

May 11, 1937.

A. E. GRANT

2,079,800

LAMP SOCKET

Filed July 22, 1933

3 Sheets-Sheet 1

Fig. 1.

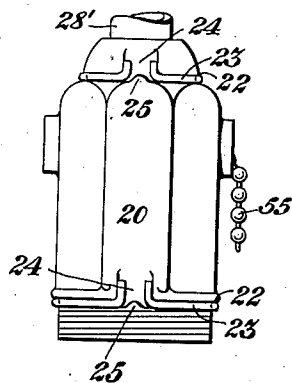


Fig. 2.

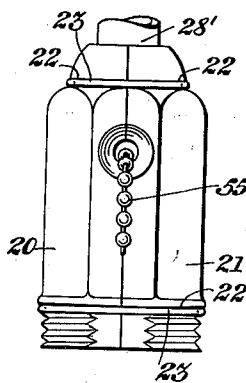


Fig. 3.

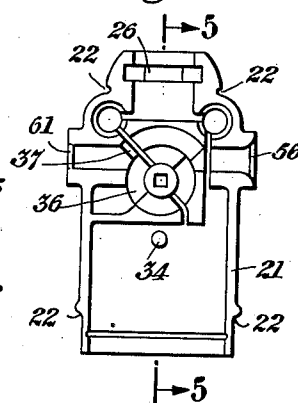


Fig. 4.

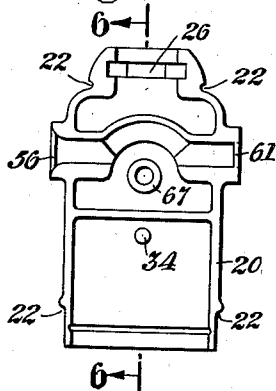


Fig. 5.

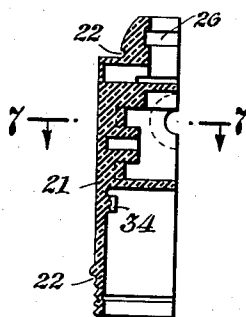


Fig. 6.

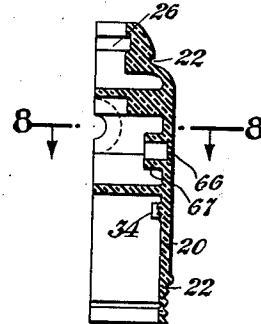


Fig. 7.

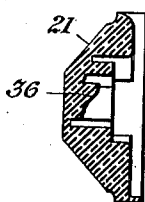
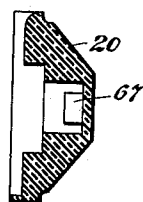


Fig. 8.



