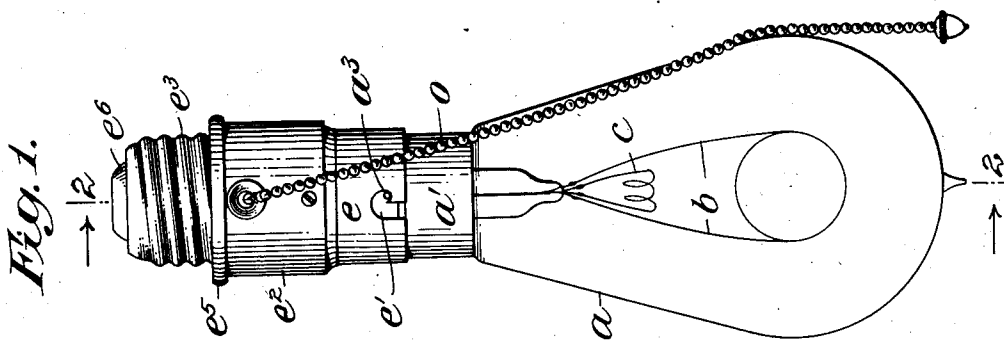
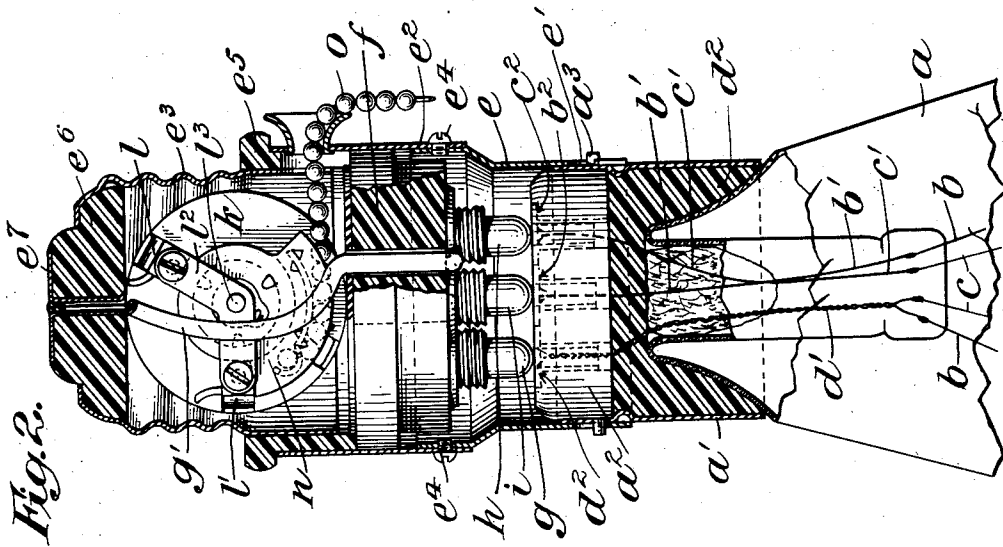


J. J. ROONEY.
 SOCKET FOR INCANDESCENT ELECTRIC LAMPS.
 APPLICATION FILED JAN. 5, 1910.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.

1,037,994.



