

No. 860,568.

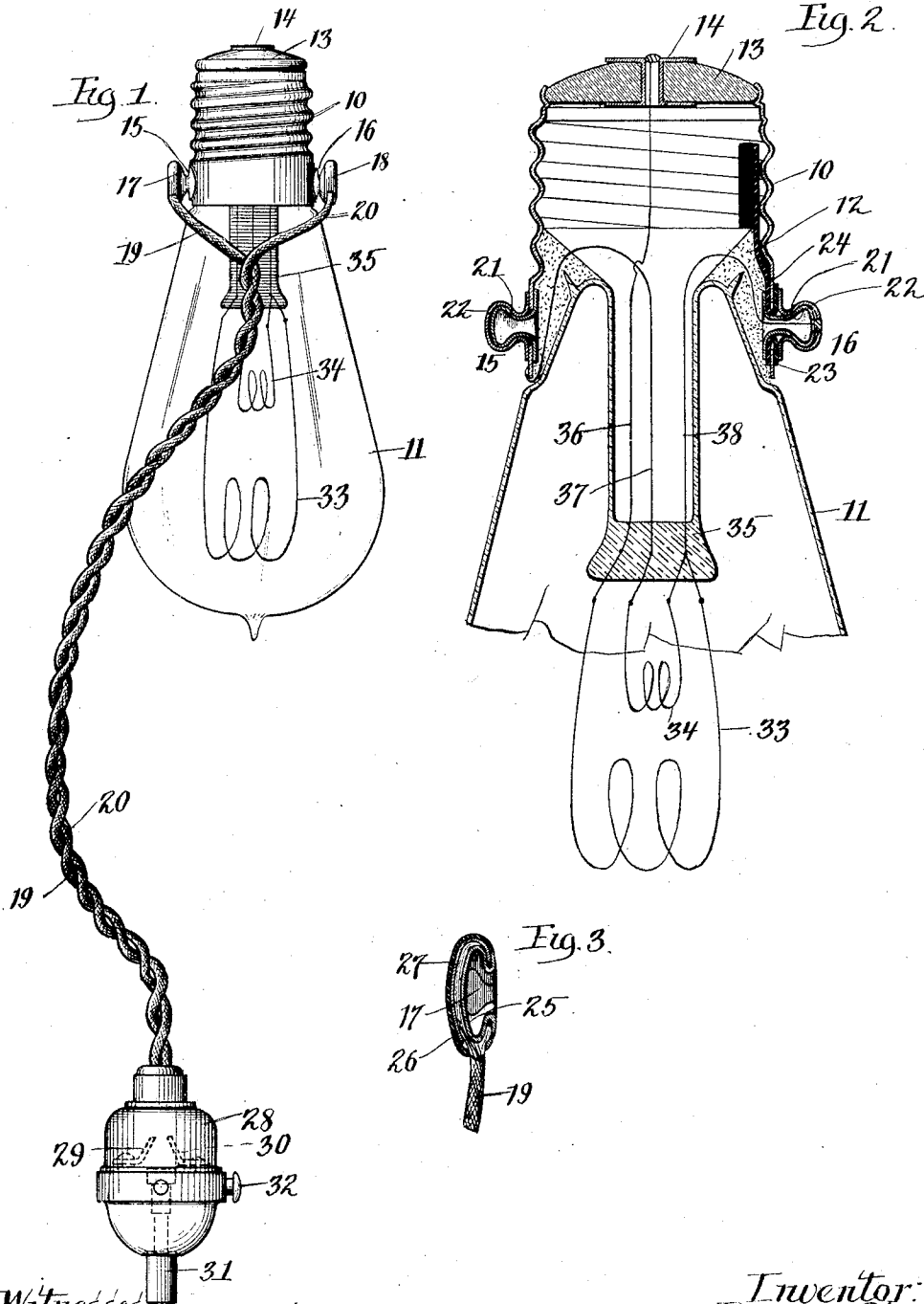
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W. J. PHELPS.

ELECTRIC INCANDESCENT LAMP AND CONNECTION THEREFOR.

APPLICATION FILED SEPT. 10, 1902.