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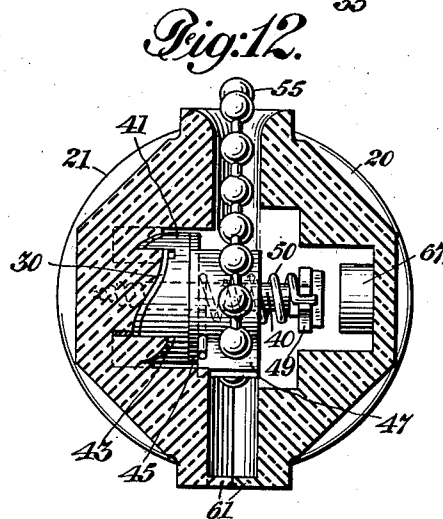
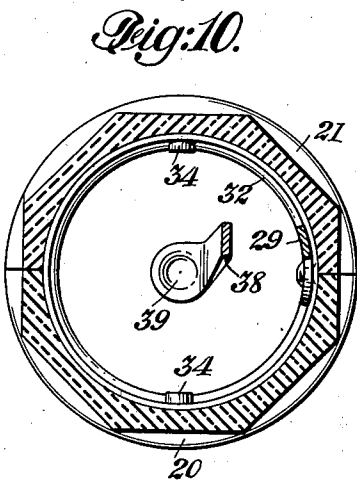
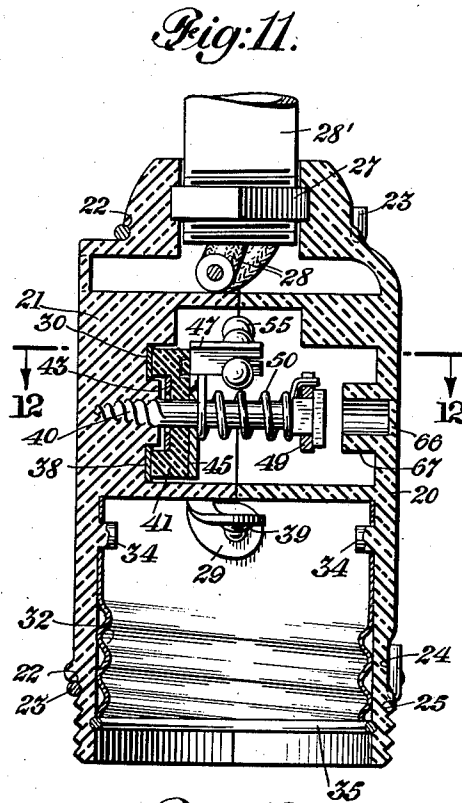
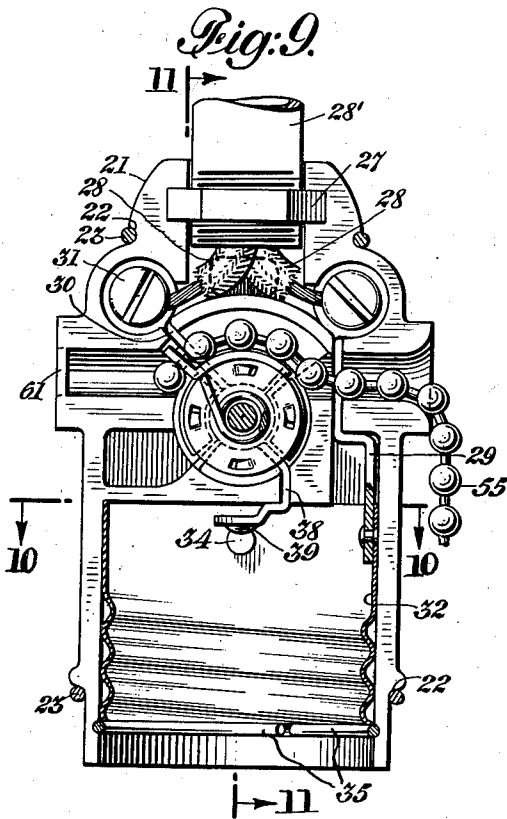
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Fig. 13.

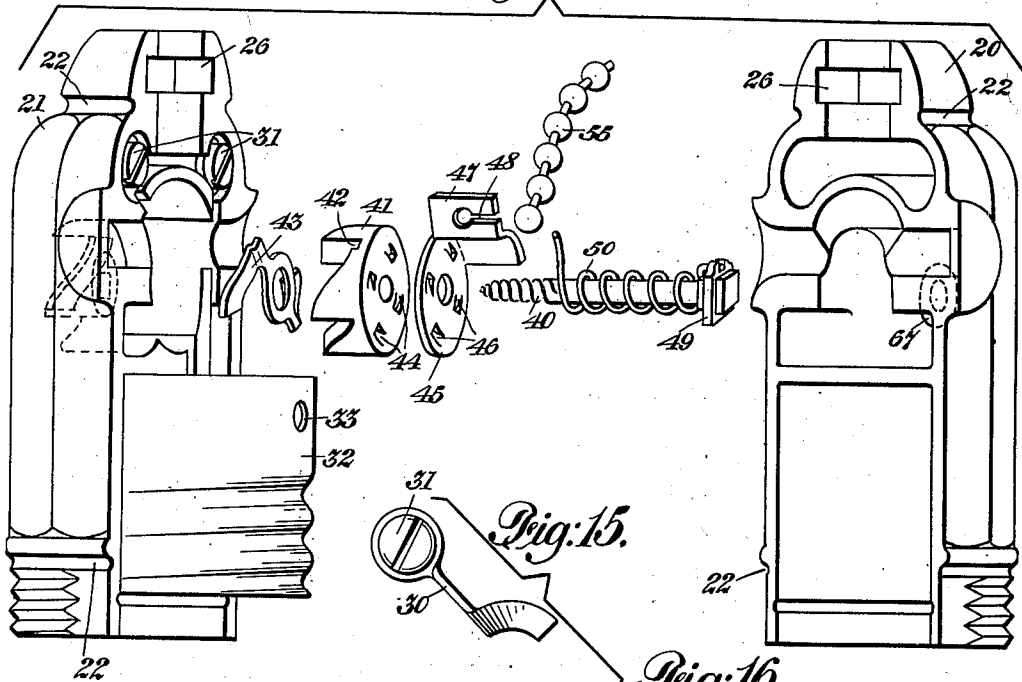


Fig. 15.



