F. M. EULER.

LAMP.

APPLICATION FILED NOV. 4, 1910.

1,004,002. **Patented Sept. 26, 1911.**

Fig. 1.

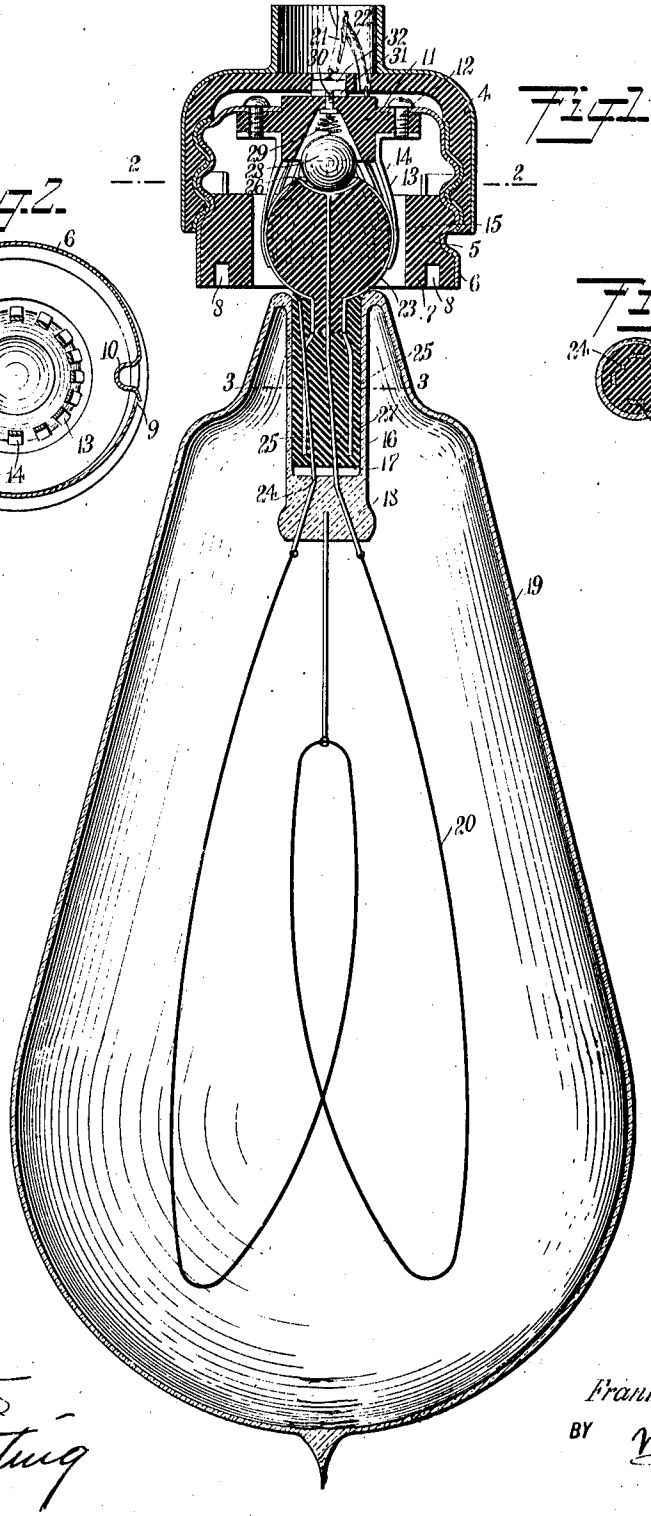

Fig. 2.

Fig. 3.

WITNESSES

INVENTOR

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LAMP.

1,004,002. Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed November 4, 1910. Serial No. 590,616.

To all whom it may concern:

Be it known that I, FRANK M. EULER, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented a new and Improved Lamp, of which the following is a full, clear, and exact description.

This invention relates to a new and improved adjustable and quick-detachable incandescent lamp.

While there are now on the market and in common use many devices for adjusting incandescent lamps to obtain either a closer or a less intense application of the rays of light therefrom, these generally are limited to adjustment of the stand or bracket for the lamp, and in certain cases are found to be inconvenient, and thus do not give the best results desired.

