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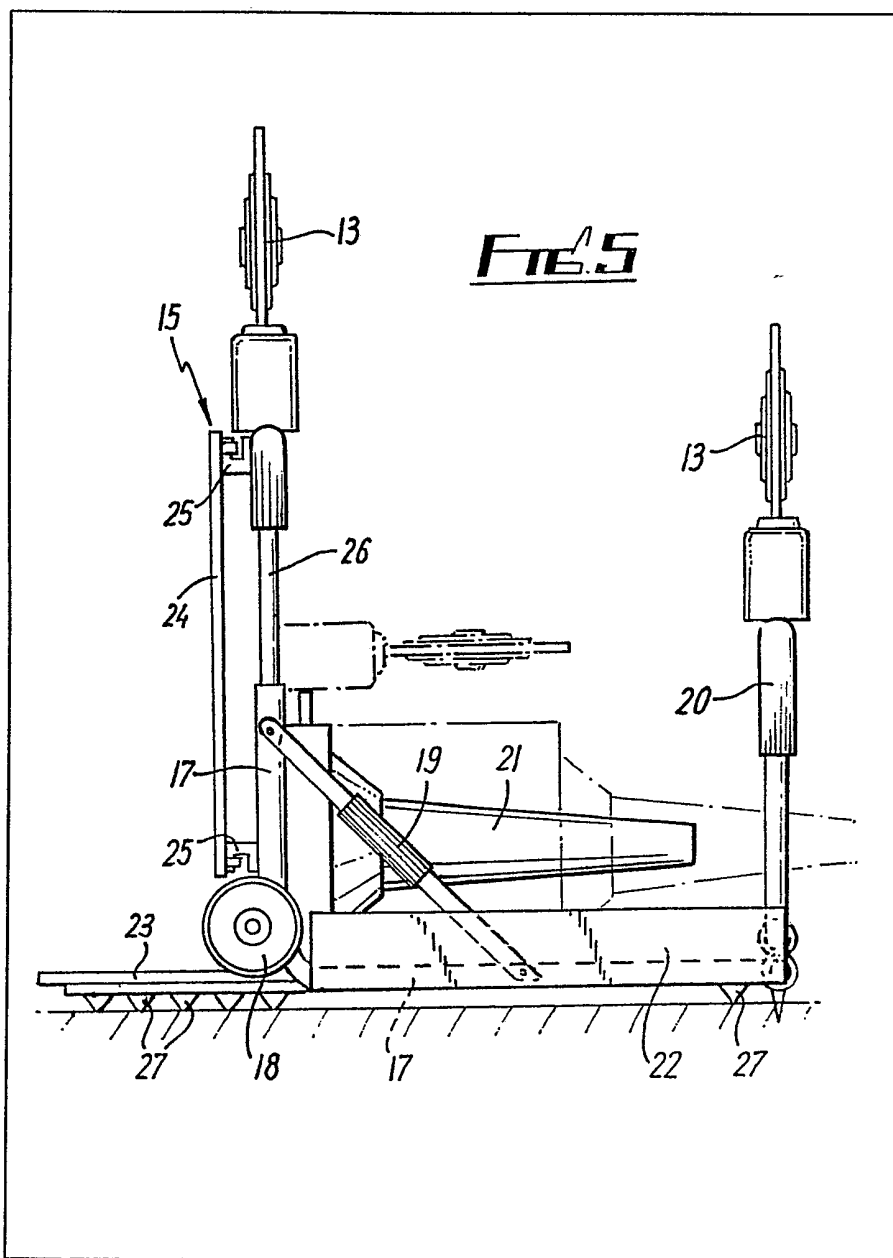
