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B. SCHREUDER  
WARNING SYSTEM AND APPARATUS FOR USE  
WITH AUTOMOBILES, MOTOR CYCLES AND  
SIMILAR MOTOR VEHICLES  
Filed July 29, 1939

Serial No.  
287,416

3 Sheets-Sheet 1

FIG.1

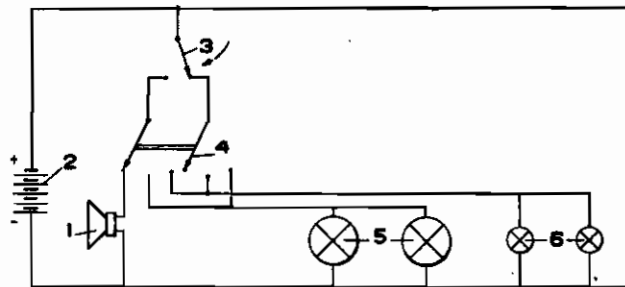


FIG.2

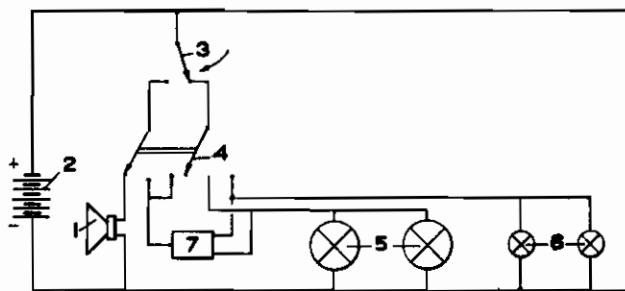
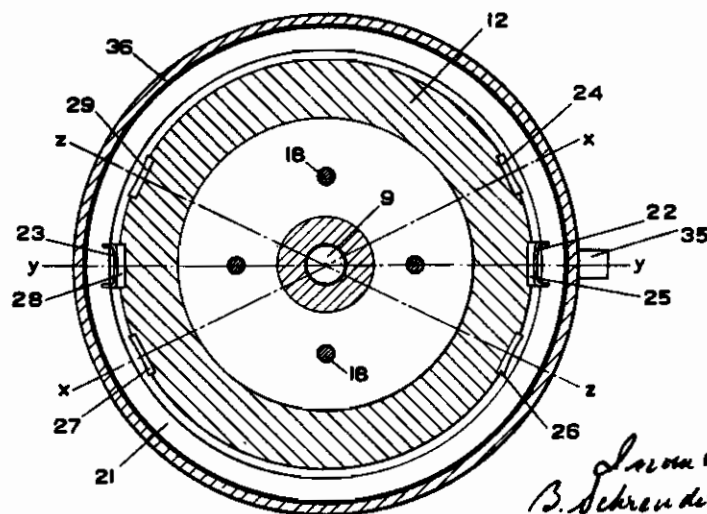


FIG.5



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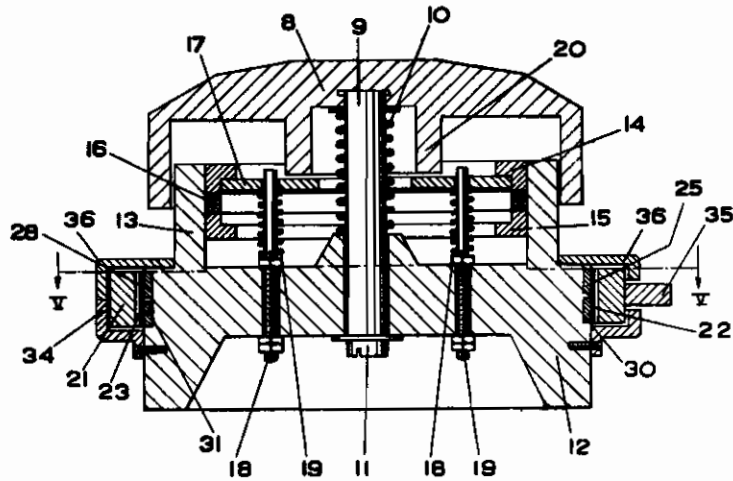
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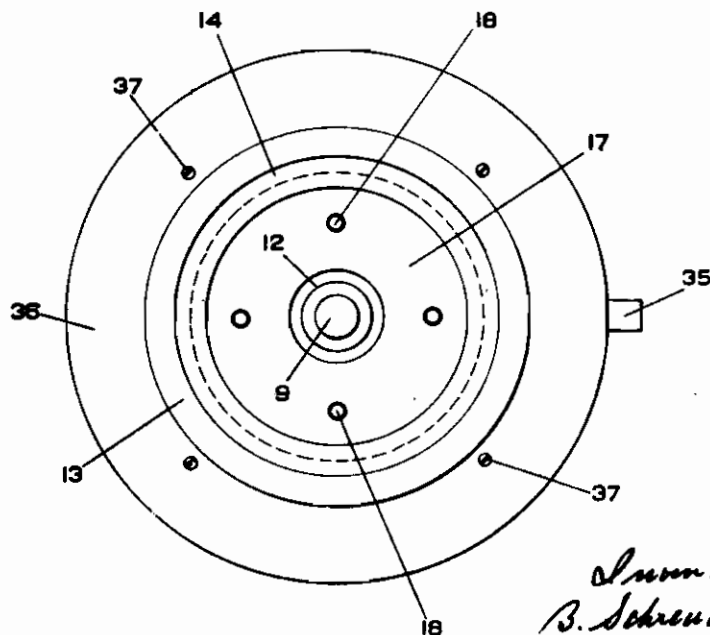
**287,416**

