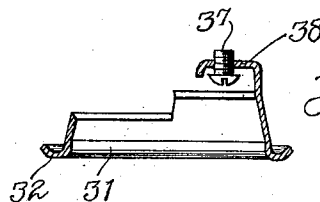
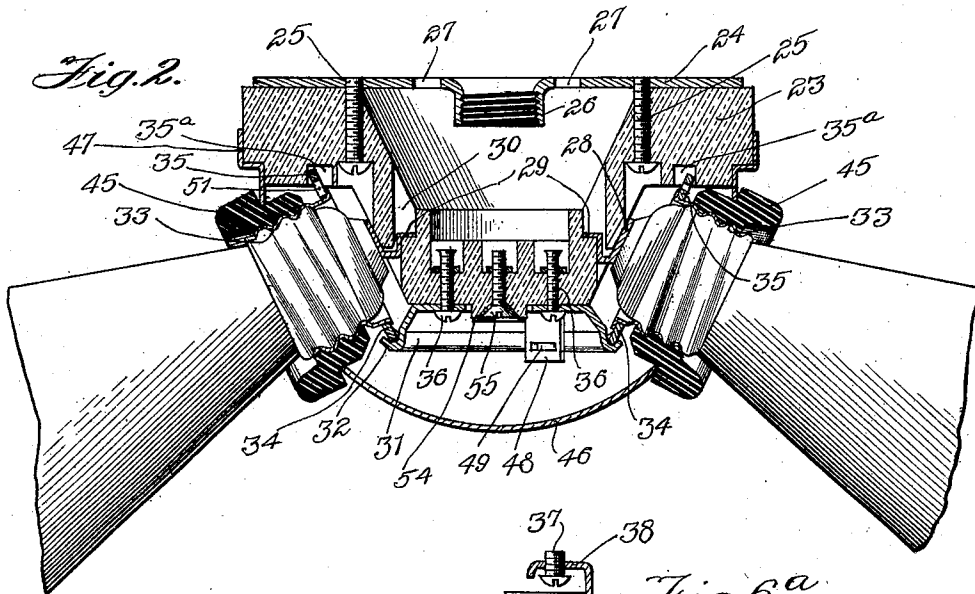
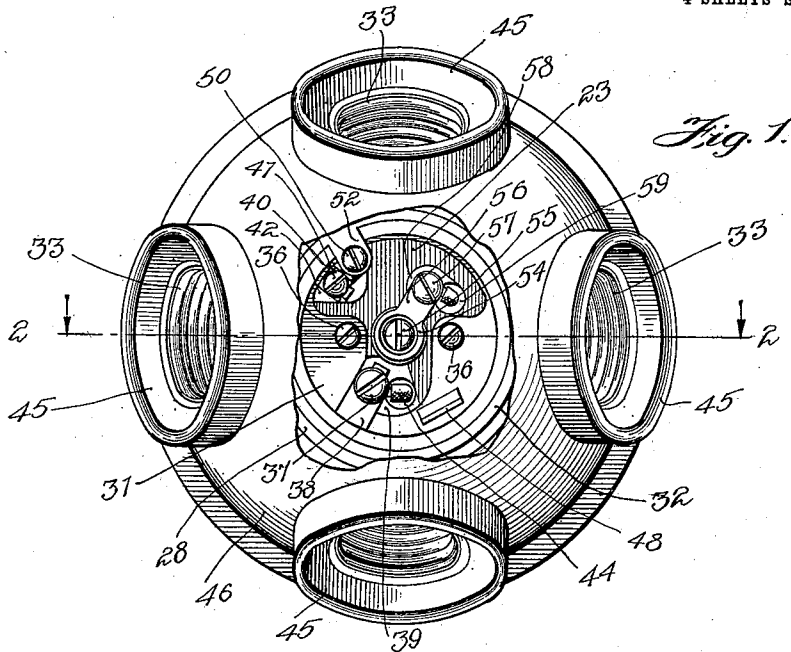


R. B. BENJAMIN.
CLUSTER LAMP SOCKET.
APPLICATION FILED DEC. 28, 1907.

980,912.

Patented Jan. 10, 1911.

