

Dec. 20, 1949

G. S. ANDERSON

2,491,914

MULTICOLOR SIGNAL LIGHT HEAD

Filed July 2, 1948

2 Sheets-Sheet 1

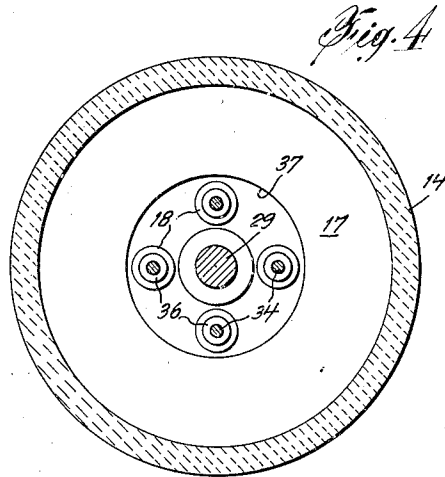
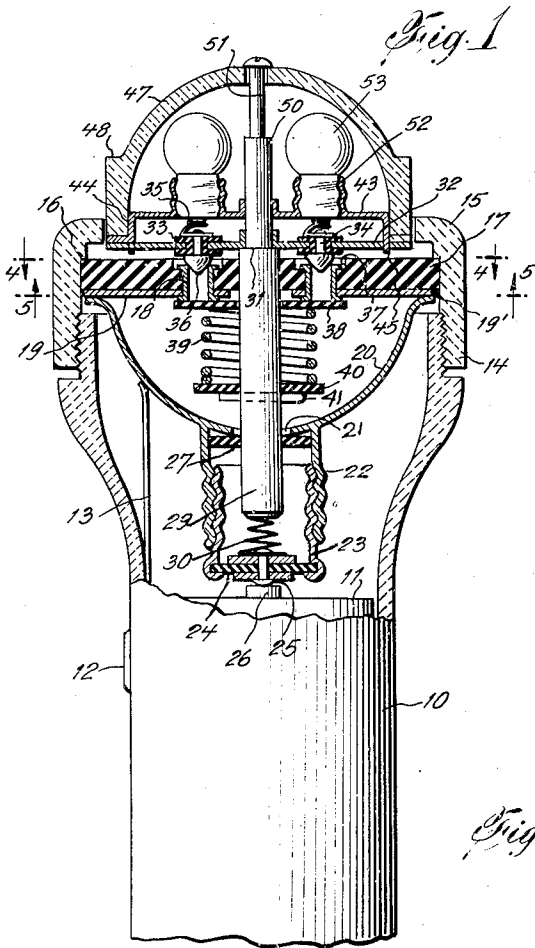


Fig. 3

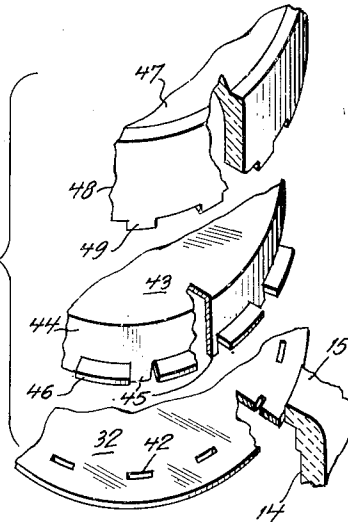
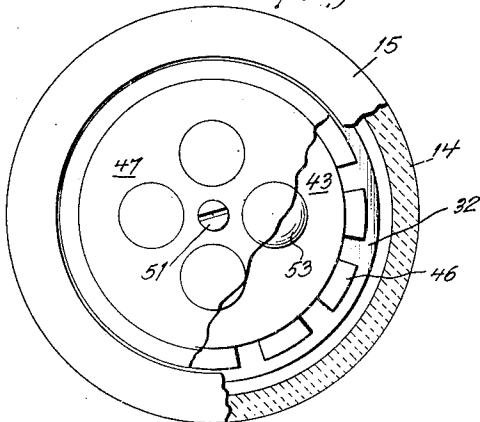


