

C. D. PLATT.
 INCANDESCENT LAMP SOCKET.
 APPLICATION FILED DEC. 20, 1910.

1,009,565.

Patented Nov. 21, 1911

2 SHEETS-SHEET 1.

Fig- 1.

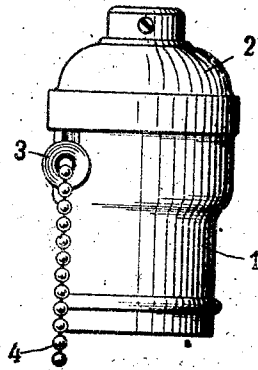


Fig- 2.

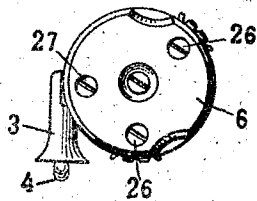


Fig- 3.

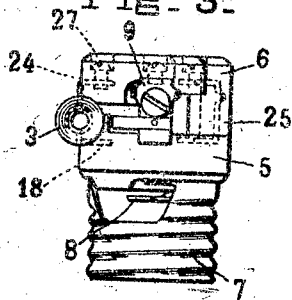


Fig- 4.

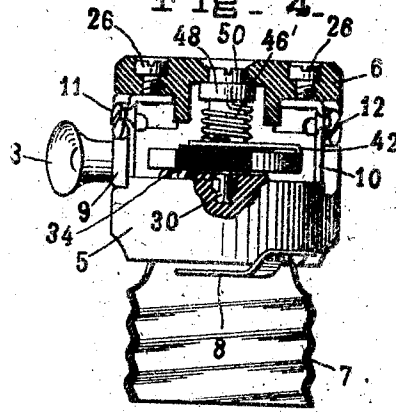


Fig- 5.

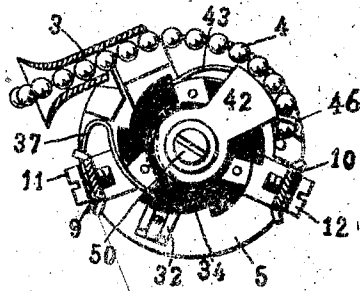
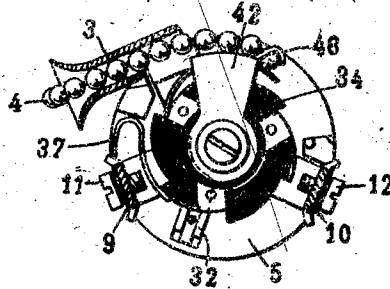


Fig- 6.



WITNESSES

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2 SHEETS-SHEET 2.

Fig. 7.

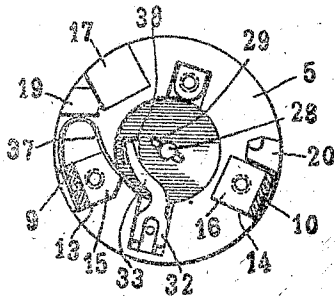


Fig. 8.

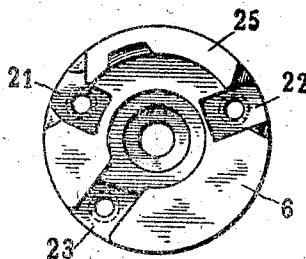


Fig. 9.

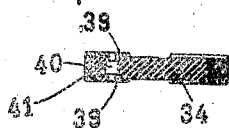


Fig. 13.

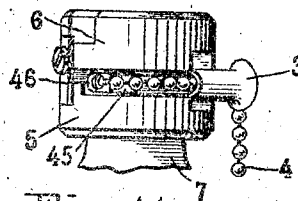


Fig. 10.

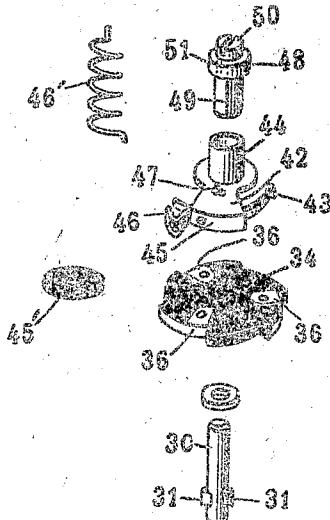


Fig. 11.