4 SHEETS—SHEET 1.



Witnesses:
Ed. D. Perry
Chas. L. Hopkins

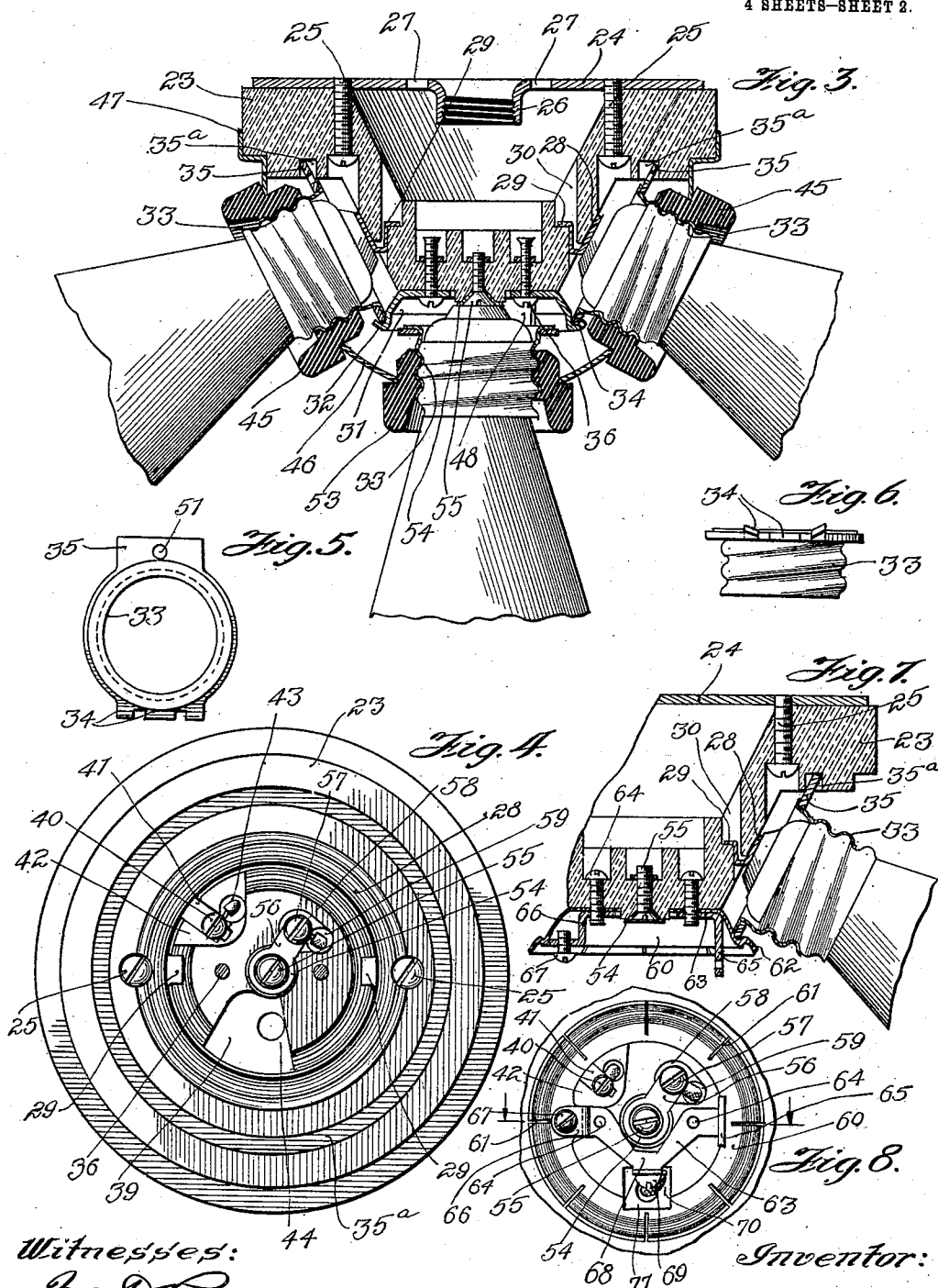
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4 SHEETS—SHEET 2.



