No. 626,017. Patented May 30, 1899.

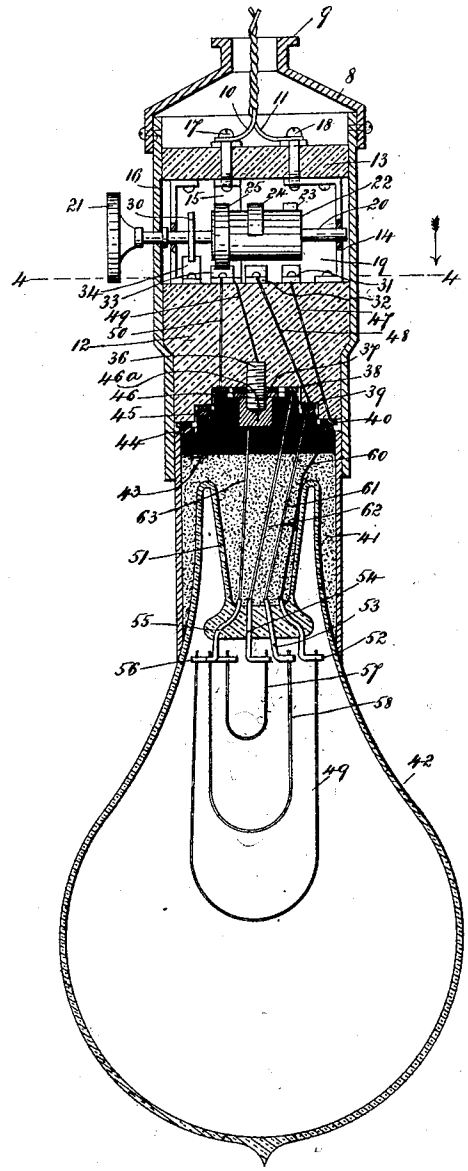
R. W. CARROLL.

INCANDESCENT ELECTRIC LAMP.

(Application filed July 1, 1898.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.



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FIG. 2.

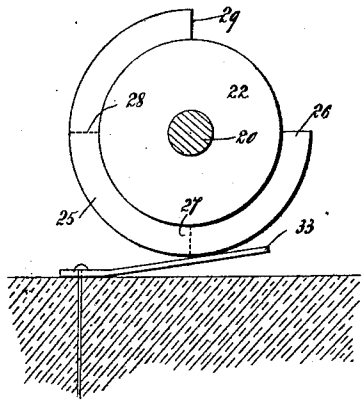


FIG. 3.

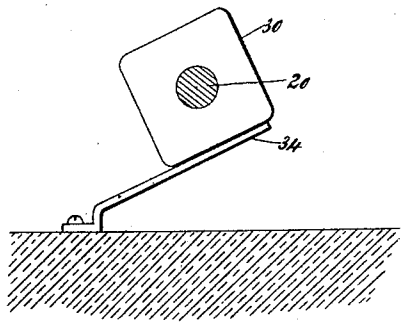


FIG. 4.

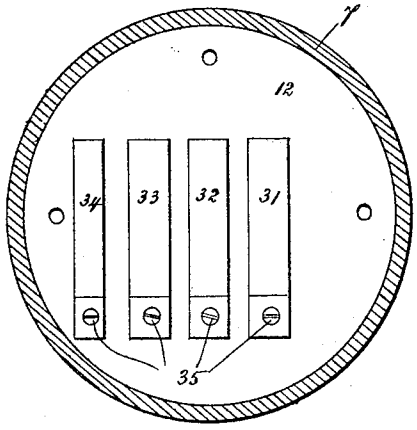
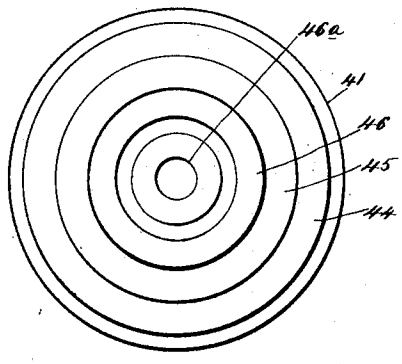


FIG. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

RALPH WALDO CARROLL, OF BLANDINSVILLE, ILLINOIS.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 626,017, dated May 30, 1899.

Application filed July 1, 1898. Serial No. 684,910. (No model.)

