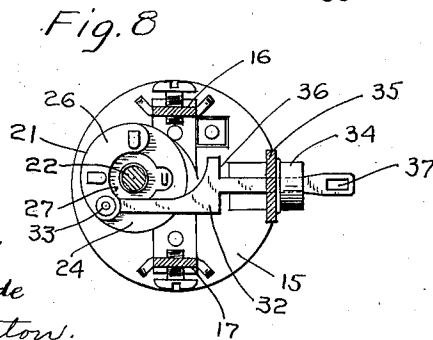
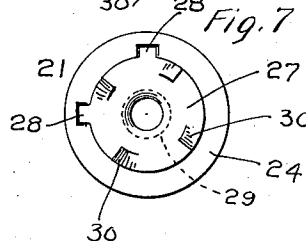
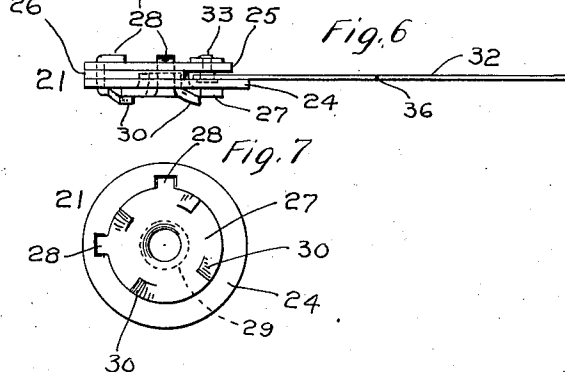
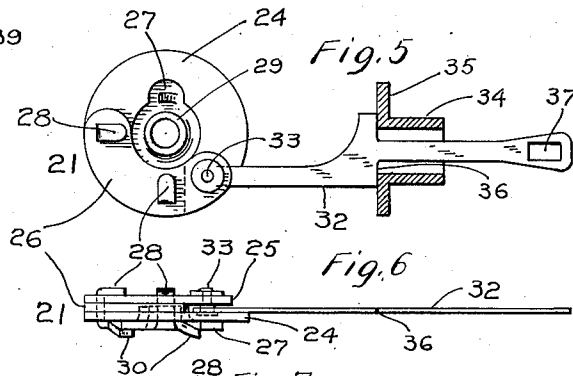
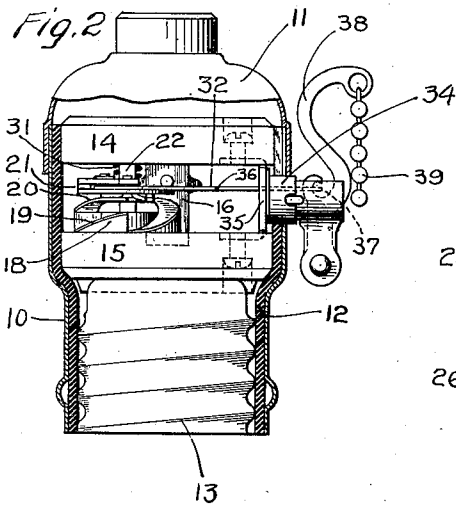
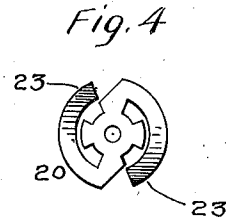
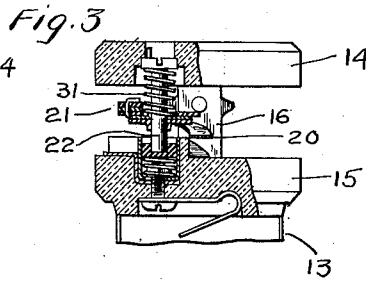
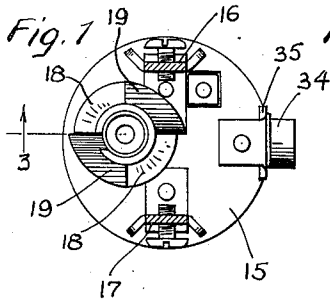


H. HUBBELL.
PULL SOCKET.
APPLICATION FILED MAY 6, 1912.

1,053,177.

Patented Feb. 18, 1913.



WITNESSES:

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PULL-SOCKET.

1,053,177.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed May 6, 1912. Serial No. 695,473.

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 Pull-Sockets, of which the following is a specification.