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4 SHEETS-SHEET 3.

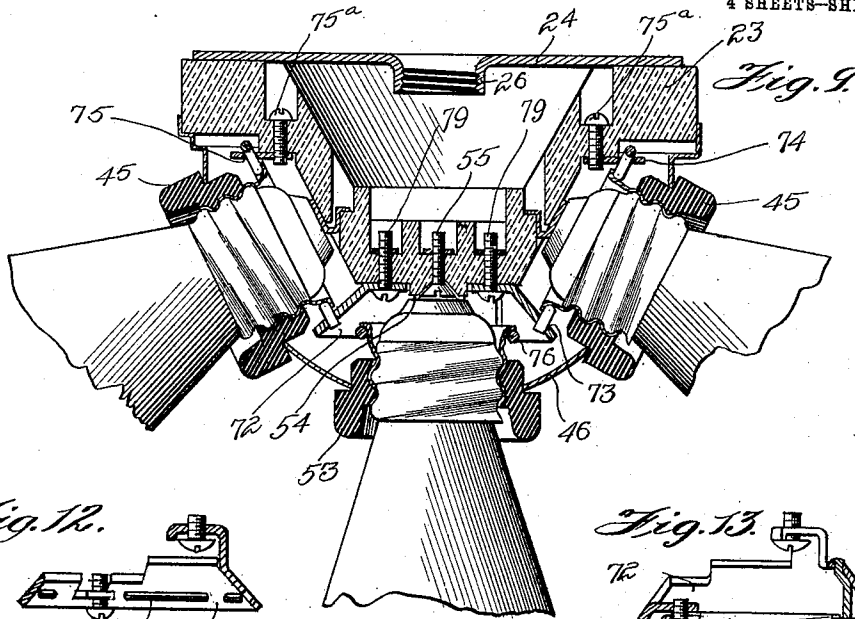


Fig. 12.

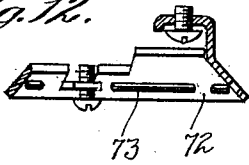


Fig. 13.

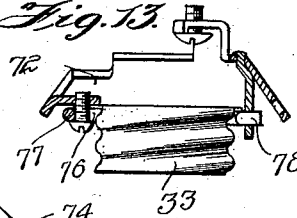


Fig. 10.

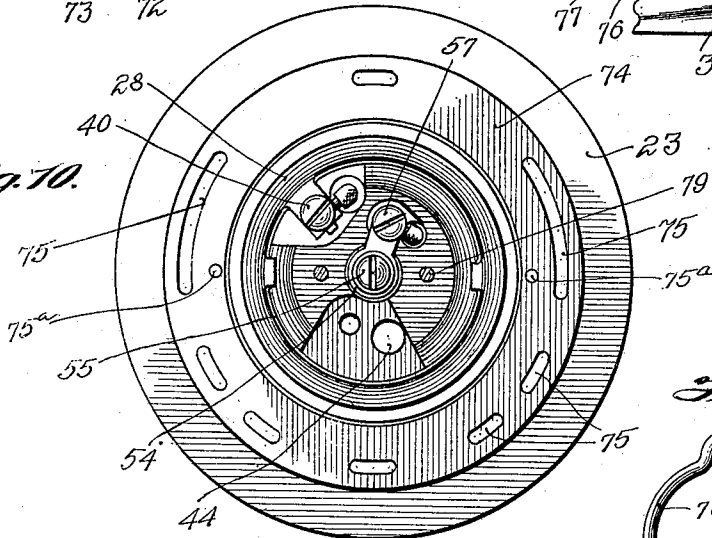


Fig. 11.

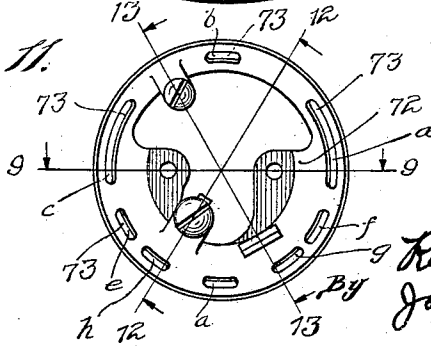
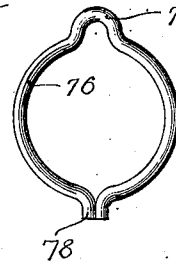


Fig. 14.