Fig. 2



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Fig. 5

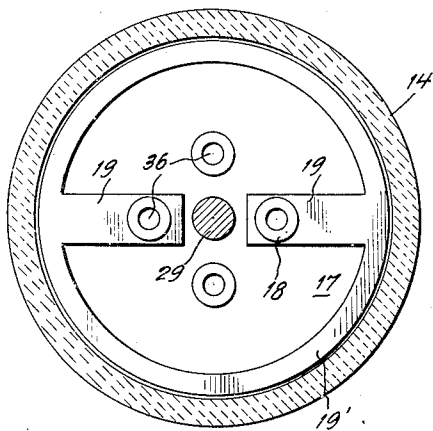


Fig. 6

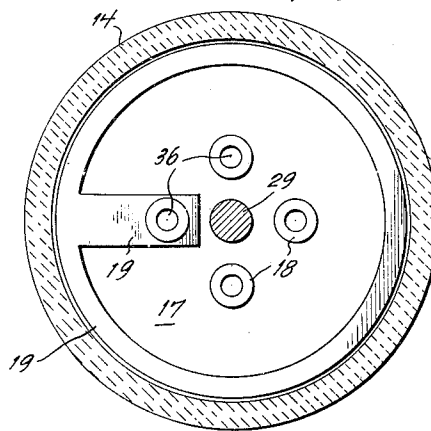


Fig. 7

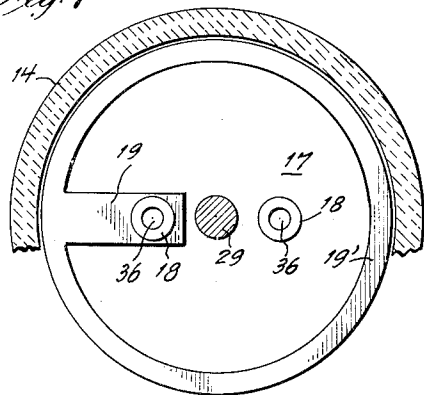


Fig. 8

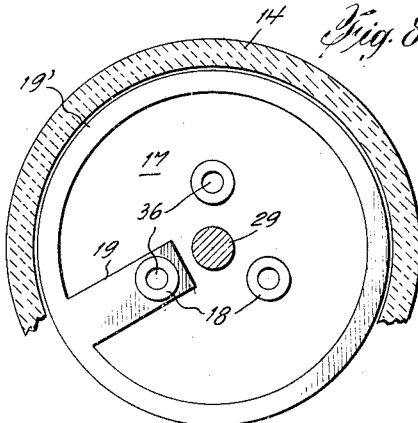


Fig. 9

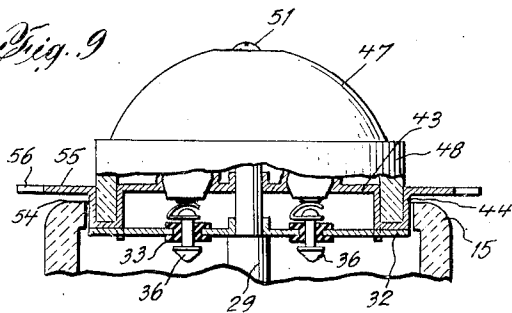
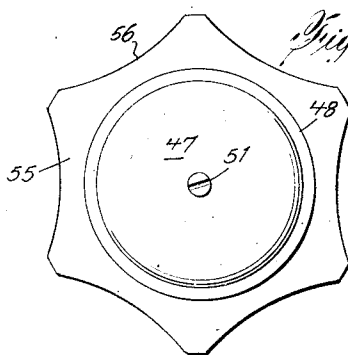


Fig. 10



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MULTICOLOR SIGNAL LIGHT HEAD

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This invention relates to new and useful improvements in signalling devices and has particular reference to a flashlight device provided with a novel signalling head.

