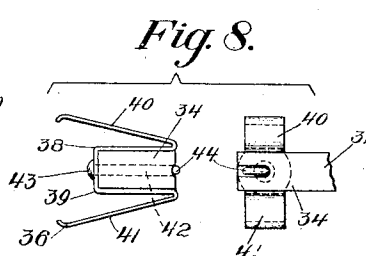
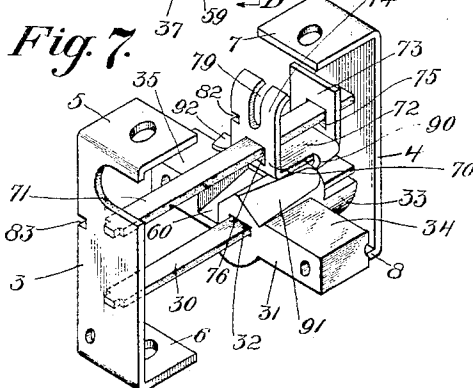
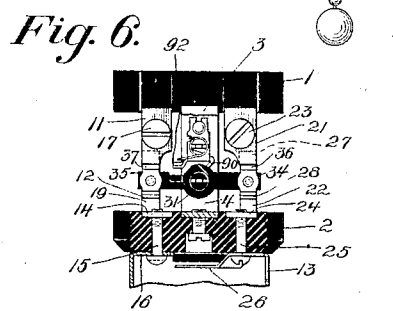
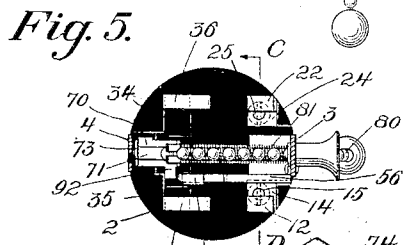
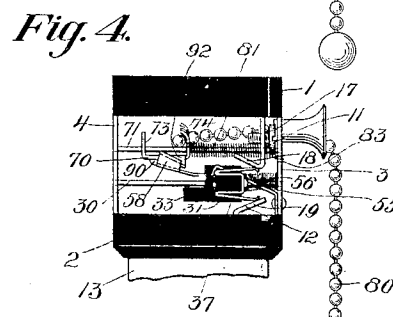
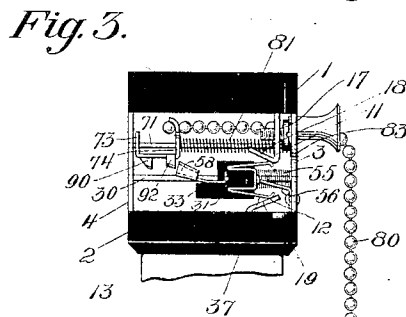
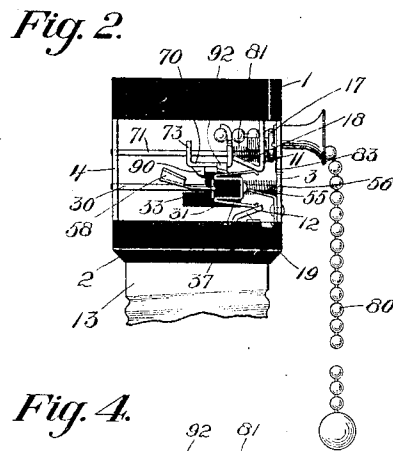
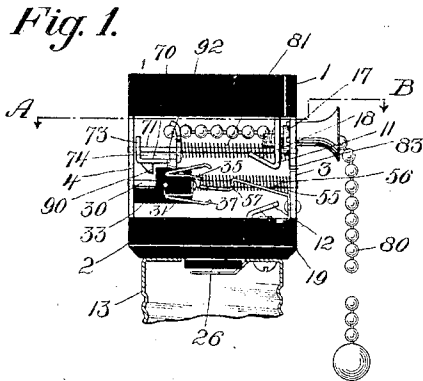


J. DARBY.
LAMP SOCKET.
APPLICATION FILED OCT. 12, 1910.

1,056,154.

Patented Mar. 18, 1913.

2 SHEETS—SHEET 1.



Witnesses:
R. Victor
R. Munk

John Darby Inventor
John D. Morgan By his Attorney

J. DARBY.
LAMP SOCKET.

APPLICATION FILED OCT. 12, 1910.