Witnesses:

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Chas. L. Hopkins

Inventor:

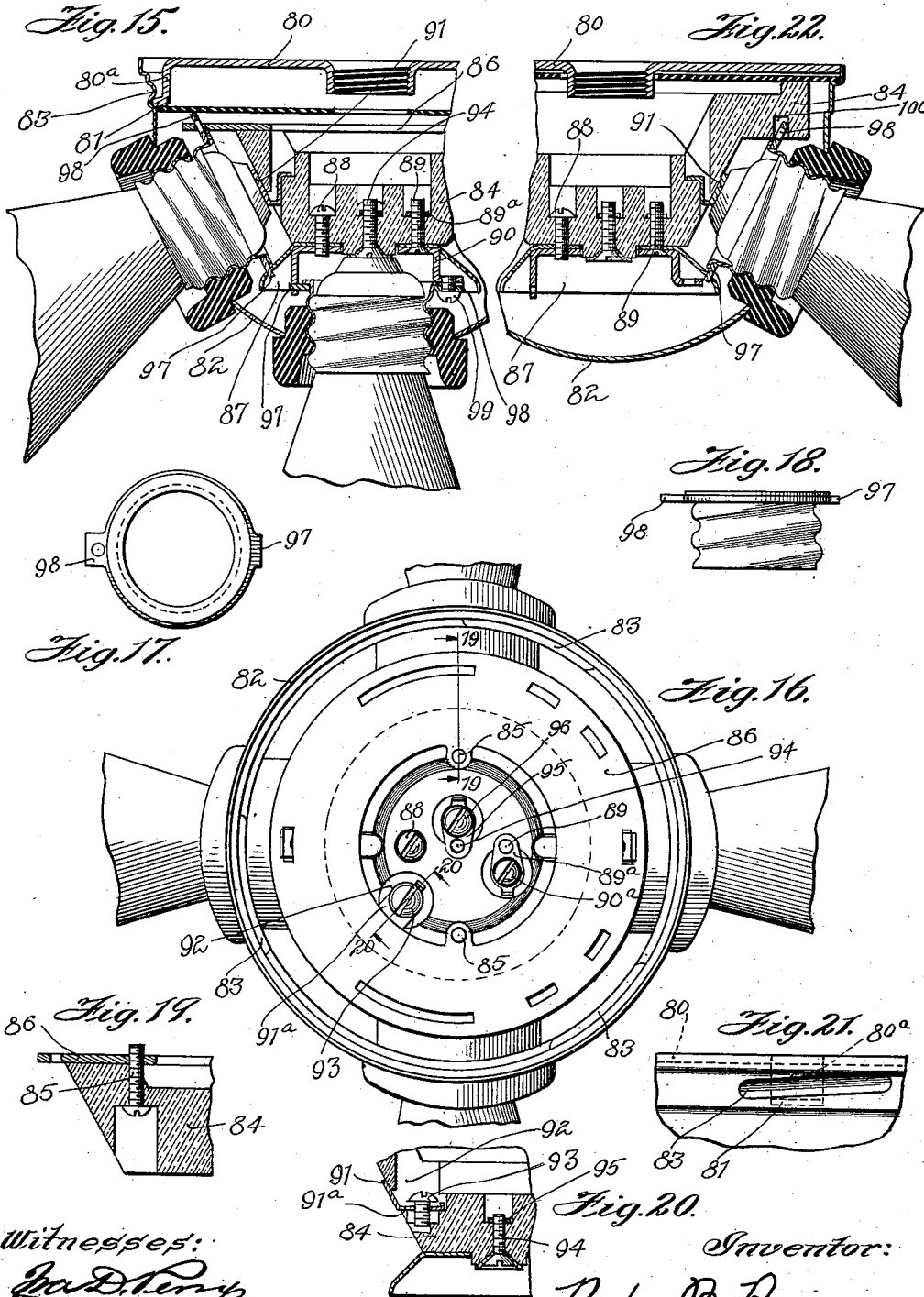
Reuben B. Benjamin
Jones, Addington &
Ames, Attys.