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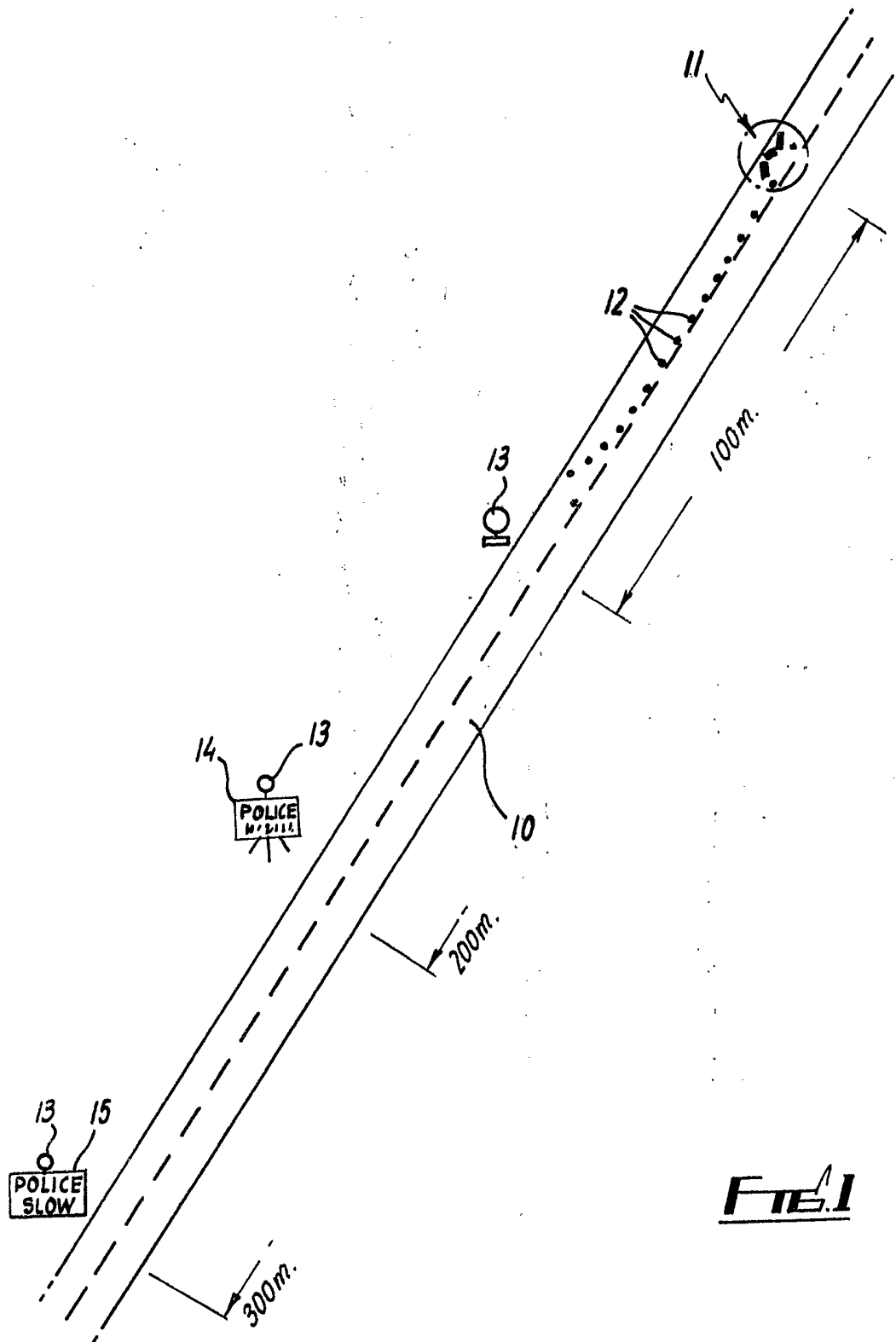
(54) Deployment of warning devices