1,056,154.

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2 SHEETS-SHEET 2.

Fig. 10.

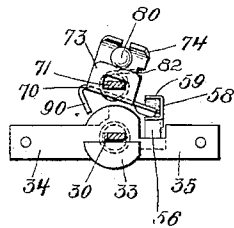


Fig. 9.

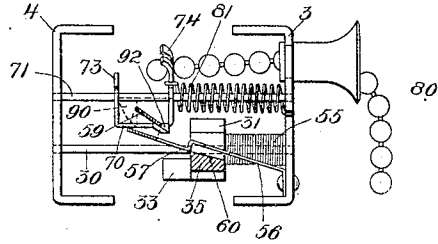


Fig. 12.

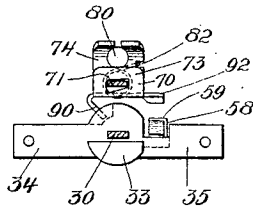


Fig. 11.

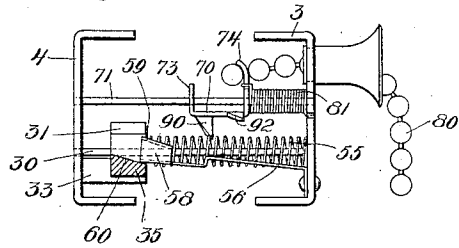


Fig. 14.

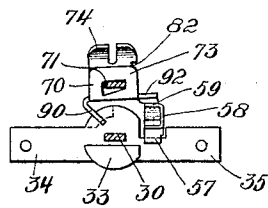


Fig. 13.

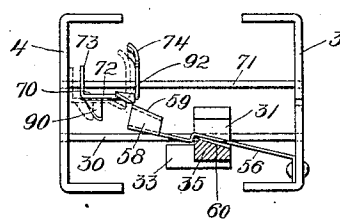


Fig. 18.

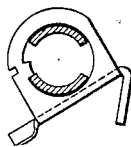


Fig. 17.

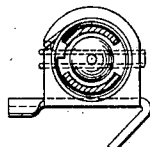


Fig. 16.

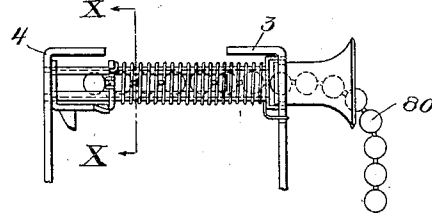
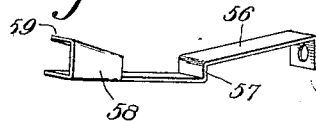


Fig. 15.



WITNESSES:

Witness
R. Munk

INVENTOR:

John Darby
BY *John D. Morgan*
his ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN DARBY, OF SUMMIT, NEW JERSEY.

LAMP-SOCKET.

1,056,154.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed October 12, 1910. Serial No. 586,688.

To all whom it may concern:

Be it known that I, JOHN DARBY, a citizen of the United States, and a resident of Summit, in the county of Union and State of New Jersey, have invented new and useful Improvements in Lamp-Sockets, of which the following is a specification.

The invention relates to incandescent lamp sockets, and in certain of its aspects more particularly to double pole, double break pull chain sockets, although in some aspects thereof the invention is also applicable to other current controlling devices.

The objects of the invention will appear in part hereinafter and will in part be obvious to those skilled in the art.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and forming a part hereof, illustrate one embodiment of the invention, the same serving in connection with the description herein to explain the principles of the invention.

Of the drawings: Figure 1 is an elevation of a lamp socket constructed in accordance with the principles of the invention, and showing the parts in what may be termed the current-off position; Fig. 2 is a corresponding view to Fig. 1 but showing the parts in the other, or what may be termed the current-on position just after the actuation of the current controlling parts; Fig. 3 is a corresponding view to Figs. 1 and 2, but showing the actuating means having moved back in position to begin the release movement for current controlling parts from the current-on position; Fig. 4 is a corresponding view to the foregoing figures, but showing the parts after the beginning of the current off or circuit breaking movement of the current controlling devices and actuating parts therefor; Fig. 5 is a sectional plan on the line A—B of Fig. 1, looking in the direction of the arrows; Fig. 6 is a partial vertical section on the line C—D of Fig. 5, looking in the direction of the arrows; Fig. 7 is a perspective view of certain supporting and current controlling devices shown of a larger size than the preceding figures; Fig. 8 comprises side and end views of the sliding circuit making and breaking device; Fig. 9 is an enlarged side

