No. 704,851. Patented July 15, 1902.

H. W. BEECHER, JR.

ELECTRIC LAMP.

(Application filed Feb. 6, 1902.)

(No Model.)

Fig. 1.

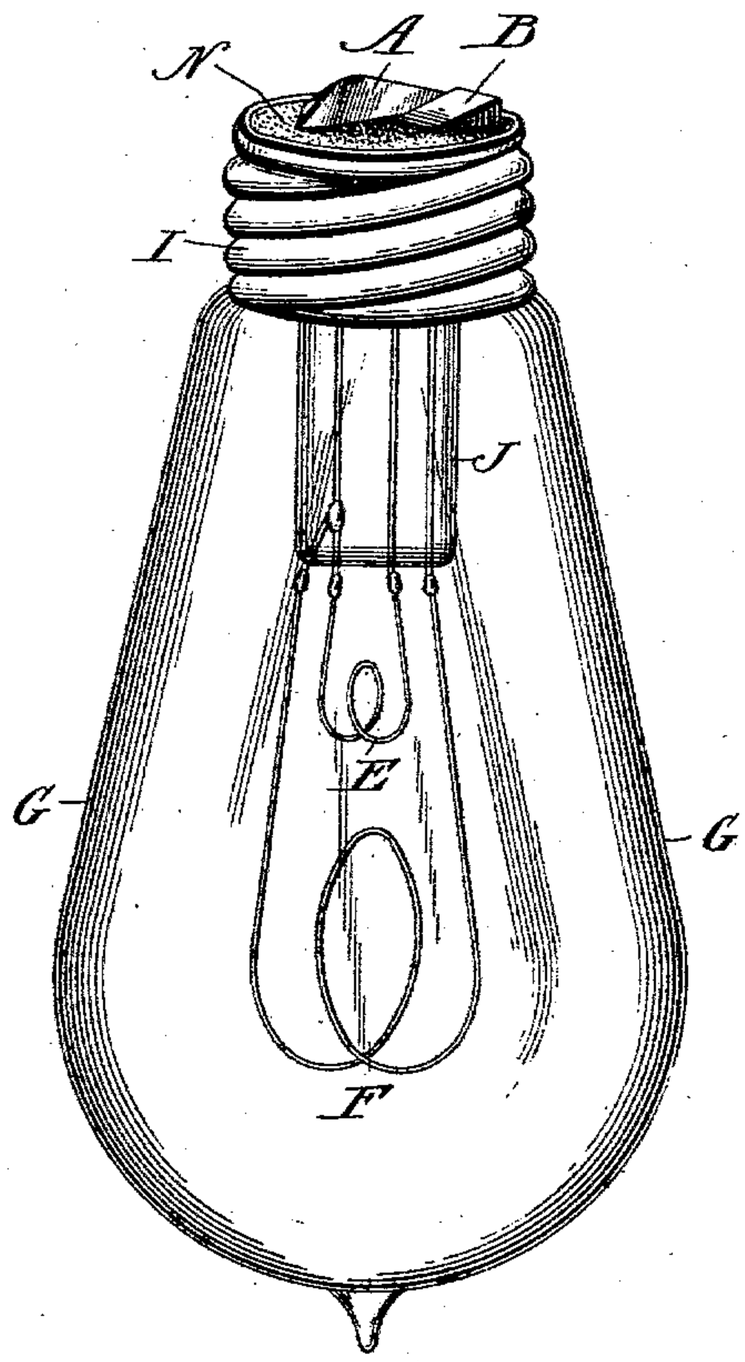


Fig. 2.