To all whom it may concern:

Be it known that I, RALPH WALDO CARROLL, a citizen of the United States, residing at Blandinsville, in the county of McDonough and State of Illinois, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to incandescent electric lamps; and the object thereof is to provide an improved lamp of this class the power of which is adjustable or which may be regulated by simply turning a switch, so as to increase or decrease the illuminating power of the lamp, as desired.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in which—

Figure 1 is a central vertical section of my improved lamp; Fig. 2, a transverse sectional view of the switch which I employ; Fig. 3, a similar view, the transverse section being taken on a different line from that of Fig. 2; Fig. 4, a partial section on the line 4 4 of Fig. 1, and Fig. 5 a plan view of the neck of the bulb detached from its socket.

In the accompanying drawings, Figs. 2, 3, 4, and 5 are on a much larger scale than Fig. 1, and in the practice of my invention I provide a lamp of the class herein described which comprises the usual cylindrical socket-casing 7, provided with a detachable cap 8, having a neck 9, through which the conductor-wires 10 and 11 are passed. The cylindrical casing 7 is provided with the usual insulating-block 12, composed of porcelain or other desired material, and also with an insulating-disk 13, composed of similar material, and said block 12 and disk 13 are connected by metal braces 14, 15, and 16, and both the upper and lower ends of these braces are angular in form, and passing through the insulating-disk 13 are two binding-posts 17 and 18, with which the conducting-wires 10 and 11 are respectively connected, and these binding-posts are in electrical connection with the standards 14 and 15.

Passing transversely through the space or chamber 19, between the disk 13 and the insulating socket-block 12, is a switch-shaft 20, which also passes through the standards 14 and 16, and one end of said shaft projects through the cylindrical casing 7 and is provided with a button or head 21, by which it is operated. The shaft 20 is provided with a drum 22, which is provided with three segmental ribs 23, 24, and 25. The drum 22 and the ribs 23, 24, and 25 are composed of metal, and the rib 23 extends one-quarter distance around the drum, the rib 24 one-half way around the drum, and the rib 25 three-quarters the way around said drum. All of these ribs begin at the same longitudinal line, as indicated at 26 in Fig. 2. The rib 23 terminates at 27, Fig. 2, and the rib 24 at 28, Fig. 2, and the rib 25 terminates at 29 in said figure, and the switch-shaft 20 is also provided with a lock-plate 30, which is square in form, as shown in Fig. 3. The upper surface of the socket-block 12 is provided with three contact-springs 31, 32, and 33 and a lock-spring 34, (shown in Figs. 1 and 4,) and these springs are secured to said socket-block by screws or pins, as shown at 35 in Fig. 4, and the free ends thereof project upwardly and transversely of the socket-block and beneath the switch-shaft, and as said shaft, together with the drum 22, is revolved the rib 23 on said drum is adapted to contact with the spring 31, the rib 24 with the spring 32, and the rib 25 with the spring 33, while the lock-plate 30 is adapted to bear on the spring 34. As thus constructed, it will be seen that as the switch-shaft and drum are revolved the rib 25 first comes in contact with the spring 33, and after a quarter of a revolution the rib 24 comes in contact with the spring 32, and at the end of another quarter of a revolution the rib 23 comes in contact with the spring 31, and at this time all of said ribs are in contact with their respective springs, and when the shaft or drum is further revolved the connections between said ribs and springs are all broken at the same time.

The spring 34 is much stronger than the other springs 31, 32, and 33, and together with the locking-plate 30 is intended to lock the switch-shaft and drum and hold them in any desired position, it being understood that this

is not an absolute lock, but simply a friction device to regulate the movement of the shaft.

The socket-block 12 is provided centrally of its lower end with a screw 36, preferably provided with a washer or set-nut 37, and said lower end of the socket-block is provided with annular steps on which are placed contact-rings 38, 39, and 40, and the neck 41 of the incandescent-lamp bulb 42 is provided with an insulating-head 43, having steps similar to those in the lower end of the socket-block 12, on which are placed contact-rings 44, 45, and 46, and said insulating-head 43 is provided with a metal socket 46^a, adapted to receive the screw 36 of the socket-block 12, and when the neck of the bulb is secured in the socket the contact-rings 44, 45, and 46 will come in contact with the rings 38, 39, and 40, as shown in Fig. 1. The spring 31 is connected with the ring 40 by a wire 47, and the spring 32 is connected with the ring 39 by a wire 48, while the standard 15 is connected with the socket-screw 36 by a wire 49, and the spring 33 is connected with the ring 38 by a wire 50.