(57) A transporter for the deployment of warning devices at the scene of an accident or other roadway obstruction retains all of the requisite warning devices whilst the transporter is carried, for example, in the boot of a vehicle. When required the transporter is used as a wheeled conveyance (16) by which the warning devices (12, 13, 14, 15) may be transported to the

places of deployment. The conveyance (16) comprises a frame (17) having wheels (18), handles (19, 20), a cone (12), receiving spigot (21) and containers (22) for the warning devices (14, 15). The conveyance (16) may be turned so that wheels (18) are clear of the ground and the frame (17) is supported by support (23). A warning display board (15) is then mounted on the frame (17) in a visibly prominent position.



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FIG. 1

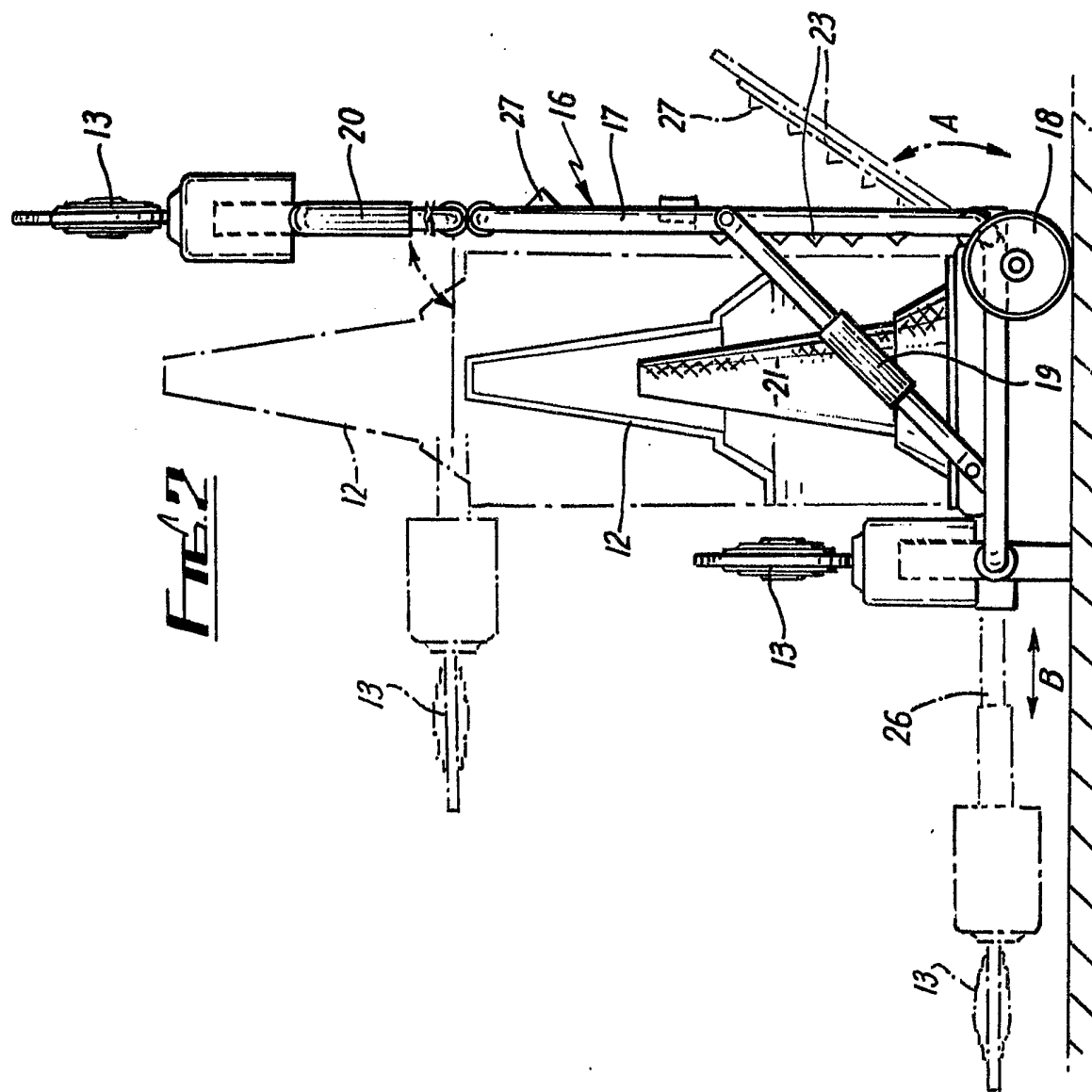
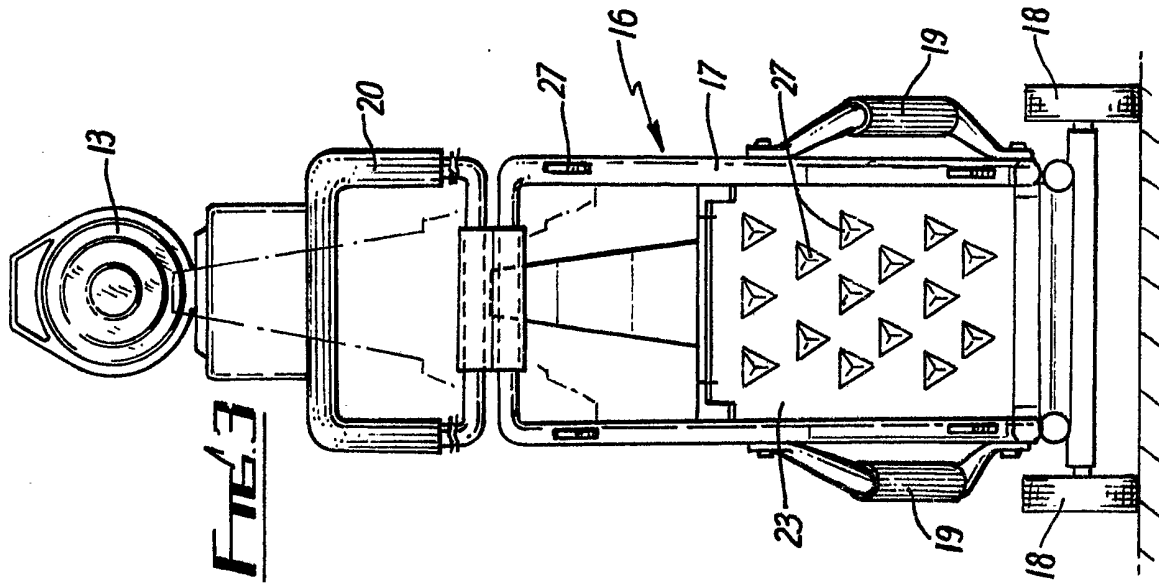


