

F. BARR.
ELECTRIC LAMP SOCKET.
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1,053,697.

Patented Feb. 18, 1913.

Fig. 1.

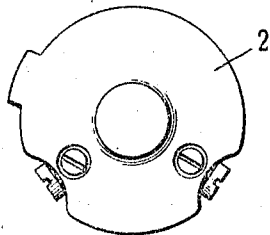


Fig. 2.

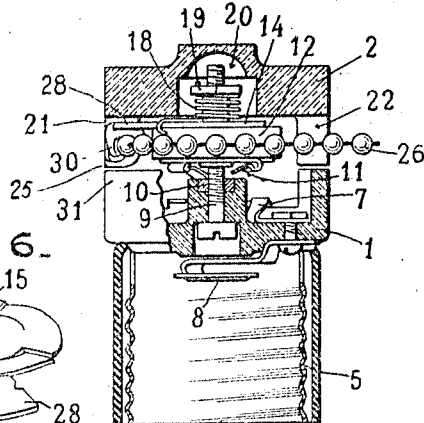


Fig. 6.

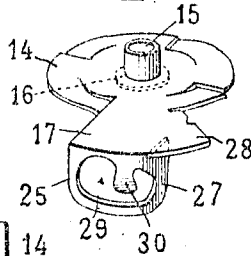


Fig. 3.

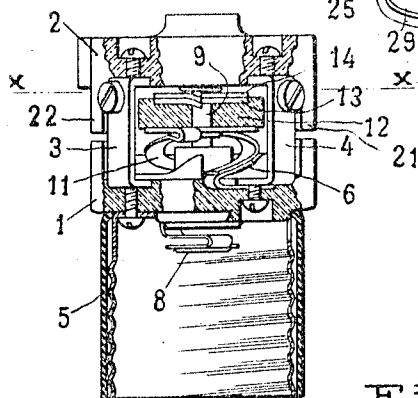


Fig. 4.

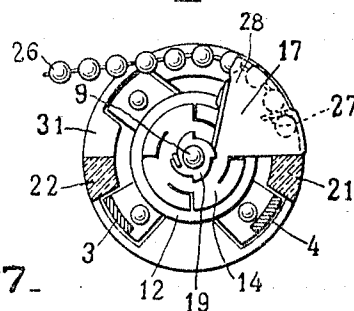


Fig. 7.

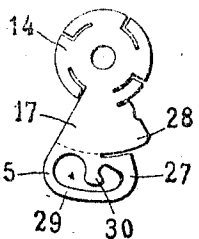


Fig. 5.

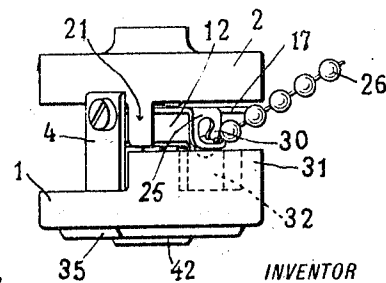


Fig. 8.

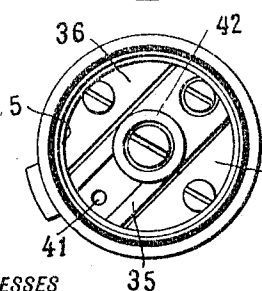
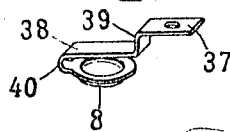


Fig. 9.



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ELECTRIC-LAMP SOCKET.

1,053,697

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed August 5, 1911. Serial No. 642,509.

To all whom it may concern:

Be it known that I, FREDERIC BARR, a citizen of the United States, and resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric-Lamp Sockets, of which the following is a specification.

This invention relates particularly to improvements in means for connecting and housing the chain of what is commonly termed a pull socket switch, and the construction of the center lamp contact and the method of supporting and insulating the various parts from each other.

The main object is to provide a simple construction which can be readily assembled and yet which will not become accidentally disassembled.

