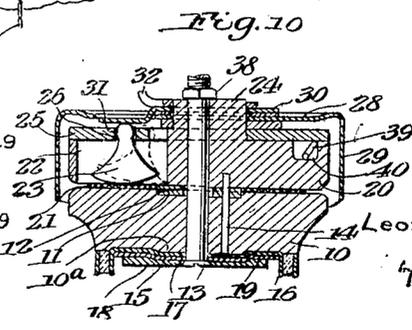
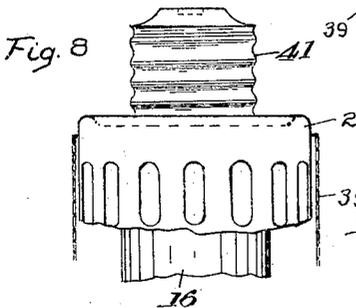
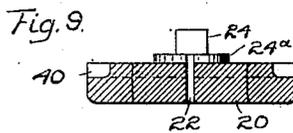
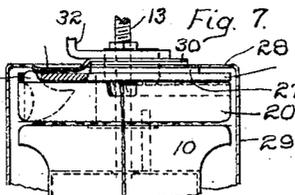
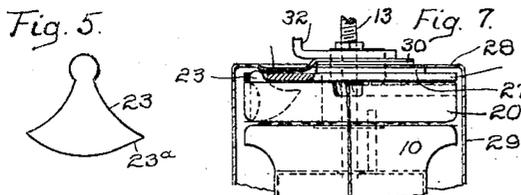
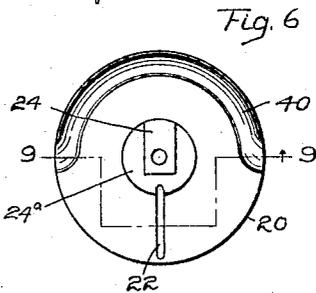
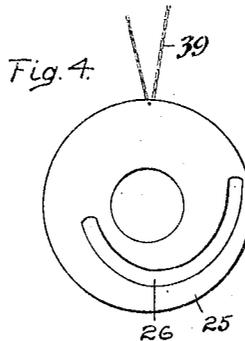
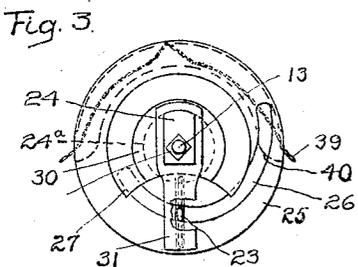
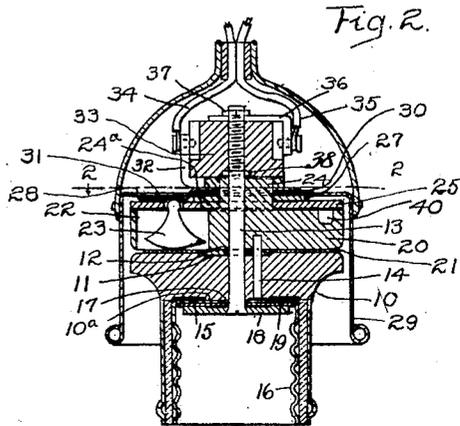
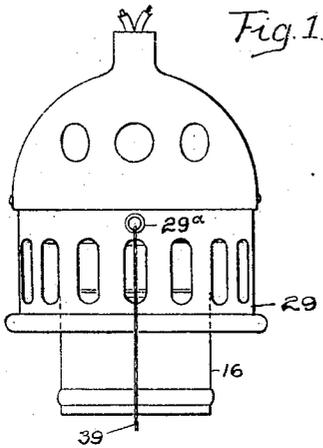


L. SYKES.
ELECTRIC LIGHT REGULATOR.
APPLICATION FILED NOV. 4, 1916.

1,237,124.

Patented Aug. 14, 1917.



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UNITED STATES PATENT OFFICE.

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ELECTRIC-LIGHT REGULATOR.

1,237,124.

Specification of Letters Patent. Patented Aug. 14, 1917.

Application filed November 4, 1916. Serial No. 129,436.

To all whom it may concern:

Be it known that I, LEONARD SYKES, a subject of George V, King of Great Britain and Ireland, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented new and useful Improvements in Electric-Light Regulators, of which the following is a specification.

The invention relates to electric light regulators in which a series of exposed coils and a movable contact adapted to be rocked across the coils to establish electrical connection therewith, vary the resistance to the current passing to the filament of the lamp.

The object is to provide a simple and economical device which shall efficiently regulate the current flowing to the electric lamp.

Another object is to provide a novel and efficient contact which is readily moved across the resistance coil.