FIG. 5

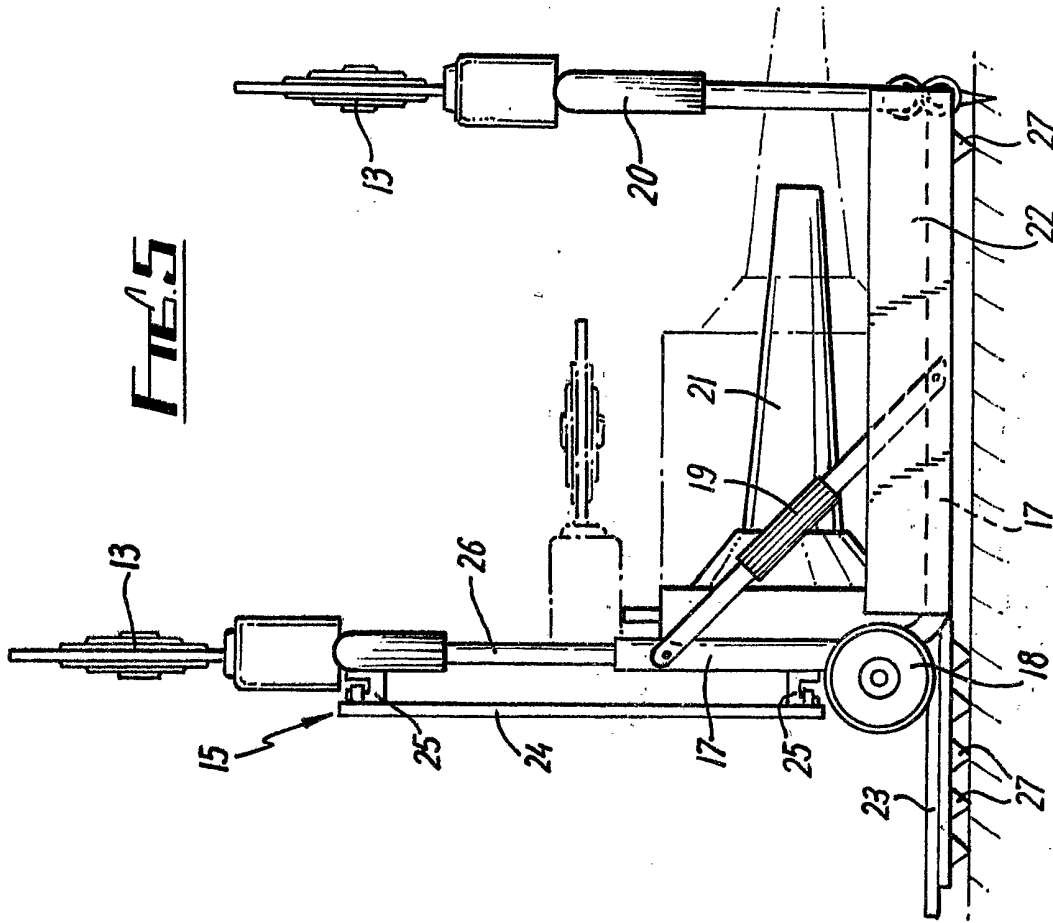
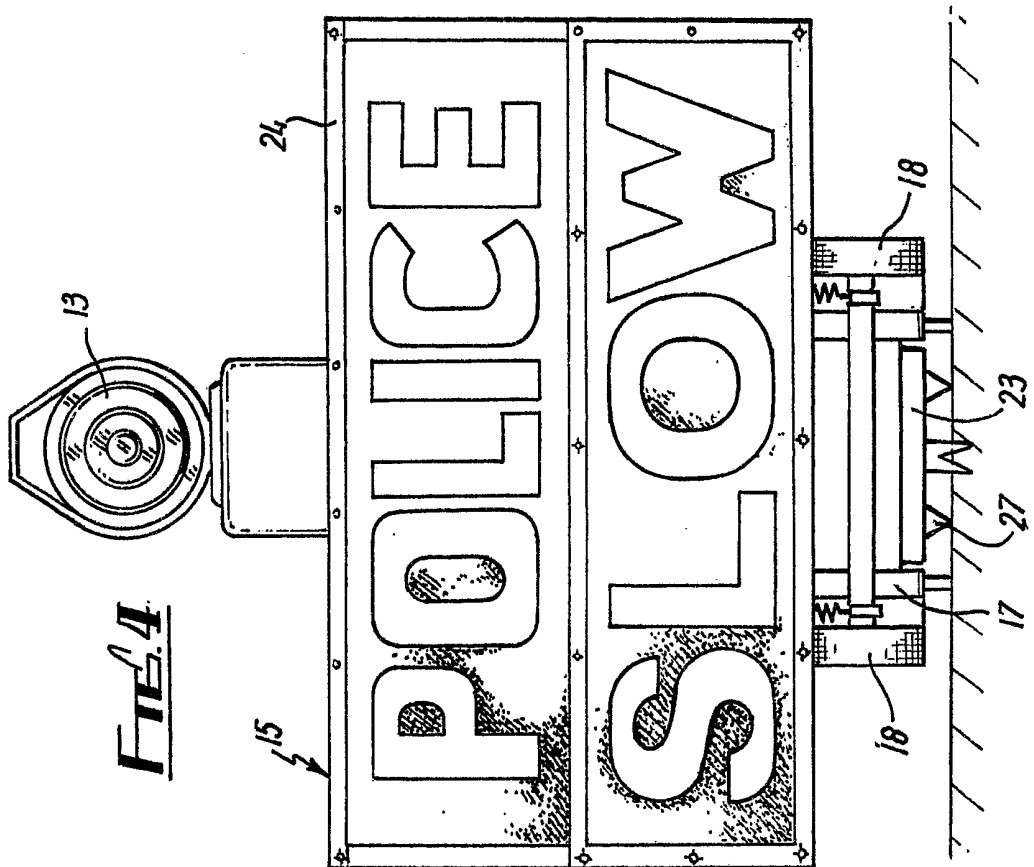
