal size flagman carrying a sign in his hand or in a hand held pole. By providing a mannequin considerably larger than lifesize, the motorist can identify the purpose and function of the mannequin much farther away, and, at least initially, will most rapidly slow down believing he is coming up to a normal size person located nearby.

It is to be noted that the barrier arm 32 is designed to actually physically block at least a portion of the traffic lane to be controlled. Further, the barrier arm can be made in two pieces with breakaway shear pins or rivets 68 so that should a driver purposefully or inadvertently run into the barrier arm, it will simply break away, doing no substantial damage to the rest of the device and, equally important perhaps, doing so substantial damage to the vehicle of the motorist.

As shown, the control cable 46 serves as an operative control linkage between the switch 56 and the power means. It is to be understood that a radio control device or the like could be substituted for the cable to serve as the control linkage.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A portable roadway traffic control device for selectively alternating blocking a portion of a roadway to be controlled and unblocking said roadway, said device including:
   A. a portable platform adapted to be situated adjacent to a roadway to be controlled;
   B. a replica of a person mounted on said platform in position to be observable by motorists approaching this platform along the roadway;
   C. a traffic control gate pivotally mounted with respect to said replica and said platform to be movable between a first position wherein a portion of said gate extends over a least portion of the roadway to be controlled and a second position wherein said gate is clear of said roadway;
   D. power means to move said gate between said first and second positions; and
   E. control means for controlling said power means.

2. The traffic control device of claim 1 wherein said replica is an oversize representation of a flagman; wherein said platform is provided by a vehicle trailer; said replica and said gate are pivotally mounted with respect to said platform to be movable between a first upright position where each are observable by approaching motorists and a second knock-down position where neither is identifiable by approaching motorists as a traffic control device.

3. The traffic control device of claim 2 wherein the power means includes a power source on said trailer; and wherein said control means includes a remotely located switch and a control linkage operably connecting said switch and said power means.

4. The traffic control device of claim 3 wherein said power means includes a winch and motor on said platform, and said cable operably connected between said winch and said gate.

5. The traffic control device of claim 3 and stop lights mounted on said gate and with respect to said replica in position to be observable by approaching motorists when said replica is in said first upright position with
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5 respect to said platform and said gate is in its first position with respect to said replica; said control means being operative to connect said power means to light said stop lights when said gate is not in said second position and to disconnect said power from said lights when said gate is in said second position with respect to said replica.

6. The traffic control device of claim 5 and warning lights mounted with respect to said replica in position to be observable by approaching motorists when said replica is in said first upright position with respect to said platform and said gate is in its second position with respect to said replica; said control means being operative to connect said power means to light said warning lights when said gate is in said second position and to disconnect said power from said warning lights when said gate is not in said second position with respect to said replica.

7. The traffic control device of claim 1 wherein a traffic control sign is affixed to said gate in position to be observable when said gate is in said first position with respect to said replica, and to be effectively out of sight behind the replica when said gate is in said second position with respect to the replica.

8. The traffic control device of claim 1 wherein said gate consists of a first barrier arm portion adapted to extend over at least a portion of a roadway when said gate is in said first position with respect to said replica, a second portion situated to be at all times clear of said roadway, and frangible means connecting said first and second portions. * * * * *