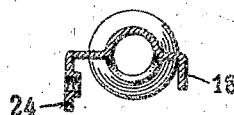
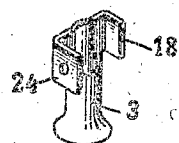


Fig. 12.



WITNESSES

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INCANDESCENT-LAMP SOCKET.

1,009,565.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed December 20, 1910. Serial No. 598,423.

To all whom it may concern:

Be it known that I, CLARENCE D. PLATT, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Incandescent-Lamp Sockets, of which the following is a full, clear, and exact description, whereby any one skilled in the art may make and use the same.

The invention relates to incandescent lamp sockets and more particularly to the type of socket, known as "pull sockets" inasmuch as the switch which makes and breaks the circuit for the lamp or other device is operated by a pull cord or chain in contra-distinction to being operated by a key.

The objects of the invention are, generally stated, to provide an improved construction of details.

The principal object is to provide a combined actuating and circuit making and breaking mechanism, reducing the number of parts ordinarily employed in such devices.

A still further object is to provide for more perfect insulation of the parts and to so arrange the various elements that there is little or no liability of short circuiting or inaccuracy in the automatic action of the mechanism.

"Pull sockets" are not new in the art, but in so far as known to applicant, such switches embody a contacting device having a make and break action with a step by step actuator, which actuator is controlled by a pull cord or chain and has a ratchet and pawl arrangement for effecting the make and break movements of the contact members. Applicant has coalesced, into a single structure, the mechanism, in which the make and break device is the ratchet. These ratchet teeth are directly actuated by the actuator, which is adjustable for definite movements.

Referring to the drawings: Figure 1 is a view in elevation of a socket embodying the invention. Fig. 2 is a top plan view of the body of the socket with the shell removed, illustrating the position of the pull cord or chain guide. Fig. 3 is a view in elevation of the body of the socket and appurtenant parts illustrated in plan in Fig. 2. Fig. 4 is a partial sectional view with parts broken away, on enlarged scale, show-

ing the body of the socket with the appurtenant parts. Fig. 5 is a plan view of the parts shown in Fig. 4, with the upper insulating member removed and the chain guide cut in horizontal section, the part being in normal closed circuit position. Fig. 6 is a similar view illustrating the actuator moved and about to place the part in open circuit position. Fig. 7 is a plan view in enlarged scale of the lower insulating member and appurtenant contact members, the contacting posts being shown in section. Fig. 8 is a bottom plan view of the upper insulating member, which coöperates with the lower member illustrated in Fig. 7 to provide complete insulation for the parts. Fig. 9 is a detail sectional view through the make and break ratchet, illustrating the method of attaching the contacting and conducting members. Fig. 10 is a perspective view of the various parts of the make and break member, its actuator and adjusting member shown in unassembled position. Fig. 11 is a cross-sectional view through the chain guide and supporting post. Fig. 12 is a perspective view of said chain guide and supporting post. Fig. 13 is a side elevation illustrating the insulating members and actuator together forming a chain guide.

Referring to the drawings 1, denotes a shell and 2, the cap of the socket casing. Through the shell 1, extends the chain guide 3, depending from which is a chain or pull cord 4, for actuating the switch mechanism. Within the casing, there is arranged a socket body having a lower insulating section 5, and an upper insulating section 6. To the lower section is secured a threaded sleeve contact 7, and a central contact member 8. The central contact 8, is connected to a conducting post 10, provided with a suitable wire attaching device 12. The threaded sleeve contact 7, is connected with and disconnected from a conducting post 9, provided with wire attaching means 11, dependent upon the position of the switch member. The conducting posts 10, and 11, form not only insulated conductors, but act as binding supports between the insulating members 5, and 6.

Referring to Fig. 7, the lower insulator 5, is provided with recesses 13, 14, within which the foot portions 15, 16, of the conducting posts 9, and 10, rest and are secured by suitable screws. There is also a recess 17, within which may be inserted the foot-piece