A main object of the invention is to provide a novel signal head for a flashlight casing whereby various lights of one or different colors may be illuminated selectively by merely turning a rotatable part of the head so that a wide combination of lights by suitable circuit arrangements may be employed for signalling purposes.

A further object is to provide a combination of elements which afford a compact durable structure which will operate efficiently and stand excessive wear and tear.

A still further object is to provide a device which can be quickly and easily assembled and disassembled for inspection, replacement and repair when desired and which can be operated for signalling purposes by one finger of the hand holding the device and directing its signalling beams.

Further and more specific objects, features and advantages will more clearly appear from a consideration of the detailed specification hereinafter set forth, especially when taken in connection with the accompanying drawings which illustrate present preferred forms which the invention may assume and which form part of the specification.

In brief and general terms, the device comprises a unit on the top of a flashlight casing which unit can be rotated by the hand of the person signalling and which involves a lamp support, a contact plate, and a cover for the lamps all interlocked for unitary rotation. The contacts on the rotatable plate are associated with contact sockets on a fixed plate of insulation mounted within the top of the casing below the rotatable unit and these sockets are selectively connected to conducting strips suitably connected to one side of the battery. The other side of the battery is connected to the shells of the lamps by metallic connection through the lamp support and the conducting rod which extends up from the battery and acts as a bearing axis element for the rotation of the above mentioned unit.

The present preferred forms which the invention may assume, are illustrated in the drawings, of which,

Fig. 1 is an elevation of the device with the upper portion shown in vertical section;

Fig. 2 is a plan view of the device with a portion broken away;

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Fig. 3 is a partial exploded perspective view of certain operative parts;

Fig. 4 is a horizontal cross section taken on the line 4—4 of Fig. 1;

Figs. 5, 6, 7, and 8 are cross sectional views taken on the line 5—5 of Fig. 1 showing different circuit connections which may be employed;

Fig. 9 is a partial section of a modified form of the device, and

Fig. 10 is a front or end view of the modified form.

Referring now merely to the specific forms of the invention illustrated herein, it is seen that the device is connected to an ordinary flashlight casing 10, containing a battery cell 11 and the usual thumb switch button 12 connected to a slidable switch contact finger 13. The outer end of the casing 10 is threaded to receive the usual clamping ring 14 having an inwardly turned flange 15. The ring 14 has an inner shoulder 16 and within the ring and against this shoulder an insulating plate 17 is tightly disposed. This plate has a series of apertures of any desired number formed therethrough in which are fitted eyelets of metal 18. Against the lower face of the plate 17 are disposed a series of conducting strips of metal 19, the inner ends of which are bored to embrace an eyelet 18. These strips are preferably integral and inwardly extending from a conducting annulus 19' disposed against the lower face of the insulating plate 17. The usual metallic reflector casing 20 is disposed within the casing 10 and beneath the plate 17, and its periphery bears against the contact annulus 19'.

At its bottom the reflector is apertured at 21 and provided with an integral threaded metal sleeve 22 extending away from the reflector axially aligned with said aperture. Threaded within the sleeve 22 is a metal cup 23, the outer end of which is closed by an insulated plate 24 having a central metal stud 25 to contact the terminal 26 of the battery 11. At the inner end of the sleeve 22 near the bottom of the reflector is an insulating washer 27 which tends to keep the reflector from contact with the metal rod or shaft 29, against the bottom of which is disposed a coiled spring 30 which presses upwardly on the rod 29.

Near the top of rod 29 it has a shoulder 31 on which rests a bored plate 32 of metal, the periphery of which rests beneath the flange 15 of the ring 14. The plate 32 is provided with a series of insulating sleeves 33 spaced thereon in suitable openings at desired intervals. These

insulating sleeves 33 act as bearings for metal shafts 34 which are fixed in the sleeves and have springs 35 at their upper ends and contact tapered points 36 at their lower ends adapted to engage with the open upper ends of the eyelets 18 previously mentioned. The upper ends of these eyelets 18 extend into a circular groove or recess 37 cut in the upper face of the insulating plate 17. Across the bottom of the eyelets 18 and bearing thereagainst is an insulating disk 38 against which the upper end of a coiled spring 39 bears, the lower end of this spring resting upon a flanged plate 40 of insulating material which in turn rests upon key 41 passing through the rod 29. This spring functions to hold the eyelets in firm contact with the contact points 36.