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980,912.

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4 SHEETS—SHEET 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

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CLUSTER LAMP-SOCKET.

980,912.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed December 28, 1907. Serial No. 408,407.

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.

This invention relates to improvements in cluster lamp sockets, the object of the invention being to provide a device of this class which is so constructed that it may be readily changed to adapt it to carry any desired number of lamps within its capacity.

In the accompanying drawings, Figure 1 is a bottom plan view of a device embodying my invention, a portion of the casing thereof being broken away to expose to view some of the interior construction; Fig. 2 is a diametrical sectional view of this form of the device, the section being taken on the line 2—2 of Fig. 1, looking in the direction of the arrows; Fig. 3 is a view similar to Fig. 2 but showing the device provided with a centrally disposed lamp; Fig. 4 is a bottom plan view of the base, the casing and one of the contact plates being removed; Fig. 5 is an end elevational view of one of the threaded lamp-receivers; Fig. 6 is a side elevational view of the same; Fig. 6^a is a sectional view of a contact plate employed in this form of the device; Fig. 7 is a partial sectional view of the base and some of the parts carried thereby, showing a modification in the means for securing the threaded shells in place; Fig. 8 is a partial inverted plan view of the form shown in Fig. 7; Fig. 9 is a sectional view similar to Fig. 3 but showing a modified form of the device; Fig. 10 is an inverted plan view of the base, the casing and some of the parts being omitted; Fig. 11 is an inverted plan view of a contact plate employed in this form of the device; Fig. 12 is a cross sectional view of the contact plate shown in Fig. 11, the section being taken on the line 12—12 of Fig. 11, looking in the direction of the arrows; Fig. 13 is a sectional view of the same part, the section being taken on the line 13—13 of Fig. 11, looking in the direction indicated by the arrows; Fig. 14 is an elevational view of a detail; Fig. 15 is a partial sectional view of a further modified form of the device; Fig. 16 is

a plan view of the form of the device shown in Fig. 15, the back-plate and insulating partition being removed; Fig. 17 is an end view of the form of threaded shell employed in this form of the device; Fig. 18 is a side elevational view of the same; Fig. 19 is a partial sectional view taken on the line 19—19 of Fig. 16, showing a detail of construction; Fig. 20 is a partial sectional view on the line 20—20 of Fig. 16, showing a detail of construction; Fig. 21 is an elevational detail view showing the method of securing the body of the device to the back-plate; and Fig. 22 is a partial sectional view showing still further modifications.

Referring first to the form of the device shown in Figs. 1 to 6^a inclusive, 23 is an insulating base formed of porcelain or similar material secured to a back-plate 24 by means of screws 25. This back-plate 24 is provided with a threaded neck 26 for the reception of the threaded end of a pipe or similar supporting means. If desired the leads may be brought down through this pipe, or they may be brought through suitable openings 27 in the back-plate. The base 23 is of general truncated cone form and carries a ring-contact member 28 which extends around the base and serves as the center lamp terminal engaging member for all of the circularly-arranged sockets. This ring 28 is held in place on the base by means of a pair of inturned and upturned lugs 29 formed thereon, these lugs extending through suitable openings 30 provided therefor and having their ends bent over to prevent their being withdrawn from these openings.

The present invention consists in the means which I employ for securing the lamp-holders in place, this means being adapted to provide for the disposition of the circularly-arranged lamps at any points around the base made necessary by the number of lamps to be used. By the use of such a construction it is made possible to change, when desired, the number of lamps which the device may receive, by simply substituting for the casing another casing having a different number of lamp-receiving openings and changing the number of threaded shells employed. The means by which I am enabled to thus vary the number of lamps will now be described in detail.

