H. HUBBELL.

LOCKING LAMP.

APPLICATION FILED APR. 9, 1913.

1,138,293.

Patented May 4, 1915.

2 SHEETS—SHEET 1.

Fig. 1

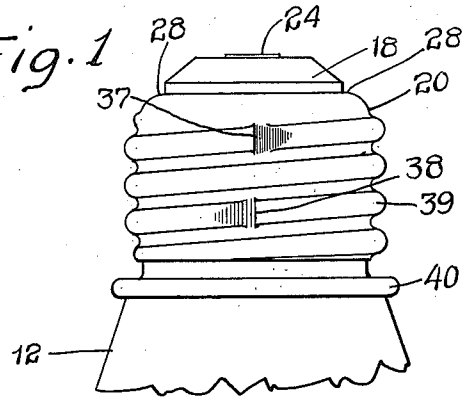


Fig. 2

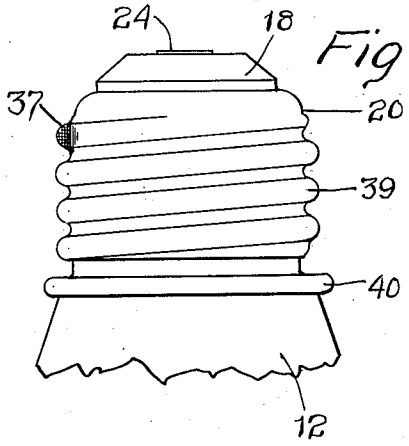


Fig. 3

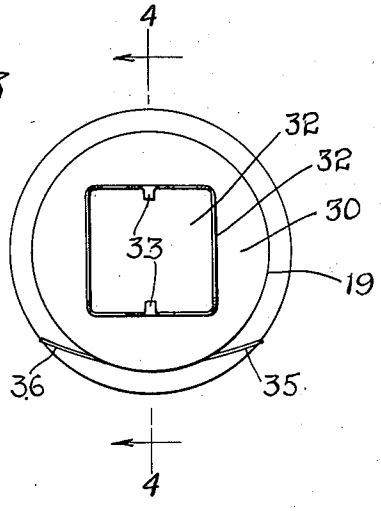


Fig. 4

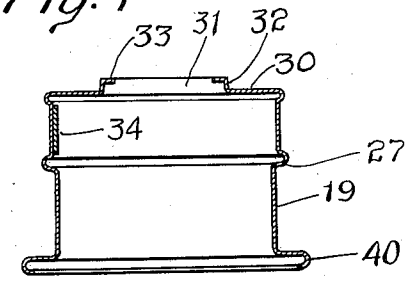
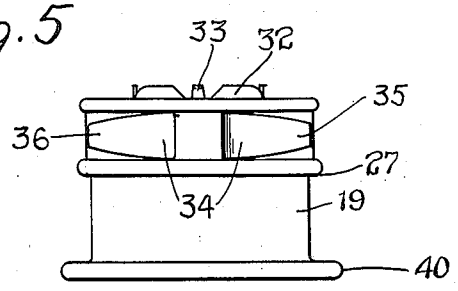