Fig. 16.

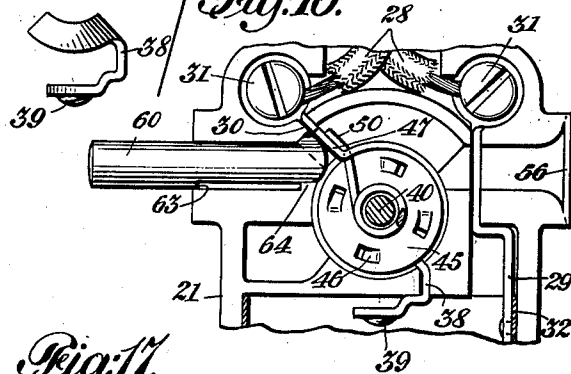


Fig. 14.

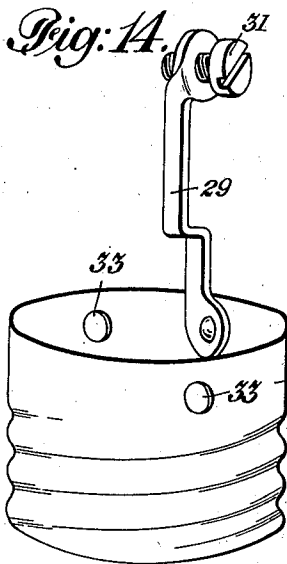
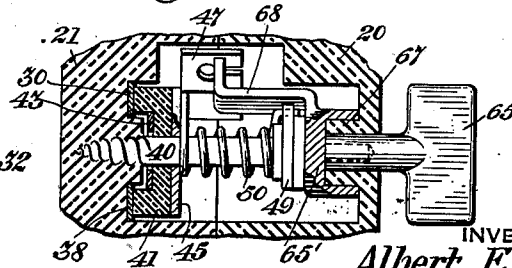


Fig. 17.



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LAMP SOCKET

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Application July 22, 1933, Serial No. 681,797

5 Claims. (Cl. 173—346)

My invention relates to lamp socket constructions. A principal object of my invention is to provide a screw socket of simplified and improved construction. Another object is to provide a wiring device comprising an improved rotating switch. A further object is to provide a rotary switch capable of being equipped with any one of several standard types of manual actuator, such as a pull chain, a push button, or a rotatable key, and other and further objects will appear from the following specification.

Referring to the drawings:

Figure 1 is a side elevation of a lamp socket embodying features of my invention, and

Figure 2 is a front elevation thereof.

Figure 3 is an elevation showing the interior of the right half portion of the casing, and

Figure 4 is a similar view showing the interior of the left half portion of the casing.

Figure 5 is a vertical sectional view taken on lines 5—5 of Figure 3.

Figure 6 is a section taken on lines 6—6 of Figure 4.

Figure 7 is a plan section taken on lines 7—7 of Figure 5, and

Figure 8 is a section taken on lines 8—8 of Figure 6.

Figure 9 is an elevation similar to Figure 3 showing the switch mechanism and the conducting parts of the device assembled therein, the latter being shown partly in section.

Figure 10 is a sectional view taken on lines 10—10 of Figure 9.

Figure 11 is a vertical section thru the device taken on lines 11—11 of Figure 9, and

Figure 12 is a section taken on lines 12—12 of Figure 11.

Figure 13 illustrates in perspective the assembly of the principal parts of the construction.

Figure 14 is a perspective view of the screw threaded contact element and the conductor strip which connects therewith.

Figure 15 is an elevation of the other contact element and the spaced conductor members which connect therewith.

Figure 16 is a fragmental view, similar to Figure 9, showing the switch equipped with a push button actuator.

Figure 17 is a fragmental section, similar to Figure 11, showing the switch equipped with an actuator of the rotatable key type.

The casing shell comprises two vertical and complementary half portions, 20 and 21 respectively, which are moulded of insulated material such as hard rubber. The external walls of each

of the portions are formed with annular grooves at 22—22 etc., adjacent their opposite ends to receive spring wire clasps 23 and 23 which removably surround and grip the casing portions to hold them in assembled relation. The ends of the wire clasps are angularly bent and the casing portion 20 is recessed at 24 and 24 to receive them and thus insure against accidental expansion and removal of the clasps. Projections 25 and 25, respectively, interrupt the grooves 22 in the half portions 20 between the bent ends of each of the clasps and serve in positioning the clasps and to prevent their accidental contraction after they have been assembled. In this manner the half portions may be readily and securely assembled and disassembled without the use of screws or other such usual devices.