Heretofore the sockets have sometimes

been firmly secured to a stationary member carried by the base. In other constructions they have been secured to the casing and have been removable therewith. In a device made up in accordance with my present invention there is employed a plate 31 of inverted dish form, this plate having, in the forms of the invention shown in Figs. 1 to 6^a inclusive, an outturned and upturned edge 32. Each of the threaded lamp-receiving rings 33 is provided with a lateral extension 34 adapted to rest in the groove formed between the sides of the dished plate 31 and the edge 32 thereof, and with a projection 35 which rests in a groove 35^a in the lower side of the portion of the base having the greatest diameter. As the groove 35^a extends continuously around the base, and as the groove of the dished plate 31 is also circular, it is evident that the sockets may be disposed at any desired positions around the base. The plate 31 is held in position by a pair of bolts 36, 36 which extend through suitable apertures in the base. When it is desired to remove or insert a socket, these screws may be backed out to permit the plate 31 to be separated slightly from the lower side of the base. The plate 31 is provided with a suitable binding screw 37 carried by a lug 38 which extends inwardly and upwardly and occupies a recess 39 in the base. The annular contact plate 28, which engages the center terminals of the lamps, has also a binding screw 40 carried by a lug 41 which occupies a recess 42 in the base. Suitable openings 43 and 44 are provided extending through the base, through which are carried the leads to the binding screws. An interiorly threaded insulating bushing 45 is screwed on to each of the threaded shells 33, these bushings being inserted through the lamp-receiving openings in the casing 46, thereby securing this casing in place with its upper edge surrounding the base at 47. Means are provided whereby, when desired, a centrally disposed lamp socket may be had as shown in Fig. 3. The plate 31 is provided with a downwardly extending tongue 48 provided with an opening 49 for the reception of the extension 34 of the threaded shell 33. The opposite extension on this threaded shell is secured by means of a screw 50 passing through a suitable opening 51 provided for that purpose in the extension and screwing into a suitable lug 52 formed on the plate 31. This center lamp-holder may be readily added or removed as desired, and when present will carry an interiorly threaded bushing 53 similar to the bushings 45. The mechanical support for the center lamp-holder above described, affords also electrical communication between this lamp-holder and the binding screw 37 which is connected with all of the other threaded shells. The center lamp-

terminal-engaging contact member for the centrally-disposed socket consists of a thimble 54 secured in place by a bolt 55 and having a lateral extension 56 carrying a binding-screw 57 disposed in a recess 58. An opening 59 is provided in the base close to the binding-screw 57 through which a lead may pass to this binding-screw. The center contact of the central lamp being separately wired, the centrally disposed lamp may, by the provision of suitable switching means, be controlled independently of the circularly-arranged lamps.

In the modification shown in Figs. 7 and 8 the means for securing the circularly-arranged socket shells in place comprises a dished plate 60, similar in general form to the plate 31 hereinbefore described but made of lighter material and radially slitted at 61, 61 to permit the plate to yield as the sockets are inserted into place. In this form of the device, because of the resilient character of this dished plate 60, it is not necessary, when inserting or removing a socket, to back out the screws which hold the plate in place. To facilitate the insertion of the socket shells in place the edge of the plate 60 is formed with a cam surface 62 with which the extension 34 engages when the shell is thrust into place. As the edge of the plate is yieldable it will spring in when the socket is thus thrust into place, thus permitting the extension 34 to pass over into the groove and occupy this groove as in the form of device hereinbefore described. In this form of the device the means for supporting the centrally-disposed lamp-holder, when such is to be employed, consists of a bridge-plate 63 between which and the base the dished plate 60 is clamped by means of screws 64, 64 which take into suitably threaded openings in the bridge-plate. This bridge-plate 63 is provided with a downwardly extending lug 65 perforated similarly to the lug 48 of the hereinbefore described form of the device and for the same purpose. The bridge-plate has also an oppositely-disposed downwardly extending lug 66 having an outturned end provided with a screw 67 having the same function as the screw 40 of the hereinbefore described form. This bridge-plate is offset at 68 to escape the center contact 54 and carries a binding-screw 69 for making connection between a lead and the socket shells. The lug which carries this binding-screw occupies a recess 70 in the base, access being afforded to the binding-screw through a notch 71 in the dished plate 60.