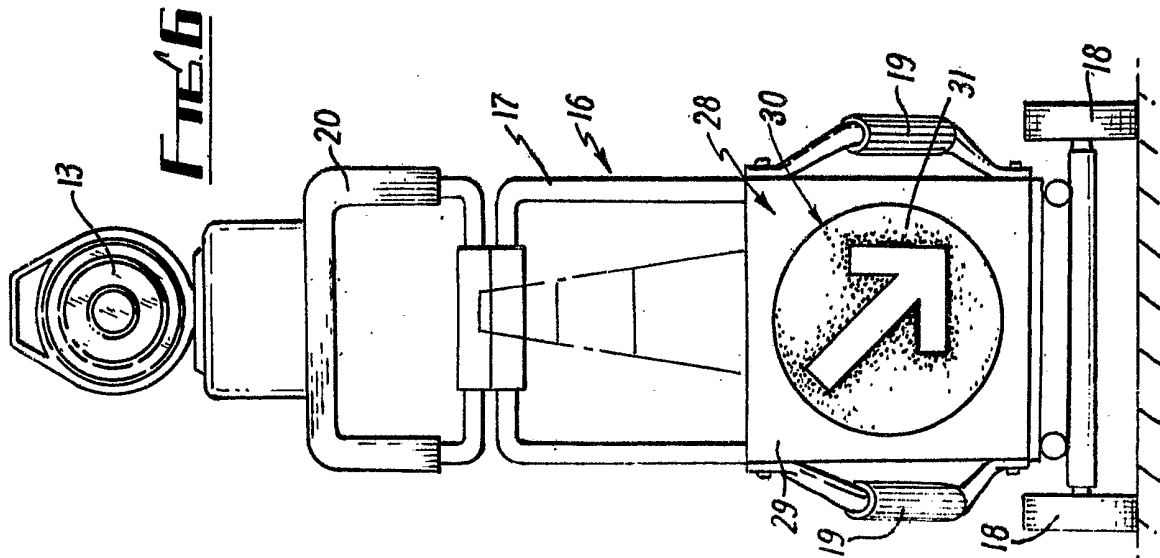
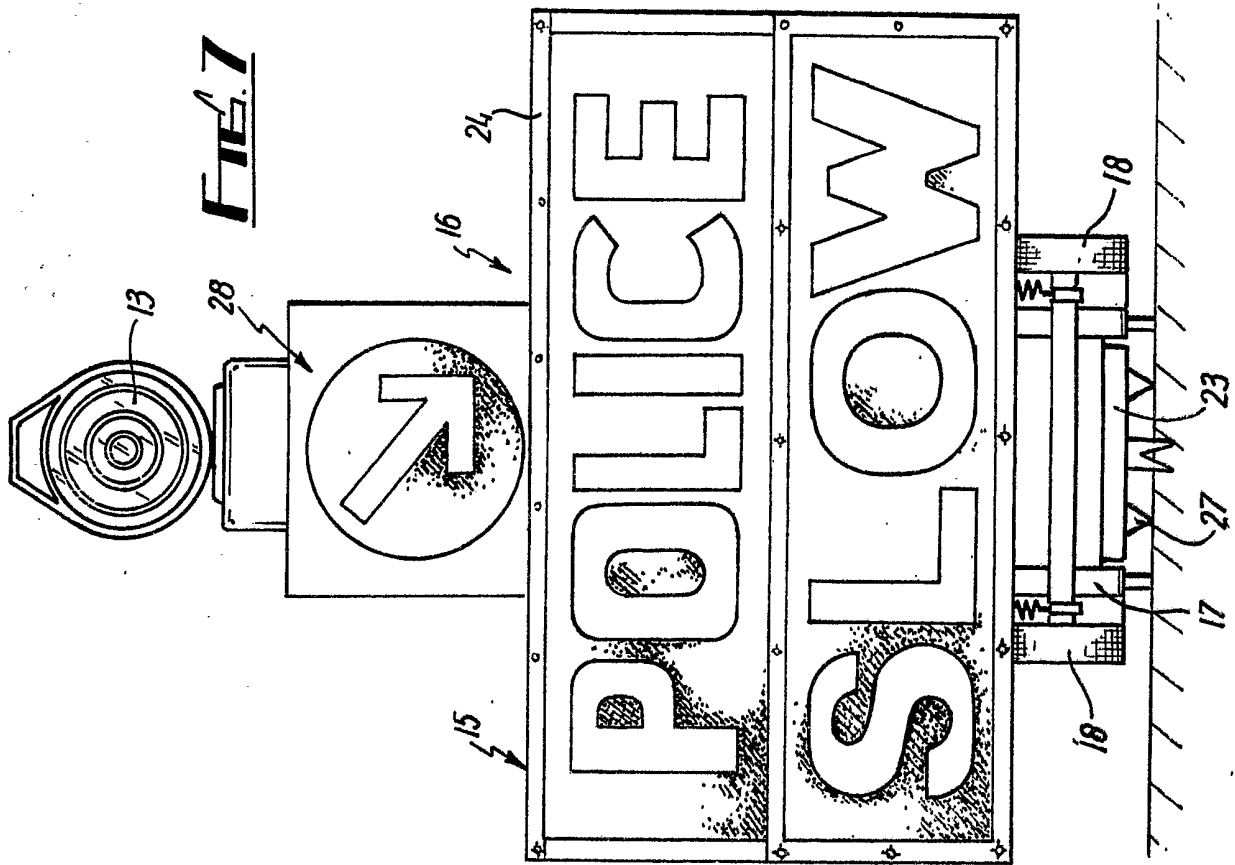


