A. J. WEST.

ELECTRIC LAMP.

APPLICATION FILED NOV. 26, 1915.

1,232,741. Patented July 10, 1917.

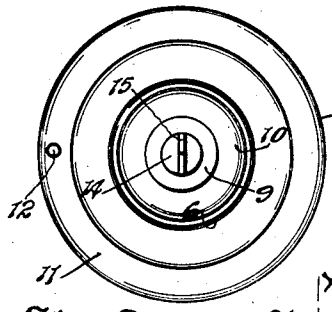


Fig. 2.

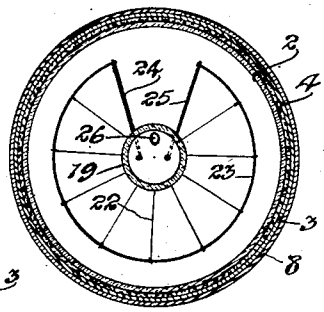


Fig. 3.

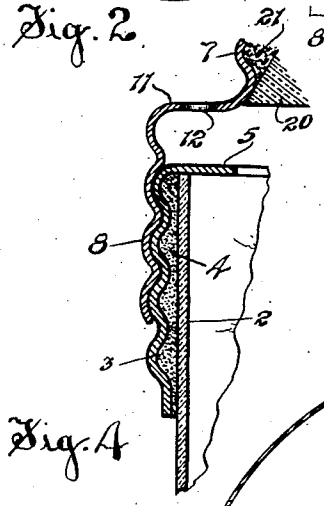


Fig. 4.

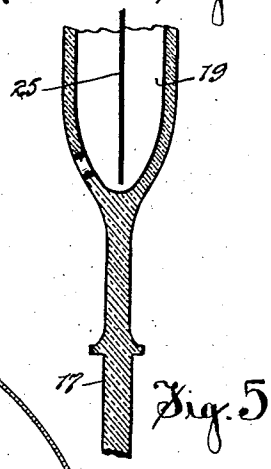


Fig. 5.

Fig. 1.

WITNESSES

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UNITED STATES PATENT OFFICE.

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ELECTRIC LAMP.

1,232,741. Specification of Letters Patent. Patented July 10, 1917.

Application filed November 26, 1915. Serial No. 63,634.

To all whom it may concern:

Be it known that I, ANDREW JOHN WEST, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Electric Lamps, of which the following is the specification.

The invention relates to improvements in electric lamps, particularly to that class of incandescent electric lamp wherein the lamp globe contains a gas, and the object of the invention is, primarily, to construct a lamp arranged such that the filament thereof can be readily removed and without damaging the remaining parts of the lamp, and secondarily, while so constructing the lamp, to provide a means whereby the repaired lamp can be readily recharged with gas and sealed to retain the gas.

With the ~~above~~ objects in view the invention consists essentially in a lamp having the globe thereof detachably secured to the lamp filament carrying head and providing in the head, suitably closed inlets and outlets for the admission of gas and the escape of air, the parts being arranged and constructed as hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawing in which:

Figure 1 represents a vertical sectional view longitudinally through a lamp, constructed in accordance with my invention.

Fig. 2 represents a plan view of the head of the lamp.

Fig. 3 represents a horizontal sectional view through the lamp, the section being taken in the plane denoted by the line X—X′ Fig. 1.

Fig. 4 is an enlarged detailed vertical sectional view through a portion of one side of the lamp, the section passing through the air outlet opening, and the globe in this section having been screwed down to open the outlet opening.

Fig. 5 represents an enlarged detailed vertical sectional view through the support for the filament, the section being taken in the plane denoted by the line Y—Y′ Fig. 1.

In the drawing like characters of reference indicate corresponding parts in each figure.

Prior to describing my invention, I wish to state that recently electric lamps have been made with the globes charged or filled with a gas, such lamps being to all intents and purposes manufactured and constructed in the same manner as the ordinary electric lamp, with the exception that in the ordinary electric lamp the interior of the globe presents a vacuum surrounding the filament, whereas in the gas filled lamp the globe is filled with gas instead of being a vacuum globe. To retain the vacuum in the lamps it has been the practice to permanently seal the globe to the lamp head with the result that upon the filament becoming useless the complete lamp had to be discarded. The practice of permanently fastening the head to the globe has been followed by manufacturers in the gas filled lamp with the result that this type of lamp has also to be discarded upon the filament becoming useless.

In my style of lamp, which is of the gas filled type, I take advantage of the feature that it is not necessary to have a vacuum, as it is only necessary to retain the gas in the globe under its own pressure. Accordingly, I make my lamp so that the globe can be removed to allow of the renewal of the filament, and arrange it such that when the globe is attached to the head the joint is tight enough to retain the gas admitted. Further, I provide in the head an easy means for refilling the lamp with gas and retaining the gas after it has been admitted.

Referring now to the drawing;

1 represents the glass globe or bulb of the lamp which is fitted with the usual cylindrical, open ended glass neck 2.