elevation of the current controlling devices showing the pawl piece in engagement with the holding device for the commutator piece just prior to the release of the latter, the end of the commutator piece being cut off for the sake of clearness; Fig. 10 is an end view looking at Fig. 9 from the left; Fig. 11 is a similar view to Fig. 9, but showing the commutator piece returned to the current off position, but the pawl piece not turned; Fig. 12 is an end elevation looking at Fig. 11 from the left; Fig. 13 is a similar view to Figs. 9 and 11 showing the pawl piece returning past the holding device after moving the commutator piece into the current on or circuit closing position; Fig. 14 is an end elevation looking at Fig. 13 from the left; Fig. 15 is an enlarged perspective detail of the holding and releasing device for the commutator; Fig. 16 is a fragmentary elevation of a different form of pawl rocking and connected mechanism; Fig. 17 is a section on line X X of Fig. 16 looking in the direction of the arrows, but on a further enlarged scale; and Fig. 18 is a likewise enlarged view of the pawl piece shown also in Figs. 16 and 17.

Referring to the accompanying drawings, illustrating by way of example an embodiment of the invention, a socket is shown having opposed heads 1 and 2 of insulating material. Suitable means for connecting and supporting these heads in proper relation to each other are provided, the embodied form thereof comprising standards 3 and 4, which are also utilized to support the current controlling devices. The standard 3 is shown with angled ends 5 and 6, and the standard 4 with similar angled ends 7 and 8, for attachment, by screws or otherwise, to the socket heads 1 and 2.

The current and circuit controlling devices are shown arranged for a double pole, double break, that is to cause a gap to be made or to be bridged over in each arm or branch of the circuit to respectively break and make the circuit. The embodied form of such means comprises a set of two contact pieces 11 and 12 in one branch of the circuit, the contact piece 11 connecting to the line by suitable means such as the binding screw 17, and the contact piece 12 to the screw shell 13 into which the lamp is screwed. The contact piece 12 has an angled foot 14 resting upon the socket head

2, and which is connected by the screw bolt 15 to the flange 16 of the screw shell 13, which flange rests against the opposite face of the socket head 2. The contact pieces are formed to have wiping contact with a connecting strip moving in a straight line and also according to one feature of the invention moving to and from the contact pieces to make and break the circuit. In the embodied form the end of the contact piece 11 is bent or inclined at an angle as shown at 18 and the end of the contact piece 12 is bent at an angle as shown at 19. The two ends 18 and 19 are shown in alinement and converging toward each other. In the other branch or arm of the circuit, is a set of two contact pieces 21 and 22, the contact piece 21 connects to the line by suitable means such as the binding screw 23 and the contact piece 22 connects by suitable means to the other lamp terminal. The foot 24 of said contact piece 22, resting on the socket head 2 connects by means of the screw bolt 25 to the spring plate 26 against which the central lamp terminal is adapted to press. The angled pieces 27 and 28 are similar and similarly arranged to the corresponding ones in the other branch of the circuit.

Means are provided movable into and out of position to open and close the gap between each set of contact pieces in order to break or make the circuit, said means having a wiping contact with said contact pieces and moving in a straight path and further moving in one direction to close the gap and make the circuit and in the opposite direction to open the gap and break the circuit. In the embodied form of such means a guide 30 is mounted between the standards 3 and 4 and upon said guide is movably mounted a member 31 of insulating material, which may be for convenience called a commutator. Said commutator is provided with conducting pieces which are moved into and out of position to close the gaps in the circuit as aforesaid. The commutator is centrally apertured at 32, the guide 30 passing through said aperture. The central part of said member 31 is shown of somewhat elongated form to give a good bearing on said guide and is shown also with a projection 33 on the lower side of the guide which is conveniently used to stop and position it against the standard 4. Said member 30 is shown having arms 34 and 35 extending to either side, on which arms the conducting pieces 36 and 37 are carried. Said conducting pieces have a spring action so that when they wipe into contact with the corresponding contact pieces they will press firmly thereagainst and also tend to keep the surfaces smooth and bright. The conducting piece 36 is shown angled at the intermediate points 38 and 39 to fit about three sides of the arm 34 of the com-

mutator 31. The ends 40 and 41 are shown bent diagonally outward and back, away from the arm 34. Suitable fastening means are provided, shown herein as a pin 42 passing through the arm 34 and contact piece 36 and being headed at 43 and bent over at 44 into a groove in the arm 34. The contact piece 37 and its associated parts may be of similar construction.