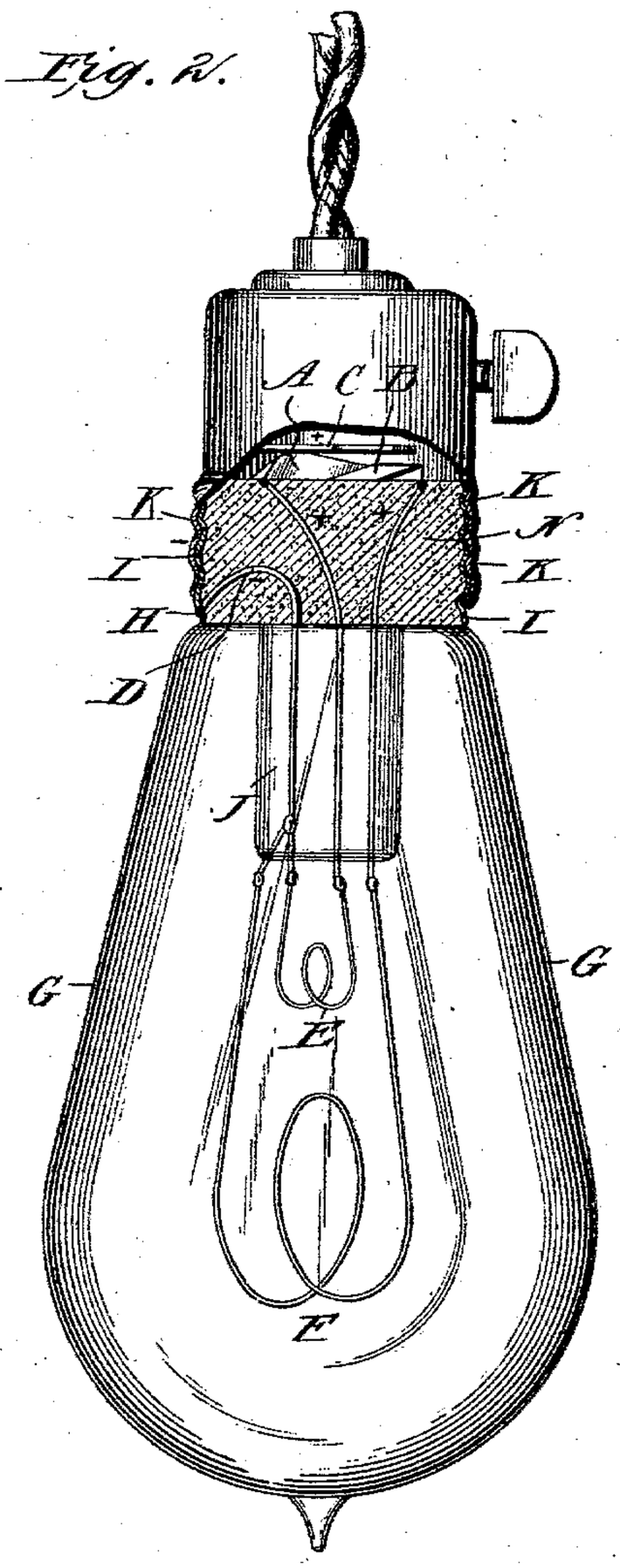


Fig. 3.

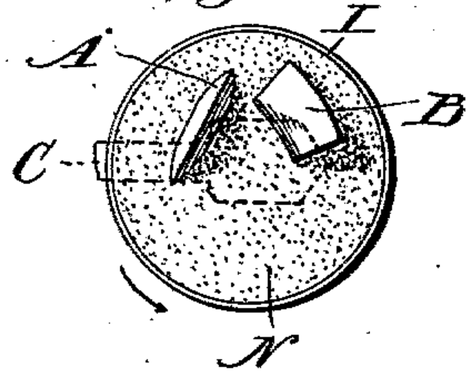


Fig. 4.

