

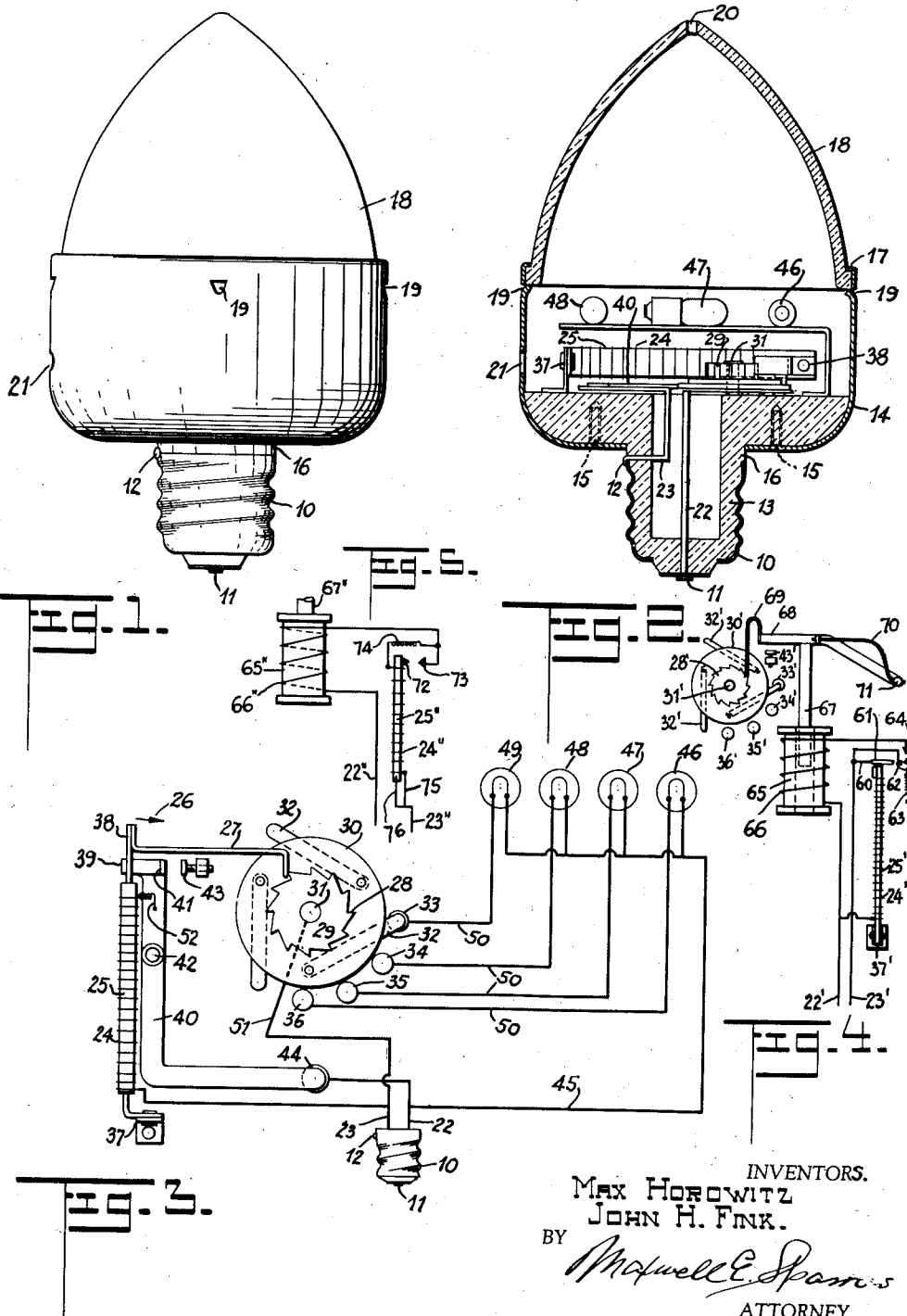
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CHANGEABLE COLOR ELECTRIC LAMP

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CHANGEABLE COLOR ELECTRIC LAMP

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9 Claims. (Cl. 240—1)

The invention relates to improvements in electric lamps and especially to those of the multiple color type.

An object of this invention is to provide a lamp which will automatically change its colors when illuminated.

Another object of this invention is to accomplish this changing color feature with a device which is simple, compact and efficient and which cannot readily get out of order.

Another object of this invention is to make this lamp such as to be interchangeable in any standard lamp socket.

A further object of this invention is to provide a small controlling mechanism and a plurality of colored electric lamps so arranged as to have each lamp lighted in a continuous order and for a predetermined length of time.

These and other objects will more fully appear from the following specification and drawing attached hereto. While for illustration purposes certain embodiments have been shown in the accompanying drawing, it is understood however, that the invention is not limited to the construction shown, but that, without deviating from the objects of the invention, certain modifications are possible such as for example the number of bulbs illuminated, the use of a small universal motor of the electric clock type instead of the thermostat principle, etc.

In the attached drawing:

Fig. 1 is an elevational view of an embodiment of the invention.

Fig. 2 is a vertical section through the same.