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**FIG. 3**



**FIG. 4**



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FIG. 6

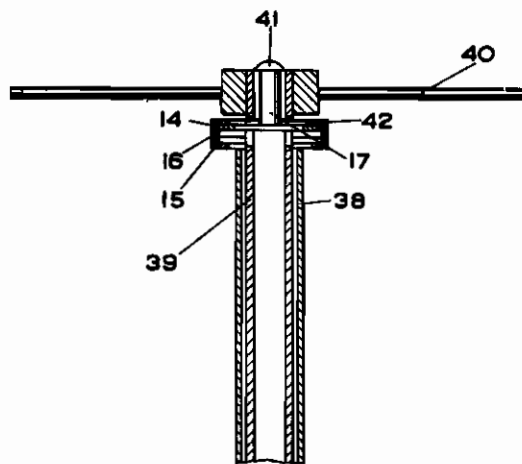
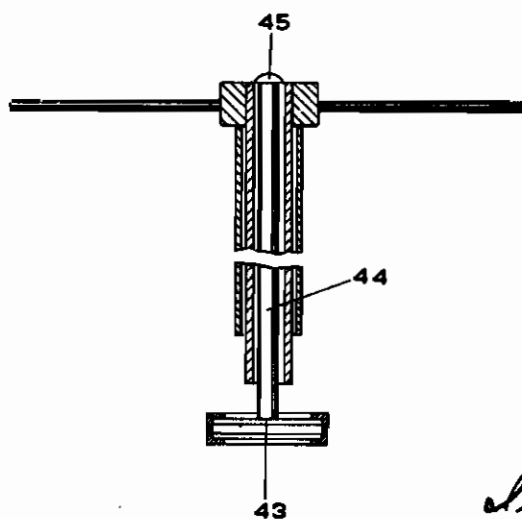


FIG. 7



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# ALIEN PROPERTY CUSTODIAN

## WARNING SYSTEM AND APPARATUS FOR USE WITH AUTOMOBILES, MOTOR CYCLES AND SIMILAR MOTOR VEHICLES

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Application filed July 29, 1939

My invention relates to a warning system, more particularly for automobiles, which will enable the driver to give during the hours that silence is prescribed a visual warning.

It is an object of the invention to provide a warning system in which this visual warning is given by the same operation as that by which an audible signal may be provided.

Another object of the invention is to provide a system by which visual warnings of different kind may be given.

A further object of the invention is to provide such a system comprising an actuating device e. g. a press button by which one current circuit may be opened and a second current circuit be closed thereby providing a very simple warning system.

Still a further object is to combine such a warning system with a device for giving audible signals thereby providing a simple system by means of which either audible or visual signals may be given.

Still further objects of the invention will appear from the following description and the accompanying drawing.

It is known that automobiles and similar vehicles have generally a horn for giving audible warning signals. This horn is usually actuated by means of a press-button on the steering wheel, on the steering bar or in another place within direct reach of the driver.