Another object is to completely insulate the various parts from each other.

Another object is to increase the length of life particularly of the oscillating lever and the center lamp contact.

Another object is to hold the parts in proper alinement at all times.

Another object is to insure a perfect contact for the center of a lamp.

The invention contemplates the mounting of the switch contacts and operating mechanism between two porcelain blocks which form between them a channel for the oscillating lever and operating chain. The operating lever has a specially formed lug to which the chain is attached and a finger for preventing accidental disengagement of the chain. The lower end of the spindle on which the operating parts are mounted is rigidly secured to the lower porcelain block and the upper end is housed in a recess in the upper porcelain block. The center lamp contact has a reflexed spring arm and an extended base portion with connecting bends which afford a maximum of resiliency with a minimum of strain. The lower porcelain block is so formed as to insulate the center lamp contact from the center spindle and from the screw socket terminal of the lamp.

Figure 1, is a plan view of a socket embodying the improvements of my invention. Fig. 2, is a front view and partial vertical section of the same showing the center lamp contact, spindle and switch operating mechanism. Fig. 3, is a rear view and partial vertical section showing the rotating switch member and the connection between the up-

per and lower porcelains. Fig. 4, is a horizontal section and plan on the plane of the line X X of Fig. 3. Fig. 5, is a side view showing the oscillating member and chain moved into a position to permit of disengagement of the chain. Fig. 6, is an enlarged detail perspective view of the oscillating lever and its hub. Fig. 7, is a plan view of the oscillating lever showing the lug to which the chain is to be attached laid out in the plane of the arm of the lever. Fig. 8, is a bottom view of a socket, the center lamp contact being removed to show the construction of the lower side of the porcelain. Fig. 9, is a detail perspective view of the center lamp contact.

The term "porcelain" will be used herein to designate the insulating material since that is the term commonly used. It should be understood however, that any equivalent material is intended to be included on that term.

The lower porcelain 1 is connected to the upper porcelain 2 for instance, by means of brackets 3 and 4 which constitute the circuit terminals. The screw socket 5 for the lamp (not shown) is connected to one of the brackets 3 and one of the switch contacts 6 is connected to the other bracket 4. The other switch contact 7 is connected to the center lamp contact 8.

The spindle 9 passes through the lower porcelain 1 and is rigidly secured thereto by means of a nut 10. The rotatable switch member 11 for connecting and disconnecting the switch contacts 6 and 7 is carried by a porcelain disk 12 which is rotatable on the spindle 9. Connected to the carrier 12 in any suitable manner so as to rotate therewith is a ratchet disk 13 formed to be operated step by step by the oscillation of the ratchet plate 14. The ratchet plate or disk 14 is preferably provided with a sleeve or tubular hub 15 which has a flange 16 to maintain the parts in proper position. The ratchet disk 14 has an arm 17 which constitutes in conjunction therewith what may be termed the oscillating operating lever. Surrounding the tubular hub 15 is a helical spring 18 having one end engaging the arm 17 of the lever and the other end engaging a toothed nut 19 screwed on to the upper end of the spindle 9. The upper porcelain 2 has a recess 20 forming a housing for the spring 18, nut 19 and the upper end of the spindle 9. The tension of the spring 18

may be adjusted by changing the upper end of the spring from one tooth of the nut to another as desired. The tension of the spring normally holds the operating lever 17 in contact with the lug 21 which projects downwardly from the upper porcelain. Another similar lug 22 is provided to limit the oscillation of the lever 17 in the opposite direction.