3 SHEETS—SHEET 1.



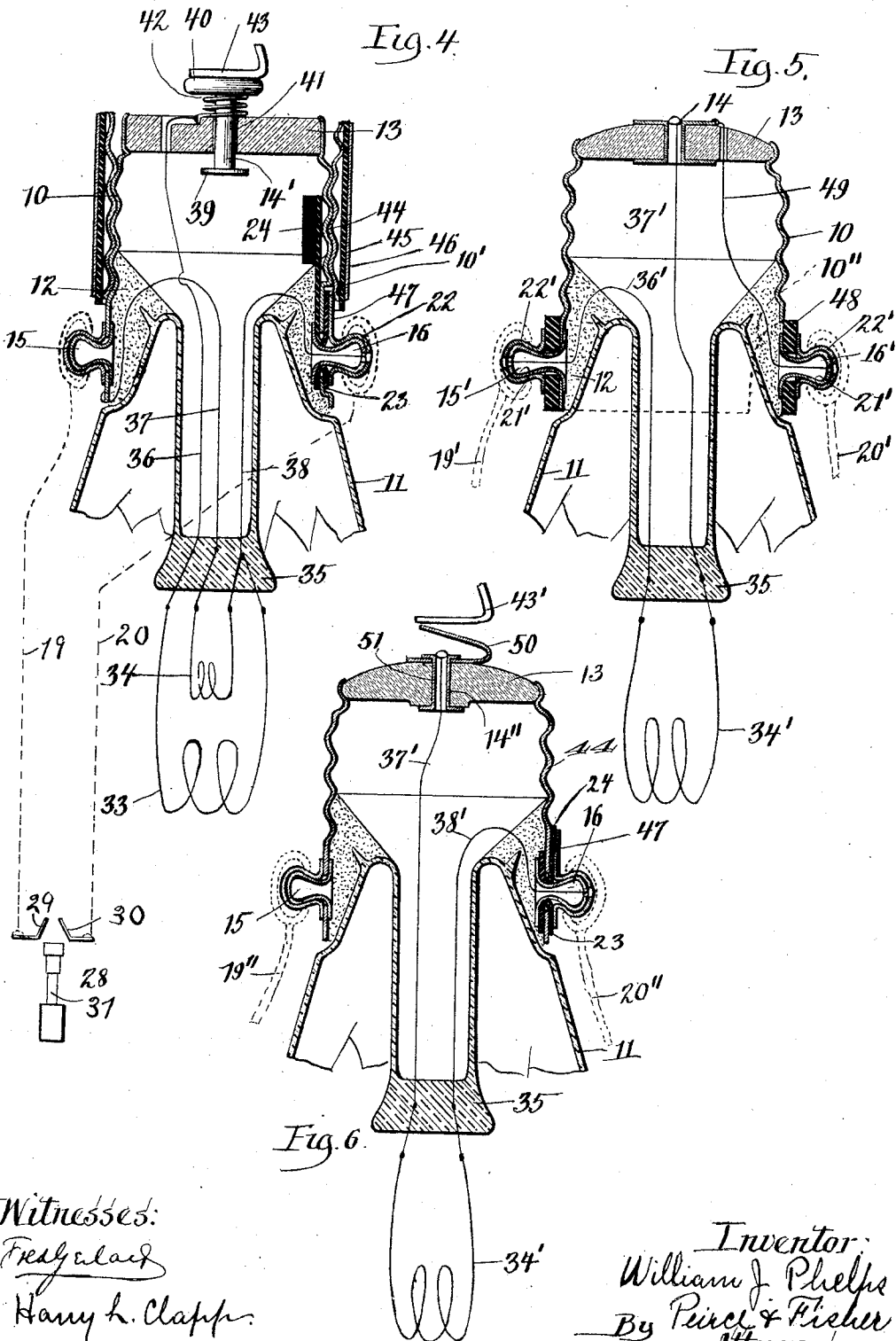
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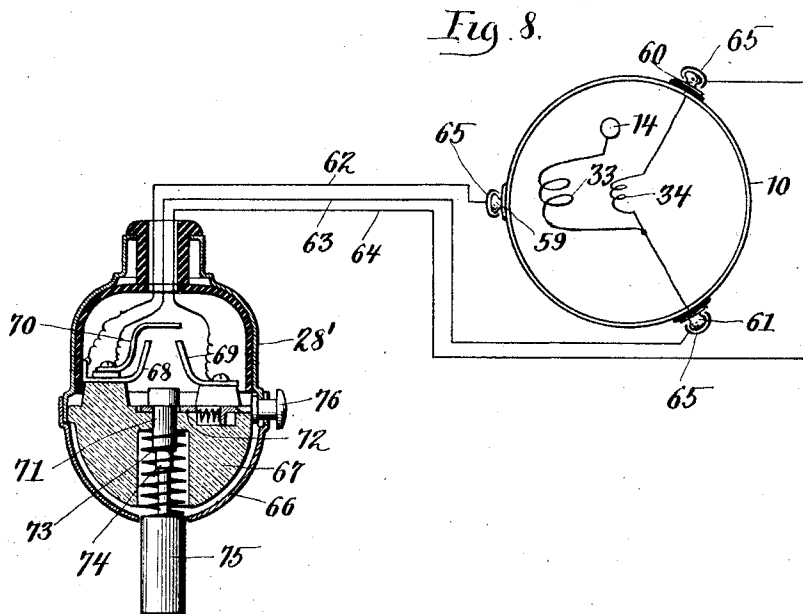
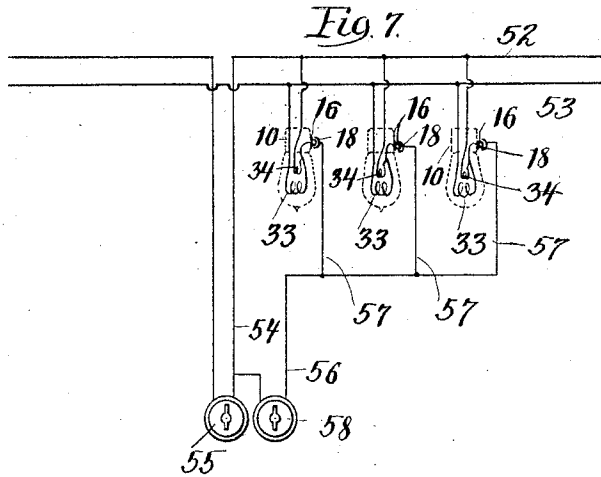


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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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ELECTRIC INCANDESCENT LAMP AND CONNECTION THEREFOR.

No. 860,568.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed September 10, 1902. Serial No. 122,850.