This invention relates to pull sockets for incandescent electric lamps and has for its general objects to simplify the construction, to reduce the number of parts and the cost of construction, and to so greatly improve the operation in use that danger of the mechanism getting out of order is practically eliminated.

A further object of the invention is to produce a pull socket so constructed as to permit the use of a relatively small shell with switch mechanism amply large to meet the requirements of use and with a large clearance between the switch mechanism and the current carrying brackets, which is accomplished by placing the switch mechanism eccentrically to the insulating blocks and on the far side from the operating mechanism.

A further object of the invention is to produce a pull socket in which, in lieu of a chain, the pulling member shall be a direct acting bar pivoted to the operating member, thus doing away with the part most likely to break and which is a frequent cause of trouble in pull sockets as ordinarily constructed.

A further object of the invention is to provide a novel insulating operating wheel by which the switch mechanism is perfectly insulated from the operating mechanism.

A further and very important object of the invention is to provide means within the shell for limiting the movement of the operating mechanism whereby the switch is fully relieved from the shocks of the pulls, the delicate mechanism of the switch being subjected to no strain whatever except to overcome the action of the operating spring.

With these and other objects in view, the invention consists in certain constructions and in certain parts, improvements and combinations which will be hereinafter described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the lower insulating block, the

current carrying brackets being in section; Fig. 2, an elevation of the insulating blocks and switch mechanism, with the shell in section; Fig. 3, a view partly in section of the switch mechanism and insulating blocks detached; Fig. 4, a plan view of the contact plate, detached; Fig. 5, a plan view of the operating member and operating bar detached, the hub being in section and the parts in the operated position; Fig. 6, an edge view of the insulating operating member and the operating bar; Fig. 7, an inverted plan view of the operating member detached; and Fig. 8 is a plan view of the switch mechanism and lower insulating block, the operating member and the operating bar being in the normal position.

10 denotes the socket shell, 11 the cap, 12 the insulating lining, 13 the screw shell, 14 and 15 insulating blocks, which I term for convenience the upper and lower insulating blocks, respectively, and 16 and 17 current carrying brackets by which the insulating blocks are connected. The lower insulating block is provided with inclines 18 which terminate with abrupt shoulders, alternate inclines carrying plates 19 which are in the circuit.

20 denotes the contact plate and 21 my novel operating member, both of which are adapted to turn freely on a pin 22. The contact plate is provided with spring arms 23 which engage the inclines and is itself engaged and operated by the operating member, oscillation of which produces rotary movement of the contact plate. The operating member comprises a lower plate 24, an upper plate 25 and an intermediate plate 26, all three made of insulating material, and under the lower plate a metal plate 27, shown as provided with integral lugs 28 which pass through the plates of insulating material and secure the four plates together.

29 denotes a bearing tube for the operating member which is struck out from the metal of plate 27. Upon the lower side of plate 27 are teeth or lugs 30 which are adapted to engage the contact plate to actuate said plate.

31 denotes a spring which returns the operating member to its normal position after each actuation, one end of said spring being connected to the pin and the other to the operating member. The tension of the operating spring may be adjusted by turning the

pin, the spring additionally acting to hold the angular head of the pin in a socket in the upper insulating block which retains it against rotation.

5 Fuller description of the operation of the switch is not thought to be required as it has been illustrated, described and claimed in various patents heretofore granted to me.

10 A vitally important feature of the present invention is the arrangement of the switch mechanism with relation to the insulating blocks, the current carrying brackets and the operating mechanism. It is desirable that the parts be as small and the arrangement as compact as possible in order to reduce the size of the shell, as the trade will not take large and clumsy pull sockets, but the switch mechanism must of course be large enough to provide ample current carrying capacity. It is furthermore essential in the present structure that the operative parts be arranged to work in the horizontal plane and that the parts of the switch be placed at a safe distance from the current carrying brackets; that is far enough away to make short circuiting impossible and also important to do away with the use of a chain within the shell and to provide a direct pull upon the operating member. These different requirements I have found it impossible to work out with a horizontally operating switch arranged centrally of the shell as heretofore. I have, however, succeeded in overcoming all of the difficulties and in providing a switch which fully meets the requirements stated, by placing the switch eccentrically to the insulating blocks and on the far side of the blocks from the operating mechanism. This requires the use of a relatively long operating bar which has relatively little swing, its operation being a direct pull and practically tangential to the arc of movement of the pivotal point of the operating bar to the operating member. It will of course be obvious that the greater the diameter of the switch the greater will be the swing of the operating bar and the nearer the switch is placed to the operating mechanism the more it will be necessary to shorten the operating bar and the greater will be its swing.