FIG. 4





SPECIFICATION

Deployment of warning devices

This invention relates to the deployment of warning devices, particularly to give warning of a road accident or like emergency.

- In the event of a road accident or like emergency on a roadway to which the police are summoned it is customary for warning devices to be disposed by policemen in the immediate vicinity of the scene of the accident in an attempt to prevent further accidents occurring. Such action generally entails the provision of advance warning signs spaced respectively 300m, 200m and 100m or thereabouts from the scene of the accident in the direction of oncoming traffic, together with further warning devices in the form of traffic cones or bollards which serve to close off a part of the roadway in order that oncoming traffic is caused to divert around the scene of the accident. Such cones are placed at intervals in the 100m or thereabouts immediately preceding the scene of the accident. The various warning devices referred to above are carried in the boot of the police vehicle and it is a time-consuming and laborious task to remove these from the vehicle boot and place each sign in its specified location. Several journeys to and from the police vehicle are required, during which time the scene of the accident is relatively unprotected from oncoming vehicles. Furthermore the policemen's time could often be better spent in attending to any victims of the accident, obtaining statements, directing traffic, moving vehicles or other such tasks.

- It is an object of the present invention to provide a transporter which can be used to enable a policeman to deploy warning devices at desired locations in the minimum time and with the minimum effort.

- According to the invention therefore there is provided a transporter comprising a wheeled conveyance adapted to removably support a plurality of warning devices and at least one further warning device adapted to be mounted in prominent warning disposition on said conveyance.

With this arrangement, deployment of warning devices can be much facilitated.

The said removable warning devices may comprise cones or other devices.

- The said further warning device or devices may comprise one or more of: a flashing lamp mounted on the conveyance, a display board permanently or detachably mountable on the conveyance, or any other suitable sign or device.

- Further if desired, the conveyance may have provision for removable stowage of one or more additional warning devices which may be of the kind described above or of any other suitable construction.

- In a particularly preferred embodiment the said wheeled conveyance comprises a frame, support means for said frame, wheels rotatably mounted on said frame, said wheels and support means being relatively disposed whereby either may

- contact the ground and support said frame with the other out of contact with the ground, a display surface (constituting one said further warning device) on said frame and disposed so as to be upstanding when said frame is supported on said support means, and retaining means on said frame adapted to retain thereon a plurality of said removable warning devices.

- The frame may comprise a first handle disposed remote from said wheels whereby the conveyance may be readily moved by hand along the ground. The frame may also comprise further handle means whereby the conveyance may be readily lifted into and out of the boot of a vehicle. The first handle may be extendible and/or pivotable between a storage position and an operative position for moving said conveyance.

- The support means may comprise a support member pivotally mounted on said frame between an operative frame-supporting position and an inoperative position for which said frame may be supported by said wheels.

- The retaining means may include a spigot which may be conical or frusto-conical. The retaining means may also include at least one container. Alternatively the retaining means may also include a plurality of clips or straps.

- The conveyance may also comprise receiving means for one or a plurality of lamps (constituting said further warning devices) and said receiving means may be extendible and/or pivotable between operative and inoperative positions.

- One embodiment of a transporter or safety device in accordance with the invention will now be described with reference to the accompanying drawings, in which:—

- Fig. 1 illustrates a road on which an accident has occurred, with the requisite warning devices disposed in their specified locations relative to the scene of the accident;

- Figs. 2 and 3 are side and back views respectively of the safety device in the configuration for moving the same along the roadway;

- Figs. 4 and 5 are front and side views respectively of the device of Figs. 2 and 3 in the configuration for stationary deployment in or by the roadway, and,

- Figs. 6 and 7 are front views of the device with an alternative arrow sign deployed thereon respectively in the configuration for moving the device along the roadway and in the configuration for stationary deployment in or by the roadway.