To all whom it may concern:

Be it known that I, WILLIAM J. PHELPS, a citizen of the United States, and a resident of the city of Detroit, county of Wayne, and State of Michigan, have invented certain new and useful Improvements in Electric Incandescent Lamps and Connections Therefor, of which the following is declared to be a full, clear, and exact description.

The invention relates to electric incandescent lamps more particularly to such lamps as have two or more incandescing filaments or filament sections and designed to emit light of varying intensity, such as disclosed in prior Letters Patent, of the United States issued to me, #603,705 May 10, 1898. In the construction shown in said Letters Patent the flow of current to the separate filament sections could be modified by turning the lamp within its socket to cause it to glow with different candle power.

The principal object of the present invention is to provide a lamp having two or more filaments or filament sections which will fit ordinary sockets already in use, together with connections therefor by which the flow of current to the separate filament sections may be modified at a point distant from the lamp itself, so that the lamp may be located within an exterior globe or upon a bracket out of reach or in other places where the lamp itself could not be conveniently manipulated within its socket, and so that the flow of current to the filament sections may be modified by a distant wall or other switch located at some convenient point.

The invention is however, not limited to a lamp having multiple filaments, and a further object of the invention is to provide a form of lamp having a single filament which will fit ordinary sockets now in use, together with connections therefor by which the lamp may be turned on and out by a wall or other switch located at some convenient point, or by which a phonograph or other similar device may be operated.

The invention consists in the features of construction, arrangement and combinations of parts set forth in the following description, illustrated in the accompanying drawings and more particularly set forth in the appended claims.

In the drawings, Figure 1 is a side elevation of one form of the improved lamp having two filaments and the connection therefor, certain parts being shown in section. Fig. 2 is a longitudinal section of the lamp shown in Fig. 1. Fig. 3 is a section of one end of the flexible conductor for the lamp. Fig. 4 is a longitudinal section of a modified form of lamp having two filaments. Figs. 5 and 6 are longitudinal sections of lamps each having a single filament which fall within the scope of the invention. Fig. 7 is a diagrammatic view of a series of lamps having multiple filaments controlled

by wall switches. Fig. 8 is a diagrammatic view of a lamp having two filaments, connections and switch for entirely controlling the flow of current through the filaments.

In Figs. 1 and 2 is shown a form of lamp adapted to fit the ordinary Edison socket now in common use. In this form, the lamp base comprises the metal screw shell 10 within the outer end of which the exhausted globe or vacuum bulb 11 of glass is held in place by the composition filling 12. The lamp base is further provided at its inner end with the insulating disk 13 which carries central lamp terminal 14. Means are provided for connecting the lamp base to a suitable conductor, and such means preferably comprises a two-part coupling, one of which parts is connected to the outer end of the lamp base, which, when the lamp is in position, projects beyond its socket, and the other part connected to the conductor. In the form shown, this coupling comprises ball and socket members, the ball members 15 and 16 being connected to the outer projecting end of the shell 10 of the lamp base at diametrically opposite points and the socket members 17 and 18 being connected to the ends of the flexible conductors 19 and 20. The ball members 15 and 16 preferably comprise separate inner and outer metal sections 21 and 22, which are flanged at their inner ends to embrace the edges of openings formed in the metal shell 10. The ball member 16 is however insulated from the metal shell 10 by strips of mica or insulating fiber 23 and 24 interposed between the flanges of the sections 21 and 22 and the metal shell 10. The socket members 17 and 18, as shown in detail Fig. 3 preferably comprise separate inner and outer metal sections 25 and 26 between which the bared end of the flexible conductors 19 and 20 is held in electrical contact. The inner section 25 of the socket is of spring metal and yieldingly held in position so that the socket 17 may be snapped over the ball member and firmly held in place and in electrical contact therewith by friction. The outer section 26 of the socket is preferably provided with an insulating covering 27 so that the socket members may be safely put on and taken off of the ball members. The flexible conductors 19 and 20 are insulated and preferably twisted together as shown, and are connected at their free ends by a switch 28 which, in the form shown in Fig. 1 is a pendent switch supported upon the ends of the conductors.

Switch 28 may be of any suitable or desirable construction but as indicated, comprises flexible contacts 29 and 30 to which the ends of conductors 19 and 20 are connected, the spring-held plunger or bridging member 31 and a spring-held latch 32 for the plunger 31.

The lamp filaments may be arranged in different

ways but preferably two filaments or filament sections (preferably of different candle power) 33 and 34 are supported within the vacuum bulb 11 from the stem or mount 35 of the globe. Three leading-in wires 36, 37 and 38 are connected respectively to the lamp terminal 14, the metal shell 10 and to the insulated ball member 16 which thus forms a third terminal. As shown, the insulating strip 24 preferably extends some distance upwardly into the shell 10 of the lamp base to prevent the leading-in wire 38 from coming in contact with the shell 10. Leading-in wire 38 is connected to the joined ends of the filaments 33 and 34 and wires 36 and 37 are connected respectively to the opposite ends of the filaments 33 and 34.