Fig. 5



WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 6

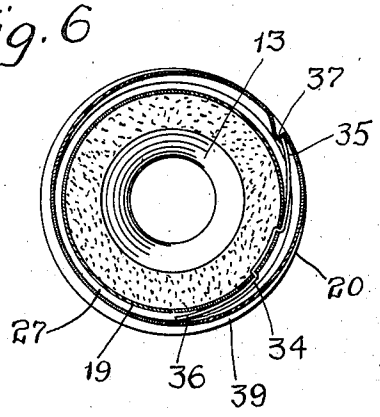


Fig. 8

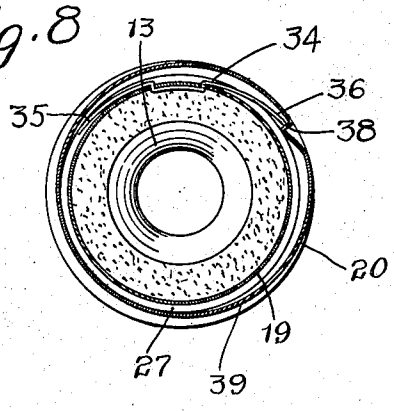


Fig. 7

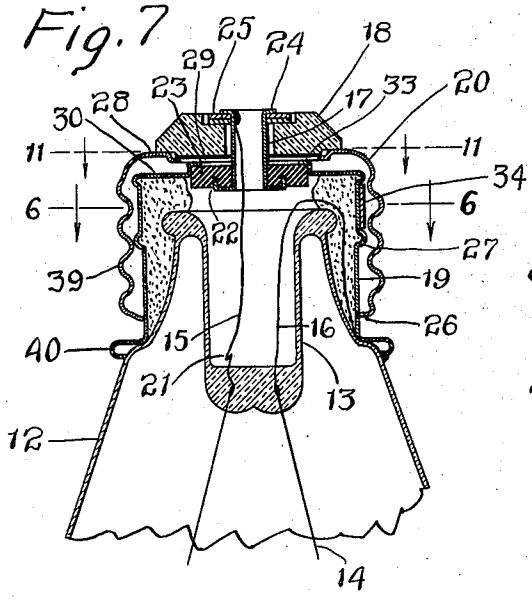


Fig. 9

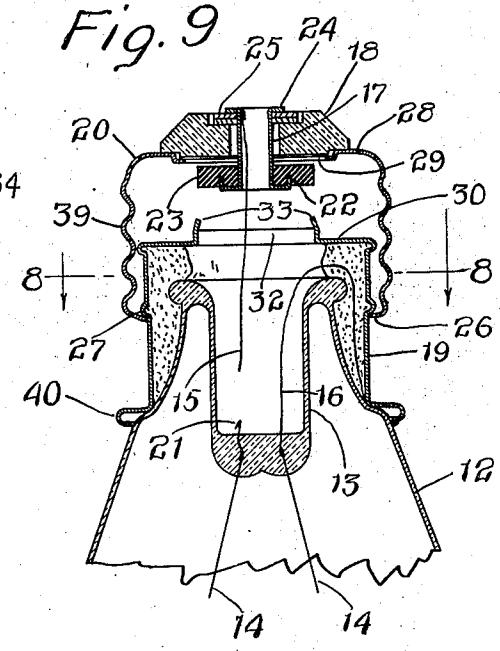


Fig. 10

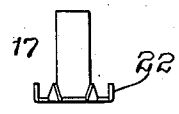
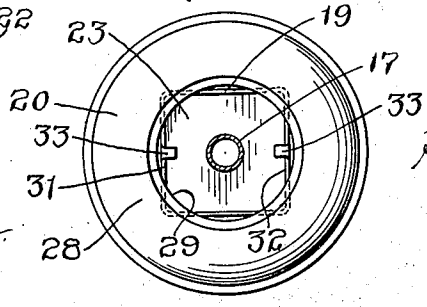


Fig. 11



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UNITED STATES PATENT OFFICE.

HARVEY HUBBELL, OF BRIDGEPORT, CONNECTICUT.

LOCKING-LAMP.

1,138,293. Specification of Letters Patent. Patented May 4, 1915.

Application filed April 9, 1913. Serial No. 759,922.

To all whom it may concern:

Be it known that I, HARVEY HUBBELL, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Locking-Lamps, of which the following is a specification.

This invention relates to electric lamps and has for its general object to provide a lamp which may be readily attached to a lamp socket but which, when in place, cannot be detached therefrom, thereby preventing the improper removal or changing of lamps by unauthorized persons.

To this end the invention, in the form herein shown and described, comprises a lamp base having means for attachment to a lamp socket in the usual manner, said means however, being inoperative to permit detachment of said lamp from said socket.

More specifically, and in accordance with one feature of the invention, said invention contemplates the provision of a lamp base which may be screwed into an ordinary lamp socket but which cannot be unscrewed therefrom without first performing an operation which will destroy the usefulness of the lamp.

With these and other objects in view I have devised the novel lamp which I will now describe, reference being had to the accompanying drawings forming a part of this specification and in which:

Figures 1 and 2 are elevations, at right angles to each other, of a lamp base constructed in accordance with the invention. Fig. 3 is a plan view, Fig. 4 a section on the line 4—4, Fig. 3, and Fig. 5 an elevation of the inner shell of the lamp base. Fig. 6 is a section substantially on the line 6—6, Fig. 7. Fig. 7 is a longitudinal section of the lamp base and a portion of the bulb, showing the parts in attaching position. Fig. 8 is a section substantially on the line 8—8, Fig. 9. Fig. 9 is a view similar to Fig. 7 showing the parts in detaching position. Fig. 10 is a detail elevation of the tube or hollow rivet, showing the form of this part prior to its assembly with the insulating button. Fig. 11 is a section substantially on the line 11—11, Fig. 7.

