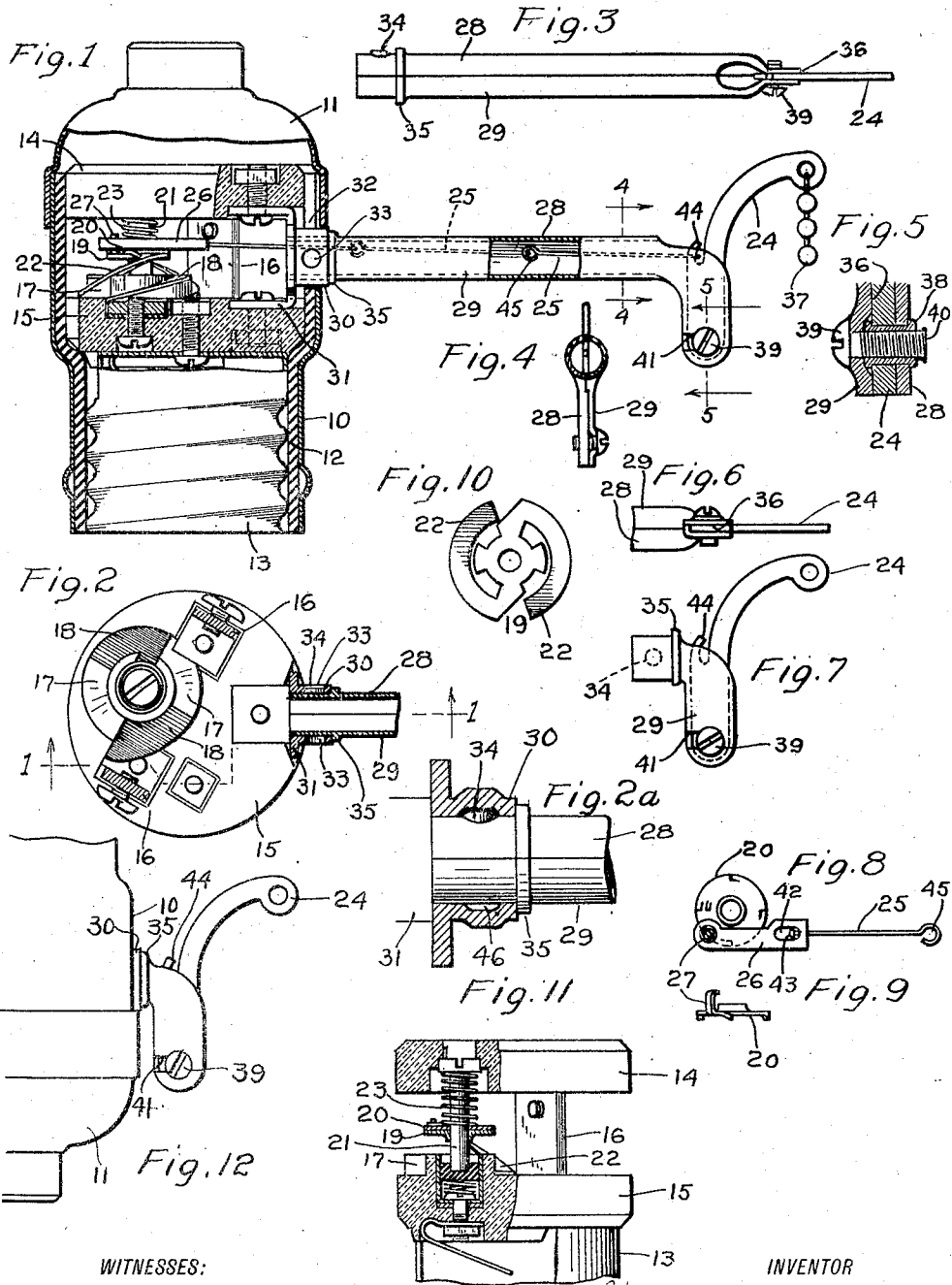


H. HUBBELL.
 PULL SOCKET.
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WITNESSES:

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PULL-SOCKET.

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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 object to provide a construction which shall be thoroughly simplified, the number of parts and the cost of production being reduced to the minimum, and in which the operating mechanism shall be readily attachable, removable and adjustable and adapted to place the pendant close to or at any required distance from the shell, if used in connection with a globe, shade or husk, all changes and repairs being made without disturbing the works, shell or cap.

With these and other objects in view I have devised the novel structure which I will now describe, referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts.