An object, therefore, of this invention is to provide a new and improved lamp of any suitable type, such as an incandescent lamp, in which the lamp proper, and in this case the bulb, is adjustable to a plurality of angles, whereby the light may be directed to any desired point.

A further object of this invention is to provide a lamp in which the bulb or lamp proper can be quickly detached without the necessity of unscrewing the plug, which is usually necessary in such types of lamps as are now found on the market.

A still further object of this invention is to provide a lamp which is detachable from its plug, the plug being adapted to be normally locked in the usual socket, but capable of being detached therefrom, if desired, in extreme cases.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a vertical section; Fig. 2 is a section on the line 2—2 of Fig. 1; and Fig. 3 is a section on the line 3—3 of Fig. 1.

Referring more particularly to the separate parts of the device, 4 indicates a socket, of any usual character, which is secured in any suitable manner to either an adjustable or stationary support. This socket 4 is provided with the usual screw-threaded interior, which is adapted to be engaged by a plug 5 having a corresponding screw-thread, whereby it may be attached to the socket 4. While the plug 5 may be of any suitable character, it preferably includes an outer metal casing 6 and an inner ring 7, of any suitable insulating material, which is screw-threaded to correspond to the screw-thread of the casing 6, and adapted to be unscrewed and removed therefrom by a suitable instrument inserted in a plurality of openings 8, so that access may be had to the interior of the casing 6. The metal of the casing 6 is cut at one or more points, as indicated at 9, so that when the plug 5 is once screwed into the socket 4, the metal, by its expanding tension, due to its cylindrical form, will spring outwardly and engage the inner surface of the socket 4, locking the plug 5 in the socket 4, so that it cannot be screwed out from the socket 4 in the usual manner by manipulation of the hand. It will thus be seen that the plug 5 is normally locked in the socket 4, but under abnormal conditions, it may be desired to remove the plug 5 from the socket 4, so that, for this purpose, I have provided the flexible portions of the casing 6, which are adapted to expand outwardly, with loops 10, projecting into the interior of the casing 6, so that when the ring 7 is removed, a suitable instrument can be placed in these loops, which are shown as diametrically opposed to each other, and by twisting this instrument in the act of unscrewing the plug 5 from the socket 4, these flexible portions will be drawn inwardly, thereby removing their ends from engagement with the interior of the socket 4, and permitting the plug 5 to be readily unscrewed from the socket 4.

The plug 5 is provided with an insulating block 11, to which is detachably secured in any suitable manner, as by means of screws 12, a holder 13. This holder 13 may be of any suitable form, but preferably consists of a circular member having a plurality of concave spring fingers 14, which are adapted to permit the insertion of a ball or knob 15 and grasp the same, when once inserted, in a yielding manner, so as to hold it firmly and yet permit it to be removed by the exertion of an abnormal force. The knob 15 forms part of a support 16, which extends into an opening 17 in a nipple 18 of the

lamp proper 19, the latter being in this case shown in the form of an incandescent bulb having a suitable illuminating filament 20. The support 16, with its spherical knob 15, thereby forms, with the holder 13, a universal joint between the plug 5 and the lamp 19, permitting an adjustment of the latter relative to the plug 5 and the socket 4 in a variety of directions.

It is desired that the electrical connections shall be at all times maintained between the filament 20 and lead wires 21 and 22 extending from any suitable source of electricity to the socket 4. For this purpose, the outer surface of the knob 15 is provided with a metallic conducting casing 23, which is connected with one end of the filament 20 by a suitable conductor 24, and is adapted to form, together with the metallic conductor 13, the screws 12 and the metallic casing 6, an electrical connection between one end of the filament 20 and one of the lead wires 22.