The lower ends of the casing portions are semi-circular and have complementary parts of a spiral thread moulded therein to facilitate the attachment of lamp shades or other such equipment.

A wire inlet passage extends inwardly from the top of the casing, the walls of which are recessed at 26 to receive an angular nut 27 which serves to reinforce the casing walls and is adapted to screw over the end of a threaded wire conduit 28 of a fixture carrying insulated current supply wires 28, the inner ends of which are firmly secured to conductor strips 29 and 30, respectively, by means of binding screws 31 and 31.

The conductor strip 29 is bent to conform to the inner wall of the casing and is riveted or otherwise suitably secured at its lower end to a tubular threaded contact socket 32 housed in the lower open end of the casing. The threaded contact is perforate adjacent its top at 33 and 33 to receive short positioning pins 34—34 formed integral with the casing, and the casing is provided with an internal annular groove at the lower periphery of the contact to receive a wire ring 35, all for the purpose of immovably securing the socket element in assembled position.

Above the threaded contact 32, the inner side of the casing portion 21 is moulded to define a circular four-point face cam at 36 which is bisected by a diagonal slot at 37. The conductor strip 30 is received in the upper portion of this slot and is bent at its lower end to overlie and conform to the upper segment of the cam 36. An analogous conductor strip 38 is clinched in the lower portion of the slot 37, is bent to overlie and conform to the segment of the cam opposite the strip 30, and extends to a central point in the socket chamber where it is formed to provide a suitable terminal contact 39. As thus shaped and supported, the

conductors 30 and 38 are adapted to be bridged by a switch, the mechanism of which will now be described.

A shaft 40 is firmly secured by one end in the casing concentric with the cam 36. I prefer to form teeth on the shaft and to drive it into a square recess formed in the casing as shown. Rotatable and axially movable on the shaft is a cylindrical rotor 41 of insulating material having one of its faces cambered complementary to the cam 36 and slotted radially at 42 (see Figure 13). A switch member 43, adapted to bridge the conductors 30 and 38, opposite quarter sectors of the rotor cam face and is clinched into the slot 42 to hold it in position. The opposite face of the rotor has a plurality of circumferentially arranged angular detents 44—44 etc., therein, and is thus adapted for engagement by teeth 46—46 etc., stamped integral with a ratcheting disc 45 which is also rotatable and axially movable on shaft 40. An angular bracket 47 is formed integral with the disc 45 at its periphery and is slotted at 48 as shown.

The shaft 40 has a head thereon at its free end and is enlarged in diameter and formed square, or angular, thereadjacent. A nut 49 surrounds the angular portion of the shaft and is retained thereon by the head. A torsion spring 50 carried on the shaft is anchored by one end to the nut and is compressed to bear against disc 45, thus holding the disc in engagement with the rotor and urging the rotor and switch member in the direction of the cam 36. The free end of the spring is extended to abut the bracket 47 in such manner as to resist rotation of the disc in the direction in which its teeth engage the rotor.

From the foregoing it will be apparent that one side of a circuit thru the device is carried by the conductor 29 directly between one of the binding terminals 31 and the screw socket contact 32, and that the other side of the circuit is carried between the contact 39 and the other binding terminal thru conductors 30 and 38 and switch member 43, when the latter is in contact position.

To make or break the circuit, the ratchet disc 45 is rotated against the torque resistance of spring 50 to drive the rotor and its switch member 43 a quarter turn. In rotating, the rotor rides axially on the shaft against the compression resistance of the spring while climbing the peaks of the cam 36. When it has passed over the cam peaks, its rotation is substantially accelerated by the reciprocal movement of the spring, thus providing the positive snap action desirable in switch mechanisms of this character. Thereupon, the spring also operates to return the disc to its original position, as will be readily understood.

The resistance of the spring 50 may be adjusted by turning the nut 49 in relation to the shaft. This is accomplished by forcing the nut along the shaft to its smaller round diameter, whereupon the nut is rotated and returned to its engaging position.