The lamp is designed for use with an electric lighting current of constant or fairly constant potential, and preferably filament 33 is of high candle power and adapted for the full voltage of the electrical supply while filament 34 is of small candle power. When the lamp is screwed into its socket and the switch 28 is open, the current for the electrical supply will pass by terminal 14 and leading-in wire 36 through both filaments 33 and 34 in series and by leading-in wire 37 to the metal shell 10, when the low power filament 34 alone will glow, while the high power filament 33 will act as a relatively dark and dead resistance or will only glow with much diminished power, for example dull red, and the amount of current used will be considerably cut down. If now the switch 28 be closed the low power filament 34 will be short circuited and the current will flow from lamp terminal 14 by leading-in wire 36 through the high power filament 33, by leading-in wire 38 to the ball member 16, through socket member 18 to conductor 20, through switch 28 to conductor 19, from thence to socket member 17 and ball member 15 to the metal shell 10 which forms the other terminal of the lamp. When the switch 28 is so closed the high power filament 33 alone will glow with the full candle power of the lamp. It will thus be seen that I have provided a form of lamp and connections having two filaments or sections, which will fit the ordinary socket in use and which may be placed within a globe or out of reach, together with connections therefor by which the flow of current through the filament sections may be modified at a point distant from the lamp itself. The flexible conductors 19 and 20 may hang down within easy reach or may be strung to any convenient point. It will also be observed that the improved lamp and connections may be placed in position and operated without disturbing the electrical supply wires in the brackets or in the walls and without disturbing the ordinary switches already in use.

The form of lamp illustrated in Fig. 4 is in most respects similar to the form illustrated in Figs. 1 and 2. The lamp terminal upon the insulating disk 13 is in the form of a metal plunger 14' provided with enlarged ends 39 and 40 and arranged to move axially within an opening 41 formed centrally in the insulating disk 13. A spring 42 is coiled about the plunger 14' and is interposed between the enlarged end 40 and the upper face of the disk 13, and tends in all positions of the lamp to press the end 40 of the lamp terminal 14' into contact with the socket terminal 43. In Edison sockets, as at present constructed, the screw shell 44 of the socket is surrounded by an insulating shell 45 of insulating fiber

and an outer metal shell 46. The insulating fiber shell 45 projects as indicated, below the lower end of the screw shell 44.

In the form of lamp shown in Fig. 4 the ball member 16 of the lamp base which is insulated from the metal shell 10, is positioned within a slightly recessed or depressed portion 10' of the metal shell 10, and the outer section 22 of the ball member is provided with an integral upwardly projecting contact piece 47 which, when the lamp is screwed completely into its socket will engage with the metal shell 44 thereof. When the lamp is so screwed completely into its socket the low power filament 34 will be short circuited and the current will pass from socket terminal 43 to lamp terminal 14' and from thence leading-in wire 36 through the high power filament 33, leading-in wire 38 to the ball terminal 16 and by contact piece 47 to the shell 44 which forms the other terminal of the lamp socket. High power filament 33 will then glow with the full candle power of the lamp. If now, the lamp be partially unscrewed from its socket contact between the piece 47 and the shell 44 will be broken, but the contact between socket terminal 43 and lamp terminal 45 will be maintained by the spring 42. In this position the current will pass through both filaments in series from lamp terminal 14' to leading-in wire 36 through filaments 33 and 34 and by leading-in wire 37 to the metal shell 10 of the lamp base. The low power filament 34 will then alone glow while the high power filament 33 acts as a resistance as already described. If now it is desired to cause the lamp to glow with full candle power, it is only necessary to close the switch 28 and the current will flow through the high power filament 33 alone, as previously described in connection with the form shown in Figs. 1 and 2. In this form, I have provided a lamp which, when screwed completely into its socket will burn like an ordinary lamp but with which the flow of current to the separate filaments may be modified to cause the lamp to glow with different candle power by unscrewing the lamp in its socket, or by partially unscrewing the lamp and attaching the flexible conductors 19 and 20 with switch 28 the flow of current may be modified from a point distant from the lamp itself. It is obvious that in this type of lamp other forms of axially movable lamp terminals may be employed without departure from the essentials of the invention, such as shown for example in Fig. 6 and hereinafter described.

In Fig. 5 is illustrated a form of lamp having a single filament 34' a strong ring 48 of fiber or other suitable insulating material is fitted about the outer end of the metal shell 10 of the lamp base and secured thereto in any suitable manner. The lower edge of the metal shell 10 is cut away at one point opposite the insulating ring 48 as indicated at 10''. The balls 15' and 16' are constructed as previously described, except that the flanges of the separate sections 22' and 21' embrace the edges of openings formed in the insulating ring 48. The ball 16' is located opposite the cut-away portion 10'' of the shell 10, while the inner section 21' of the ball 15' extends through the insulating ring 48 and into electrical contact with the metal shell 10. The leading-in wires 36' and 37' are connected respectively to the ball 15' and to the lamp terminal 14 and are also connected to the ends of the filament section 34'. A wire 49 leads from the lamp terminal 14 to the ball member or ter-

minial 16'. It will be observed that the balls 15' and 16' are thus in parallel with filament 34' of the lamp and by connecting two conductors 19' and 20' to the balls 15' and 16' in the manner previously described, another or distant lamp, an electric fan or similar device may be operated in parallel with the lamp in the socket. In this manner I provide means for operating an auxiliary electrical device from an ordinary lamp socket and without sacrificing the use of the lamp in the socket.