Other objects will be set forth hereinafter.

In the drawings, in which I illustrate one embodiment of the invention,

Figure 1 is an elevational view of the device.

Fig. 2 is a vertical cross-section of the device.

Fig. 3 is a cross-section on line 2—2 of Fig. 2, the casing being omitted.

Fig. 4 is a plan view of the contact rocking member.

Fig. 5 is an elevational view of the contact.

Fig. 6 is a plan view of the upper member of the main body of the regulator.

Fig. 7 is a fragmentary elevational view of the regulator, the contact having been rocked to its cut-out position.

Fig. 8 is a fragmentary plan view of a plug provided with the invention.

Fig. 9 is a cross-section on line 9—9 of Fig. 6.

Fig. 10 is an enlarged vertical section of the central portion of Fig. 2.

Referring to the drawings, 10 is the lower member of the main body of the regulator, and it is formed of vulcanized rubber or other suitable insulation. Its upper face is centrally recessed to receive an apertured conductor plate 11. A bolt 13 extends upwardly through the center of member 10 and through the aperture 12 in plate 11, the aperture 12 being larger than the bolt so that there shall be no contact between them.

A pin 14 also extends upwardly through member 10 and through plate 11, with which plate it makes contact. The lower end of pin 14 is connected to or is part of the upper end 15 of socket 16 which is also apertured at 17 to obviate contact between the socket and bolt 13. The socket is in the usual form to receive an incandescent lamp. A suitable plate 18 is supported by bolt 13 and suitable insulation 19 prevents electrical contact between the plate and socket 16. In order that bolt 13, when drawn up tightly, shall hold the parts below member 10 in place, I provide a depending boss 10^a on member 10 and also provide a corresponding depression in plate 18 and end 15 of the socket so that the insulation 19 and the end of socket 16 are firmly gripped between the boss and the depression in the plate.

Above member 10 and spaced from it by plate 11 is the upper member 20 of the main body of the regulator. This member, like member 10, is formed of vulcanized rubber or other suitable insulation. The upper end of pin 14 is extended into an aperture provided in the lower face of member 20 and serves to prevent relative movement of the two members.

Between the two members is wound a resistance 21 of the requisite or desired number of turns of insulated wire, one end thereof being connected to conductor plate 11, and the other end being suitably engaged in member 20.

A radially extending slot 22 is provided in member 20, and disposed within the slot is a contact member 23 having its lower edge curved and adapted to contact with resistance 21, the insulation of the several turns of wire having been scraped off immediately below slot 22 in order to present bare wire to member 23. Member 23 is adapted to be rocked to and fro upon the bare wire to cut in or out as many of the turns of wire as the user desires. The lower edge of the contact is straightened out at one end so as to provide a short flat surface 23^a which will contact with a selected number of the inner turns of the resistance at once. When the contact is rocked inwardly the inner end or point of the same meets conductor plate 11 whereupon the resistance is cut-out of the circuit and the lamp receives the full current. As the contact is

rocked outwardly its flat or straight edge 23^a is first elevated and at once cuts in a selected number of turns of the resistance coil in the circuit in order that the coil shall not overheat. The continued movement of the contact upon its curved portion gradually cuts in more and more of the resistance.

A boss 24 projects upwardly from member 20. A disk 25 is revoluble upon a circular portion 24^a on the boss and is provided with a cam slot 26 which engages the upper end of contact member 23. As the disk is rotated in either direction the contact member is caused to rock on resistance 21. Boss 24, above the circular portion 24^a, is rectangular in shape and an insulating disk 27 is disposed upon the disk 25 and engages the boss. Top 28 of casing 29 rests upon insulation 27 and is centrally apertured to be engaged over boss 24. Insulation 30 is placed upon top 28 and a spring 31 is engaged over boss 24 and upon insulation 30. The outer free end of the spring engages the upper end of contact member 23 which extends through slot 26 in disk 25. The top 28 and insulation 27 and 30 are cut-out to permit of the free access of the spring to the contact member.

A plate 32 is in contact with spring 31 and is carried by a block of insulation 33 through which bolt 13 is extended. One of the feed wires 34 is connected to plate 32 and the other feed wire 35 is connected to plate 36 which is connected to bolt 13 by nut 37. Nut 38 on bolt 13 when tightened on the bolt holds together all the several parts between the nut and the head of the bolt, and nut 37 holds the terminal plates 32 and 36 tightly on block 33 and maintains contact between spring 31 and plate 32.