12 denotes an ordinary incandescent lamp bulb having the usual inturned neck 13 in which is secured a filament 14 from which lead conductors 15 and 16. The conductor 15 passes upwardly and is secured, as by solder, to a short metal tube or hollow rivet 17 passing through the usual insulating button 18. The conductor 16 passes downwardly over the outside of the bulb and is secured, as by solder, to the edge of the inner lamp base shell 19 which is normally in contact with the outer lamp base shell 20. Within the neck 13, and adjacent the inner end thereof, the conductor 15 is provided with an abrupt bend or kink 21 for a purpose presently to be explained. The tube or hollow rivet is provided at its inner end with reversely turned prongs 22 which are embedded in a preferably square insulating washer 23, whereby said washer and tube are rigidly secured together. The edge of the outer end of the tube or rivet 17, when the latter has been placed in position in the button 18, is turned outwardly to form a flange or end contact member 24, and between said flange and the outer recessed face of the button 18 are interposed washers 25. By reason of this construction the button 18 is adapted to turn freely with respect to the tube or rivet 17.

The outer shell 20 is corrugated in the usual manner to provide threads 39 by which the lamp may be screwed into and attached to the ordinary lamp socket. The shells 19 and 20 are both preferably formed of sheet metal. The outer shell 20 is loose or free to turn upon the button 18 and inner shell 19 and is formed with an inturned inner end 26 adapted to coöperate with a stop shoulder 27 on the inner shell 19. The outer end of the outer shell is also turned inwardly, as at 28, and is interposed between the button 18 and insulating washer 23, said inturned portion having a central, preferably circular opening 29 to receive the tube 17, but of less diameter than the greatest diameter of the washer 23. By this construction the outer shell 20 is held in the longitudinal position shown in Figs. 7 and 9, but is free to turn with respect to both the button 18 and washer 23. The inner shell 19 is formed with an inturned end 30 provided with a central opening 31 shaped to receive and fit the washer 23. Surrounding the opening 31 is a flange 32 which may, if desired, be notched, as shown in Fig. 5, and which is provided with resilient projections 33. Said projections are normally turned inwardly over the outer face of the washer 23. By this arrangement the inner shell 19 is secured to the washer 23 so as to

turn therewith, but, by reason of the loose engagement of the tube 17 with the button 18 and outer shell 20, is free to turn with respect to both said button and said outer shell.

34 denotes a spring plate secured at its center to the inner shell 19, as by passing through slots in the wall thereof, and having oppositely extending ends or arms 35 and 36 adapted respectively to engage shoulders 37 and 38 projecting inwardly from the outer shell 20. These shoulders are preferably produced by indenting the threads 39, are oppositely disposed as shown most clearly in Figs. 6 and 8, and are located in different planes or positions longitudinally of the lamp base, as shown in Fig. 1.

40 denotes an outwardly turned flange on the end of the inner shell 19 adjacent the bulb 12. When the lamp is in position said flange extends beyond the edge of the opening in the lamp socket and also, as shown in Fig. 7, normally overlaps the inturned end 26 of the outer shell 20. This flange prevents direct access to the outer shell when the lamp is in position in a socket, and also makes it impossible for an unauthorized person, by forcing an implement into the space between the two shells, to wedge or lock them together.

The operation of the device is as follows: The normal position of the parts is as shown in Fig. 7. If the bulb 12 be turned in the direction to screw the lamp into a lamp socket, engagement of the spring arm 35 with the shoulder 37 (see Fig. 6) causes the outer shell 20 to turn in unison with the inner shell 19, which is rigidly and permanently secured to the bulb 12, permitting the lamp to be screwed into the socket in the usual way. Turning of the bulb 12 in the opposite direction, in order to unscrew the lamp from the socket, will not cause corresponding turning of the outer shell 20, since the spring arm 35 will move idly over the shoulder 37. The inner shell 19 will therefore turn idly within the outer shell 20, so that after the lamp has once been screwed into place it cannot be unscrewed merely by turning the bulb 12. The loose connection between the inner shell 19, button 18, and outer shell 20 makes it impossible for rotation of the inner shell to be communicated to the outer shell through the button, while the flange 40 prevents direct access to the outer shell and also prevents all possibility of locking the inner and outer shells together, as above explained. In order to remove the lamp from the socket, it is necessary to pull the bulb 12 outwardly from the socket with sufficient force to disengage the projections 33 from the washer 23 and bring the stop shoulder 27 on the inner shell 19 into engagement with the inturned end 26 of the outer shell 20, as shown in Fig. 9, outward movement of the button 18 being prevented by engagement thereof with the inturned end 28 of the outer shell. This relative longitudinal movement of the lamp base shell brings the spring arm 36 into a position to coöperate with the shoulder 38, as shown in Fig. 8. If now the lamp bulb be turned in a direction to unscrew the lamp from the socket, engagement of said spring arm 36 and shoulder 38 causes the outer shell 20 to rotate in unison with the inner shell 19, permitting the lamp to be removed from the socket. By reason of the resilience of the spring arms 35 and 36, these arms are normally thrown outwardly so as always to be in a position to engage the shoulders 37 or 38 according to the relative position of the lamp base shells.