In the embodiment of my invention shown in Figs. 9 to 14 inclusive the dished plate 72 is given a different form from that of the corresponding plate 31 of the preferred form of the device. This dished plate 72, instead of having an upturned edge to form a groove for the reception of the extensions of the

threaded sockets, is provided with a series of slots 73, these slots being so disposed and of such length as to be capable of receiving the extensions of any number of threaded shells within the capacity of the device, provided these shells be evenly spaced around the base. For instance: if two threaded shells be employed the slots *a* and *b* will each receive the extension of a socket. When three sockets are used slots *a*, *c* and *d* will be employed or slots *b*, *e* and *f*. If four shells are used the slots *a*, *b*, *c* and *d* will be used. If the device is to carry five lamps the slots *b*, *d*, *g*, *h* and *e* will be employed. If the device is to carry six lamps, *a*, *b*, *c*, *d*, *e* and *f* will be employed. The capacity of the device herein shown is six lamps, but it is evident that if desired a device adapted to carry a greater number of lamps could be constructed, and suitable spacing of the slots would provide for the accommodation of the required number of sockets. In this form of the device the continuous groove in the base for the reception of the upper extensions of the sockets is dispensed with and in place thereof there is provided a plate 74 having a series of slots 75 corresponding in number and position with the slots of the dished plate 72. The plate 74 is annular and extends around the tapered part of the base, being secured in place by screws 75^a, 75^a. I have illustrated herein the shells as provided with a different form of means for securing the same to the supporting plates from that shown in the preferred form, this means comprising, instead of integral wings, a ring 76 which extends around the inner edge of the shell and is secured thereto by soldering or otherwise. This ring has an outward crimp 77 at one point therearound, and diametrically opposite this crimp 77 the meeting ends of the wire of which the ring is formed are turned outwardly to form an extension 78. When the sockets are to be secured in place the screws 79, which hold the dished plate 72 in place, are backed out sufficiently to permit the crimp 77 to be passed through one of the openings in the plate 74 and the extension 78 to be passed through the corresponding opening in the dished plate 72. When the required number of lamp-receivers have been put in place the screws 79 will be turned in to draw the dished plate up in contact with the bottom of the base. The casing 46, in this form of the device, is held in place by means of threaded bushings 45 screwed on to the threaded shells, as in the preferred form. If desired, a central lamp may be employed in this form of the device, the socket for its reception being held in place in substantially the same manner as in the preferred form, the crimp 77 and extension 78 on the wire ring 76 serving the same purpose as the extensions 34 and 35 of the sockets in the preferred form.

In the form of the device shown in Figs. 15 to 21 inclusive the insulating member which carries the contacts is not secured to the back plate, but is carried by the casing, the latter being itself secured to the back plate. In this form of the device provision is made for connecting the ends of the leads with the contacts by means of binding-screws disposed upon the rear or inner side of the insulating block, these binding-screws being accessible when the body of the device is detached from the back-plate. In this form of the device it is not necessary, when the leads are to be connected, to take out the insulating bushings and remove the casing as is the case with the hereinbefore described forms of the device. As the casing, lamp-holders, contacts etc., are secured to each other and form a unitary structure and may be removed together from the back-plate, the advantage of ready connection is afforded. In this form of the device the back-plate 80 is provided with downturned integral lugs 80^a, preferably three in number, having each an outturned toe 81. The casing 82 is provided with three corresponding inwardly-projecting elongated humps or beads 83 under which, when the casing is secured to the back-plate, the toes 81 engage, the weight of the body of the device and lamps carried thereby being supported by these beads resting upon the toes 81. The beads 83 are given a slight pitch, as clearly shown in Fig. 21, and after the casing is put into place a slight rotation imparted thereto will carry the beads around over the toes 81 and the device will be supported thereby. Secured to the upper side of the insulating block 84 by means of screws 85 is a plate 86, preferably metallic, provided with perforations arranged near its outer edge, substantially the same as the slots in the plate 74 illustrated in Fig. 10 and for the same purpose. Secured to the lower side of the base 84 is a dished plate 87. This plate 87 is provided with elongated perforations near its outer edge similar to those of the dished plate 72 illustrated in Fig. 11. The plate 87 is held in place by a pair of screws 88 and 89 which extend through the plate and a bridge-piece 90. This bridge-piece 90 sustains the centrally disposed lamp socket as in the hereinbefore described forms of the device. The screw 89 extends upwardly into a plate 89^a which carries a binding-screw 90^a by means of which connection is made between one of the leads and all of the sleeve contacts in the cluster. Extending around the base is an annular center contact member 91, similar to the corresponding member in the other forms of the device, except that the binding-screw for connection of a lead therewith is accessible from the upper or inner side of the base instead of from the lower side as in the other forms. This construction