- Referring now to Fig. 1 there is shown a roadway 10 on which an accident 11 has occurred which creates an obstruction in the roadway 10 and a hazard to other vehicles. Obviously any other form of hazard, for example a subsidence or fallen tree or building, would provide the same situation as the accident 11 shown. If the accident 11 or other hazard is of sufficient seriousness to warrant the attendance of the police, it is customary for the policemen to arrive by car and bring with them in the boot of their car the equipment shown in Fig. 1. Such equipment

comprises a number of cones or bollards 12, for example between 6 and 15 cones, lamps 13 and warning signs 14, 15. The cones 12 are placed in the roadway 10 at intervals within approximately

- 5 100 metres of the accident 11 so as to divert the oncoming traffic around the accident 11. A first lamp 13 is placed at the end of the line of cones 12 remote from the accident 11. A warning sign 14 and second lamp 13 are placed approximately
- 10 200 metres from the accident 11 and a second warning sign 15 and third lamp 13 are placed approximately 300 metres from the accident 11. This equipment is of considerable size and weight in total and it is therefore necessary for a
- 15 policeman to make several journeys from the police vehicle, which is usually parked at the scene of the accident in such a manner as to protect if possible any injured people involved, carrying some of the equipment for deployment in
- 20 its specified location. This task is tiresome and time consuming, when such time could be better spent attending to other matters relating to the accident as hereinbefore mentioned.

- Referring now to Figs. 2 and 3 there is shown
- 25 one embodiment of safety device 16, the use of which will reduce the time taken in deploying the aforementioned equipment, thus enabling the policeman to take charge of the proceedings at the scene of the accident 11 at the earliest
- 30 possible moment. Furthermore a reduction in the time taken to deploy the warning equipment provides that the risk of further accidents is reduced to a minimum.

- The device 16 comprises a frame 17 which
- 35 may be of tubular construction, of steel, aluminium alloy, reinforced plastics material or other suitable material. Mounted on the frame 17 are two wheels 18 and handles 19, 20. Two handles 19 are provided, one on each side of
- 40 device 16, to enable the device to be lifted into and out of the boot of a vehicle, the device 16 being conveniently laid on one side whilst in such boot. Handle 20 is provided whereby the device 16 may be readily pushed or pulled along the
- 45 roadway 10 from the scene of the accident 11, and the handle 20 comprises two mutually telescoping parts so that the height of the handle above the ground can be conveniently adjusted if desired. The handle 20 is also pivotal between the
- 50 operative position shown in full lines in Figs. 2 and 3 to the loading position shown in dotted lines in Fig. 2. In the former position the handle 20 is suitably disposed for the device 16 to be pushed or pulled along the roadway 11, whilst in the latter
- 55 position the device 16 is more compact for the purpose of transport in the boot of a vehicle.

- The frame 17 is generally of an L-shape as shown which is braced by the handles 19, the wheels 18 being mounted substantially at the
- 60 apex of the L-shaped frame 17. The handle 20 is pivotally mounted, as mentioned above, on the longer arm of frame 17 whilst a spigot 21 is provided on the shorter arm of frame 17. The spigot 21 is conical or frusto-conical in shape and
- 65 is of a size enabling a stack of cones or bollards 12

to be retained thereon. Conveniently the handle 20, extended if necessary, can be moved to the loading position referred to above to assist in retaining the cones 12 on the spigot 21 when the device 16 is in the boot of a vehicle. A lamp 13 may be attached to handle 20 to serve as a warning device in the event that the device 16 is left unattended for any reason. Another lamp or lamps 13 may be attached to the front of frame

70 17. Attached to the longer arm of frame 17 are containers 22 (shown in Fig. 5) into which a tripod and display board may be stored, and tripod and display board when assembled forming the warning sign 14. A further display board which

75 forms a part of warning sign 15 may also be stored in containers 22. Obviously containers 22 may be replaced by clips or straps or by partial containers, i.e. a tray base and a retaining ring displaced therefrom, if desired.

- 85 In use the device 16 with the cones 12, lamps 13 and signs 14, 15 stored thereon is carried to the scene of the accident 11 in the boot of a police vehicle. The vehicle is then parked in a suitable position and the device 16 removed from the boot of the vehicle. The handle 20 is pivoted and extended if required to a suitable operative position and the device pushed or pulled along the roadway 10. Cones 12 may be placed at the required intervals as shown in Fig. 1, and a lamp
- 90 13 activated and placed at the position approximately 100m from the accident 11. The device 16 is then moved to a position approximately 200m from the accident 11 at which the tripod and display board forming
- 95 warning sign 14 are removed from containers 22, assembled and placed in position, together with another lamp 13.

- The device 16 is then moved to a position approximately 300m from the accident 11 and the display board which forms part of the warning sign 15 is removed from containers 22. At this point a support member 23 is pivoted from a retracted position substantially within the bounds of the longer arm of frame 17, as shown in Figs. 2 and 3, through approximately 180° as shown by the arrow A in Fig. 2, to a position in which it becomes substantially an extension of that arm. With the support member 23 in the extended position the device is tilted through 90° so as to rest on the
- 100 ground in the position shown in Figs. 4 and 5, with the wheels 18 clear of the ground. Display boards 24, which have been removed from containers 22 are then secured to the frame 17 as by clips 25 so that such display boards are substantially vertical when the device 16 is in the position shown. For this purpose the frame 17 has an extendable part 26, formed by mutually telescoping tubes, as shown by arrow B in Fig. 2, and lamp 13 mounted on the extendable part 26 is pivotal between the two positions thereof shown in Figs. 2 and 5. The support member 23 is in the form of a plate having a plurality of protrusions 27 thereon to restrain the device 16 against movement caused by wind. Similar protrusions 27 are provided on
- 105 the frame 17 adjacent handle 20, and such
- 110
- 115
- 120
- 125
- 130

protrusions may be pointed and rigid so as to be forced into soft ground at the side of roadway 10 if available.

