R. B. BENJAMIN.

CLUSTER LAMP SOCKET.

APPLICATION FILED APR. 14, 1908.

980,913.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

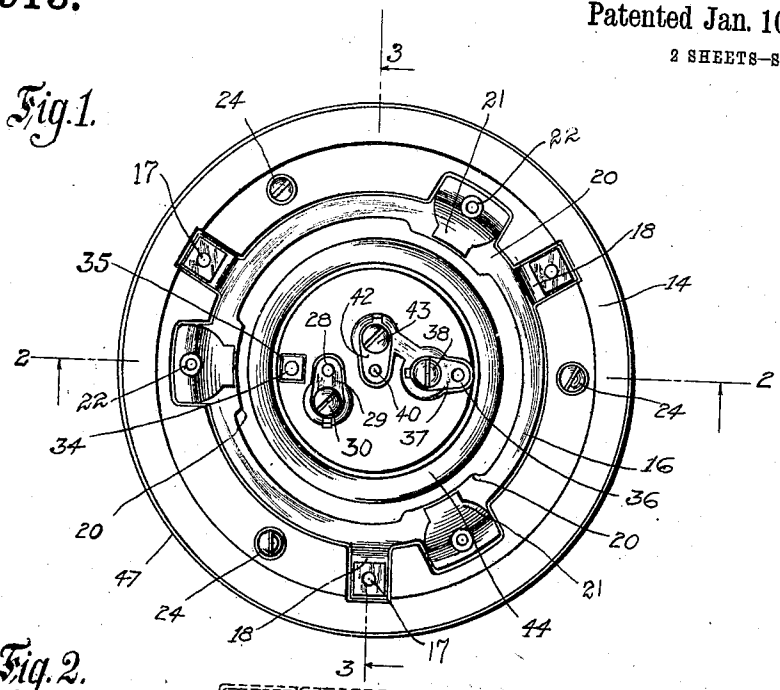
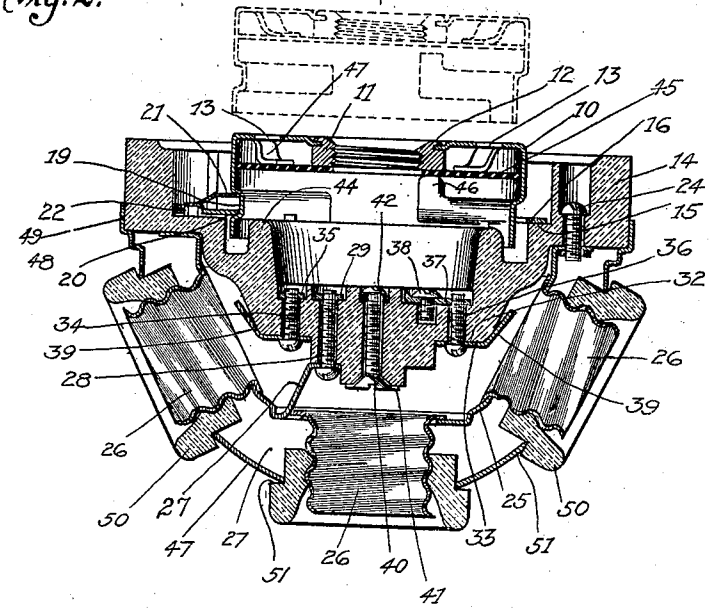


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

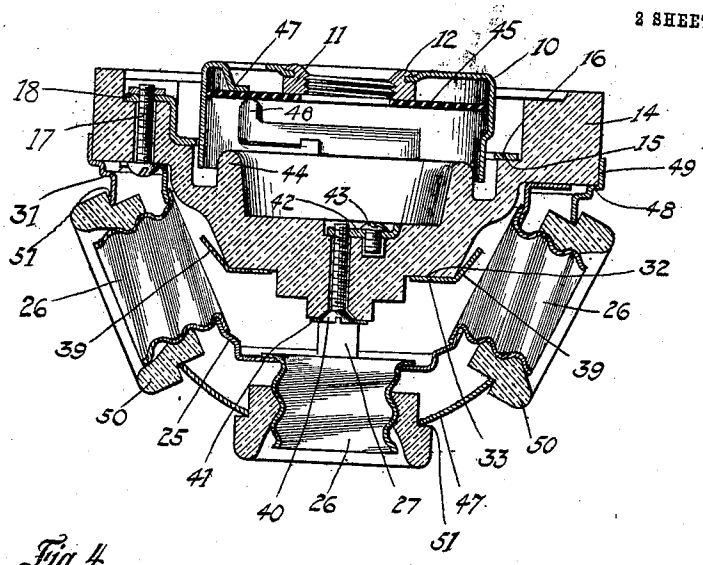


Fig. 4.