Optical signals may also be given, which of course can only be used in darkness. These optical warning signals are produced by repeatedly switching over the current from lamps having high intensity to lamps having low intensity or vice versa, for instance from one or both of the head lights, spotlights or other search lights to the dimmed condition of the head lights, to the side lights etc. This switching-over is usually carried out by means of one or more switches on the dashboard, the steering wheel or (especially in motor-cars for dimming the lights) on the floor-board next to the clutching pedal.

The emission of audible warning signals in darkness is practically superfluous and their use may even be prohibited for certain hours of the evening and night. The driver however is so much accustomed to the production of horn signals by means of their press-button that his hand automatically reaches for the press-button and the forbidden signal is often given before the driver is aware of his mistake. Nevertheless this will often result in a fine for the driver.

An object of the invention is to completely eliminate this risk.

Some preferred examples of the invention are described below with reference to the drawing, which illustrates some executional examples of a circuit and a device according to the invention.

Figure 1 is a circuit arrangement of a car installation embodying the invention.

Figure 2 is another circuit arrangement according to the invention.

Figure 3 is a vertical cross-section of a press-button switch for use in conjunction with the invention.

Figure 4 is a top view of the press-button switch of Figure 3.

Figure 5 is a horizontal section through this switch taken along the line V--V in Figure 3.

Figure 6 shows another embodiment of the invention.

Figure 7 shows another modification of the device according to the invention.

In Figure 1 of the drawing is shown an electric horn 1, which is fed by an accumulator 2 by means of a press-button 3, e. g. on the steering wheel, and via a selector switch 4 in series therewith, the latter being in the position shown. The press-button 3 which on impression moves in the direction of the arrow, is provided with a rest contact and an operating contact, whereas the selector switch 4 has two switch-arms and may assume three different positions. At 5 are shown lamps of high intensity, e. g. the head lights, and at 6 lamps of smaller intensity. The different electrical connections appear clearly from the drawing. In the indicated position of the selector switch 4 impression of the press-button 3 enables only the emission of audible signals. In the middle position of the switch, when the press-button is in the high position the small lamps 6 are burning and upon impression of the button 3 the big lights 5 are switched on instead of the small ones. By repeatedly actuating the push-button 3, the driver of the motor-vehicle can give warning signals without sounding the electric horn 1. In the third position of the selector switch 4 the head lamps 5 are alight when the press-button 3 is in the high position and upon impression of the button 3 the small lamps 6 are lit instead of the head lights. In this way too the driver is able to give optical warning signals.

In Figure 2 the same reference numbers indicate corresponding parts of the installation in which is incorporated an automatic periodically working switch-over device 7 which alternately

can close one of two circuits. In the second as well as in the third position of the selector switch 4 this device is put into action by pressing down the button 3, and this device lights alternately and in a predetermined rhythm the lamps 5 and the lamps 6. The driver is no longer obliged to depress the button and release it each time, but as long as he keeps the button down the device 7 provides the signaling. Upon release of the button 3 the big lights will burn when the selector switch is in the middle position or the small lights when it is in the third position.

In both circuit arrangements therefore the selector switch 4 serves also for changing over from big to small lights, e. g. upon reaching the built-up area of a village or town.

The circuit may further be completed with tail-lights, indicating arrows, stop lamps, parking lights, etc.

The selector switch 4 may be mounted in any convenient place, e. g. on the dash-board, or near the press-button of the steering wheel, in which latter case it may be combined with the press-button. This case is illustrated in Figures 3 and 5 in which 8 is the push-button, mounted on a stem 9, which slidably passes through a base 12, the stem being locked by means of a washer and screw 11. A spring 6 keeps the press-button in the upper position. The base 12 is provided with an upstanding rim 13, carrying contact rings 14 and 15, which are separated by a ring 16 of insulating material and which form respectively the rest contact and the operating contact of the press-button switch. Inside these rings there is a contact disk 17, slidably mounted on pins 18 which are rigidly connected to the base by means of a screw threaded portion and nuts as shown in Figure 3. On each pin there is a spring 19 between the base 12 and the contact disk 17 which keeps the contact disk in contact with the upper contact ring 14. The press-button 8 carries a downwardly extending rim 20 which upon depression of the button touches the disk 17 and brings this disk into electrical contact with the ring 15, against the action of the springs 19.