10 In the form shown in Fig. 6 a single filament 34' is employed connected by the leading-in wires 37' and 38' to the lamp terminal 14'' and to the ball 16 which is insulated from the shell 10 of the lamp base. The arrangement of the balls 15 and 16 in this form is similar 15 to that shown and described in connection with the form shown in Fig. 4, the insulated ball member or terminal 16 is provided with an upwardly extending contact 47 adapted to engage the metal shell 44 of the lamp socket when the lamp is screwed completely into 20 position. Another form of axially movable lamp terminal 14'' is shown which comprises a bent spring 50 held to the insulating disk 13 of the lamp base by a tubular rivet 51, which is flanged at each end and in electrical contact with the spring 50. When the lamp 25 is screwed completely into its socket it operates in the ordinary manner, current flowing from socket terminal 43' to lamp terminal 50, from leading-in wire 37' through the filament 34', then by leading-in wire 38' to the insulated ball member 16 and by contact piece 47 to the shell 44, which forms the other terminal of the socket. 30

By partially unscrewing the lamp in its socket and connecting conductors 19'' and 20'' to the balls 15 and 16 in the manner previously described, a phonograph or similar device may be connected and operated in 35 series with the lamp in the socket, or by providing the ends of the conductors 19'' and 20'' with the switch the lamp may be turned on and off from any distant or convenient point. In this manner I have provided a lamp and connections which will fit ordinary sockets 40 as are now in use and which may be turned on and off from a distant point without changing the wiring in the brackets or walls of the building.

In Fig. 7 is diagrammatically illustrated the application of the invention to a series of lamps arranged in 45 multiple arc between the circuit wires 52 and 53. Each lamp is provided with a high and a low power filament 33 and 34, the free ends of which are connected respectively to the conductors 53 and 52, while their joined ends are connected to the ball or terminal 16 which is 50 mounted as already described, upon the metal shell 10 of the lamp base, but which is insulated therefrom. The conductor 52 is provided in the ordinary manner with a loop 54 in which is interposed a wall or other suitable switch 55. A conductor 56 is provided with 55 branches 57 to each of which is attached a socket 18 arranged to engage the balls or terminals 16 of the lamp in the manner previously described. One end of the conductor 56 is connected to the loop 54 and a wall or other suitable switch 58 is interposed in said conductor 60 56. When the switch 55 is closed the current will pass through the high and low power filaments in series, and the latter alone will glow with much diminished power and with considerable economy in the amount of current used, when the switch 58 is also closed the 65 low power filaments 34 will be short circuited and the

high power filaments 33 alone will glow with the full candle power of the lamps. In this manner the lamps may be used with a system of wiring and brackets already in place, the conductor 56 with its branches 57 being strung along outside of the wall.

In Fig. 8 is diagrammatically illustrated another application of the present invention, in which the lamp base 10 is provided with three balls 59, 60 and 61, balls or terminals 60 and 61 being insulated from the lamp base while the ball 59 is in electrical contact 70 therewith. The lamp is provided with high and low power filaments 33 and 34, the joined ends of which are connected to the insulated ball or terminal 61 while the opposite ends of the filaments 33 and 34 are connected respectively to the lamp terminal 14 and to 75 the insulated ball or terminal 60, it being understood that the shell 10 forms the other lamp terminal in the usual manner. Three conductors, 62, 63 and 64 are provided with sockets 65 by which they may be connected to the balls 59, 61 and 60 in the manner previously described. Wire 62 is connected to the ball 80 59 which is in electrical contact with the shell 10, while wires 63 and 64 are connected to the insulated balls or terminals 61 and 60. A switch 28' is supported upon the ends of the wires 62, 63 and 64. This switch may 85 be of any suitable construction but preferably comprises an inclosing casing 66 within which are mounted upon a suitable insulating support 67, the spring contacts 68 and 69 which are connected respectively with 90 the wires 62 and 64. The spring contacts 68 and 69 are oppositely arranged as shown and above the gap between them is positioned a third spring contact 95 70 which is connected to the wire 63. A spring-held plunger or contact piece 71 is arranged to successfully bridge the gap between contacts 68 and 69 and between 100 contacts 68 and 70, and is held in its different successive positions by a spring-held latch plate 72 which engages successively with the shoulders 73 and 74 formed upon the plunger 71. Plunger 71 and latch 105 72 are preferably provided with insulating thumb pieces 75 and 76. When the plunger 71 is pressed part way in with the latch 72 in engagement with the shoulder 73, the circuit may be traced from lamp terminal 14 through the high and low power filaments 33 and 34 in series to the ball terminal 60 and by wire 110 64 to contact 69, through the plunger 71, to contact 68 and by wire 62 to ball 59 and shell 10, which forms the other terminal of the lamp. The low power filament will then alone glow as previously described, while the high power filament acts as a resistance. 115 When the plunger is pushed completely in with the latch 72 in engagement with the shoulder 74, the low power filament 34 will be short circuited and the current will be traced from lamp terminal 14 through the high power filament 33 to ball terminal 61, by 120 wire 63 to contact 70, through the plunger 71 and by contact 68 to wire 62 and thence back to the ball 59 and shell 10 of the lamp. The high power filament 33 will then alone glow with the full candle power of the lamp. In this form I have provided a lamp which 125 will fit the ordinary Edison socket now in common use, together with connections and a switch therefor by which the lamp may be turned on and off or up and down by a switch located within easy reach of the operator or at any convenient point. 130

Numerous changes can be made in the details of construction and the arrangement of certain parts may be reversed without departure from the essentials of the invention.

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

1. An electric incandescent lamp provided with a base having terminals for the reception of current from a suitable lamp holder, said base having coupling devices at
10 its outer, normally projecting end, said coupling devices being in electrical connection with the lamp terminals, substantially as described.