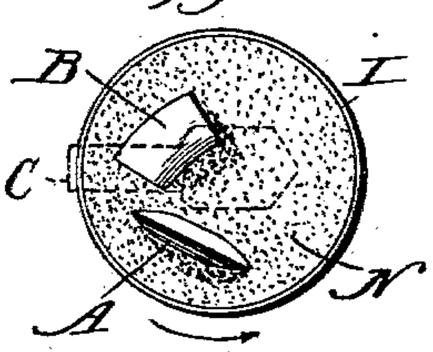
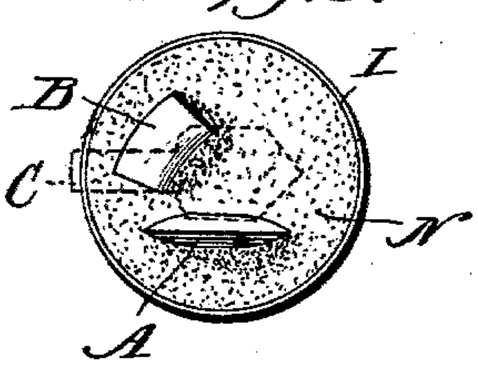


Fig. 5.



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HENRY WARD BEECHER, JR., OF PORT TOWNSEND, WASHINGTON.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 704,851, dated July 15, 1902.

Application filed February 6, 1902. Serial No. 92,778. (No model.)

To all whom it may concern:

Be it known that I, HENRY WARD BEECHER, Jr., of Port Townsend, in the county of Jefferson and State of Washington, have invented a new and useful Improvement in Electric Lamps, of which the following is a specification.

The object of my invention is to provide an electric incandescent lamp of the Edison type, which will permit of the variation of the amount of light afforded in a simple and practical way. For this purpose turning-plug switches have heretofore been employed which embodied a commutator with a variable amount of resistance, more or less of which was thrown into circuit to regulate the intensity of light emanating from a single filament. It is also old to provide a lamp having two or more filaments of different sizes and radiating power, with connecting-contacts by which from a mere turning of the glass globe the current may be directed through either or both filaments. My invention is an improvement in the latter class; and it consists in the peculiar construction and arrangement of the contacts, as will be hereinafter more fully described with reference to the drawings, in which—

Figure 1 is a perspective view of my lamp-globe. Fig. 2 is a side elevation of the lamp, partly in section; and Figs. 3, 4, and 5 are top views showing the terminal contacts of the filaments and the three positions of the globe when rotated about its longitudinal axis for sending the current through either or both of the filaments.

In the drawings, G represents the glass globe, whose neck is filled with a non-conducting composition N, surrounded by the metal screw-threaded collar I.

F and E are the two carbon filaments, of which F is very much larger than E. Both of them connect with the platinum wires sealed in the glass projection J. One end of each filament is connected to the wire D, which connects with the metal collar I at H, and consequently with the corresponding threaded sleeve K of the metal socket when the globe is screwed in place. The other terminals of the filaments pass through the non-conducting composition to separate contacts A and B, which are insulated from each other and also from the collar I. Both these contacts are designed to connect with the spring-tongue C of the socket of the lamp. This spring-tongue represents one electrode of the lamp-socket, (+, as shown,) and the socket-sleeve K represents the other electrode, (—, as shown.)

The contacts A and B are in the nature of cams whose pitch corresponds to the incline of the screw-threads of the socket-collar, and A is thinner, but higher than B.

Now it will be seen that if the spring-tongue C of the socket rests exclusively on A the current will pass through the small filament E and illuminating it only will give a feeble light. If the spring-tongue C rests exclusively upon the contact B, the current will pass through the larger filament F and give a larger amount of light. If, however, the spring-tongue C rests on both contacts A and B, the current will pass through both filaments and will give the maximum amount of light.

