No. 818,750. PATENTED APR. 24, 1906.

J. H. DALE.

CLUSTER LAMP SOCKET.

APPLICATION FILED FEB. 4, 1905.

Fig. 1.

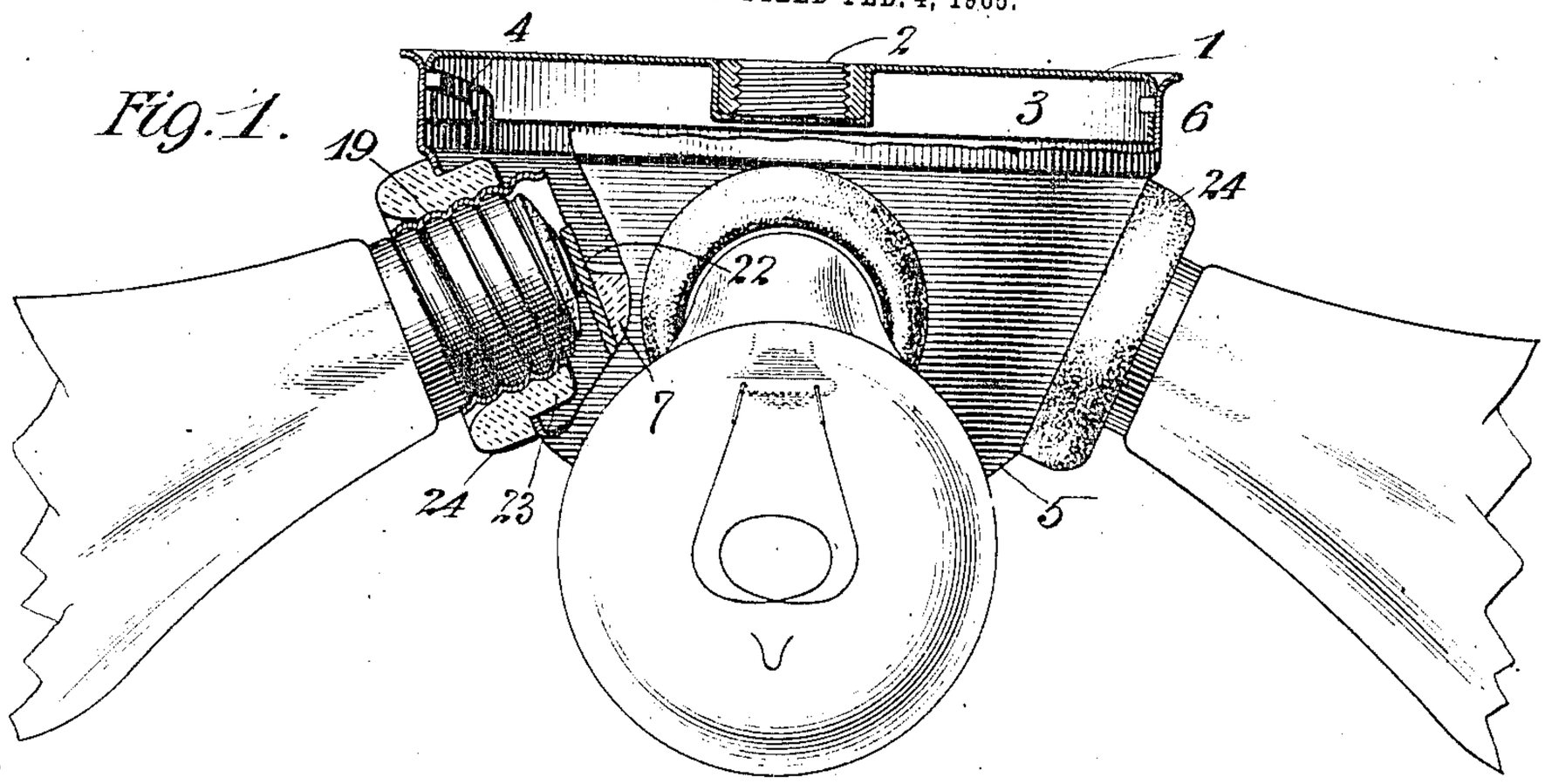


Fig. 2.