In Figures 3-5 the selector switch is mounted on the same base 12 as the press-button 8 and consists essentially of a ring 21 of insulating material provided with two more or less resilient contact strips 22 and 23 located at diametrically opposite points of the ring.

The ring 21 encircles the base 12 and in the circumferential surface of the base there are embedded two groups of contact strips, the upper group consisting of six strips 24-29, each one of which is diametrically opposite another strip of this group. The lower group consists of two contact strips 30 and 31 only, which each extends over such a portion of the circumference of the base 12 that they each pass under three contact strips of the first mentioned group. All these contact strips are so arranged that a resilient contact strip on the ring 21 can interconnect one contact strip of the upper group with the underlying contact strip of the lower group. The ring 21 is mounted between a circular bracket 34 and a clamping ring 36, the latter being removably fixed to the base by means of screws 37. Furthermore the ring 21 is provided with an extension 35 so that it can be rotated by hand and brought into each one of the three positions X-X, Y-Y and Z-Z suitable rests being provided to fix the positions of the ring in a more or less definite way e. g. by snap-action. So in each position of the ring two diametrically op-

posite contact strips of the upper group are connected with the two contact strips of the lower group. The electrical connections are such that each of the rings 14 and 15 is connected to the contact strips 30 and 31 respectively of the lower group. The live connection of the battery is brought to the pins 18 and the six contact strips 24-29 of the upper group are in the same order connected to: nothing, the small lights, the big lights, the horn, the big lights, the small lights. In the position Y-Y as shown in Figures 3 and 5 the current flows from the battery via pins 18 and contact disk 17 to contact ring 14 (upper position of the button) and from this ring to the lower contact strip 30 and hence through the contact strip 22 to the contact strip 25 of the upper group which is connected with the small lights. Upon depression of the button the current goes from the contact disk 17 through the ring 15 to the lower contact strip 31 and hence through the contact strip 23 to the contact strip 28 which is connected with the big lamps. Therefore by depression of the button the intensity of the cars lighting is varied and by this means a warning signal is given. The functioning of the device in the other positions X-X and Z-Z will be readily understood from the above description with reference to the drawing.

In Figure 6 it is shown how the press-button switch according to the invention may be mounted to eliminate the need for electric wires running through the steering column. This is an advantage because wires running through the steering column are continuously being twisted so that the insulation may easily break down. In the embodiment shown 38 is the stationary sleeve of the steering column, 39 the steering spindle or shaft carrying the wheel 40. In the centre of the wheel is mounted a spring-loaded knob 41 which may be depressed by hand. Below the steering wheel this knob has suitable extensions 42 which pass through vertical slits in the wall of the hollow steering spindle and these extensions 42 serve to actuate a contact disk similar to that of Figure 3 and contacting in the same manner with contact rings 14 and 15. The push-button switch itself is arranged below the wheel on the non-rotatable sleeve of the steering column, so that the electrical connections may run along the sleeve without need for twisting. Apart from the knob 41 the construction of the push-button switch may be similar in every respect to that of Figure 3.

Figure 7 shows another executional example of a push-button switch. In this figure the switch itself is located at the lower end of the steering column and the contact disk 43 which is suitably held against rotation, is actuated by means of a long rod 44, passing through the middle of the steering shaft and carrying a knob 46 at its upper end. This knob may also be spring loaded and the rod 44 is able to turn together with the steering shaft because it passes with play through the contact disk 43. In order to actuate the disk the rod 44 carries locking nuts which hold the disk 43 against axial displacement. The disk 43 is insulated in a suitable way from the rod 44 and can alternately connect the contacts 46 and 47 or, upon depression of the knob, the contacts 48 and 49. The contacts 46 and 48 are strapped together, the function of this device being the same as that of the switch 3 in Figure 1. In this case the selector switch is mounted separately e. g. on the dashboard. The operating rod 44 may

be replaced by suitable other means, e. g. a so called Bowden cable as is well known in the art.

It will be understood that in conjunction with the invention any other suitable switch construction may be used and that the location of the push-button switch as well as of the selector switch may be chosen at will. Also they may be combined or not, or be combined with a third

switch without departing from the scope of this invention. It will also be understood that when the switch is mounted on the steering wheel any other convenient method of eliminating the drawback of wire twisting may be used, e. g. contact rings with brushes may be mounted somewhere on the steering column.

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