To the upper end of the neck I secure a screw threaded band 3 which is fastened to the neck by a self setting composition, such as cement, indicated at 4. The upper edge of the band is turned in over the neck to provide an annular flange 5 for a purpose later described.

6 represents the head of the lamp which has the body portion thereof screw threaded as indicated at 7, the lower end thereof enlarged and screw threaded as indicated at 8 and the upper end thereof contracted and carrying a nipple 9, the nipple being heavily insulated from the material of the head by means of inserted insulation 10.

The screw threaded body portion 7 of the head is arranged to screw into the usual

lamp socket (not shown), and at the point where the body portion enlarges into the enlarged lower end I form a shoulder or seat 11, and in the seat I provide an air exit opening 12.

The band 3 is designed to screw into the enlarged lower end 8 of the head and when screwed tightly in the flange is arranged to seat tightly on the seat and effect the closing of the opening 12.

The nipple 9 has the opening therein flared at the top, as shown at 13, and is interiorly screw threaded to receive a metallic screw plug 14 having the upper end thereof flared to fit the flare 13. A cross cut 15 is formed in the upper face of the plug whereby it can be readily screwed down or removed by means of a screw driver or similar tool. By flaring both the plug and the nipple I am able to retain a tight joint at this point, once the nipple is screwed tightly down.

The head carries, as is usual, a support 16 for the lamp filament. This support is preferably formed from glass and has the lower end thereof presenting a solid arm 17 with an end knob 18, the upper portion thereof in the nature of a hollow tube 19 carrying the arm and the upper end thereof enlarged as indicated at 20, and permanently fixed, such as by cementing, as shown at 21, within the body of the head piece.

The knob 18 is located centrally of the globe and carries a number of outstanding, radially disposed hangers 22 on which the lamp filament 23 is mounted.

24 is a feed wire passing downwardly through the tubular body portion 19 of the support and having the upper end thereof permanently and electrically secured to the nipple and the lower end projected through the glass body of the support and connected with one end of the lamp filament.

25 is a second feed wire passing downwardly through the tubular top portion 19 of the support and having the upper end thereof connected electrically and permanently to the body of the head piece and the lower end thereof projecting through the glass body of the support and fastened permanently to the other end of the filament.

26 is an entrance opening formed in the lower end of the tubular portion of the support 16.

The above completes the description of the parts of my lamp, but it is to be understood that before this is used the globe has to be filled with a gas, which gas is introduced into the globe through the opening 26, and after the plug 14 has been removed.

With a lamp of this construction it will be seen that upon the filament being rendered useless one can readily unscrew the globe from the head and withdraw the filament through the neck of the globe. After a new filament has been substituted the globe can be replaced. At this time, however, it is necessary to recharge the globe with gas. This is done by removing the screw plug 15 and recharging the globe with gas through the opening 26. In the operation it is necessary to slightly unscrew the globe to withdraw the flange 5 and free the opening 12. As the gas is passed into the globe through the ferrule, tube 19 and opening 26 the air is forced out by the gas through the opening 12, it being understood that the admitted gas is heavier than the air. Upon the globe being filled with the gas it is screwed tightly in to make the flange close the opening 12 and afterward the plug 15 is inserted and screwed tightly down.

Although I have described a special construction which allows the globe to be readily removed from the head without damaging any of the parts and while allowing of the withdrawal of the filament, still it will be understood that I do not wish to be restricted to the precise screw joint shown, as this construction could be readily modified without in the least departing from the spirit of this invention, and further, I wish it to be understood that I do not wish to be restricted to the manner in which I allow of the recharging of the globe with gas while utilizing a removable globe. This could be readily accomplished in a variety of ways which would readily suggest themselves to one familiar with the manufacture of electric lamp globes.

What I claim as my invention is:—

1. An incandescent electric lamp comprising, a globe having an open ended neck, a contact making, filament carrying head detachably secured to the open end of the neck and provided with inlet and outlet openings, a removable plug closing the inlet opening and said outlet opening being arranged to be closed by the attaching connection between the globe and the head.

2. In an incandescent gas filled electric lamp, a globe fitted with an open ended neck, a screw threaded band attached to the neck and having the upper end thereof flanged inwardly over the upper end of the neck, a head having the body portion thereof screw threaded, the upper end thereof contracted and the lower end thereof enlarged and screw threaded to receive the band of the neck and provided, in the enlargement, with an escape opening normally closed by the flange, a removable screw plug carried by the upper end of the head and insulated therefrom, a filament support mounted in the body portion of the head and extending downwardly into the globe and having the upper portion thereof tubular and communicating with the interior of the head and the

tubular portion communicating at the lower end with the interior of the globe through an entrance opening provided, a filament suspended from the lower end of the support and withdrawable through the neck of the globe and feed wires connecting the filament in circuit with the plug and the head.

Signed at Winnipeg this 27th day of October 1915.

ANDREW JOHN WEST.

In the presence of—
G. S. ROXBURGH,
S. SILVERT.