Holding devices acting to hold the commutator in either position are provided, and in the present embodiment it is held in and impelled toward the open circuit position by a spring shown herein as a helical spring 55 coiled about the guide 30 and acting between the commutator 31 and the standard 3. The device for holding the commutator in the circuit closing position also serves to release the commutator from the circuit closing position when acted upon by the actuating mechanism, the spring 55 serving to return the commutator to the open circuit position. The embodied form of said holding device consists of a spring member 56 shown mounted on the standard 3 and having a detent portion 57 formed therein, shaped and positioned to take over and hold the commutator piece 31. Said member 56 extends past said detent portion 57 and has an upwardly bent part 58 and extending laterally from said part 58 toward the center of the commutator piece is a flat part 59.

For the purpose of engaging with the holding means there is provided in the arm 35 of the commutator piece a groove 60 the bottom of which inclines upwardly from the side of the commutator facing the holding member and terminating in or near the opposite side thereof.

The actuating means for the commutator 31, which actuating means comprises what may conveniently be called a controller 70 having suitable guiding means and in the embodied form is mounted upon the guide 71 to slide to and fro thereon. Said controller 70 has a body portion 72 hung below the guide 71 and having two upturned ends 73 and 74, each of said ends being slotted at 75 and 76, respectively, to receive the guide 71. The slots are shaped to permit the controller to rock on its guide as shown in Figs. 10 to 14, and for purposes which will be hereinafter described. The upturned end member 74 of the controller has its extremity curved and slotted as shown at 79 to receive the chain 80.

A spring acts to keep the controller in a certain position and the same spring is utilized in the present embodiment to return the controller 70 after actuation by the chain or other equivalent means. A spring 81 is coiled about the guide 71 and has one end fastened in the notch 82 on the controller and the other end fixed in a notch 83 in the standard 3, the rotatory impulse of the spring

keeping the controller in one position but allowing it to rotate into another position and then causing it to return again.

The controller 70 has an engaging member 90 for engaging with the commutator member to move it on certain actuations of the controller and this engaging member is also utilized to rock the controller by cooperating with a suitably located and shaped surface 91 on the controller body, said surface being inclined upwardly from left to right, referring to Fig. 7. The controller 70 has also means for causing the holding and releasing device 56 to release the commutator, and is provided for this purpose with a finger 92 which engages with the laterally extending part 59 of the holding and releasing device 56 as will be later described.

The manner of operation of the hereinbefore described mechanism is substantially as follows: For convenience of description toward the right in Fig. 1 may be called front and forward and toward the left back and backward and the terms up and down will be referred to the position of the socket in said figure. The parts may be assumed to be in the position in Fig. 1 the circuit then being broken. A pull on the chain 80 moves the controller 70 along the guide 71 compressing the spring 81 as it travels. The member 90 engages the back face of the controller 70 carrying it forward to the position shown in Fig. 2. As the controller moves forward, the inclined forward portion 58 of the member 56, between the upturned portion 58 and the detent portion 57 will meet the incline 60 and ride up said incline, the spring member 56 being raised or flexed upwardly by the incline 60. When the back edge of the controller 31 reaches the detent part 57 the detent snaps over said edge and holds the controller in the forward position as shown in Fig. 2. In the meantime the spring ends 40 and 41 of the conducting strip 36 have passed, respectively, into frictional sliding engagement with the reversely inclined ends 18 and 19 of the contact pieces 11 and 12 as shown also in Fig. 2. The same thing has occurred with the spring ends of the corresponding conducting strip 37 and the inclined faces 27 and 28 of the contact pieces 21 and 22 in the other branch of the circuit. The gap in each branch of the circuit is thus closed and the circuit is made in each branch, or at each pole, at each of two points, one at each contact point, the conducting strip in each case serving to bridge the gap. The parts are now in the position shown in Fig. 2. The member 56 is in a higher position, however, than in Fig. 1 due to its being supported by the incline 60. The parts are so constructed and arranged that on the forward motion of the controller 70 carrying with it the commutator piece 31, the finger 92 travels at a