To effect the switching or commutation of the current through either or both of the filaments, no special commutation-plug is required; but the simple and ordinary plug-switch in the socket is retained, and the glass globe itself is simply rotated more or less about its longitudinal axis. Thus in Fig. 3 the electrode-tongue C of the lamp-socket is shown in dotted lines resting on cam-contact A, and as the latter is higher than B contact is made with A; but the tongue does not touch B, as clearly shown in Fig. 2. If the globe be turned now to the position shown in Fig. 4, the dotted lines of the spring-tongue show it resting exclusively on contact B, and consequently the current will pass only through the larger filament F and will give a larger amount of light, while if the globe be turned in relation to the spring-tongue to the position shown in Fig. 5, in which said spring bears upon the top of contact B and also against the side of contact A, then the current will pass through both filaments, and the maximum amount of light will be radiated.

The candle-power of the filaments of my lamps may be graduated so that for one lamp they may be 2.8 and ten, another lamp 4.8 and twelve, another 4.12 and sixteen or 4.16 and twenty, to suit the particular use to which

the lamp is to be put. The means for thus varying the candle-power of the lamp makes a great saving in power consumed, and my invention is very valuable for hospitals, hotels, business houses, and the sick-room, where only a subdued light at times is required. It is very inexpensive, as it does not require any complicated commutating-switch, and is so simple that a child may regulate it.

In pointing out more clearly the distinctive features of my invention I would call attention to the value of making one contact higher than the other. It is to enable the higher contact to hold the spring-tongue or resilient electrode out of contact with the lower contact, thus securing a more certainly individualized contact when only one filament is to be illumined. By making the high contact narrow and the low one broad a better collective action in a rotary adjustment is obtained, as the yielding electrode bears flatwise on the low contact and edgewise on the high contact. By making these contacts also with cam-faces rising with the pitch of the screw-threads of the collar and socket contact is made in a manner harmonious with the advance of the screw-collar in the socket, so that the ordinary screw-socketed Edison lamp may be made available to act by a mere rotary adjustment of the globe in the socket.

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

1. An electric lamp comprising a globe having a plurality of filaments and a conducting screw-collar for the lamp-socket with one end of each filament connected to said screw-collar and separate insulated contacts arranged on the upper face of the neck of the globe and connected to the other ends of the filaments, said insulated contacts being made as cams having their upper faces inclined to correspond to the pitch of the screw-collar substantially as and for the purpose described.

2. An electric lamp comprising a globe having a plurality of filaments, and a conducting screw-collar for the lamp-socket with one end of each filament connected to said screw-collar, and separate insulated contacts arranged on the upper face of the neck of the globe, and connected to the other ends of the filaments, said contacts being made of different heights to coöperate separately or collectively with a yielding electrode in the lamp-socket substantially as and for the purpose described.

3. An electric lamp comprising a globe having a plurality of filaments and a conducting screw-collar for the lamp-socket, with one end of each filament connected to said screw-collar, separate insulated contacts arranged on the upper face of the neck of the globe and connected to the other ends of the filaments and made of different height as described, and a lamp-socket screw-threaded to mesh with the collar of the globe and having a yielding electrode arranged to bear separately or collectively upon the globe-contacts substantially as described.

4. An electric lamp comprising a globe having a plurality of filaments, and a conducting screw-collar for the lamp-socket with one end of each filament connected to said screw-collar, separate insulated contacts arranged in the upper face of the neck of the globe and connected to the other ends of the filaments and made of different heights as described and a lamp-socket screw-threaded to mesh with the collar of the globe, and having a yielding electrode arranged to bear separately or collectively upon the globe-contacts, the said yielding electrode and globe-contacts being adapted as described to be brought into separate or collective contact by a rotation of the globe in its socket as described.

5. In an electric lamp of the kind described, a globe having a plurality of filaments with terminal insulated contacts made of different heights as described whereby the higher of said contacts is made to hold a yielding electrode away from and out of contact with the next adjacent and lower contact as described.

6. In an electric lamp of the kind described, a globe having a plurality of filaments with two terminal insulated contacts, one of said contacts being made relatively broad and low and the other one narrow and high in relation to each other substantially as described.

7. In an electric lamp of the kind described, a globe having a plurality of filaments with terminal insulated contacts having contacting faces inclined to form cams substantially as described.

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