Projecting arms 25 may be provided on the casing 23 of the knob 15, which extend into the portion of the support 16 which is located in the nipple 18, for the purpose of reinforcing the insulating body thereon. The opposite end of the filament 20 is connected to a concave conducting plate or cup 26, by means of a suitable conductor 27. This cup is preferably located at the upper end of the knob 15, and extends in a concavity formed therein, and forms an adjustable contact with a metallic ball 28, which is normally held in engagement with the plate 26 by means of a metallic spring 29, which is connected to a contact screw or terminal 30. The latter is secured to a contact plate 31, which, together with the screw 30, engages a contact plate 32 connected to the lead wire 21. The opposite end of the filament 20 is thus connected electrically to the lead wire 21 in any position of adjustment of the bulb or lamp 19.

The utility of the device will be readily understood when taken in connection with the above description. The plug 5 is normally screwed into the socket 4, which is locked either movably or stationarily on any suitable support, and when once inserted, will be normally located in position, so that it cannot be detached by mere operation or unscrewing of the plug. If desired to remove it under abnormal conditions, however, this can be done by removing the insulating ring 7 and then forcing the flexible locking portions of the casing 6 inwardly by a suitable tool in the act of unscrewing the plug. The plug forms, with the socket 4, a supplementary socket, by means of the holder 14, to which the lamp proper or bulb can be detachably connected by the mere insertion of the knob 15. When the knob 15 is once inserted, the bulb 19 can be moved relative to the plug and adjusted to a variety of positions, and still at all times maintain positive electrical connections between the filament 20 of the bulb and the lead wires 21 and 22 of the socket.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, alterations and modifications which I may make within the scope of the appended claims.

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

1. The combination with a socket, of a plug adapted to engage said socket, said plug having portions thereof normally tending to spring outwardly in locking engagement with said socket, said portions being so formed as to provide loops which may be engaged by a suitable instrument to remove said portions from locking engagement with said plug.

2. The combination with a socket, of a plug adapted to engage said socket, said plug having portions thereof normally tending to spring outwardly in locking engagement with said socket, said portions being so formed as to provide loops which may be engaged by a suitable instrument to remove said portions from locking engagement with said plug, said plug having a removable collar adapted to normally conceal said portions.

3. The combination with a plug, of a holder on said plug, a bulb, means adapted to engage said holder for supporting said bulb on said plug, said bulb having a filament therein, electrical connections between said filament and said plug through said holder, and a spring-pressed ball electrically connected to said filament.

4. The combination with a plug, of a socket in said plug, a knob adjustably mounted in said socket, a bulb connected to said knob, said knob having a metal portion, said bulb having a filament, electrical connections between said filament and said metal portion of said knob, a plate on said knob, and electrical connections between said plate and said filament.

5. The combination with a plug, of a socket in said plug, a knob adjustably mounted in said socket, a bulb connected to said knob, said knob having a metal portion, said bulb having a filament, electrical connections between said filament and said metal portion of said knob, a plate on said knob, electrical connections between said plate and said filament, said metallic portion of said knob being connected electrically with said plug, a ball engaging said plate, and a spring holding said ball in engagement with said plate.

6. The combination with a plug, of a

holder connected to said plug, comprising a plurality of concave spring fingers, a bulb having a filament therein, a knob connected to said bulb, adapted to engage in the socket formed by said spring fingers of said holder, whereby a universal detachable connection is formed between said bulb and said socket, said knob having a metallic casing engaging said holder and also having a concave metallic plate, a ball engaging said plate, a spring holding said ball in engagement with said plate, and electrical connections between said filament and said plate and said filament and said casing.

7. The combination with a socket, of a plug adapted to engage said socket, locking means for fixedly securing said plug to said socket, and a bulb having a universal connection with said plug, whereby said bulb can be movable relative to said socket without disturbing the connection of said plug to said socket.

8. The combination with a plug, of a bulb adapted to have an adjustable connection with said plug, said bulb having a knob thereon, and a spring holder on said plug, comprising a plurality of spring fingers adapted to form a universal ball-and-socket connection with said knob, normally holding said knob by its own resilience, and adapted to yield under pressure from said knob in either direction, so as to permit said knob to enter or leave said holder.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK MICHEAL EULER.

Witnesses:

JOHN REUTER, Jr.,

FRANK L. WAGNER.