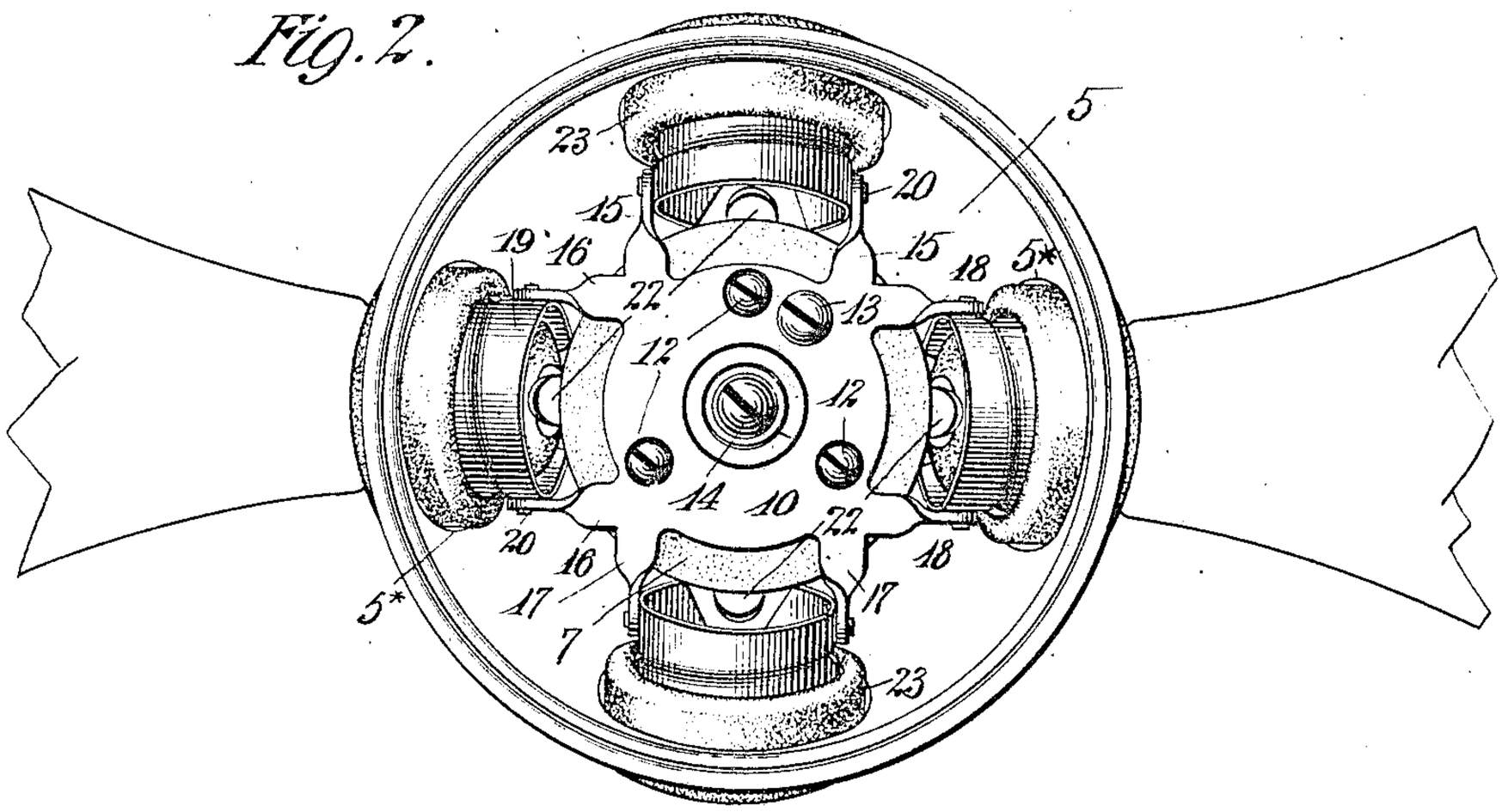
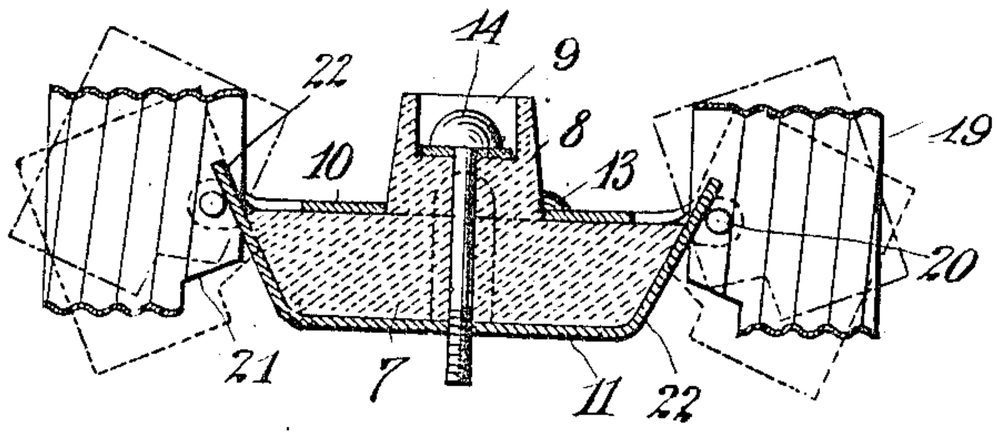