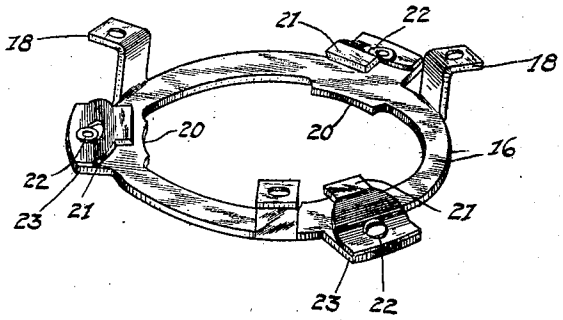


Fig. 5.

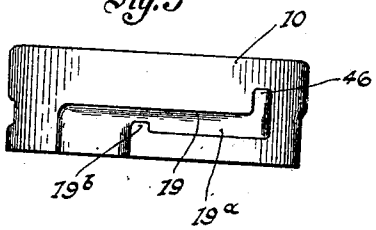
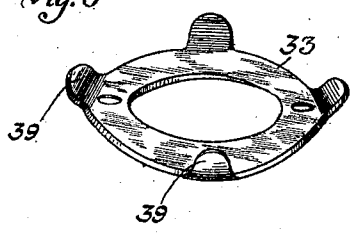


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CLUSTER LAMP-SOCKET.

980,913. Specification of Letters Patent. **Patented Jan. 10, 1911.**

Application filed April 14, 1908. Serial No. 426,941.

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Cluster Lamp-Sockets, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to cluster lamp sockets and contemplates structural improvements therein. These improvements are directed toward simplicity in construction and are applied for the purpose of obtaining a device wherein the electrical connections may be made readily and conveniently.

It is the further object of my invention to so fortify the current-carrying parts as to reduce the possibility of short circuits and crosses and as to prevent their electrical connection with any of the exposed parts of the structure.

Broadly, the device of my invention comprises two structural units, one of which is rigidly mounted upon a main support and forms, by means of a separable connection, the sustaining member for the other upon which the lamp-holding and contacting parts are mounted. The separable connection between the two units permits taking down the lamp-carrying member of the device conveniently and admits of ready access to the binding terminals.

My invention is illustrated in the accompanying drawings in which,

Figure 1 is a plan view of the lower or lamp-carrying unit. Fig. 2 is a cross sectional view of the complete device, the section being taken on the line 2—2 of Fig. 1 and looking in the direction indicated by the arrows, one of the separable units being indicated in dotted lines as removed from the other; Fig. 3 is a cross sectional view of the complete device taken on the line 3—3 of Fig. 1 and looking in the direction indicated by the arrows; Fig. 4 is a detail view illustrating, in perspective, a part which I employ to obtain the separable connection between the structural units of the device; Fig. 5 is an elevational view of the supporting unit; and Fig. 6 is a perspective view illustrating one of the electrically contacting members which I employ.

Like reference characters are applied to the same parts throughout the various figures.

The device of my invention comprises broadly, two structural units: a supporting member which is rigidly mounted upon a main support, such as a ceiling or a conduit extending from a ceiling as is usual in the art, and a base detachably sustained by said supporting member and carrying the lamp-holding and current-conducting parts of the device. In the embodiment herein shown the supporting member is in the form of an inverted dished cap 10 which is provided with a central opening through which the leading-in conductors may be passed to enter the structure as will hereinafter be described. This cap is conveniently constructed of sheet metal, and in order that the same may be properly sustained by a conduit, such as an ordinary pipe, I have provided a bushing 11 formed of more substantial material and having a reduced portion extending into the central opening, being burred over as shown at 12 to secure its firm mechanical attachment to the body of the cap. This bushing is interiorly threaded for the reception of a pipe which also forms the conduit for the supply conductors. It is sometimes desirable to secure the structure directly to a ceiling or other similar support, and in such cases, suitable supporting bolts or screws may be passed through the openings 13, 13 which I have provided in the cap.

The detachable unit of the device comprises a primary member in the form of an insulating base 14 and a lamp-holding and electrically contacting arrangement mounted thereupon. As will be hereinafter described, the binding terminals of the device, to which the leading-in conductors are connected, are on the upper side of this insulating base, and for the purpose of obtaining convenient access to these binding terminals, my invention contemplates means whereby the insulating base may be readily detached from the supporting cap. I have herein shown this means of detachable connection between the separable members as taking the form of a bayonet joint arrangement which is constructed as follows: The upper side of the insulating base 14 is hollowed out centrally to form an annular shoulder or ledge 15, and upon this ledge is disposed an annular plate 16, preferably