higher level than the laterally extending part 59 of the member 56 so that they do not cooperate in this forward movement. When the parts are in the position shown in Fig. 2, however, owing to the member 56 resting on the incline 60, the laterally extending part 59 is slightly above the level of the finger 92. When the chain 80 is released from the hand in Fig. 2 the spring 81 returns the controller 70 backward but the detent 57 holds the commutator piece 31 still in the circuit closing position, (Fig. 3). As the controller moves back the finger 92 engages the laterally extending member 59 on its upper inclined face, and the controller 31 is thereby rocked as shown in Figs. 13 and 14 to pass said member 59. When it passes clear thereof, the spring 81 rocks back the controller to its former position. This movement leaves the parts so positioned (Fig. 3) that on the next forward movement of the controller, the finger 92 will engage the member 59 on its under face. The chain 80 is again pulled and as the controller 70 moves forward, as stated, the finger 90 passes underneath the member 59 (see Figs. 4, 9 and 10) and owing to its being inclined downwardly and forwardly the continued travel of finger 92 lifts the spring member 59 until the detent 57 is clear of the controller 31. The spring 55 moves the commutator piece 31 back to the left hand position. The member 59 has, however, acted to rock the controller 70 about its guide 71 and against its spring 81 until the engaging member 90 is lifted above the commutator piece 31 as shown in Fig. 10, thereby permitting the commutator piece to snap back to the left ahead of the controller. This movement of the controller breaks the circuit in both branches and at both points in each branch as previously explained in connection with making the circuit. The position of the parts now, is as shown in Figs. 11 and 12 of the drawings. When the chain 80 is released by the hand, the controller 70 will then return to the left. The controller 70 must also pass the commutator piece 31 in order to again get into the position shown in Fig. 1 so that at the next pull on the chain the controller will take the commutator piece forward again to make the circuit as already described. When the chain 80 is released when the parts are in the positions shown in Figs. 11 and 12, the spring 81 drives the controller 70 toward the left. During this movement the engaging member 90 engages the inclined surfaces 91 on the commutator piece (see especially Figs. 7 and 12) and the controller is rocked on its guide to pass the commutator piece, and after passing it is rocked back into position by its spring 81. The parts are now back in the positions shown substantially in Fig. 1.

The form of controller shown in Figs. 10, 130

17 and 18 provides a safety device to prevent the chain ever coming in contact with any current carrying parts and also the economy of space. The chain is carried inside the tubular guide or slide on which the controller moves. The slotted openings in the tubular guide allow for the rocking of the controller and also for the wire staple to pass through, for the chain holding.

10 What I do claim as my invention and desire to secure by Letters Patent, is:

1. A lamp socket including in combination a commutator reciprocating on a straight guide arranged transversely of the socket, two contact pieces in one branch of the circuit with a gap therebetween, two contact pieces in the other branch of the circuit with a gap therebetween, two conducting pieces carried upon said commutator and insulated from each other, and a separately moving actuator, slidable along a straight guide parallel with first said guide, for reciprocating said commutator to and fro to cause said conducting pieces to alternately close and open the gaps in the two branches of the circuit.

2. A lamp socket including in combination a commutator reciprocating on a straight guide arranged transversely of the socket, two contact pieces in one branch of the circuit with a gap therebetween, two contact pieces in the other branch of the circuit with a gap therebetween, two conducting pieces carried upon said commutator and insulated from each other, and a separately moving actuating mechanism, slidable along a straight guide parallel to first said guide, which on one actuation moves said commutator in one direction, whereby the respective conducting pieces close the gaps in the circuit and on the subsequent actuation cause said commutator to move in the opposite direction, whereby the respective conducting pieces open the gaps in the circuit.