Fig. 3 is a diagrammatic view of the component parts.

Fig. 4 illustrates diagrammatically a modified form of the operating mechanism.

Fig. 5 illustrates diagrammatically a further modification of the operating mechanism.

Like numerals refer to like parts throughout the drawing.

In the drawing the numeral 10 represents the conventional base of a lamp having electrical contact points 11 and 12. The base 10 is preferably mounted on a filler 13 made of any insulating material such as bakelite, glass, porcelain, etc. A metal shell 14 is fastened to filler 13 by means of screws 15, the insulating filler is provided with a projecting ring 16 which will insulate the shell 14 from electric contact with base 10. Shell 14 at its upper edge has a turned in portion 17 which holds the glass cover 18. Notches 19 securely fasten this glass cover 18. Glass cover 18 is provided with a ventilating hole

20 and shell 14 has a ventilating hole at 21. Shell 14 may be made of suitable insulating material, in which event the filler 13 may be dispensed with and a mounting made from insulating material used to support the mechanism herein-after described.

Contact points 11 and 12 are connected to lead wires 22 and 23, respectively. One portion of lead wire 23 goes to the winding 24 of a thermostat 25 well known to the art. The winding 24 of thermostat 25 is electrically connected to contact arm 40 by means of a coil 52. Arm 40 has sliding, electrical contact with terminal 44, the latter being connected electrically to conductor 22. Thermostat 25 when actuated will bend in the direction of arrow 26. A ratchet or pawl 27 fastened to the thermostat will move with it and engage teeth 28 of a ratchet wheel 29. This ratchet wheel is preferably made of insulating material such as bakelite, glass, etc., and is mounted on a metal disc 30 mounted on shaft 31. Fastened to metal disc 30 on its underside are spring arms 32 which make electrical contact with contact points 33, 34, 35 and 36. The thermostat 25 is fastened at 37 and its free end 38 moves in a U-shape bracket 39 of contact arm 40.

The thermostat 25 when moving in the direction of arrow 26 will strike inner surface 41 of U-shape member 39 and then, still bending, move the whole bracket 40 on fulcrum 42 until striking against adjustable stop 43.

This total movement is sufficient to move the ratchet so as to make the contact at the next contact point, in the case of this drawing from 34 to 35. The contact at 44 has meanwhile been broken, the thermostat 25 cools off returning to its former position, carrying contact arm 40 back into its former position and again forming the contact, and therefore, heating up again. This function will repeat itself as long as current is supplied.

Lead wire 22 electrically connects with conductor 45, the latter leading to the series of small bulbs 46, 47, 48 and 49. Connection wires 50 connect these bulbs with the respective contact points 33, 34, 35 and 36. Wire 51 supplies current to the metal disc 30 and its spring fingers 32, thereby completing the circuit as plainly illustrated in Figure 3. Instead of a flat piece of thermostatic metal as shown in the drawing, a spiral or other suitable shape of metal may be used. When a spiral of the metal is used the resistance wire is formed in a capsule and placed either on the inside or outside of the spiral.

It is understood, that glass cover 18 may be

made removable, so as to facilitate exchange of burnt out color lamps.

Instead of the mechanism described above and shown in Figure 3, the automatic switching of the various lights may be operated by means of an electromagnet (solenoid) as illustrated for example in Figure 4. The numerals 22' and 23' represent the wires from the lamp base. Wire 22' goes to the coil 24' of thermostat 25'; the free end of the thermostat 25' together with the free end of coil 24' slides on contact member 61 until shortly before reaching extreme bent shape when heated, at which time it will leave contact 61 and break the heat producing current, but will still continue to bend further so as to close contact switch 64 by moving against switch arm 62 which is held in the normal open position by a spring 63. By closing switch 64 the current flow through coil 66 will energize solenoid 65 and thereby attract core 67 attached to lever 68. Spring member 69 attached to lever 68 will operate the ratchet 28'. The movement of lever 68 is controlled by adjustable stop 43'. The lever 68 is fulcrumed at 71 and held in its normal position by a spring 70. The thermostat 25' is fastened at 37'. The ratchet wheel 28', which is mounted on shaft 31' and metal disc 30' is of the same general construction and the operation is similar, to that described for the mechanism shown in Figure 3.

Figure 5 illustrates diagrammatically a modification in the operation of solenoid 65'. The current will pass through wire 23' to wire 75 and from there to heating coil 24'' of thermostat 25''. Thermostat 25'' has at its free end contact point 72 connected with direct connection 76 to current line 23''.

Normally contact points 72 and 73 are not engaged, therefore, forcing flow of current through heating element 24''. A very small amount of current will in this arrangement flow through coil 66'' of solenoid 65' but not enough to energize the same. Upon heating of thermostat 25'' the same will bend over until contact is made at 72-73; the current will thereupon flow through the direct line 76 and energize the solenoid. This will permit the thermostat 25'' to cool off sufficiently so as to break direct current contacts 72 and 73. This operation will alternately repeat itself as long as current is supplied.

The mechanisms above described to operate the ratchet constitute intermittent circuit breakers to light each of the lamps 46, 47, 48 and 49 in continuous order and for a predetermined length of time.