Attest:
N. McPherson
Ellis J. Kruger

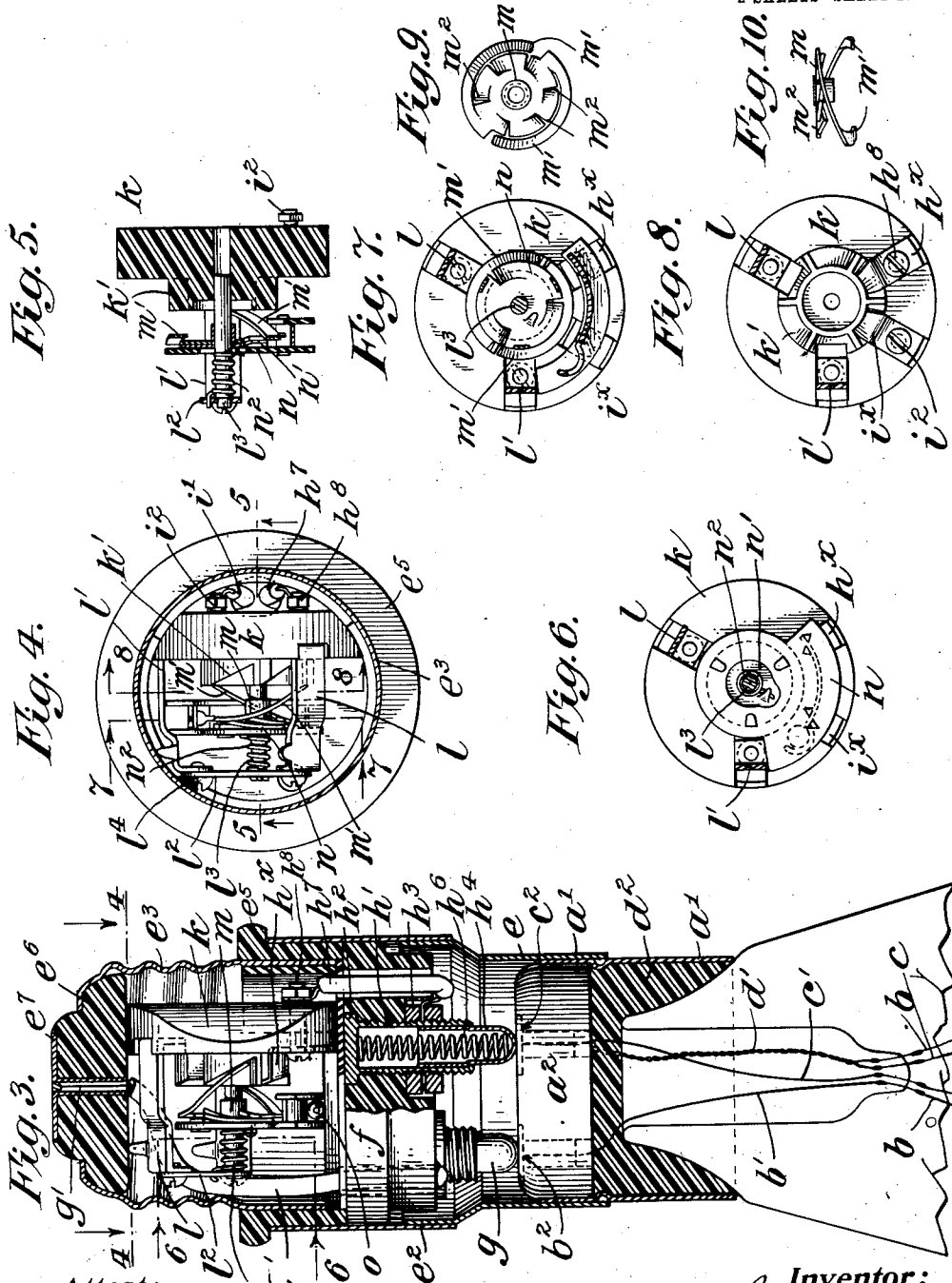
Inventor:
John J. Rooney
 by *Redding, Greeley & Austin*
 Attys.

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UNITED STATES PATENT OFFICE.

JOHN J. ROONEY, OF NEW YORK, N. Y.

SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

1,037,994.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed January 5, 1910. Serial No. 536,543.

To all whom it may concern:

Be it known that I, JOHN J. ROONEY, a citizen of the United States, residing in the borough of Brooklyn of the city of New York, in the State of New York, have invented certain new and useful Improvements in Sockets for Incandescent Electric Lamps, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to so-called "turn-down" incandescent electric lamps which have a plurality of carbon filaments so related and combined with each other that one or another, at will, may be made to glow so as to secure illumination of varying intensity.