It will be seen in Fig. 3 that the plate or tray 32 is provided adjacent its periphery with a series of spaced apertures 42. Disposed above the tray plate 32 is an inverted shallow metal cup having a base 43 and a dependent circular flange 44, the lower edge of which is provided with alternate vertical ears 45 adapted to extend into the apertures 42 in the plate 32 and horizontal ears 46. Disposed above the cup is a glass dome 47 having a circular dependent flange 48 with vertical ears 49 along its lower edge which are adapted to lie between the horizontal ears 46 of the flange 44 of the metal cup. In this manner the plate 32, the cup, and the dome are interlocked. They are held in this interlocked condition by reason of the fact that the upper slender end 50 of the rod 29 extends up into the space between the cup and the dome and is engaged by a screw 51 seated in a hole in the top of the dome 47. It is clear that the flange 48 of the dome 47 may be grasped by the fingers and turned to turn this unit and thereby turn the contact points 36 to make selective contact with the terminal strips 19 previously mentioned.

The base 43 of the metal cup is provided with metal sleeves 52 forming sockets for signal bulbs 53 and there are as many of these sockets as there are contact points 36 on the tray plate 32 although the number of lamps used may be a matter of choice. The central terminals of the lamps engage the springs 35 on the upper end of contact shafts 34.

In the form shown in Figs. 9 and 10, the turning of the tray, the bulb-supporting cup and the dome is achieved by extending the cup up as at 54 and out as at 55 with a periphery formed with scalloped curves 56 to enable the finger of the hand grasping the device to turn the unit while still holding the device in the same hand.

Referring to Figs. 5 to 8 inclusive, the circuit arrangement shown in Fig. 5 is for a device carrying four bulbs with two bulbs being energized for each position; Fig. 6 is an arrangement of head with four bulbs with one bulb being energized for each position; Fig. 7 is an arrangement with two bulbs and one bulb being energized for each position; and Fig. 8 is an arrangement with three bulbs with one bulb being energized for each position. It is of course, obvious that many other arrangements may be made with different colored bulbs to be energized either separately or in combination.

Thus it is clear that I have provided a simple compact durable device which can be quickly and easily manipulated to energize one or more lamps of different or the same color to give signals in various locations, such as airfields, marine bases, and industrial or mechanical departments, etc.

While the invention has been described in detail and shown with respect to the accompanying drawing, it is not to be limited to such details, since many changes and modifications may be made in the invention without departing from the spirit and scope thereof. Hence it is desired to cover any and all forms and modifications of the invention which may come within the language and scope of any one or more of the appended claims.

What I claim as my invention is:

1. A signal device having a casing, a rotatable unit disposed at one end of the casing, said unit comprising a lamp support, a light-transmitting cover over the lamp support, and a metal plate below the support, said elements interlocked and moving as a unit when manipulated.

2. A signal device having a casing, a rotatable unit disposed at one end of the casing, said unit comprising a lamp support, a light-transmitting cover over the lamp support, and a metal plate below the support, said elements interlocked and moving as a unit when manipulated, a plate of insulation fixed in the casing below the unit, and cooperating circuit contact means on the two plates to energize the lamps on the support as the unit is selectively rotated.

3. A signal device having a casing, a rotatable unit disposed at one end of the casing, said unit comprising a lamp support, a light-transmitting cover over the lamp support, and a metal plate below the support, said elements interlocked and moving as a unit when manipulated, a plate of insulation fixed in the casing below the unit, insulated spring pressed contact elements on the metal plate adapted to contact one side of the lamps on the support, and cooperating socket elements on the plate of insulation adapted to make contact with desired lamps on the support as the unit is selectively rotated.