metal and held in place by means of bolts 17, 17 passing through the insulating base and through lugs 18, 18 which extend outwardly from the annular plate. The supporting cap 10 fits snugly within the annular plate and is provided with a plurality of bayonet slots 19, 19 which are arranged for the reception of a corresponding number of projections 20, 20 extending inwardly from the annular plate 16 and registering with the bayonet slots of the cap. As before stated, the cap 10 is adapted to be rigidly supported, and when it is desired to attach the insulating base thereto the projections 20, 20 on the plate 16 are passed upwardly in the corresponding vertical portions of the bayonet slots and the base is then given a slight rotary motion to pass the projections into the horizontal portions of the slots. In order that this attachment may be rigid and positive, I have provided a plurality of spring members 21, 21 which are riveted at 22 upon lugs 23, 23 extending outwardly from the annular plate 16. These lugs register with the inwardly extending projections 20, 20, the spring members 21, 21 being coextensive therewith. Thus, when the projections 20, 20 engage within the respective bayonet slots 19, 19, the spring members 21, 21 engage the upper sides of the slots to force the annular plate downward, as illustrated in Fig. 2. The inner end of each of the bayonet slots is widened as shown at 19^a to leave a portion 19^b projecting into the slot so that, when once in place, the projections 20, 20 will be securely locked against displacement unless the proper rotary movement be imparted to the insulating block to compress the spring members.

The central portion of the under side of the insulating base 14 is of general frusto-conical contour as illustrated in Figs. 2 and 3, and this is also hollowed out to provide a chamber in its upper side to accommodate the binding terminals of the device, as will be described. Secured to the insulating base by means of bolts 24, 24, which are preferably sunk therein, and surrounding this frusto-conical portion is an electrically conductive bowl-shaped shell 25 which is provided with a series of circularly arranged openings and, if desired, a central opening. At each of these openings is secured an outwardly extending threaded lamp-receiving sleeve 26 all of which sleeves, since they are electrically united by their supporting member, may be provided with a common binding terminal. The shell 25 is provided with a tongue 27, conveniently stamped therefrom, and this tongue extends upwardly to the insulating base 14 to which it is secured by means of a screw 28 passing through the base and having threaded engagement with a plate 29 in the chamber on the opposite side of the base. This plate is provided with the binding screw 30 to which one of the leading-in wires, which enter through the opening in the cap 10, may be connected. The shell 25 is cut away as shown at 31 to escape the bolts 17 which hold the annular plate 16 in place, thus preventing electrical connection between the current-carrying members and the exposed parts of the device.

The substantially frusto-conical portion of the insulating base has a shoulder 32 thereon upon which is disposed a circular electrically-conductive plate 33, this plate being secured in place by means of a screw 34, passing therethrough and through the base and into a nut 35 on the opposite side thereof, and a screw 36 similarly arranged and having threaded engagement with a plate 37 upon the upper side of the base. This plate carries a binding screw 38 which, as will be noted, forms a common binding terminal for all the circularly arranged lamps in the cluster. The circular plate 33 is provided with a plurality of outwardly extending lugs 39, 39 which form spring contacts and which project in respective register with the circularly arranged lamp-receiving sleeves 26. Thus the center terminals of incandescent lamps inserted in the sleeves 26 may contact with the respective spring lugs.

A screw 40 passes through an axial opening in the base 14, and the head of this screw, together with the cone plate 41 which it holds in place, forms the center contact to be engaged by the center terminal of a lamp inserted in the centrally disposed threaded sleeve. The screw 40 enters a plate 42 on the opposite side of the insulating base 14, and this plate is provided with a binding screw 43 to which one of the leading-in wires may be connected. It is apparent that this arrangement provides for the control of the center lamp independently of those circularly arranged. If it is desired to control the center lamp with the other lamps in the cluster, the binding screw 43 may be permanently connected with the binding screw 38 which will then form the common terminal for all the center contacts in the device. Thus, it is apparent that the lamp-holding devices and their contacts are all carried by the insulating base 14, and that, when it is desirable to obtain access to the binding screws for the purpose of making the electrical connections, the base may be readily released from engagement with the supporting member 10. In order that the separable units of the device may be parted sufficiently to gain access to the interior of the structure, it is necessary to provide an adequate amount of slack wire which may be accommodated within the hollowed out portion of the base. To prevent any loose strands of the leading-in wires

from contacting with the metallic supporting member 10 I provide upon the insulating base 14 an annular rim 44 extending upwardly in the hollowed out portion, and between this rim and the body proper of the block the supporting member 10 may extend, as clearly shown in Figs. 2 and 3. This arrangement keeps the exposed parts of the structure free from current and reduces the liability of short circuits and crosses. To secure further protection I place an insulating plate 45 on the inside of the cap 10, this insulating plate being held in place between inwardly punched portions 46 on the supporting member and downwardly projecting toes 47 also punched therefrom, as shown in Figs. 2 and 3. This insulating plate is, of course, provided with a central opening coincident with the opening in the bushing 11 to accommodate the leading-in conductors.