The main purpose of the invention is to effect the changes in illumination, including the complete extinguishing of the light, through the operation of a "chain-pull" switch, in which successive pulls upon a pendant effect a change from one condition to another through the series. The invention, however, is not necessarily limited to the use of the "chain-pull," it being possible to operate the switch by other means, such as a button, and the invention therefore resides in various features of improved construction, whether the same be combined with a "chain-pull" or not, as will more clearly appear hereinafter with reference to the accompanying drawings, in which—

Figure 1 is a view in side elevation of a lamp which embodies the present improvements. Fig. 2 is a detail view of the lamp base and switch socket, partly in section and partly in elevation, a portion of the lamp bulb and filaments being also shown. Fig. 3 is a view similar to Fig. 2 but on a plane of section at right angles to that of Fig. 2. Fig. 4 is a detail view in section on the plane indicated by the line 4—4 of Fig. 3, looking in the direction of the arrows. Fig. 5 is a detail view in section on a vertical plane indicated by the line 5—5 of Fig. 4, looking in the direction of the arrows. Fig. 6 is a detail view in horizontal section on the plane indicated by the line 6—6 of Fig. 3, looking in the direction of the arrows. Fig. 7 is a detail view in section on the plane indicated by the line 7—7 of Fig. 4, looking in the direction of the arrows. Fig. 8 is a detail view in section on the plane indicated by the line 8—8 of Fig. 4, looking in the

direction of the arrows. Figs. 9 and 10 are detail views in front and side elevation of the rotatable contact plate.

In the embodiment of the invention shown in the drawings, the bulb *a* is mounted in a base *a'* and has a main filament *b* and a secondary filament *c*. One terminal of the main filament *b* is connected by a leading in wire *b'* with an insulated contact *b²* at the inner end of the lamp base *a'*. One terminal of the secondary filament *c* is connected by a leading in wire *c'* to an insulated contact *c²*, also exposed at the inner end of the base *a'*. The other ends of the two filaments *b* and *c* have a common electrical connection, the leading in wires *d'* thereof being twisted together and connected to an insulated contact *d²* exposed at the inner end of the base *a'*. The three contacts *b²*, *c²* and *d²* may be mounted in a common insulating block *a²* carried by the base *a'*, and they are preferably disposed symmetrically in said block. The base *a'* is adapted to be received by the lower portion *e²* of the switch-socket shell and has pins *a³* to enter bayonet slots *e'* in the edge of the shell, so that the bulb may be applied to and removed from the switch-socket readily. The shell of the switch socket is preferably made in three parts *e*, *e²* and *e³*, for convenience, the parts *e* and *e²* being secured together by screws *e⁴*, while the shell member *e³*, which may be screw threaded for engagement with the terminal socket, not shown, is insulated from the member *e²*, by an insulating sleeve *e⁵*. The member *e³* receives at its end an insulating block *e⁶*, which supports a contact *e⁷*. Electrical connection between the lamp and the line wires may be effected, as usual, through the shell member *e³* and the contact *e⁷* and corresponding contacts in the supporting or terminal socket, not shown, to which the line wires are connected.

In the shell member *e²* is supported an insulating block or disk *f*, in which are mounted contacts *g*, *h* and *i*, corresponding in number and arrangement, with the contacts *b²*, *c²* and *d²*, with which they coöperate. The contacts *g*, *h* and *i* are preferably yielding contacts so that proper coöperation with the contacts *b²*, *c²* and *d²* is insured, each of such contacts *g*, *h* and *i* being constructed, as is clearly shown, with respect to the contact *h*, in Fig. 3, comprising an externally screw threaded tube *h'*, having an enlarged con-

tact head h^2 and held in the insulating block f by nuts h^3 . A contact finger h^4 , shouldered externally and held from disengagement by the inward crimping of the tube h^1 , is held yielding outward by a spring h^5 .

The contact g is connected by an insulated wire g' with the terminal contact e^7 , the filament b being thus placed in electrical connection with the line wire.

