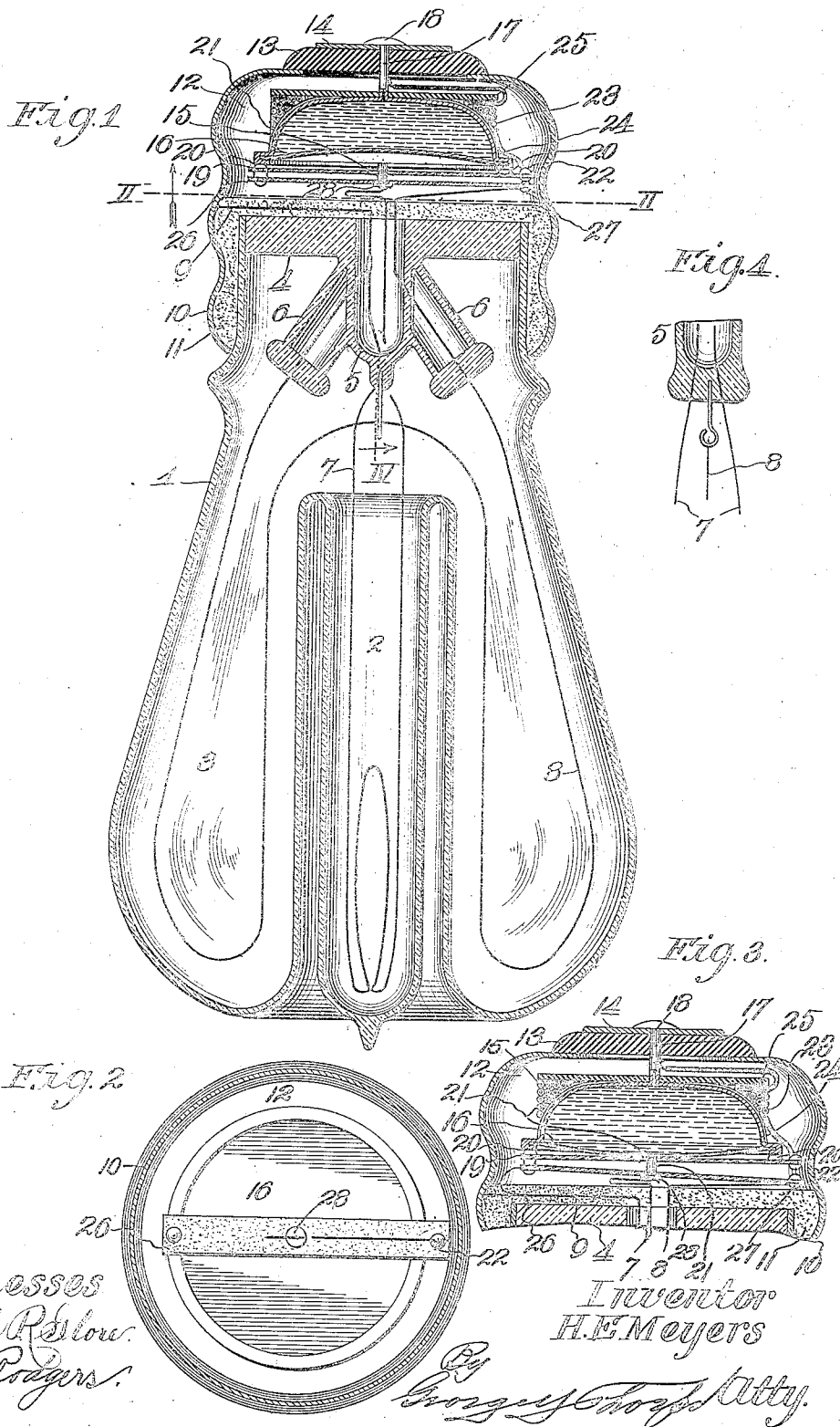


H. E. MEYERS.
 AUTOMATIC FLASH LAMP.
 APPLICATION FILED APR. 30, 1906.

932,406.

Patented Aug. 24, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY E. MEYERS, OF DENVER, COLORADO, ASSIGNOR OF ONE-FOURTH TO GUSTAV SCHBAGE
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AUTOMATIC FLASH-LAMP.

932,406.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed April 30, 1906. Serial No. 314,352.

To all whom it may concern:

Be it known that I, HENRY E. MEYERS, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Automatic Flash-Lamps, of which the following is a specification.

This invention relates to automatic flash lamps and has for its object to produce an incandescent lamp of this character provided with a thermo-electric switch whereby certain electrical connections are automatically made and broken through the lamp to cause the same to emit light at regular intervals.

A further object is to produce a thermo-electric switch for bi-filament lamps, whereby the circuit shall be completed alternately through said filaments so as to flash light alternately therefrom.

A still further object is to produce a combined incandescent lamp and switch of the character named which will operate efficiently and reliably and can be manufactured cheaply.

With these objects in view the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1 is a central vertical longitudinal section of a combined incandescent lamp and thermo-electric switch of my preferred construction, said figure showing a larger lamp than that generally used. Fig. 2 is a section taken on the line II—II of Fig. 1. Fig. 3 is a section similar to Fig. 1, but with the switch completing a different circuit. Fig. 4, is a section on the dotted line IV—IV of Fig. 1.

In the said drawings, 1 indicates a globe having a central chamber 2, and a chamber 3 surrounding the central chamber, the chambers communicating at one end near the base of the globe so that the air can be exhausted from both at the same time, it being understood, however, that the particular type of globe is immaterial.