Figure 1 is a view partly in elevation and partly in section on the line 1—1 in Fig. 2, looking in the direction of the arrows, illustrating the construction and operation of my novel mechanism; Fig. 2 a plan view of the lower insulating block, the current carrying brackets being in section and the non-current carrying bracket in plan; Fig. 2^a an enlarged detail view illustrating a modification in details of construction; Fig. 3 a plan view of a relatively long tubular arm detached; Fig. 4 a section of the tubular arm on the line 4—4 in Fig. 1, looking in the direction of the arrows; Fig. 5 a detail sectional view on an enlarged scale, on the line 5—5 in Fig. 1, looking in the direction of the arrows; Fig. 6 an inverted plan view of the outer end of the arm as seen in Fig. 1; Fig. 7 an elevation of a short tubular arm detached; Fig. 8 a plan view of the operating plate and insulating link detached; Fig. 9 an edge view of the operating plate with the insulating link removed; Fig. 10 a plan view of the contact piece detached; Fig. 11 a vertical section of the switch mechanism with the operating plate removed, the position of the parts corresponding with Fig. 1; and Fig. 12 is an elevation showing the socket reversed.

10 denotes the socket shell, 11 the cap, 12

the insulating lining, 13 the screw shell, 14 and 15 insulating supporting blocks which I term for convenience upper and lower insulating blocks, respectively, and 16 current carrying brackets by which the insulating blocks are connected. The lower block is provided with inclines 17 which terminate in abrupt shoulders, alternate inclines carrying plates 18 which are in the circuit. The contact plate 19 and the operating plate 20 are adapted to turn freely on a pin 21. The contact plate is provided with spring arms 22 which engage the inclines and is engaged and operated by the operating plate, oscillation of the operating plate producing intermittent rotary movement of the contact plate to open and close the circuit.

23 denotes a spring which returns the operating plate to its normal position after each actuation, one end of such spring being connected to the pin and the other to the operating plate. The tension of the operating spring may be adjusted by rotating the pin, the spring acting additionally to hold the angular head of the pin in a socket in the upper insulating block which retains it against rotation.

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

The gist of the present invention lies in the fact that the operating mechanism is wholly disconnected from the shell and may be attached, removed, adjusted or changed, in a moment's time and without in any way disturbing either the works, shell or cap.

The operating mechanism consists of an operating lever 24 pivoted to a removable arm and connected by means of one or more detachable links 25 with an insulating link 26 which is pivoted to the operating plate as at 27. The arm is preferably tubular so as to inclose and conceal the links and is made in two parts indicated respectively by 28 and 29, which detachably engage a hub 30 formed integral with or rigidly secured to a non-current carrying bracket 31, which in turn is secured to the insulating blocks. The hub just extends through the usual slot 32 in the insulating lining and screw shell. The hub is provided in each side with a hole 33 or depression 46, as preferred, (see Figs. 2 and 2^a) and part 28 of the arm is provided with a projection 34 which is adapted to engage either of the holes or de-

pressions. The ends of the parts of the arm just pass within the hub and are provided with ribs or beads 35 which engage the end of the hub and limit the inward movement of the parts of the arm. The outer end of the arm is bent at an angle and at the extreme end thereof the operating lever is pivoted between the parts and swings in a slot 36. The free end of the operating lever is shown as curved outward and the pendant 37, which may be a chain or ornamental cord, is attached thereto. I preferably pivot the lever to part 28 and secure the outer ends of the parts together in the manner illustrated in Fig. 5. The lever is pivoted on a hollow rivet 38, the ends of which are headed outwardly locking the lever and part 28 together but leaving the lever free to swing. The hollow rivet is internally threaded and is engaged by a screw 39. This screw is slightly longer than the combined thickness of the parts of the arm and the lever, is unthreaded for the portion of its length directly under the head and when in place has its end upset, as at 40, to prevent it from becoming detached from part 28 and the lever. Part 29 is provided near its end on the inner side with a slot 41 which receives the screw freely, the parts being locked together after assembling by tightening up the screw, the head of which will bear upon part 29 leaving the lever free to oscillate.

The operating lever is connected to the insulating link by means of as many links 25 as may be required, depending entirely upon the length of the arm. The connection of the inner link to the insulating link must be a swivel connection in order to permit reversal of the arm and lever. I have shown the insulating link as provided with a recess 42 and the end of the inner link 25 as passed through the wall between the end of the link and the recess and headed down as at 43 to retain the link 25 in engagement with the insulating link, leaving the link 25 free to be turned. The operating lever is provided with a hook 44 which is engaged by the other end of the link 25 or by the outer end of the outer link 25 if more than one of said links are used. The links 25 (except the inner one) are shown as provided at their ends with eyes 45 which are adapted to engage each other or to engage the hook on the operating lever.

When the socket is used without either shade, globe or husk, it is of course desirable to have the pendant hang close to the shell. I therefore use the form of arm illustrated in Fig. 7, in connection with which no additional links 25 are used but the link 25 that is connected to the insulating link is connected at its other end to the hook 44 on the operating lever. In case the socket is to be used with a shade, globe or husk, comple-

mentary parts 28 and 29, of the arm, are provided of the required length to place the pendant out of contact with the shade, globe or husk, as clearly shown in Fig. 1, in which a relatively long arm is used requiring three links 25 between the operating lever and the insulating link.