18, of the chain guide 3. Extending upwardly from the base, adjacent to the post 9, there is an insulating pillar 19, and similarly extending from the base adjacent to the post 10, there is an insulating pillar 20. The upper insulating member 6, is likewise provided with recesses 21, 22, to receive the head portions of the conducting posts 9, and 10, respectively. There is also a recess 23, to receive the head portion 24, of the chain guide. There is a dependent insulating skirt 25, which, when the upper piece 6, is in place with reference to the lower piece 5, completely incases the section between the conducting post 9, and the conducting post 10, and this dependent skirt, in conjunction with the raised insulating portions 19, and 20, form a complete insulating inclosure for the conducting posts and appurtenant parts. The posts 9, and 10, at their upper ends, are secured firmly in place with reference to the uppermost insulating member 6, by screws 26, and the chain guide is similarly secured by a screw 27, which screws are countersunk below the upper surface of the insulating member. By removing the screw 27, the chain guide may be slid out of its grooves 17, 23, and may be removed without disturbing the arrangement of the other socket parts. With this arrangement of insulators, it is apparent that the live conducting parts of the switch mechanism are completely and thoroughly insulated one from the other and from the metal parts of the mechanism, except when in proper contacting position to carry a current.

The chain guide, which is illustrated somewhat in detail in Figs. 11 and 12, may be of any desired form and its specific construction forms no part of the present invention beyond its double use of a removable chain guide and supporting post between the two insulating members.

Centrally arranged in a socket 28, having a central depression and a transverse depressed portion 29, is removably supported an arbor or spindle 30, having transverse ears 31. This fits tightly within the depression 28, and is non-rotatively held therein by the ears and cooperating depression 29. It may readily be removed when the upper insulating member is disconnected from the lower insulating member 5.

Connected with the threaded shell contact is a spring conducting member 32, provided with a curved arm 33, which underlies a rotary contact ratchet 34. This ratchet is provided with conductors 36, which in conjunction with the arm 33, and a spring-contact member 37, connected to the conducting post 9, make the circuit between said post and the threaded shell contact 7. The arm 33, at its forward end is depressed and extends into a depressed recess 38, to insure proper engagement of said arm with the

contact members 36, without liability of tripping against the point of the arm.

The contact members 36, are of peculiar formation and comprise lugs 39, straddling the edge of the insulating ratchet member 34, and located at the bottom of certain of the ratchet teeth, as best illustrated in Figs. 9 and 10. They are held in place by stamping or punching the metal of the ears into perforations 40, so that they are securely held in place on the edge of the ratchet. They have extended conducting faces 41, which extend to the edge of the next succeeding ratchet tooth. From this, it is apparent that there is a conducting member at the under side of the insulating ratchet 34, adjacent to the base of alternate teeth and an extended contact part reaching to the point of the next succeeding ratchet tooth. The result is a ratchet member having a plurality of teeth with the alternate teeth forming insulated bearing surfaces and the intermediate teeth forming conducting surfaces. This ratchet is loosely mounted upon the spindle 30, and when rotated, as herein-after defined, its teeth bear against the spring arm 37, and said arm 37, either rests upon one of the conductors 41, or upon one of the intermediate insulated teeth. By this means, the circuit between the post 9, and shell 7, is made or broken. There is a special advantage in having the long tooth conductor 41, in conjunction with the conductor 36. The conducting portion 36, comes into engagement with the contact arm 33, while the conducting spring 37, is in engagement with the tooth surface and does not break its engagement with the arm 33, until after the point of the spring 37, has dropped from the high point to the low point of the ratchet. Thus, a very quick make and break is effected between the spring contact member 37, and the ratchet conductors with no liability of arcing between said ratchet conductors and the conducting arm 33.

The ratchet member 34 is actuated by a pawl actuator 42, which is provided with a spring pawl 43, adapted to engage the teeth of the ratchet member 34, and move the same whenever the pull cord or chain 4, is moved. This actuator 42, is preferably formed from sheet metal stamped, pressed or drawn up, with a central spring barrel 44, and a chain guide member 45, provided with a suitable chain attachment clip 46. The guide member 45, is dependent from the main plane of the actuator 42, and is of sufficient width to fit nicely between the open edges of the insulating members 5, and 6. The fit may be close enough to form a guide channel so that there is no liability of the chain or pull cord binding between the edges of the guide 45, and the insulating members.

The actuator 42, is loosely mounted upon the spindle 30, and overlies the ratchet 34, an insulating washer 45', being interposed between the parts to insure insulation. The actuator 42, is held in normal position by a spring 46', the lower end of which engages a clip 47, upon the actuator, while the upper end engages an adjusting clutch or nut 48. This adjusting nut is of tubular form split as at 49, to firmly grasp the spindle 30, and it is designed to extend into the cupped-up spring barrel 44. It rests below the upper insulating member 6, and is provided with a slotted head 50, which extends through a central opening in the insulator 6. The head 50, projects above a collar 51, and the opening through the insulator 6, while of sufficient diameter for the slotted head 50, prevents the movement of the collar 51, therethrough. Thus the spindle and appurtenant parts are held in definite position between the insulating members 5, and 6, when the parts are in place.