4. A signal device having a casing, a rotatable unit disposed at one end of the casing, said unit comprising a lamp support, a light-transmitting cover over the lamp support, and a metal plate below the support, said elements interlocked and moving as a unit when manipulated, a plate of insulation fixed in the casing adjacent the unit, insulated spring pressed contact elements on the metal plate adapted to contact one side of the lamps on the support, cooperating metal socket elements on the plate of insulation and adapted to make contact with desired lamps on the support as the unit is selectively rotated, a battery in said casing, means connected to one pole of the battery and to the metal lamp support, and means connected to the other pole of the battery and the socket elements, and a manual switch in said last-mentioned connection.

5. A signal device having a casing, a battery in said casing, a metal reflector above said battery, a switch connecting one pole of said battery to said reflector, an insulated plate fixed in the casing, a contact annulus fixed to said plate and engaged by said reflector, metal sockets mounted on said insulated plate, contact strips connecting said sockets with said annulus, a rotatable unit above said insulated plate and comprising a lamp support, a light-transmitting cover for said support, and a metal plate below said support, said unit elements being interlocked for unitary rotation, spring-pressed contact elements on said metal plate and insulatingly supported thereon, said contact elements adapted to contact the sockets at one end and one side of the lamps at the other when the unit is selectively rotated, a

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metal rod connected to said unit and acting as a bearing during its rotation, said rod being insulated from said metal plate and from the reflector and connected at one end to the other pole of the battery.

6. A signal device having a casing, a battery therein, and a reflector casing above the battery and insulated therefrom, switch means connecting one pole of the battery to the reflector, a fixed plate of insulation in the casing above the reflector, socket elements on said plate, means connecting said sockets conductively to said reflector, a rotary unit above said plate of insulation and comprising a lamp support of metal, a light-transmitting cover for said support, and a metal plate below the lamp support, said elements of said unit interlocked for unitary rotation, spring-pressed contacts on the metal plate adapted to engage one side of the lamps on the support and the sockets as the unit is rotated, and metallic means acting as a bearing for the rotation of the unit, said metallic means conductively connected to the lamp support, insulated from the reflector and connected to the other pole of the battery.

7. A signal device having a casing, a battery therein, and a reflector casing above the battery and insulated therefrom, switch means connecting one pole of the battery to the reflector, a fixed plate of insulation in the casing above the reflector, socket elements on said plate, means connecting said sockets conductively to said reflector, a rotary unit above said plate of insulation and comprising a lamp support of metal, a light-transmitting cover for said support, and a metal plate below the lamp support, said elements of said unit interlocked for unitary rotation, spring-pressed contacts on the metal plate adapted to engage one side of the lamps on the support and the sockets as the unit is rotated, and metallic means acting as a bearing for the rotation of the unit, said metallic means con-

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ductively connected to the lamp support, insulated from the reflector and connected to the other pole of the battery, spring means connected to the plate of insulation and the metallic means to hold the rotary unit in close relation to the plate of insulation, and spring means to maintain contact between the metallic means and the other pole of the battery.

8. A signal device having a casing and a battery therein, which comprises a rotary lamp unit at the end of the casing, a fixed plate of insulation in the casing below said unit, socket means on said plate, means connecting said socket means to said battery optionally, contact elements on said rotary unit to engage said sockets selectively as the unit is rotated, and a single means acting as bearing for the rotation of said unit, said single means electrically connected to one side of the lamps on said unit and to the other pole of the battery.

9. A signal device having a casing, a rotatable unit at one end of the casing and comprising a lamp support, a light-transmitting cover for said support, a metal plate below the lamp support, said unit elements being connected to rotate as one, said metal plate having a periphery which is extended laterally beyond the casing and is scalloped to be manipulatable by the hand of the person holding the device in his hand.

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