- 10 The switch by which the connection of the contacts h and i with the other line wire is controlled is a rotary switch and is mounted above the insulating block f within the shell member e^3 . In the form shown in the drawings it comprises the following elements, to wit: an insulating block k which is preferably formed on its face with a circular series k' of fixed teeth, upon two of which are secured contact h^x , connected with spring contact h by insulated wire h^7 and post h^8 , and contact i^x connected with contact i by insulated wire i^7 and post i^8 ; a metallic frame comprising legs l and l' , cross-bar l^2 and stud l^3 , the frame being in electrical connection with the screw threaded shell member e^3 , as by a drop of solder at l^4 ; a rotating contact member m , mounted for rotation on the stud l^3 and in electrical contact therewith and therefore in electrical connection with the shell member e^3 and having preferably a plurality of spring contact fingers m' which coöperate with stationary teeth k' of the insulating block k and with the contacts h^x and i^x , and driving teeth m^2 ; and an actuating quadrant n , preferably of insulating material, mounted on the stud l^3 and having secured thereto a toothed driving member n' , preferably of metal, for coöperation with the rotatable contact m , said driving member having connected thereto the chain-pull o by which it may be rocked in one direction and also having connected thereto one end of a spiral spring n^2 which is mounted on the stud l^3 and has its other end connected to the cross-bar l^2 , by which spring the driving quadrant n is returned to normal position when the pull on the chain is relaxed. Successive pulls on the chain, therefore, act through the pawl and ratchet device formed by the quadrant n and teeth of the rotatable contact m , to rotate the contact member with a step by step movement, causing its spring contact fingers m' to pass successively over the contacts i^x and h^x and from contact therewith in succession upon the teeth k' of the insulating block k , which teeth form detents to prevent backward rotation of the contact member m . The latter is preferably provided with a plurality of contact fingers m' so that such fingers may act in succession without requiring a multiplicity of operations of the quadrant n between the end of each series of circuit closing or circuit opening movements and the beginning of another series.

In describing the operation of the switch, it will be assumed that the movable contact m stands with its contact fingers m' resting on the insulating block k . A pull upon the chain o then causes one of the fingers m' to move into contact with the contact i^x . In this position the circuit is completed from the terminal e^7 through wire g' , contact g , leading in wire b' , filament b , leading in wire d' , contact i , contact i^x , movable contact or circuit closer m and frame l to the terminal shell e^3 , thus short circuiting the secondary filament c and causing the main filament b to glow, giving the strongest illumination. Another pull on the chain o causes the contact finger m' of the circuit closer to move from the contact i^x to the contact h^x , the circuit through the contact i being therefore broken. The circuit is now completed from the terminal e^7 through contact g , leading in wire b' , filament b , common connection d' , filament c , leading in wire c' , contact h , contact h^x , circuit closer m , and frame l to the terminal shell e^3 . The relation between the two filaments is such that when they are thus connected in series the secondary filament c alone glows, giving the lesser illumination. A third pull upon the chain o causes the contact finger m' to move from the contact h^x , breaking the circuit through the filaments and making the lamp dark. The next pull on the chain causes the other contact finger m' to complete the circuit through the contact i^x and the main filament, short circuiting the secondary filament, as before.

It will be understood that the details of construction and arrangement of the switch-socket, switch and various contacts may be varied without departing from the spirit of the invention, which is not limited to the precise construction shown.

I claim as my invention:

1. In an incandescent electric lamp, the combination of a lamp bulb, having two filaments in series, a lamp base having three insulated contacts to which the free ends of the filaments and the common connection between the two are respectively connected, said contacts being independent of the base and insulated therefrom, a switch-socket to receive the lamp base, three contacts carried by the socket but independent thereof and insulated therefrom for coöperation with the contacts on the lamp base respectively and a controlling switch independent of all the said contacts and connections, from said switch to the contacts carried by the socket.
2. In an incandescent electric lamp, the combination of a lamp bulb, having two filaments in series, a lamp base having three insulated contacts to which the free ends of the filaments and the common connection between the two are respectively connected, said contacts being independent of the base

and insulated therefrom, a switch-socket to receive the lamp base, an insulating block carried by the switch-socket and three insulated contacts carried by said block and independent of and insulated from the socket for coöperation with the contacts on the lamp base respectively, and a controlling switch independent of all of said contacts,

and connections from said switch to the contacts carried by the socket.

This specification signed and witnessed this 16th day of November, A. D. 1909.

JOHN J. ROONEY.

Signed in the presence of—

ELLA J. KRUGER,

AMBROSE L. O'SHEA.