Disposed upon the under side of the insulating base and surrounding the lamp-holding devices is a casing 47, preferably of metal which is provided with a shoulder 48 and a rim 49 which may encounter the base to procure a structure of neat appearance. The casing is provided with a plurality of openings registering with the lamp-receiving sleeves, and these openings are of such diameter that the insulating bushings 50, 50, having threaded engagement with the outside of the lamp-receiving sleeves, may extend therein and by means of their shoulders 51 retain the casing rigidly in place.

I claim as new and desire to secure by Letters Patent:

1. In a cluster lamp socket, the combination of a bowl-shaped insulating base having a ring-shaped groove formed in the interior thereof, an inverted-cup-shaped supporting member having its edge extended into said groove, a plate secured to said base above said groove, coöperating means on said plate and cap for detachably locking said plate to said cap, a bowl-shaped shell secured at its upper edge to said base and carrying lamp-receiving shells, binding terminals within said base, electrical connection between said bowl-shaped shell and one of said binding terminals, and a contact plate disposed on said base in position to be engaged by the center terminals of the lamps and having electrical connection with another binding terminal.

2. In a cluster lamp socket, the combination with a cup-shaped supporting member, of an insulating base detachably secured to the sides of said supporting member and extending around and laterally beyond the same, a current-carrying member on the under side of said base, and a binding terminal for said current-carrying member on the upper side of said base.

3. In a cluster lamp socket, the combination with a cup-shaped supporting member, of an insulating base detachably secured to the sides of said supporting member below the same and having a hollowed out portion into which the edge of said supporting member extends, a current-carrying member on the under side of said base, and a binding terminal for said current-carrying member on the upper side of said base.

4. In a cluster lamp socket, the combination of a bowl-shaped base, a cap having the form of an inverted cup and extending into said base, a plate secured to said base, coöperating means on said cap and plate for detachably locking them together, a conducting shell inclosing the lower part of said base, a binding terminal within said base electrically connected with said conducting shell, lamp-holders secured to said shell, a contact plate extending around said base in position for engagement with the lamps, and a binding terminal electrically connected with said contact plate.

5. In a cluster lamp socket, the combination of a base having a depression in its upper side, binding terminals in said depression, a contact plate on the under side of said base electrically connected with one of said binding terminals, a conducting shell extending below said base and having its upper portion secured to the underside of said base, means for electrically connecting another binding terminal with said shell, a cap having a downturned edge extending into the depression in the base, and means for detachably securing said base to the downturned portion of said cap.

6. In a cluster lamp socket, the combination with a supporting member, of an insulating base extending laterally beyond said supporting member, a plate secured to the upper side of said base, a bayonet connection between said plate and said supporting member, and lamp-holding and contacting means carried by said base.

7. In a cluster lamp socket, the combination with a cup-shaped supporting member, of an insulating base detachably secured to said supporting member below the same and having an annular hollowed out portion into which said supporting member extends, lamp-holding and contacting means mounted upon the under side of said base, and binding terminals for said lamp-holding and contacting means disposed upon said base below said supporting member.

8. In a cluster lamp socket, the combination with a supporting cap, of an insulating hollow base, a plate carried upon the upper side of said insulating base over the hollow thereof and having an opening through which said cap may extend into said hollow, means for detachable connection between said cap and said plate, and lamp-holding and contacting means mounted upon the under side of said base.

9. In a cluster lamp socket, the combination with a supporting cap, of an insulating base detachably secured to the exterior of said cap and extending laterally therebeyond, an electrically conductive member secured to the under side of said base, a plurality of lamp-holding sleeves contacting with said electrically conductive member, contact means carried upon the under side of said base and arranged to be engaged by lamps inserted in said sleeve, said base being hollowed out below said cap and binding terminals for said electrically conductive member and said contact means respectively disposed on the upper side of said base in said hollow.

10. In a cluster lamp socket, the combination with a supporting cap having a bayonet slot therein, of an insulating base, a plate secured upon the upper side of said base and having an opening wherein said cap may extend, an inwardly extending projection on said plate arranged for engagement in said bayonet slot, and lamp-holding and contacting means carried upon the under side of said base.

11. In a cluster lamp socket, the combination with a supporting cap having a downwardly extending edge, of an insulating base having an annular groove in the upper side thereof into which said edge may extend and a central hollowed out portion, means for detachable connection between the sides of said cap and said base, lamp-holding and contacting means carried upon the under side of said base, and binding terminals for said lamp-holding and contacting means disposed on said base in said hollowed out portion.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

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M. S. FARRAR.