In the drawings I have illustrated an arrangement of the parts that I have found to work out perfectly in practice. The current carrying brackets are placed diametrically opposite to each other and the operating mechanism is placed midway between them. This exact arrangement, however, is not essential. It is essential, however, that the switch be located eccentrically to the insulating blocks and on the side opposite to the operating mechanism. In the present instance while the switch is at a safe distance from both current carrying brackets, it is not equidistant from said brackets, the

purpose of which is to give a direct pull of the operating mechanism upon the switch mechanism and to provide a rigid stop that will limit the movement of the operating bar and consequently the pull upon the switch mechanism, as will presently be more fully explained.

32 denotes the operating bar which is pivoted to the insulating operating member, as at 33. I have shown the intermediate plate of the operating member as shortened and the operating bar as pivoted between the upper and lower insulating plates.

34 denotes a hub which passes through the insulating lining and the screw shell and is carried by a bracket 35 which is secured to the upper and lower insulating blocks. The operating bar passes freely through the hub without contact therewith in operation and the outer end thereof is connected as by means of an eye 37 with suitable operating mechanism, as for example an operating lever 38 pivoted exteriorly of the shell to which a pendant 39 is attached.

It is not thought necessary for the purpose of this specification to describe the operating mechanism in detail, as specifically it forms no portion of the present invention but is described and claimed in another application for Letters Patent.

Another important feature of the present invention is that the operating bar is provided with shoulders 36 which are adapted to engage bracket 35, as clearly shown in Fig. 5, to limit the outward movement of the operating bar and consequently the pull upon the switch mechanism. This construction wholly prevents shocks to the switch mechanism and provides that the shocks of vigorous pulls upon the operating mechanism be taken up by a rigid member which cannot be harmed thereby.

Having thus described my invention, I claim:

1. An insulating operating member of the character described, comprising upper, lower and intermediate insulating plates, said intermediate plate being shortened and a metal plate having integral lugs which pass through the insulating plate and secure the parts together.

2. In a pull socket the combination with switch mechanism comprising an insulating operating member, of operating mechanism and an operating bar pivoted to the operating member and connected to the operating mechanism.

3. In a pull socket the combination with switch mechanism comprising an insulating operating member, of operating mechanism, an operating bar intermediate the operating member and the operating mechanism and means for limiting the outward movement of the operating bar whereby injury to the switch mechanism is prevented

4. In the pull socket the combination with insulating blocks, switch mechanism and operating mechanism, of an operating bar intermediate the switch mechanism and the operating mechanism and provided with a shoulder, and a bracket connected to the insulating blocks through which the bar passes, the shoulder on said bar being adapted to engage the bracket to limit the outward movement of the bar and prevent injury to the switch mechanism.

5. In a pull socket the combination with insulating blocks, operating mechanism and switch mechanism placed eccentrically to said blocks and on the far side from the operating mechanism, of an insulating operating member for the switch mechanism and an operating bar intermediate said operating member and the operating mechanism.

6. In a pull socket the combination with insulating blocks, operating mechanism and switch mechanism placed eccentrically to said blocks and on the far side from the operating mechanism, of an insulating operating member for the switch mechanism, an operating bar intermediate the operating member and the operating mechanism and provided with a shoulder and a bracket connected to the insulating blocks through which the operating bar passes and which is

adapted to be engaged by the shoulder, substantially as described, for the purpose specified.

7. A socket of the character described comprising insulating blocks, operating mechanism, switch mechanism placed eccentrically to said blocks and on the far side from the operating mechanism, an insulating operating member, an operating bar intermediate said member and the operating mechanism and provided with a shoulder and a bracket secured to the insulating block through which said bar passes and which is adapted to be engaged by said shoulder whereby injury to the switch is prevented.

8. A socket of the character described comprising insulating blocks, operating mechanism, switch mechanism placed eccentrically to said blocks and on the far side from the operating mechanism, an insulating operating member, an operating bar intermediate said member and the operating mechanism and means for limiting the outward movement of the operating bar.

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

HARVEY HUBBELL.

Witnesses:

S. W. ATHERTON,
H. W. MEADE.