is illustrated in Fig. 20, wherein a lug 91^a extends into a recess 92 in the base and carries the binding-screw 93. The centrally-disposed lamp is separately controllable, being
 5 provided with an independently-wired center contact consisting of a screw 94 extending upwardly into a plate 95 carrying a binding-screw 96 accessible from the upper
 10 side of the base, the plate 95 and binding-screw 96 lying in a suitable depression in the base provided for that purpose. In Figs. 17 and 18 I have illustrated the form of socket
 15 shell which I employ with this form of the device, this socket shell having short projections 97 and 98. These projections 97 and 98 occupy the slots in the plates 86 and 87. This form of socket is equally well adapted for use in the central position, and when so
 20 used a screw 99, passed through the perforation in the lug 98 and taking into a threaded opening in the lug on the bridge-plate 90, will prevent this centrally-disposed socket from being displaced. In this form of the
 25 device, when the threaded bushings are inserted through the casing and screwed on to the threaded shells, the insulating block and all of the parts carried thereby are secured firmly to the casing, this whole construction forming a unitary structure removable or
 30 detachable with relation to the back-plate.

In the form shown in Fig. 22 the plate 86 of Fig. 15 is dispensed with and the insulating block is extended upwardly and provided with an annular groove 100 adapted
 35 for the reception of the lugs 98 of the socket shells.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

40 1. In a cluster lamp socket, an insulating base having a recess formed therein, a contact member mounted on said base for engaging one of the terminals of a lamp, a second contact member carried by said base,
 45 a lamp receiving shell being formed so that the shell may be gripped between the recess of the base and said second-named contact member, and a casing having an opening for receiving said shell.

50 2. In a cluster lamp socket, an insulating base having a recess formed therein, a contact member mounted thereon for engaging the center contacts of a plurality of lamps, a plurality of threaded shells, a second
 55 contact member, said second-named contact member and said lamp receiving shells being formed so that the shells may be gripped between the recess of the base and said

second-named contact, and a casing having lamp receiving openings corresponding in
 60 number to the number of shells employed.

3. In a cluster fixture; an insulating member; threaded shells; contact members mounted upon said insulating member; one
 65 of said contact members being disposed to engage the center terminals of a variable number of lamps, the other of said contact members being adapted to support a variable number of said threaded shells; said
 70 shells, said insulating member, and said second-named contact member having inter-engaging parts for connecting the same together; a casing having openings corresponding in number to the number of shells employed; and means for connecting said casing
 75 with said shells and thereby supporting said casing in position.

4. In a cluster lamp socket, a casing having lamp-receiving openings, a base within
 80 said casing, threaded shells corresponding to said openings, means carried by said base for supporting said shells and conducting current thereto, said means having a recess extending continuously around said base for the reception of the threaded shells, whereby
 85 a threaded shell may be supported at any point around said base.

5. In a cluster lamp socket, a casing having lamp receiving openings, a base within
 90 said casing, threaded shells corresponding with said openings and provided with supporting projections, means carried by said base for supporting said shells and conducting current thereto, said means having a
 95 recess extending continuously around said base for the reception of the supporting projections of said shells, whereby a threaded shell may be supported at any point around said base.

6. In a plural lamp holding device an insulating base, means carried by said base
 100 for conducting current to the center terminals of a plurality of lamps, threaded shells, and a plate secured to the base and formed with an annular groove for receiving portions of said shells, whereby the latter are
 105 locked in a coöperating relation with said current conducting means.

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

REUBEN B. BENJAMIN.

Witnesses:

M. L. FARRAR,
 CHARLES L. HOPKINS.