Referring now to Figs. 6 and 7 there is shown the device 16 which incorporates an additional sign 28 secured to part 26 instead of the lamp 13 shown in Figs. 2 and 5. The sign 28 comprises a rectangular frame 29 having a centrally disposed circular recess 30. In the recess 30 fits a circular disc 31 displaying the white arrow on a blue ground which is used to indicate a diversion. The disc 31 is magnetically retained in recess 30 so that it can be positionally adjusted in order that the arrow can point in the required direction. The sign 28 is visible from the front of the device 16 both when it is being wheeled along the roadway and when it is in the stationary position. In this way a further measure of protection is given to the policeman and the accident scene whilst he is deploying the signs.

The signs 14, 15 may be of any suitable construction, for example they may be of a rigid material and of the configuration shown. Alternatively they may be of a rigid material but have one or more fold lines or hinges so that they can be stored in a container 22 of smaller dimensions than would otherwise be the case. As a further alternative the signs may be of a flexible sheet material that they can be rolled or folded for storage in suitable containers 22.

A further sign (not shown) may be included with the device 16 on which all of the aforementioned items of equipment are listed. Such a sign is of use when the device 16 is stored so that borrowed items can be identified and a check on when and by whom they are borrowed. It also serves as a check that all of the items have been replaced after the accident scene is cleared.

By means of the invention all of the equipment required in the vicinity of a road accident may be removed from the boot of a vehicle in a single lifting operation and then deployed at the specified locations by making a single journey from the police vehicle to a point about 300m from the scene of the accident. The policeman does not have to carry the equipment and the time taken to deploy the equipment is considerably shorter than was possible heretofore. The policeman is then free to return to the scene of the accident as quickly as possible to attend to other matters. When the accident has been cleared, the equipment is readily collected, by repeating the aforescribed procedure in reverse, and stored in the boot of the police vehicle.

By variation of the wording on the signs 14, 15 the device 16 may be equally suitable for use by road maintenance, gas, water, telephone or electrical engineers during roadworks.

CLAIMS

1. A transporter for the deployment of warning devices comprising a wheeled conveyance adapted to removably support a plurality of warning devices and at least one further warning device adapted to be mounted in prominent

65 warning disposition on said conveyance.

2. A transporter according to claim 1 wherein said removable warning devices comprise cones.

3. A transporter according to claim 1 or claim 2 wherein said further warning devices comprise a lamp or lamps.

4. A transporter according to any one of claims 1 to 3 wherein said further warning devices comprise a display board or boards.

5. A transporter according to any one of claims 1 to 4 wherein said conveyance comprises retaining means for the removable stowage of a plurality of said warning devices.

6. A transporter according to claim 5 wherein said wheeled conveyance comprises a frame, support means for said frame, wheels rotatably mounted on said frame, said wheels and support means being relatively disposed whereby either may contact the ground and support said frame with the other out of contact with the ground, said further warning device comprising a display surface on said frame and disposed so as to be upstanding when said frame is supported on said support means.

7. A transporter according to claim 7 wherein said frame comprises a first handle disposed remote from said wheels whereby said conveyance may be readily moved by hand along the ground.

8. A transporter according to claim 7 wherein said frame comprises further handle means.

9. A transporter according to claim 7 or claim 8 wherein said first handle means is movable between a storage position and an operative position for moving said conveyance.

10. A transporter according to any one of claims 6 to 9 wherein said support means comprises a support member pivotally mounted on said frame between an operative, frame supporting, position and an inoperative position.

11. A transporter according to claim 2 or any claim dependent thereon comprising retaining means for said cones in the form of a spigot.

12. A transporter according to claim 11 wherein said spigot is conical or frusto-conical.

13. A transporter according to claim 11 or claim 12 wherein said conveyance comprises first handle means movable between a storage position in which said cones are retained on said spigot by said first handle means and an operative position for moving said conveyance.

14. A transporter according to claim 5 or any claim dependent thereon wherein said retaining means comprises at least one container.

15. A transporter according to claim 5 or any claim dependent thereon wherein said retaining means comprises a plurality of clips.

16. A transporter according to claim 5 or any claim dependent thereon wherein said retaining means comprises a plurality of straps.

17. A transporter according to claim 3 or any claim dependent thereon wherein said conveyance comprises receiving means for one or a plurality of lamps.

18. A transporter according to any of claims 1

to 17 wherein said removable warning devices
comprise at least one display board, the or each
display board comprising support means therefor
adapted to retain said display board in an upright
5 position on the ground.

19. A transporter according to claim 4 or any
claim dependent thereon wherein said display

board comprises a frame having a circular recess
therein and a display disc retained in said recess
10 and rotatable in the plane of said frame.

20. A transporter for the deployment of
warning devices substantially as hereinbefore
described with reference to and as illustrated in
Figs. 2 to 7 of the accompanying drawings.