The relative longitudinal movement of the inner and outer shells necessary to bring the spring arm 36 into a position to engage the shoulder 38, by separating the inner shell from the button 18, causes the conductor 15 to be broken, as shown in Fig. 9, thereby destroying the usefulness of the lamp and defeating the usual purpose of an unauthorized person in improperly removing a lamp. By reason of the elasticity of the projections 33, the force necessary to disengage them from the washer 23 is not sufficient to bend these projections into a completely upright position, and they will be left turned inwardly to a slight extent, as shown in Fig. 9. If, therefore, the inner shell 19 be moved inwardly toward the socket again, these projections will engage the adjacent face of the washer 23, preventing the complete reëngagement of the parts and making it impossible to bring the broken ends of the conductor 15 into contact. By reason of the abrupt bend or kink 21 in the conductor 15 the breakage of said conductor will take place at the definite point predetermined by the location of said bend. This point being within the neck 13 and adjacent the inner end thereof it is practically impossible to connect the ends of the broken conductor, even by disassembling the parts of the lamp base.

Having thus described my invention I claim:

1. An electric lamp comprising a bulb and a lamp base, said lamp base including an outer shell adapted for attachment to a lamp socket, an inner shell longitudinally movable in the outer shell and secured to said bulb and means operatively connecting said shells for rotation in an opposite direction at each extreme of the longitudinal movement of the inner shell, to permit the lamp to be secured within or removed from the lamp socket.

2. An electric lamp comprising a bulb and a lamp base, said lamp base including an outer shell adapted for attachment to a lamp

socket, an inner shell secured to said bulb and adapted to receive forcible longitudinal movement in said outer shell but normally retained at one extreme of its movement and means for operatively connecting said shells for rotation in an opposite direction at each extreme of the longitudinal movement of the inner shell to permit the lamp to be secured within or removed from the lamp socket.

3. An electric lamp comprising a bulb and a lamp base, said lamp base including, in combination, an inner shell fixed to the bulb, an outer shell rotatably and longitudinally movable relatively thereto, and means connecting said shells and operative when the bulb is turned in one direction to cause engagement of the outer shell with a lamp socket, and inoperative when the bulb is turned in the opposite direction without longitudinal movement and causing removal of the lamp when turned in the opposite direction after longitudinal movement.

4. An electric lamp comprising a bulb and a lamp base, said lamp base including, in combination, two rotatable shells one of which is secured to said bulb and the other of which is adapted for attachment to a lamp socket, said first-mentioned shell having longitudinal movement also, and means connecting said shells alternatively operative to transmit rotation of one shell to the other in opposite directions to cause the lamp to be secured within a lamp socket or removed therefrom after longitudinal movement of the first-mentioned shell.

5. In an electric lamp, a lamp base comprising, in combination, two members having relative rotary and longitudinal movement for placing in attaching and detaching positions, one of said members having means for attachment to a lamp socket, and means connecting said members to permit attachment of said base and socket, said means being inoperative to permit detachment of said base and socket when said members are in attaching position, and being brought into position to permit detachment of said base and socket by longitudinal movement of one of said members.

6. An electric lamp comprising, in combination, a bulb, a button, a tube passing through said button and having a contact member, a washer carried by the inner end of said tube, an inner lamp base shell secured to said bulb and having an opening and teeth projecting into said opening and engaging said washer, an outer threaded lamp base shell mounted to turn on said button and on said inner shell, and means for operatively connecting said shells for movement in unison when said inner shell is turned in one direction.

7. An electric lamp comprising, in combination, a bulb, a button, a tube passing through said button and having a contact member, a washer carried by the inner end of said tube, an inner lamp base shell secured to said bulb and having an opening and teeth projecting into said opening and engaging said washer, an outer threaded lamp base shell mounted to turn on said button and on said inner shell, and means carried by said inner shell for engaging and turning said outer shell when said inner shell is turned in one direction.