The oscillating lever at its outer end has a downwardly turned flange 25 to which the operating chain or cord 26 is attached. The flange 25 has an ear bent inwardly as shown in Figs. 2, 4 and 6 beneath the edge 28 of the oscillating lever. The flange 25 is provided with an opening 29 adapted to receive the end ball of the operating chain. A little to the right of the center of the opening 29 I have provided a downwardly projecting finger 30 bent inwardly and somewhat wider at its lower end. The space between the tip of the finger 30 and the lower edge of the opening 29 is just sufficient to permit the passage of the connection between two of the balls of the operating chain, when the chain is tilted in the position shown in Fig. 5. The right hand end of the opening 29 is too small to permit the chain to pull out. When the chain is in place therein, a pull upon the chain is transmitted to the ear 27 and pulls the oscillating lever toward the right. When the chain is released, the spring 18 throws the operating oscillating lever and the chain back into the normal position. This action has in the past in some constructions tended to disengage the chain from the oscillating lever. The construction herein shown however, completely prevents such an accidental disengagement. The flange 31 on the lower porcelain serves to prevent the tilting up of the chain except when the oscillating lever is in the position shown in Fig. 5 where the end ball can pass into the upper end of the recess 32. In such a position the chain can be moved around to the left while the oscillating lever is held still and the chain thus disengaged. Such an action is of course impossible when the parts of the socket are in the usual shell (not shown).

The lower part of the porcelain 1 is provided with a projecting rib portion 35 which projects between the flange sectors 36, 36 of the screw socket. The center lamp contact has a base plate portion 37 connected to the arm portion 38 by a bend 39 and the contact portion 8 is connected to the arm 38 by the bent portion 40. The base portion 37 is adapted to be secured in the recess 41 in the lower porcelain. Around the recess in which the hub of the spindle 9 is located, I preferably provide a raised rim 42 immediately above the center lamp contact so as to insure the complete separa-

tion and insulation of the various parts. The center lamp contact as shown, particularly in Fig. 9, consists of the contact portion and a base plate connected by an arm which is reflexed under the contact portion so as to provide a maximum of elasticity, the construction being adapted to yield in the bend 39 and the spring arm 30 and the bend 40. Preferably the contact portion 8 is formed in the shape of a boss so as to give a somewhat rigid contact surface even where the material used is rather thin and light.

What I claim is:—

1. In a socket switch, porcelain members having a channel formed between them, an operating lever having a flange with an opening, a chain engaged therein, shoulders carried by said lever and by one of said porcelain members to prevent the withdrawal of the chain from the flange while the chain is in the channel, stops for limiting the oscillation of the lever, one of said porcelain members having a recess between said stops to receive the end of the chain and permit disengagement of said chain by an angular movement.

2. In a socket switch, a porcelain base having a flange around one side, a spindle carried by said base, a switch member and an oscillating operating lever mounted on said spindle, a flange on the outer end of said lever projecting into proximity to said porcelain base flange and having an opening, a chain engaged in said opening, and a finger projecting from one side of said opening toward the other so as to form a narrow passage for the chain connection adjacent said porcelain base flange, said passage being so close to said base flange as to prevent the chain from being disengaged while said lever is in its normal position of rest.

3. In a switch socket, a porcelain base, a spindle and switch contacts carried thereby, a rotary switch member mounted on said spindle, an oscillating operating lever, an upwardly extending tubular hub for said lever mounted on said spindle, a spring surrounding said spindle and hub and having one end engaging said lever, and an abutment for the other end of said spring.

4. In a pull switch, an oscillating lever having a flange with an opening for the chain and a yielding finger projecting from one side of the opening toward the other and having its end bent inwardly from the flange and dividing the opening into two parts connected by a narrow passage and a chain engaged in said opening, and yieldingly held by said finger.

5. In a pull switch, an oscillating lever having a flange with an opening for the chain and a finger projecting from one side of the opening toward the other and widest

near its free end and having its end bent inwardly from the flange and dividing the opening into two parts connected by a narrow passage and forming a V-shaped socket and a chain yieldingly held in said socket by said finger.

6. In a pull switch, an oscillating lever having a flange with an opening for the chain and a finger projecting from one side of the opening toward the other and dividing the opening into two parts connected by a narrow passage and a chain engaged in said opening, the chain holding portion of the flange being bent inwardly from the main portion of the flange and said finger standing behind the end ball of the chain.