The neck 41 of the bulb is provided with the usual inwardly-directed insulating projection 51, the inner end of which is provided with a plurality of filament attachments 52, 53, 54, and 55, which consist of angular metal arms passed through the lower end of said projection, and one of which is provided with a metal cross-head 56, and in the form of construction shown and described I have illustrated three incandescing carbon filaments 57, 58, and 59, each of which is connected at one end with the metal cross-head 56, and each of which is provided at its opposite end with a separate attachment, said attachment consisting of the parts 52, 53, and 54.

The contact-ring 44 of the neck 41 of the bulb is in connection with the filament attachment 52 by a wire 60, and the contact-ring 45 is in connection with the filament attachment 53 by a wire 61, while the ring 46 is in connection with the filament attachment 54 by means of a wire 62, and the neck-socket 41 is in connection with the filament attachment 55 by means of a wire 63.

The filaments 57, 58, and 59 are of different lengths, as shown in Fig. 3, and each is thus adapted to give a light of different candle-power, the power of the light depending on the length of the filament, and by means of the construction herein described the inner shorter filament 57 may be actuated alone or the power of the filament 56 may be added thereto, and the power of the filament 59 may be added to the power of the other two. In order to produce this result, the switch-shaft is turned to the right, and the rib 25 on the drum 22 first makes connection with the corresponding spring 33. The current passes through the wire 11, the binding-post 18, the standard 14, the switch-shaft, drum, and rib 35 to the spring 33, from which it passes through the wire 50 to the ring 38 and then through the ring 46, the wire 62, and the filament attachment 54, through said filament, and back through the cross-head 56, filament attachment 55, wire 63, socket 46^a, screw 36, wire 49, standard 15, the binding-post 17, and wire 10. By turning the switch-shaft another quarter of a revolution the rib 24 will make connection with the spring 32 and the filament 58 will be actuated, as is clearly shown in Fig. 1, at this time. Both the filaments 57 and 58 will be operated, and by turning the switch-shaft another quarter of a revolution the rib 23 will come in contact with the spring 31 and the filament 59 will be actuated. By turning the switch-shaft another quarter of a revolution the current through all of said filaments will be cut off.

Suppose the power of the filament 57 be five-candle power and the power of the filament 58 ten and that of the filament 59 fifteen. In this case, as will be apparent, the lamp may be so adjusted as to produce a five-candle power, a fifteen-candle power, or thirty-candle power, as may be desired.

My improved lamp is simple in construction and operation and perfectly adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An incandescent electric lamp, comprising a socket-casing, an insulating socket-block mounted therein, an insulating-disk mounted above said socket-block whereby a chamber is formed between said socket-block and said disk, metal standards connecting said block and disk, binding-posts passing through said disk and connecting with two of said standards, a plurality of contact-springs secured to said socket-block, a switch mounted in two of said standards, one of which is connected with one of said binding-posts, said switch being cylindrical in form and provided with segmental contact-plates of varying length adapted to make connection with said springs, a plurality of conductors passing through the socket-block, one of which is connected with one of said standards which is connected with another of said binding-posts, and the others of which conductors are connected with said springs, and a detachable bulb provided with a plurality of filaments and a plurality of annular contact-plates in electrical connection therewith and which are connected with the conductors in the socket-block by means of a plurality of annular contact-plates, substantially as shown and described.

2. In an incandescent lamp of the class described, a socket member provided with a switch, a plurality of annular concentric contact-plates arranged in varying horizontal planes, each provided with a suitable elec-

trical conductor with one or more of which said switch is adapted to electrically connect, a removable bulb member provided with a plurality of filaments, and a plurality of annular contact-plates, respectively in predetermined electrical connection therewith and arranged to correspond with the contact-plates of said socket member, the contact-plates in said socket member being adapted to come into electrical contact with the contact-plates in said bulb member, when said members are operatively connected, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 24th day of June, 1898.

RALPH WALDO CARROLL.

Witnesses:
EDWARD WALTON HAYDLER,
BERT EDWARD METCALF.