8. An electric lamp comprising, in combination, a bulb, an inner lamp base shell secured to said bulb, an outer lamp base shell having means for attachment to a lamp socket, said shells being relatively longitudinally movable, and means controlled by the relative longitudinal position of said shells for connecting said shells, said means being operative to connect said shells for movement in unison in one direction when said shells are in one relative longitudinal position and operative to connect said shells for movement in unison in the opposite direction when said shells are in another relative longitudinal position.

9. An electric lamp comprising a bulb, an inner lamp base shell secured to said bulb, an outer lamp base shell having means for attachment to a lamp socket, said shells being relatively longitudinally movable and being provided with coöperating stop shoulders for limiting their longitudinal movement, and means controlled by the relative longitudinal position of said shells for connecting said shells, said means being operative to connect said shells for movement in unison in one direction when said shells are in one relative longitudinal position and operative to connect said shells for movement in unison in the opposite direction when said shells are in another relative longitudinal position.

10. An electric lamp comprising a bulb, an inner lamp base shell secured to said bulb, an outer threaded lamp base shell having a pair of oppositely disposed shoulders arranged in different positions longitudinally of said shell, and a spring plate secured at its center to said inner shell and having oppositely extending arms adapted to coöperate with said shoulders respectively, said shells being relatively longitudinally movable to bring said arms into position to engage the respective shoulders.

11. An electric lamp comprising a bulb, an inner lamp base shell secured to said bulb, an outer threaded lamp base shell having a pair of oppositely disposed shoulders arranged in different positions longitudinally of said shell, and means on the inner shell adapted to coöperate with said shoulders respectively, said shells being relatively longitudinally movable to bring said arms

into position to engage the respective shoulders.

12. An electric lamp comprising, in combination, a bulb, a lamp base including two members relatively movable into attaching and detaching positions, one of said members having means for attachment to a lamp socket, a button, means connecting the other of said base members and button, said means being constructed and arranged to permit disengagement of said parts when said members are moved into detaching position and to prevent complete reëngagement thereof, and means connecting said members to permit attachment of said base and socket, said means being inoperative to permit detachment of said base and socket when said members are in attaching position, and operative to permit detachment of said base and socket when said members are in detaching position.

13. An electric lamp comprising a bulb, a button, a contact member passing through said button, a square washer carried by the inner end of said contact member, a lamp base comprising relatively movable inner and outer shells, said inner shell being secured to said bulb and having a square opening to receive said washer and projections engaging said washer, and said outer shell being mounted to turn on said button and on said inner shell.

14. An electric lamp comprising a bulb, a button, a tube passing through said button and adapted to turn therein, a washer on said tube, said tube having prongs engaging said washer, an inner lamp base shell secured to said bulb and to said washer, and an outer shell free to turn with respect to said button and tube.

15. An electric lamp comprising a bulb having a neck, a contact member, and a conductor passing through said neck and connected with said contact member, said bulb and contact member being relatively movable to break said conductor, and said parts being constructed and arranged to cause said conductor to be broken within said neck.

16. An electric lamp comprising a bulb having a neck, a contact member, and a conductor passing through said neck and connected with said contact member, said bulb and contact member being relatively movable to break said conductor and said conductor having a kink or abrupt bend within said neck.

17. In an electric lamp, in combination, a lamp base comprising two members relatively movable into attaching and detaching positions, one of said members having means for attachment to a lamp socket, a contact member, a lamp bulb, a conductor connecting said contact member and bulb and arranged to be broken at a definite predetermined point when said base members are moved into detaching position, and means connecting said members to permit attachment of said base and socket, said means being inoperative to permit detachment of said base and socket when said lamp base members are in attaching position, and operative to permit detachment of said base and socket when said members are in detaching position.

18. In an electric lamp, in combination, a lamp base comprising two members relatively movable into attaching and detaching positions, one of said members having means for attachment to a lamp socket, a contact member, a lamp bulb having a neck, a conductor connecting said contact member and bulb and passing through said neck, said conductor being constructed and arranged to be broken within said neck when said base members are moved into detaching position, and means connecting said members to permit attachment of said base and socket, said means being inoperative to permit detachment of said base and socket when said lamp base members are in attaching position, and operative to permit detachment of said base and socket when said members are in detaching position.

In testimony whereof I affix my signature in presence of two witnesses.

HARVEY HUBBELL.

Witnesses:
A. M. WOOSTER,
S. W. ATHERTON.