To actuate the ratcheting disc 45, I may employ a chain 55, a sliding rod 60, or a key 65. As shown in Figures 3, 4, 5 and 6, the casing walls are moulded quite thin over the areas indicated at 56—56, 61—61 and 66. When it is desired to equip the device with the pull chain actuator, I break out the thin wall areas 56, extend the chain thru the aperture thus formed and attach its inner end to the slotted bracket 47.

To employ the sliding actuator rod 60, the casing wall areas at 61 are broken out and the rod inserted in abutting relation to the bracket 47 (see Figure 16). The inner end of the rod is rounded, and is flanged to abut an inner wall of the casing to limit its outward sliding movement. The side of the rod facing the portion 21 of the casing is cut away from its inner end, to allow for axial movement of the disc 45, and its inner lower side is also cut away to avoid striking the spring 50. The shoulder 63 formed in the rod is adapted to engage an abutment 64 to limit its inward movement and this abutment also serves to hold the rod from rotating.

When it is desired to equip the device with the switch key 65, the casing wall area 66 is broken out. This actuator is made in two parts, the part 65' of which comprises a circular cap which surrounds and is rotatable on a hub 67 moulded in the interior wall of the casing. A bracket 68 is integral with the cap and extends to engage the bracket 47. Part 65 of the actuator comprises a key, the shank of which extends thru the casing wall and is concentrically pinned to the cup 65'.

I have found this arrangement of advantage in that it makes unnecessary the manufacture of different devices to meet the demand for the several different styles of switch actuator and also minimizes the inventory necessary to be stocked. The devices may be manufactured and all the parts except the actuator and casing portions assembled. As orders for the devices are received specifying one or the other type of actuator, the appropriate thin walled areas of the casing are broken away and assembly of the device completed by inserting the required actuator and securing the casing portions together.

To connect the device in relation to a fixture, the half portions of the casing are disassembled by prying one of the bent ends of each of the clasps 23 out of its recess 24 and then springing the clasps from the grooves 22. The nut 27 is then removed and passed over the ends of the wires 28 and threaded onto the wire conduit of the fixture. The ends of the wires are then respectively connected to the conductors 29 and 30 by means of binding screws 31 and the half portions of the casing are assembled around the nut and resecured by the clasps. In this manner the device is more securely attached to the fixture than by the usual collar and set screw means.

What is claimed is:

1. A wiring device comprising a casing formed in separable portions, each portion having complementary parts of a circumferential groove formed therein, and a resilient metal clasp embracing the casing and removably held in said groove to secure the portions in assembled relation, the ends of said clasp being angularly bent to extend parallel to the casing wall and one of said portions having a slot formed in the surface thereof in communication with said groove to receive and confine the bent ends of the clasp, the internal diameter of said clasp corresponding with the diameter of said groove at the bottom thereof.

2. A wiring device comprising a casing formed in separable portions, each portion having complementary parts of two circumferential grooves formed therein, arranged one adjacent each end of the casing, and metal clasps embracing the casing and removably held in said grooves to secure the portions in assembled relation, the ends of each clasp being angularly bent to extend parallel to the casing wall and said casing having

slots formed in the surface thereof in communication with said grooves to receive and confine the bent ends of said clasps, the internal diameter of said clasp corresponding with the diameter of said groove at the bottom thereof.

3. A lamp socket comprising a switch and a casing therefor, said casing having interior wall portions formed to support switch actuators of different types in operative relation to the switch, exterior wall sections of the casing adjacent the actuator supporting portions thereof being formed thin whereby they are adapted for selective removal to accommodate a chosen actuator.

4. A lamp socket comprising a switch and a casing therefor, said casing having interior wall portions formed at different parts thereof to support a key actuator, a chain actuator, and a rod actuator in operative relation to the switch, exterior wall sections of the casing adjacent the actuator supporting portions thereof being formed thin whereby they are adapted for se-

lective removal to accommodate a chosen actuator.

5. A lamp socket comprising a switch, a casing housing the switch and formed in separable portions, each portion having complementary parts of a circumferential groove formed therein, a resilient metal clasp embracing the casing and removably held in said groove to secure the portions in assembled relation, the ends of said clasp being angularly bent to extend parallel to the casing wall and one of said portions having a slot in the surface thereof communicating with said groove to receive and confine the bent ends of the clasp, interior wall portions of said casing being formed to support switch actuators of different types in operative relation to said switch, and exterior wall sections of the casing adjacent the actuator supporting portions thereof being formed thin whereby they are adapted for selective removal to accommodate a chosen actuator.

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