It is obvious from the above description, that the ratchet member 34, with its conducting members 36, 41, forms the make and break for the circuit between the conducting spring arm 33, and the spring arm 37, of the conducting post 9. The spring arm 37, is of such a form and length that it acts as a detent to prevent reverse movement of the ratchet 34, and as said spring arm 37, drops from the high point of the conductor tooth 41, or the intermediate insulating tooth of the ratchet, there is, obviously, an instantaneous break or make of the circuit. The actuator 42, is, of course, always insulated from the conducting parts of the mechanism as it engages both the conducting teeth and the insulating teeth at a point remote from the circuit making and breaking elements and the conducting posts 9, and 10. The tension upon the ratchet device 34, may be varied at will by moving the clutch member 49, and consequently varying the tension of the spring 46.

From the above, it will be seen that the ratchet or movable contact member 34, in conjunction with the conducting arm 33, and conductor spring 37, provides a most simple and beneficial make and break device for controlling the circuit of the socket. It actually embodies a movable contact member for making and breaking the circuit directly actuated by the step by step movement of an actuating pawl.

Obviously, the exact details of the mechanism might be varied to a considerable extent without departing from the spirit or intent of the invention, which, in addition to the feature set forth, contemplates a movable make and break ratchet in conjunction with peripheral and surface conductors and an actuating means having a pawl acting directly upon the ratchet teeth.

I do not in this case claim the tension adjusting mechanism for the electric switch, herein illustrated and described, as I have made this feature the subject of my application No. 598,579, filed December 21, 1910. Nor do I in this case claim the integral chain guide and supporting post shown in this case, as I have made that the subject-matter of my application No. 591,920, filed December 23, 1910.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a device of the character described, an insulating body part having a lower and an upper section, terminals secured to the lower section, conducting posts extending therefrom, one of said posts connected with one of the terminals, the other of said posts bearing a spring contact member, a contact operatively connected with the other of said terminals, a ratchet of insulating material having independent conductors upon alternate teeth adapted to bear upon said contact member and engaged by the spring-contact of the conducting post, and an actuator engaging the teeth of the ratchet.

2. In a device of the character described, an insulating body part, a supporting spindle, a ratchet member operatively mounted thereon, an actuator having a pawl adapted to engage the teeth of the ratchet, means for moving said actuator, independent conductors extending along alternate teeth of the ratchet and extending over the surface thereof, and a pair of spring contact members adapted to engage the contact members of the ratchet as to the toothed portion and the surface portion.

3. In a device of the character described, a movable contact member embodying a ratchet and an actuator therefor, said ratchet having independent conducting and independent non-conducting teeth, a pawl upon the actuator directly engaging said teeth, means for moving the actuator, and a spring contact member bearing upon the periphery of the ratchet and forming a detent to prevent retrograde movement thereof.

4. In a device of the character described, an insulating ratchet member, an actuator having a pawl engaging the teeth of said ratchet, conductors embracing opposite sides of the ratchet and extending along alternate teeth thereof, a contact member engaging one side of the ratchet, and a contact member engaging the peripheral edge of the ratchet and adapted to make and break a circuit through said ratchet during the engagement of the side engaging contact member.

5. In a device of the character described, a ratchet having a series of teeth, independent conductors arranged upon each alternate tooth and having contact surfaces at the periphery of the ratchet and contact

surfaces at one of the side faces of the ratchet, a peripheral contact member engaging said teeth, a cooperating contact in engagement with the portions of the conductors at the side face of the ratchet, during the engagement and disengagement of the peripheral contact member therewith, and means for actuating said ratchet.

6. In a device of the character described,
10 an insulating body part having two sections, supporting posts intermediate said sections, means including said posts for securing the

sections together, a stud or support removably mounted in the lower section and bearing a ratchet, an actuator having a pawl engaging the teeth of said ratchet, and an
15 adjusting member for said actuator extending through the upper insulating member and forming a support for the spindle.

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Witnesses:

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