3. A lamp socket including in combination a commutator reciprocating on a straight guide arranged transversely of the socket, two contact pieces in one branch of the circuit with a gap therebetween, two contact pieces in the other branch of the circuit with a gap therebetween, two conducting pieces carried upon said commutator and insulated from each other, and a separately moving actuating mechanism, slidable along a straight guide parallel to first said guide, which on one actuation moves the commutator in one direction on its path of travel and on the subsequent actuation causes said commutator to move in the opposite direction on its path of travel, whereby on one movement of the commutator the conducting pieces close the gaps in their respective branches of the circuit and on the succeeding movement said conducting pieces open

said gaps in their respective branches of the circuit.

4. A lamp socket including in combination a commutator reciprocating in a straight path, two contact pieces in one branch of the circuit with a gap therebetween, two contact pieces in the other branch of the circuit with a gap therebetween, two conducting pieces carried upon said commutator and insulated from each other, a straight guide along which said commutator travels, a spring urging said commutator in one direction along said guide, a detent for holding said commutator in position against said spring and where the gaps in the two branches of the circuit are closed by said two conducting pieces, respectively, a straight guide, a controller sliding on said second guide for moving said commutator into said circuit closing position on one movement and for releasing it from said detent on the next subsequent movement, whereby said commutator is free to move in the opposite direction under the action of said spring.

5. A lamp socket including in combination a commutator reciprocating in a straight path, two contact pieces in one branch of the circuit with a gap therebetween, two contact pieces in the other branch of the circuit with a gap therebetween, two conducting pieces carried upon said commutator and insulated from each other, a straight guide along which said commutator travels, a spring urging said commutator in one direction along said guide, a detent for holding said commutator in position against said spring and where the gaps in the two branches of the circuit are closed by said two conducting pieces, respectively, a straight guide, a controller reciprocating on said second guide for moving said commutator into said circuit closing position on one reciprocation and for releasing it from said detent on the next subsequent reciprocation, whereby said commutator is free to move in the opposite direction under the action of said spring.

6. A lamp socket including in combination a commutator reciprocating to and fro on a straight guide arranged transversely of the socket, to make and break the circuit, and actuating means reciprocating to and fro on a straight guide parallel to first said guide separately from said commutator for causing said commutator to move in one direction to close the circuit and to move in the opposite direction to break the circuit.

7. An incandescent lamp socket including in combination a slidable commutator, a spring pressing said commutator in one direction, a detent for holding said commutator against its spring, a guide, a controller slidable on and rockable about said guide to move said commutator against its spring

and to cause the detent to release the commutator, said controller rocking on its guide when engaging said detent to permit the commutator to pass the controller under the impulsion of said spring.

8. An incandescent lamp socket including in combination a slidable commutator, a spring pressing said commutator in one direction, a detent for holding said commutator against its spring, a guide, a controller slidable along and rockable about said guide, a spring pressing said controller in one direction and rocking said controller to cause it to engage the commutator and pass the detent on one reciprocation to cause the commutator to slide to circuit closing position and to be held there by the detent.

9. An incandescent lamp socket including in combination a slidable commutator, a spring pressing said commutator in one direction, a detent for holding said commutator against its spring, a guide, a controller slidable along and rockable about said guide, a spring pressing said controller in one direction and rocking said controller to cause it to engage the commutator and pass the detent on one reciprocation to cause the commutator to slide to circuit closing position and to be held there by the detent, said detent rocking said controller on the next subsequent reciprocation of the controller to release the detent and permit the commutator to pass the controller.

10. An incandescent lamp socket including in combination a slidable commutator thereon, a spring pressing said commutator

in one direction, a detent for holding said commutator against its spring, a slidable controller, a hollow guide on which said controller slides, a pull chain connected to said controller and supported within said hollow guide out of contact with the other parts of the socket.

11. An incandescent lamp socket including in combination a straight guide, a slidable commutator thereon, a spring pressing said commutator in one direction, a detent for holding said commutator against its spring, a slidable controller, a straight hollow guide on which said controller slides, a pull chain connected to said controller and supported within said hollow guide out of contact with the other parts of the socket.

12. An incandescent lamp socket including in combination a straight guide, a slidable commutator thereon, a spring pressing said commutator in one direction, a detent for holding said commutator against its spring, a slidable and rockable controller, a straight hollow guide on which said controller slides and rocks, a pull chain connected to said controller and supported within said hollow guide out of contact with the other parts of the socket.

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

JOHN DARBY.

Witnesses:

ROSE MENK,

LOUELLA F. LITTLE.