The operation is as follows: It will of course be understood that the free end of the operating lever must at all times project upward so that the switch mechanism will be operated by a downward pull upon the pendant. Suppose the parts are in the assembled position and that it is required to put in a longer or a shorter arm or to reverse the arm and operating lever when the socket is to be reversed, *i. e.* changed from the position shown in Fig. 1 to the position shown in Fig. 12, or vice versa. The operator first loosens screw 39 sufficiently to permit part 29 to be moved toward the right, as seen in Fig. 1. This may be done readily as this part simply slides into the hub but is not provided with a projection to engage a hole or depression in the hub. As soon as part 29 has been removed, part 28 may be removed by simply moving it laterally sufficiently to disengage the projection from the hole or depression and then withdrawing it the same as part 29. If it was merely required to reverse the arm and lever, instead of placing projection 34 in engagement with the hole or depression that is away from the point of view in Fig. 1, said projection would be placed in engagement with the hole or projection that is toward the point of view and the lever would project in the opposite direction (compare Fig. 12 with Fig. 1). The inner end of part 29 would now be inserted in the hub and simultaneously the slot 41 in the other end of said part would receive screw 39, the part sliding over the unthreaded portion of the screw. The insertion of the inner end of part 29 into the hub locks the part 28 therein, ribs 35 preventing any inward displacement of the parts, after which the two parts are locked together and the arm as a whole, and with it the operating lever, are locked to the socket by tightening up screw 39. In changing from a long arm to a short arm, or vice versa, it is simply necessary to use a short arm if no globe, shade or husk is used, or an arm of proper length to place the pendant out of reach of any shade, globe or husk that may be used and to connect the hook on the lever with the insulating link, using as many links 25 as may be required. The links are connected by opening one of the eyes and connecting it with an eye of the next link. The opened eye may then be closed to retain the eyes in engagement. The outer eye of the outer link is engaged with the hook on the operating lever and then the hook is closed down to prevent dis-

engagement. In order to permit ample movement of the insulating link without its coming in contact with bracket 31, I have rearranged the parts within the shell and have placed the switch mechanism out of center; that is, at one side of the space between the insulating blocks.

Having thus described my invention I claim:

1. In a pull socket, the combination with supporting blocks, and a bracket mounted between said blocks, of a removable arm attached to said bracket, and an operating lever pivoted to said arm.

2. In a pull socket, the combination with supporting blocks, a bracket between said blocks, and a shell inclosing said blocks and provided with a slot, of an arm passing through said slot and detachably engaging said bracket, and an operating lever pivotally supported by said arm.

3. In a pull socket, the combination with a non-current carrying bracket having a hub, of an arm detachably secured to said hub, an operating lever pivoted to said arm and switch operating means connected to the lever and extending through the arm and the hub.

4. In a pull socket, the combination with a non-current carrying bracket having a hub provided with depressions in opposite sides, of a two-part arm, one of said parts having a projection adapted to engage either of said depressions, whereby the arm is made reversible, and said arm being retained in place by the insertion of the other part, and switch operating means carried by the arm.

5. In a pull socket, the combination with a non-current carrying bracket having a hub provided with depressions in opposite sides, of a two-part arm, one of said parts having a projection adapted to engage either depression and both parts having ribs to limit inward movement, the part having the projection being locked in engagement with the hub by the insertion of the other part, and switch operating means carried by the arm.

6. In a pull socket, the combination with a non-current carrying bracket having a hub provided with depressions in opposite sides, of a two-part arm, one of said parts having a projection adapted to engage either depression and being retained by the inser-

tion of the other part, a hollow rivet engaging the part having the projection, an operating lever pivoted on said rivet and a screw engaging said rivet and acting when tightened to lock the parts together and to the hub.

7. In a pull socket, the combination with a non-current carrying bracket, of a two-part arm adapted to detachably engage said bracket, an operating lever pivoted to one of said parts and means for locking said parts together and to the bracket.

8. In a pull socket, the combination with a non-current carrying bracket having a hub provided with a depression, of a two-part arm, one of said parts having a projection adapted to engage the depression and to be retained by the insertion of the other part and said other part being provided with a slot, a hollow rivet engaging the part having the projection, an operating lever pivoted on said rivet and a screw which engages the hollow rivet and is received in the slot in the other part, said screw when tightened up locking the parts together and to the hub.

9. Pull socket switch operating mechanism comprising a two-part arm, an operating lever pivoted to one of said parts and a screw engaging said pivot by which the parts are locked together leaving the lever free to swing.

10. Pull socket switch operating mechanism comprising a two-part arm, an operating lever, a hollow rivet engaging one of said parts, an operating lever pivoted on said rivet and a screw engaging said rivet, the part not carrying the lever having a slot which receives the screw so that the screw when tightened up will lock the parts together leaving the lever free to swing.

11. In a pull socket, the combination with supporting blocks, and a bracket supported between said blocks, of an arm detachably connected to the bracket, an arm operating lever pivotally supported by said arm, and a link having a swiveled connection with said lever.

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

HARVEY HUBBELL.

Witnesses:

A. M. WOOSTER,
S. W. ATHERTON.