4 indicates the mount sealed in the base end of the globe and provided with stems 5 and 6, the filament 7 for chamber 2, projecting from stem 5 and the filament 8 for chamber 3 being supported by stems 6. One end

of the filament 8 is electrically connected to one end of filament 7, and from said connection a conductor 9 leads to the threaded base 10 of the lamp, the usual cement 11 being interposed between the threaded base and the corresponding end of the globe to secure said parts reliably together.

To accommodate the thermo-electric switch hereinafter described, the base preferably projects beyond the corresponding end of the globe a greater distance than is usually the case so as to provide a comparatively roomy chamber 12, and secured to the end of the base is the usual insulating button or its equivalent 13 preferably equipped with a metallic washer 14. The preferred type of thermostat for use with the lamp, whether of the double-filament type described or of the single filament type, consists of a hermetically sealed case composed of an inverted cup-shaped body 15 and a spring plate 16, connected to the cup with a liquid-tight joint, the cup portion being preferably equipped with a stem 17. The case by preference, will contain a liquid—such as ammonia—which will expand quickly under a slight application of heat and contract as soon as the temperature falls slightly. The stem 17 is utilized by preference as a means for supporting the case in chamber 12, by projecting it up through the insulating button 13 and washer 14 and soldering or otherwise securing its upper end to washer 14 as at 18, the solder or its equivalent 18, forming the central contact found at the base of an ordinary incandescent lamp.

19 indicates a strip of mica or other suitable insulating material secured at 20 in any suitable manner to the rim of the cup portion of the case at diametrically opposite points and provided with a central hole 21, one end of said insulating strip being provided with a contact 22, electrically connected with one end of resistance coil 23, surrounding the cup portion of the case, the opposite end of the coil being connected to stem 17. The coil is insulated from the cup by insulation 24 and is held properly upon the thermostat by an insulating plate 25 through which the stem 17 projects.

26 indicates a mica or equivalent plate secured to one end of plate 19 and provided at its opposite end with a contact, 27, held by the spring tendency of said plate normally in engagement with contact 22. and said

plate 26 is equipped centrally with a contact pin 28 which projects through hole 21 of plate 19, into the path of expansive movement of the spring plate 16, and contact 27 and pin 28 are respectively connected to the ends of filaments 8 and 7 opposite to the joined ends thereof. When the lamp is screwed into a suitable socket, not shown, and the current is turned on the latter passes from the stem 17 through the resistance coil 23 to contact 22, and then passes through contact 27 and the filament 8 to the lamp base 10 and then back through the socket in the usual manner. As a result of this, filament 8 is caused to glow and emit light until the heat generated in the resistance coil expands the liquid or other expansive contents of the case and causes the spring plate 16 thereof to spring from the position shown in Fig. 1 to the position shown in Fig. 3, and consequently push said pin toward the globe and break the engagement between contacts 22 and 27. This action breaks the circuit through filament 8 and the resistance coil so that the current passes from stem 17 through the case to pin 28 and thence through filament 7 to the threaded base 10, so that light shall be emitted from said filament 7 instead of from filament 8.

After a predetermined period has elapsed the temperature of the case and its contents drops, and, as a result, the spring plate 16, springs back to its original position and breaks the circuit through filament 7 and reestablishes it through filament 8, it being understood of course that the plate 26 will have sufficient resiliency to insure the reengagement of contact 27 with contact 22 and thus restore the current to its original path.

Where one section of the globe is of clear glass and the other of colored glass, the lamp will alternately flash the clear light common to incandescent lamps and the color corresponding to that of the colored glass and this alternate flashing of the light will continue as long as the current is turned on. It will be apparent that an ordinary single filament lamp can be flashed at the desired intervals through the medium of the thermal switch described, though in such event the pin 28 need not be a conductor.

From the above description it will be apparent that I have produced an automatic flash lamp possessing the features of advantage enumerated as desirable and I wish it to be understood that I do not desire to be restricted to the exact construction shown and described, as various changes in the form, proportion, detail construction and

arrangement of the parts may be made without departing from the principle of construction involved.

Having thus described the invention what I claim as new and desire to secure by Letters-Patent, is:—

1. The combination of an incandescent lamp having a threaded base and a contact insulated therefrom, a thermostat having a spring-plate portion to spring outward as the thermostat becomes heated and inward as it cools respectively, an insulating strip secured to the thermostat adjacent to the spring-plate portion thereof and provided with a contact, a resistance coil within the threaded base and surrounding and insulated from the thermostat and electrically connected at its opposite ends to the contact of the strip and the said contact insulated from the threaded base, a resilient insulating plate attached at one end to the insulating strip and provided with a contact normally engaging the contact of said strip, and a contact-pin projecting through said strip and into the path of outward movement of said spring-plate portion, and a filament connected to the threaded base at one end and to the contact of the resilient insulating plate.

2. The combination of an incandescent lamp having a threaded base and a contact insulated therefrom, a thermostat having a spring-plate portion to spring outward as the thermostat becomes heated and inward as it cools respectively, an insulating strip secured to the thermostat and provided with a contact, a resistance coil within the threaded base and surrounding and insulated from the thermostat and electrically connected at its opposite ends to the contact of the strip and the contact insulated from the threaded base, a resilient insulating plate attached at one end to the insulating strip and provided with a contact pin to be engaged by the spring plate when the latter is moved by the heating of the thermostat, and with a contact normally engaging the contact of said strip, and a pair of filaments connected together and to the threaded base at one end and having their opposite ends respectively connected to said contact pin and the contact of the resilient insulating plate.

In testimony whereof I affix my signature, in the presence of two witnesses.

HENRY E. MEYERS.

Witnesses:

H. S. WALDO,
ARTHUR W. BARNES.