2. The combination with an electric incandescent lamp provided with a base having terminals for the reception
15 of current from a suitable lamp holder, said base having coupling devices at its outer, normally projecting end, said coupling devices being in electrical connection with the lamp terminals, of flexible conductors secured to said coupling devices, substantially as described.

3. The combination with an electric incandescent lamp provided with a base having terminals for the reception
20 of current from a suitable lamp holder, said base having coupling devices at its outer, normally projecting end, said coupling devices being in electrical connection with the lamp terminals, of flexible conductors secured to said coupling devices, and a switch interposed between said
25 conductors for modifying the flow of current to the lamp, substantially as described.

4. The combination with a multi-filament lamp, provided with a lamp base having terminals for the reception
30 of current from a suitable lamp holder, said base having coupling devices at its outer normally projecting end, said coupling devices being in electrical connection with the lamp terminals and filaments, of flexible conductors secured to said coupling devices, and a switch connecting
35 said conductors for modifying the flow of current to the multi filaments of the lamp, substantially as described.

5. A lamp base comprising means for engaging a socket and suitable lamp terminals and having a coupling member
40 inserted in an opening in its outer, normally projecting end, said coupling member comprising separate sections and said sections being flanged to embrace the edge of the opening, substantially as described.

6. A lamp base comprising means for engaging a suitable lamp holder and terminals for the reception of
45 current therefrom and having a coupling stud secured to its outer, normally projecting end, said coupling stud comprising separate flanged sections and a body of insulating material interposed between the flanges of said
50 sections to insulate the stud from the main body of the lamp base, substantially as described.

7. An electric incandescent lamp having a base comprising a screw axle for engaging the lamp holder and forming one of the lamp terminals, an end insulating disk
55 and a second terminal carried by said disk, a coupling stud secured to the outer, normally projecting end of said screw shell to which a conductor may be removably secured, said coupling stud being formed of separate flanged sections and a body of insulating material interposed between the flanges of said sections to insulate the stud
60 from the screw shell, substantially as described.

8. The combination with an electric incandescent lamp, having a suitable lamp base comprising means for engaging a socket and suitable lamp terminals, of a flexible
65 conductor and a coupling independent of said socket engaging means for securing said conductor to the outer normally projecting end of said lamp base, said coupling being in electrical connection with one of the lamp terminals.

9. An electric incandescent lamp having a suitable base, said base comprising means for engaging a socket and
70 suitable lamp terminals and having at its outer normally projecting end a coupling member independent of said socket engaging means and in electrical connection with one of the lamp terminals to which a flexible conductor
75 may be removably secured.

10. A combination with an electric incandescent lamp having a suitable base, said base comprising means for

engaging a socket and suitable lamp terminals, of a flexible
conductor, a coupling comprising inter-locking members, 80 one of which is secured to the outer normally projecting end of said lamp base and the other to said flexible conductor, the coupling member on the lamp base being in electrical connection with one of the lamp terminals.

11. The combination with an electric incandescent lamp
85 having a suitable base, said base comprising means for engaging a socket and suitable lamp terminals, of a flexible conductor, a coupling comprising inter-locking ball and socket members, one of which is secured to said flexible
90 conductor and the other secured to the outer normally projecting end of said lamp base and being in electrical connection with one of the lamp terminals.

12. The combination with an electric incandescent lamp having a suitable base, of a flexible conducting cord, a
95 coupling comprising inter-locking ball and socket members, said socket members having an insulating covering and being secured to the end of said flexible conducting cord, and said ball member being secured to the outer normally
100 projecting end of said lamp base and being in electrical connection with one of the lamp terminals.

13. A lamp base comprising means for engaging a socket and suitable lamp terminals and having at its outer normally projecting end one member of an inter-locking ball
105 and socket coupling, said coupling member being independent of the socket engaging means and in electrical connection with one of the lamp terminals.

14. A lamp base comprising means for engaging a socket and suitable lamp terminals and having at its outer normally projecting end the ball member of a ball and socket
110 coupling, said ball member being in electrical connection with one of said lamp terminals.

15. A lamp base comprising a cylindrical metal shell having an opening in the outer normally projecting end, one member of a ball and socket coupling comprising inner
115 and outer sections, said sections being flanged and embracing the edge of said opening.

16. The combination with a lamp base comprising a metal shell and with a flexible conducting cord, of an
inter-locking ball and socket coupling for connecting said cord and shell, said coupling members each comprising
120 inner and outer sections, the end of said conducting cord being secured between the sections of one of said members and the sections of the other of said members being flanged to embrace the edge of an opening formed in said shell.

17. The combination with a lamp base comprising a metal shell with a flexible insulated conducting cord, a
125 ball coupling member comprising inner and outer sections, said sections being flanged to embrace an opening formed in the outer end of said shell, a corresponding socket coupling member comprising inner and outer sections embracing the bared end of said conducting cord and an
130 insulating covering for said socket coupling member.

18. An electric incandescent lamp having a suitable base, said base comprising a screw shell for engaging a
135 socket and forming one of the lamp terminals, an end insulating disk and a second terminal carried by said disk, a coupling member secured to the outer, normally projecting end of said screw shell to which a conductor may be removably secured, said coupling member being in electrical connection with one of the lamp terminals. 140

19. An electric incandescent lamp having a lamp-base, said lamp base comprising means for engaging a suitable
socket and suitable lamp terminals, and two coupling members secured to the outer, normally projecting end
145 of said lamp base to which conductors may be removably attached, said coupling members being in electrical connection respectively with the opposite lamp terminals.

