I. L. KISER.

THERMALLY OPERATED ELECTRIC TIME LIGHT.

APPLICATION FILED MAY 6, 1910.

994,846. Patented June 13, 1911.

Fig. 1.

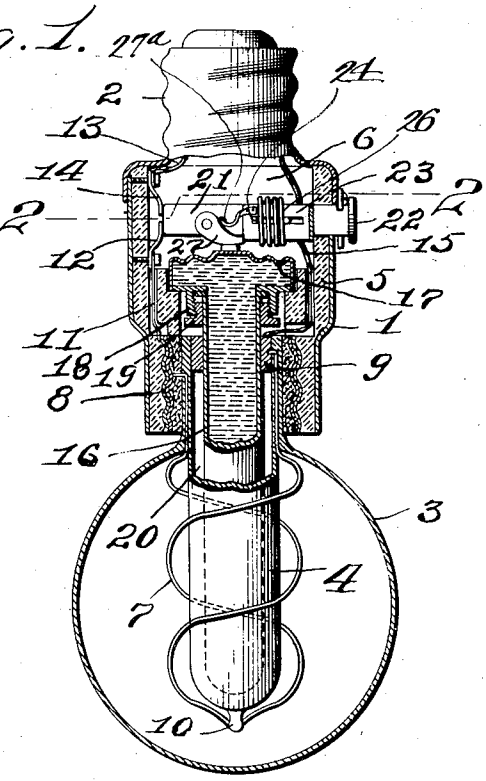


Fig. 2.

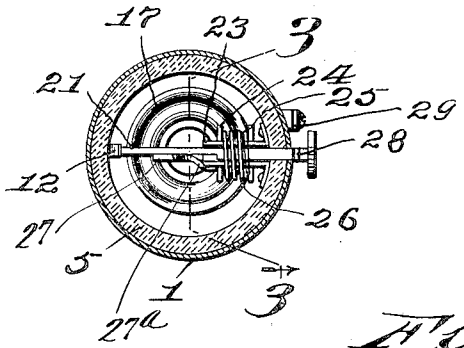


Fig. 4.

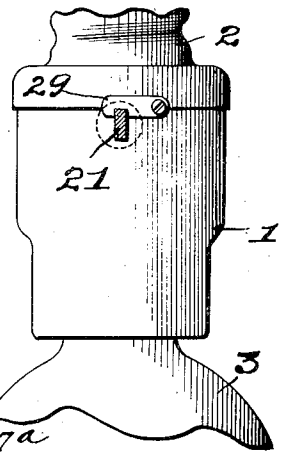
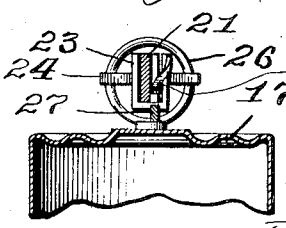


Fig. 3.



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THERMALLY-OPERATED ELECTRIC TIME-LIGHT.

994,846. Specification of Letters Patent. Patented June 13, 1911.

Application filed May 6, 1910. Serial No. 559,802.

To all whom it may concern:

Be it known that I, ISAAC L. KISER, a citizen of the United States, and resident of St. Charles, St. Charles county, Missouri, have invented certain new and useful Improvements in Thermally-Operated Electric Time-Lights, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in thermally operated, electric, time lights, the object of my invention being to construct an electric lamp which will burn for a given time and then be automatically extinguished.

A further object of my invention is to construct an electric lamp which will burn for a given length of time and then be automatically extinguished by means thermally operated from heat derived from the electric filament.

A further object is to construct such a lamp that may be set to burn continuously or in other words to provide a lock to prevent the action of the automatic extinguishing means.

For the above purposes my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings, in which:

Figure 1 is a vertical, sectional elevation of the complete lamp, the threaded member for attachment to the light fixture being shown in solid lines; Fig. 2 is a sectional plan taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged detail sectional elevation taken on line 3—3 of Fig. 2, the lamp base and porcelain lining therefor being removed; and Fig. 4 is a view of the lamp base proper, the threaded member for attachment to the fixture and the lamp globe being only partially shown, and illustrates the means for locking the automatic extinguishing means.

Referring by numerals to the accompanying drawings: 1 designates the lamp base and 2 the threaded member for attachment to the light fixture.

3 designates the globe and 4 a tube carried within the globe and preferably formed integral therewith.

5 designates a plastic filler for the lamp base in which filler is formed the chamber 6 and which filler embraces the uppermost end of the globe 3 and tube 4 within the lamp base 1.

7 designates a filament the upper ends of which are carried by the neck of the globe 3, the one end of which projects outwardly and contacts with the metallic sleeve 8 one part of which is embedded in the plastic material 5 of the base and the other part is carried by the globe and forms an electrical connection between the globe and base, the other end of the filament extends inwardly and contacts with a metallic ring 9 inserted in the open-topped neck of the globe. The filament proper within the globe is arranged helically about the tube 4 and at its lowermost end is held from contact with the tube by a projection 10 carried by the tube.

11 designates a conductor leading from the sleeve 8 to the spring contact member 12.