It is believed from the above description that those skilled in the art will have no difficulty in understanding the construction, the method of use and operation of the device herein disclosed and a detailed discussion thereof is unnecessary. The invention is of simple and practical construction and is adapted to accomplish among others all of the objects and advantages herein set forth.

Without further analysis, the foregoing will so fully reveal the gist of this invention that others can by applying current knowledge readily adapt it for various applications without omitting certain features, that, from the standpoint of the prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalency of the following claims:

We claim:

1. A device of the character described com-

prising a base having two electric contacts, a casing associated with said base, a thermostatic member arranged in the casing to flex when heated, an electrical resistance coil about said member to heat the same, one end of said coil being connected electrically to one of said contacts, an arm fulcrumed in said casing, the other end of said coil being connected electrically to said arm, an electric terminal connected to the other of said contacts and engaging electrically said arm, a ratchet, said ratchet and said arm being associated with said member in such manner that the flexing of said member will cause successive movement of said ratchet and electrical disconnection of said arm from said terminal, a ratchet wheel adapted to be rotated by said ratchet when the latter is moved, a metal plate rotatable with said wheel, electric contact points arranged in the casing, means to connect electrically said plate with each contact point in succession as said wheel is rotated, said plate being connected electrically to one of said base contacts, electric bulbs located within said casing, said points being respectively, connected electrically to one terminal of said bulbs, the other terminal of said bulbs being connected electrically with the other of said base contacts.

2. A device of the character described comprising a base having two electric contacts, a casing associated with said base, an electric thermostat arranged in the casing to flex when heated, a member in said casing, said thermostat being connected electrically to said member and to one of said base contacts, a terminal electrically connected to the other of said base contacts and contacting electrically with said member, a ratchet, said thermostat being associated with said ratchet and said member in such manner that the flexing of said thermostat will produce successive movement of said ratchet and electrical disconnection of said member from said terminal, a ratchet wheel adapted to be rotated by said ratchet upon movement of the latter, electric contact points arranged in the casing, means to successively connect electrically said wheel with each contact point upon rotation of said wheel, said means being connected electrically to one of said base contacts, electric bulbs located within said casing, each of said points being respectively, connected electrically to said bulbs, and an electrical return from said bulbs to the other of said base contacts.

3. A device of the character described comprising a base having two electric contacts, a casing associated with said base, an electric thermostat connected to said base contacts and arranged in the casing, a ratchet, means associated with said thermostat and said ratchet to produce intermittent movement of said ratchet, a ratchet wheel adapted to be rotated by said ratchet upon movement of the latter, electric contact points arranged in the casing, means to successively connect electrically said wheel with each contact point upon rotation of said wheel, said means being connected electrically to one of said base contacts, electric bulbs located within said casing, each of said points being respectively connected electrically to said bulbs, and an electrical return from said bulbs to the other of said base contacts.

4. A device of the character described comprising a base having two electric contacts, an electric thermostat connected to said base contacts, a ratchet wheel, means associated with said thermostat and said wheel to produce inter-

mittent movement of said wheel, electric contact points supported on said base, means to successively connect electrically said wheel with each contact point upon rotation of said wheel, said means being connected electrically to one of said base contacts, electric bulbs supported on said base, each of said points being respectively connected electrically to said bulbs, and an electrical return from said bulbs to the other of said base contacts.

5. In a device of the character described a base having two electric contacts, an electric thermostat connected to said base contacts, a ratchet wheel, means associated with said thermostat and said wheel to produce intermittent movement of said wheel, electric contact points supported on said base, means to successively connect electrically said wheel with each contact point upon rotation of said wheel, said means being connected electrically to one of said base contacts.

6. An electric light lamp comprising a base having two electric contacts, a housing associated with said base, a member rotatably mounted in said housing, means to produce intermittent rotation of said member, electric contact points in said housing, means to connect electrically said member with each contact point in succession upon rotation of said member, said second means being connected electrically to one of said base contacts, electric lights within said housing, each of said contact points being respectively connected electrically to said lights, and an electrical return from said lights to the other of said base contacts.

7. An electric light lamp comprising a base having two electric contacts, a housing associated with said base, a member rotatably mounted in said housing, means to produce intermittent rotation of said member, said means being associated with said base contacts, electric lights within said housing, means to connect electrically said member with said lights in succession upon rotation thereof, said second means being connected electrically to one of said base contacts, and an electrical return from said lights to the other of said base contacts.

8. An electric light lamp comprising a base adapted to screw into a conventional socket, a housing associated with said base, a plurality of stationary electric light lamps within said housing, a member within said housing and associated with said lamps, and means within said housing for producing progressive movement of said member to successively illuminate each lamp in turn.

9. An electric light lamp comprising a housing adapted to screw into a conventional socket and having contacts adapted for connection with said socket, a plurality of stationary electric light lamps within said housing, electrical contact means within said housing and associated with said housing contacts, and means within said housing and associated with said lamps and said contact means for automatically controlling the illumination of each lamp in a predetermined order.

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