7. In a pull switch, an insulating block having a peripheral flange and a head piece forming a lateral chain guiding groove, switch contacts located within said flange, a spindle supported in said block, an oscillating lever on said spindle, an operating chain secured to said oscillating lever in said groove and an insulating disk on said spindle covering said switch contacts and separating said oscillating lever from said switch contacts and preventing said chain from engaging said contacts and terminal brackets connecting said block and head piece.

8. In a pull switch, an insulating block formed of two parts, having a narrow chain guiding and insulating groove open around one side between the parts, brackets connecting said parts, switch contacts mounted within the block, an oscillating lever pivoted within the block and having its outer end projecting into said groove and an operating chain secured to the outer end of said lever and guided in said groove and thereby kept from engagement with said contacts, said block having insulating lugs adjacent said brackets to serve as stops for said lever.

9. In a lamp socket, a porcelain base having a projecting rib on one end, a screw shell lamp terminal having a flange secured to said base on opposite sides of said rib and a center lamp contact member having a base portion secured to said porcelain base between the side flanges of said rib, a spring arm portion integral with the base portion and extending across the center of said rib and a contact portion reflexed over the spring arm portion.

10. In an electric pull switch, an insulating base block, stationary and movable switch contacts carried thereby, a spindle for the movable contact, an insulating disk on said spindle, overstanding the stationary and movable contacts and operatively connected with said movable contact, an oscillating ratchet lever on said spindle operatively connected with said insulating disk, a pull chain connected to said lever, said insulating base block having an insulating

range extending around the sides of said switch contacts and serving as a chain rail, said insulating disk being interposed between said lever and said switch contacts, a second insulating block and terminal brackets holding said blocks spaced apart from each other.

11. In an electric pull switch, two insulating blocks, terminal brackets holding said blocks spaced apart, stationary and movable switch contacts located between said blocks, an insulating flange extending around the outer edge at one side of one of said blocks toward the other block and guarding said contacts, an insulating disk covering said switch contacts, an oscillating lever having its outer end extending beyond said disk between said flange and the opposite block and a pull chain connected to the outer end of said oscillating lever and guided in the space between said flange and the opposite block.

12. In an electric pull switch, two insulating blocks, terminal brackets holding said blocks spaced apart, stationary and movable switch contacts located between said blocks, an insulating flange extending around the outer edge at one side of one of said blocks toward the other block and guarding said contacts, an insulating disk covering said switch contacts, an oscillating lever having its outer end extending beyond said disk between said flange and the opposite block and a pull chain connected to the outer end of said oscillating lever and guided in the space between said flange and the opposite block, one of said blocks having insulating shoulders projecting toward the other block adjacent said brackets for limiting the movement of said lever.

13. In a pull switch, an insulating block formed of two parts, having a narrow segmental annular groove open laterally around one side, terminal brackets connecting the parts of said insulating block, switch contacts mounted within said block, an oscillating lever pivoted within said block and having one end projecting outward into said groove and an operating chain secured to said lever and guided in said groove.

14. In a pull switch, a two-part insulating block, switch contacts contained therein, a spindle supported in said block, an oscillating lever on said spindle, an operating chain secured to the outer end of said lever, terminal brackets connecting the parts of said block, said block having a segmental annular groove open around one side and insulating walls around said contacts and adjacent said brackets, said chain and the outer end of said oscillating lever being guided in said groove.

15. A pull switch, comprising a block formed of two insulating members, terminal brackets connecting said members, one of

said members having a flange forming a chamber, switch mechanism arranged within said chamber, said block having a segmental groove open around one side, metallic operating means for said switch mechanism including a pull chain and an insulating member interposed between the metallic operat-

ing means and the switch mechanism arranged to prevent the chain from contacting with the switch mechanism.

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Witnesses:

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