13 designates a conductor leading from the threaded member 2 to the spring contact member 14, and 15 designates a conductor leading from the metallic ring 9 to the threaded member 2, the uppermost ends of the conductors 13 and 15 having exposed ends where they project through the member 2 for connection with the conductors and light fixtures.

16 designates a tubular container for an expansive fluid, the lowermost end of which is closed and the uppermost end of which is provided with an enlarged cap 17, the top of which is flexible and acts as a diaphragm by the expansion and contraction of the expansive fluid contained within the tube. The cap as shown is preferably provided with a downwardly extending flange 18 which is internally threaded for connection with an externally threaded ring 19 which embraces the uppermost end of the tube 16 to form a fluid-tight joint to prevent leakage of the expansive fluid. The diametrical dimensions of the tube 16 are less than the diametrical dimensions of the tube 4 so that there is a space 20 between them, which space acts as a means whereby heat, gener-

ated by the filament, is imparted uniformly to the exterior of the surface of the tube 16.

21 designates a metallic bar, the innermost end of which is arranged for contact with the spring conducting members 12 and 14 and the outermost end of which projects through the lamp base and is provided with a head 22 for its manipulation, there being openings formed through the lamp base 1 and through the plastic material 5 for the movement of the bar 21.

23 designates a channel open-topped bearing or guide for the bar 21, the side walls of which are slotted, and carried by the channel bearing are the lateral projections 24. Carried by the bar 21 is a pin 25, the ends of which project, for travel, through the slots in the channel bearing 23. Embracing the channel bearing and impinging between the projections 24 and pin 25 is an extensile coil spring 26 arranged for normally holding the bar 21 out of contact with the members 12 and 14.

27 designates a detent, actuated in one direction by a spring 27^a pivotally carried by the bar 21, the free end of which is arranged for engagement with the inner end of the channel bearing to hold the bar 21 inwardly against the members 12 and 14 against the tension of the spring 26. The detent is also arranged to be engaged by the upper face of the diaphragm 17. For locking the bar 21 so that it will not be acted upon by the automatic extinguishing means there is a notch 28 formed in the upper margin of the bar adjacent the head 22, and pivotally secured to the socket is a detent 29 arranged to be inserted in the notch 28.

The lamp base, the globe, the filament and electric conductors, the switch and the thermo-dynamically operated means just described in detail illustrate one form of automatic electric time light. It is obvious that there might be numerous modifications of the various elements of such a time light within the scope of the claims, hence I do not wish to be understood as limiting myself to the specific construction of any one of the elements of my invention.

In the practical operation of the lamp the bar 21 is forced inwardly manually until its innermost end electrically connects the contact members 12 and 14, the detent 27 being automatically placed by the spring 27^a in position with its free end in engagement with the end of the channel bearing 23 to hold the bar 21 in a set position, the detent also being moved to a position in contact with the diaphragm 17, it being understood that the electrical connection of the members 12 and 14 completes the circuit for the lamp.

The heat generated by the filament will, at a certain length of time, have expanded the fluid beneath the diaphragm to a point sufficient to release the detent out of engagement with the end of the channel bearing then, by reason of the spring 26, the bar 21 will be moved outwardly to disconnect the members 12 and 14 thus extinguishing the lamp automatically.

I claim:

1. In combination with an electric lamp comprising a base and a globe, the filament electric conductors therefor, and manually operated means for connecting the conductors, automatic means wholly within the lamp for disconnecting the conductors operated by heat generated within the filament for extinguishing the lamp after a given time.

2. In combination with an electric lamp comprising a base and a globe, the filament conductors therefor, and manually operated means for connecting the conductors, a thermostatically operated member for disconnecting said conductors operated by heat generated within the filament.

3. In combination with an electric lamp, the filament and conductors therefor, a spring actuated member for connecting and disconnecting the conductors, means for locking said member in a position to connect said conductors, a thermostat arranged to be actuated by heat generated within the filament for the release of said locking means all of which parts are wholly within the lamp.

4. The combination with an electric lamp, the filament and conductors therefor, a member for connecting and disconnecting the conductors, means for locking said member in a position to connect said conductors, a thermostat arranged to be actuated by heat generated within the filament for the release of said locking means and there being an auxiliary locking device for holding said member for the continuous connection of said conductors.

5. In a thermally operated electric time light, a globe haying a reduced neck, a tube carried by said neck, a filament embracing said tube, a container for an expansive fluid partially embraced by said tube, a diaphragm acted upon by the fluid within said container, conductors leading to said filament, and means for connecting and disconnecting said conductors, which means are acted upon by said diaphragm.

6. In a thermally operated electric time lamp, comprising a base and a globe, an integral tubular member formed within the globe, a filament embracing said tubular member, a container for an expansive fluid within said tubular member, conductors leading through said base to said filaments, a manually operated member for connecting said conductors, a spring for actuating said last mentioned member for the disconnection of said conductors, means for locking the said member in a position to connect said

conductors, and a diaphragm carried by the container for the expansive fluid, whereby, when the expansive fluid has been thermally acted upon, the lamp will be automatically extinguished by the disconnection of the conductors leading to the filament.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

ISAAC L. KISER.

Witnesses:
EDWARD E. LONGAN,
E. L. WALLACE.