To enable disk 25 to be rotated or oscillated I provide a chain 39 which is secured at its middle portion to the disk. A groove 40 is provided in the upper face of member 20 which opens at its ends through the side of member 20. The chain is placed in this groove and its opposite ends project through the open ends thereof and through openings 29^a provided in casing 29. By pulling upon one depending end of the chain the disk is caused to rotate and rock the contact member in one direction, the rotation of the disk in the opposite direction, produced by pulling on the other end of the chain, causing the contact member to rock in the opposite direction. When one end of the cam slot in disk 25 is reached by the contact member that member will have been rocked into contact with conductor plate 11, all the resistance is out of circuit and the lamp receives the full current.

As the disk is rotated in the opposite direction the contact member is rocked across resistance 21 and more and more of the re-

sistance is cut into circuit and when the end of the cam slot abuts the upper end of contact member 23 that member has passed from under spring 31 to break the circuit to the lamp and the lamp is extinguished. Any degree of brilliancy of the lamp from zero to its maximum candle power is therefore obtainable by rotating disk 25 in the proper direction and to the desired extent.

The circuit when a lamp is installed in socket 16 is readily understood. Briefly described it is as follows: Let current enter through wire 35. It passes thence through plate 36, bolt 13 and plate 18, through the lamp; thence through the socket 16, pin 14, conductor plate 11, resistance 21, contact 23, spring 31, plate 32 and out through wire 34.

In Fig. 8 a plug 41 is substituted for block 33 and the terminal plates of the previous figures and the upper portion 40 of the casing is omitted. The plug enables the device to be installed between a lamp socket and the lamp wherever the socket may be connected to the main electrical circuit. The screw shell of the plug, in this illustration, is in contact with spring 31, and bolt 13 extends through the plug.

It is to be noted that contact member 23 is rocked in guide slot 22 over the resistance coil and is not rubbed over the wire as in prior devices. Wear on the wire by the contact member is therefore practically eliminated.

What I claim is:

1. The combination with a pair of main insulating members, of a conductor plate separating the two members, a resistance coil between the two members and having one end connected to the plate, a contact member loosely supported in one of the insulating members and independent thereof and adapted for engagement with the conductor plate and the resistance coil, and means to rock the contact member in a vertical plane.

2. The combination with a pair of main insulating members, of a conductor plate separating the two members, a resistance coil between the two members and connected at one end to the conductor plate, a contact member loosely supported in one of the insulating members and independent thereof and adapted for engagement with the conductor plate and the resistance coil, a spring adapted to engage the contact member and means to rock the contact member across the resistance coil into engagement with the conductor plate or out of engagement with the spring.

3. The combination with an electric circuit, of a pair of main insulating members, a conductor plate separating the two members, a resistance coil between the members and connected at one end to the conductor plate, a socket having connection with the

plate, a contact member loosely supported
 in one of the insulating members and inde-
 pendent thereof and adapted for engage-
 ment with the conductor plate and the res-
 5 stance coil, a fixed spring normally en-
 gaging the contact member, an electrical
 conductor having connection with the
 spring, a bolt projecting through the insu-
 10 lation members and socket and itself insu-
 lated from the socket, the conductor plate
 and the spring, an electrical conductor con-
 nected to the bolt, means to close the cir-
 cuit between the bolt and the socket and a
 15 revoluble disk having a cam slot therein
 and engaging the contact member for rock-
 ing the contact member in a vertical plane
 across the resistance coil.

4. The combination with an electric cir-
 cuit of a pair of main insulating members,
 20 a conductor plate and a resistance member
 between the two members, the resistance
 member being connected at one end to the
 conductor plate, a contact member loosely
 supported in one of the insulating members
 25 and adapted for engagement with the resis-
 tance member and the conductor plate, a
 spring adapted to engage the contact mem-

ber, a socket having electrical connection
 with the conductor plate, the socket, con-
 30 ductor plate, resistance member, contact
 member and spring constituting one side of
 the circuit, a bolt extending through the
 insulating members and constituting the
 other side of the circuit, a cam engaging the
 contact member and means to oscillate the
 35 cam for rocking the contact member across
 the resistance member and into contact with
 the conductor plate or out of engagement
 with the spring.

5. The combination with a pair of main
 40 insulating members, of a conductor plate be-
 tween the two members, a resistance mem-
 ber between said two members and connect-
 ed at one end to the conductor plate, a con-
 tact member loosely supported in one of the
 45 insulation members and independent thereof
 and adapted for engagement with the resis-
 tance member and the conductor plate,
 and a cam plate engaging the contact mem-
 50 ber and adapted to rock said member across
 the resistance member.

In witness whereof I hereunto subscribe
 my name this 1st day of November, 1916.

LEONARD SYKES.