20. A base or cap for electric incandescent lamps comprising a screw shell for engaging a suitable socket and
150 forming one of the lamp terminals, an end insulating disk, a second lamp terminal mounted on said disk, two coupling members secured to the outer, normally projecting end of said screw shell to which conductors may be removably attached, one of said coupling members being insulated from said screw shell. 155

21. An electric incandescent lamp having a suitable base, said base comprising a screw threaded member for engaging a suitable socket and forming one of the lamp

terminals, an end insulating disk, an axially movable member carried by said disk and forming the other lamp terminal and two coupling members secured to the outer, normally projecting end of said lamp base to which conductors may be removably secured, said coupling members being in electrical connection respectively with the opposite lamp terminals.

22. An electric incandescent lamp having a suitable base or cap, said base or cap comprising a screw shell for engaging the socket and forming one of the lamp terminals, an end insulating disk and an axially movable member carried by said disk and forming the other lamp terminal, coupling members secured to the outer, normally projecting end of said screw shell to which conductors may be removably secured, one of said coupling members being insulated from said screw shell but arranged to engage and electrically contact with the lamp socket when the lamp is screwed into position and a lamp filament, the ends of which are connected respectively to said axially movable terminal and said insulated coupling member.

23. The combination with an electric incandescent lamp having a suitable base or cap, said cap comprising means for engaging a socket and suitable lamp terminals for the reception of current therefrom, of two coupling members secured to the outer, normally projecting end of said lamp base, said coupling members in electrical connection respectively with the opposite terminals of the lamp and insulated flexible conducting cords having means for engaging said coupling members.

24. The combination with an electric incandescent lamp having a suitable base, said base comprising socket engaging means and suitable lamp terminals, of two flexible insulating conducting cords, two couplings comprising interlocking members, one pair of coupling members being secured to the outer, normally projecting end of said lamp base and the other pair of coupling members being secured to the bared ends of said flexible conducting cords, and a switch between the opposite ends of said conducting cords.

25. A combination with an electric incandescent lamp having a suitable base, said base comprising socket engaging means and suitable lamp terminals, of two flexible insulating conducting cords, two couplings comprising interlocking members, one pair of coupling members being secured to the outer, normally projecting end of said lamp base and the other pair of coupling members being secured to the bared ends of said flexible conducting cords, and a pendant switch extending between and supported by the opposite ends of said flexible conducting cords.

26. A base or cap for incandescent lamps having means for engaging a suitable socket and having three terminals for the reception of current, one at least of said terminals forming a coupling to which a conductor may be detachably secured, said coupling terminal being independent of the socket engaging means.

27. A cap or base for electric incandescent lamps having means for engaging a suitable socket and three terminals, one at least of said terminals constituting a coupling member independent of said socket engaging means to which a conductor may be removably attached, and a second coupling member secured to said lamp base and being in electrical connection with one of the other of said lamp terminals.

28. An electric incandescent lamp having a suitable base or cap, said base or cap comprising a screw shell for engaging a suitable socket and constituting one of the lamp terminals, an end insulating disk, a second lamp terminal mounted in said insulated disk, a coupling member secured to but insulated from said screw shell and constituting a third lamp terminal, a second coupling member secured to and in electrical connection with said screw shell and a filament extending between said insulated coupling member and one of said first mentioned lamp terminals.

29. A cap or base for incandescent lamps comprising means for engaging a suitable socket and three lamp terminals for the reception of current, one at least of said terminals forming a coupling member independent of said socket engaging means to which a conductor may be removably secured, and one at least of said terminals being resilient.

30. An electric incandescent lamp having a suitable base or cap, said base or cap comprising a screw shell for engaging a suitable socket and forming one of the lamp terminals, an end insulating disk, a second, resilient, axially movable lamp terminal mounted upon said insulating disk, a coupling member secured to, but insulated from said screw shell and forming a third lamp terminal, said coupling member arranged to engage the metallic shell of the socket when the lamp is screwed into position, and a filament extending between said coupling member and said resilient terminal.

31. An electric incandescent lamp having a suitable base or cap, said base or cap comprising a screw shell for engaging a suitable socket and forming one of the lamp terminals, an end insulating disk, a second, resilient axially movable lamp terminal secured to said insulating disk, coupling members to which conductors may be removably secured, mounted upon the outer normally projecting end of said lamp base, one at least of said coupling members being insulated from said screw shell and constituting a third lamp terminal, said insulated coupling member having a metallic extension arranged to engage the metal shell of the socket when the lamp is screwed into position, and a filament extending between said insulated coupling member and said resilient lamp terminal.

32. The combination with an electric incandescent lamp having a suitable base or cap, said base or cap comprising means for engaging a suitable socket and two terminals for the reception of current therefrom, of a third terminal carried by said base for the transmission of current independently of the socket, engaging means and a conductor connected to said third terminal.

33. The combination of an electric incandescent lamp having a suitable base, said base comprising means for engaging a socket and two terminals for the reception of current therefrom, of two coupling members mounted upon said base, one of said coupling members constituting a third terminal for the transmission of current and the other of said coupling members being in electrical connection with one of said first mentioned terminals, and two flexible conductors having corresponding coupling members engaging the coupling members mounted upon said base.

34. The combination of an electric incandescent lamp having a suitable base, said base comprising means for engaging a socket and two terminals for the reception of current therefrom, of two coupling members mounted upon said base, one of said coupling members constituting a third terminal for the transmission of current and the other of said coupling members being in electrical connection with one of said first mentioned terminals, two flexible conductors having corresponding coupling members interlocked with the coupling members of the base and a switch interposed between said conductors.

35. The combination with an electric incandescent lamp having a suitable base, said base comprising a screw threaded member for engaging a socket and forming one of the lamp terminals, a second, resilient, axially movable lamp terminal carried by said base, a third terminal for the transmission of current independently of the socket engaging means mounted on said base and constituting a coupling member, a second coupling member mounted on said base and in electrical connection with one of said first mentioned terminals, conductors having corresponding coupling members interlocked with the coupling members of the base and a switch interposed between said conductors.

36. An electric incandescent lamp having two filaments or sections, a base therefor comprising the means for engaging a suitable socket and three terminals for the reception of current, one at least of said terminals being independent of said socket engaging means and forming a coupling member to which a conductor may be detachably secured, the joined ends of said filaments or sections being connected to one of said terminals and their opposite ends respectively to other of said terminals.

37. An electric incandescent lamp having two filaments or sections, a base or cap therefor having means for engaging a suitable socket and two terminals for the reception of current therefrom and a third terminal carried by

said base for the reception of current independently of said socket engaging means, the joined ends of said filaments or sections being connected to one of said terminals and their opposite ends connected respectively to the other of said terminals.

38. An electric incandescent lamp having two filaments or sections, a base or cap therefor comprising means for engaging a suitable socket and two terminals for the reception of current therefrom and a third terminal independent of said socket engaging means mounted upon an outer normally projecting end of said base to which a conductor may be removably secured.

39. An electric incandescent lamp having two filaments or sections, a base or cap therefor comprising means for engaging a socket and two terminals for the reception of current therefrom and two coupling members secured to the outer normally projecting end of said base to which conductors may be removably secured, one at least of said coupling members comprising an additional terminal for the reception of current independently of the socket.

40. An electric incandescent lamp having two filaments or sections, a base or cap therefor comprising a screw threaded member for engaging a suitable socket and constituting one of the lamp terminals, an end insulating disk and a second lamp terminal carried by said disk, and a third terminal independent of said socket engaging means mounted upon the outer normally projecting end of said base, said third terminal constituting a coupling member to which a conductor may be detachably secured.

41. An electric incandescent lamp having two filaments or sections, a base or cap therefor comprising a screw shell for engaging a suitable socket and constituting one of the lamp terminals, an end insulating disk and a second terminal carried by said disk, two coupling members mounted upon said screw shell, one of said coupling members being insulated from said shell and constituting a third terminal and the other of said coupling members being in electrical contact with said screw shell.

42. An electric incandescent lamp having two filaments or sections, a base or cap therefor having three terminals for the reception of current and having means engaging a suitable socket, one at least of said terminals forming a coupling member independent of said socket engaging means to which a conductor may be removably secured, and one at least of said terminals being resilient and axially movable.

43. An electric incandescent lamp having two filaments or sections, a base or cap therefor comprising a screw shell for engaging a suitable socket and constituting one of the lamp terminals, an end insulating disk, an axially movable resilient member mounted on said disk and forming a second lamp terminal, two coupling members mounted upon the outer normally projecting end of said shell to which conductors may be removably secured, one of said coupling members being in electrical contact with said

shell and the other being insulated therefrom and arranged to engage the shell of the socket when the lamp is screwed into position.

44. The combination with an electric incandescent lamp having two filaments or sections and having a suitable base or cap, said base or cap comprising means for engaging a suitable socket, and two terminals for the reception of current, of a third terminal carried by said base for the transmission of said current independent of said socket, a flexible conductor connected to said third terminal and a switch connected to said conductor for modifying the flow of current to the separate filaments or sections.

45. The combination with an electric incandescent lamp having two filaments or sections, a base or cap therefor comprising means for engaging a socket and two terminals for the reception of current, therefrom, of two coupling members mounted on said base, one of said coupling members constituting a third terminal for the transmission of current and the other of said coupling members being in electrical connection with one of said first mentioned terminals, two flexible conductors having corresponding coupling members inter-locked with the coupling members of the base and a switch interposed between said conductors.

46. The combination with an electric incandescent lamp having two filaments or sections, a base or cap therefor comprising a screw threaded member for engaging a suitable socket and forming one of the lamp terminals, an end insulating disk and a second lamp terminal mounted upon said disk, two coupling members mounted upon said base, two flexible insulated conductors having corresponding coupling members inter-locked with the coupling members of the base and a pendent switch interposed between and supported by said flexible conductors.

47. The combination with an electric incandescent lamp having two filaments or sections, a base therefor comprising a screw shell for engaging a suitable socket and forming one of the lamp terminals, an end insulating disk and an axially movable resilient member mounted on said disk and forming a second lamp terminal, two coupling members mounted upon the outer normally projecting end of said screw shell, one of said coupling members being in electrical contact with said shell and the other being insulated therefrom and constituting a third lamp terminal, said insulated coupling member being arranged to engage the metal shell of the socket when the lamp is screwed into position, two flexible conductors having corresponding coupling members inter-locked with the coupling members of the base and a switch interposed between said conductors.

WILLIAM J. PHELPS.

Witnesses:

ALBERTO ADAMICK,
LILLIAN PRENTICE.