Fig. 3.



Witnesses
Paul D. Olin
Waldo M Chapin

Inventor
John H. Dale
By his Attorneys
Rosenbaum & Stöcklmayr

UNITED STATES PATENT OFFICE.

JOHN HENRY DALE, OF NEW YORK, N. Y.

CLUSTER LAMP-SOCKET.

No. 818,750. Specification of Letters Patent. Patented April 24, 1906.

Application filed February 4, 1905. Serial No. 244,098.

To all whom it may concern:

Be it known that I, JOHN HENRY DALE, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Cluster Lamp-Sockets, of which the following is a full, clear, and exact description.

This invention relates to cluster-sockets for incandescent electric lamps, and comprises an improvement upon that type of cluster-socket described in United States Patent No. 757,441, issued to me April 19, 1904. The cluster described in said patent consists, essentially, of a metal disk serving as a supporting-base, a hemispherical cap or casing having side openings for the entrance of the lamp-bases and positive and negative contact-plates suitably insulated from each other and contained in and supported by the cap through the medium of Edison threaded shells attached to one of said contact-plates and Edison insulating-bushings screwed upon said shells and entering the openings in the cap. In making up this cluster for five or six lights some difficulty has been experienced in assembling the parts by reason of the fact that the Edison shells, which are rigidly attached to the contact-plate and project partially through the openings in the cap, bind against the edges of said openings and interfere with the adjustment or placement of the parts in the cap. In a two or three light cluster the parts assemble readily, for the shell of one socket may be passed a considerable distance through the opening in the cap, so that the other shells can be easily alined with their respective openings; but, as before stated, this cannot be done so readily with the four, five, or six light cluster.

The present invention provides for a construction or mounting of the threaded shells upon the contact-plate in a flexible manner, so that when the cluster is assembled the shells can be swung out of their normal position to admit them easily into the various openings in the cap.

It is a further object of the invention to cheapen the cost of manufacture of these clusters; and with these objects in view the invention consists of the details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a four-light cluster-socket with the lamps in place and the parts of the fixture in section. Fig. 2 is a plan of the fixture with the base or cover plate removed and with only two of the lamps in position, and Fig. 3 is a central section of the mechanism inside of the cap or casing.

1 indicates a base or support for the cluster, being at the same time a cover to exclude dust. It has a central threaded orifice 2 for attachment to a pipe or conduit through which the two wires of the circuit lead into the fixture. This base is a disk in form and has a peripheral flange 3, provided with slots 4 of a bayonet-joint.

5 is a cap or casing shaped hemispherically and provided with inwardly-projecting pins 6 near its upper edge to coöperate with the bayonet-slots and serve as a ready means for connecting and disconnecting the cap to and from the base.

Within the cap and entirely independent of the base is a block of insulating material, such as porcelain, 7. This is a comparatively thick disk having a central projection 8 on its upper side provided with a deep countersink 9. To the opposite faces of this porcelain block are secured two metal plates 10 and 11, the plate 10 being in the form of a ring, so as to pass over the projection 8 and rest upon the surface of the block. It is firmly secured to the block by three screws 12, which do not pass entirely through the block. The lower plate 11 is similarly fastened to the bottom of the block 7 by screws. (Not shown.) The upper plate carries a binding-screw 13 for one of the line-wires, the other line-wire being connected with plate 11 by means of the central screw 14, which passes through an axial hole in the block 7 and screws into the plate 11, as shown, while the head of the screw becomes housed in the countersink 9 and is shielded from contact with the wire attached to screw 13 by the wall of projection 8, surrounding the screw.

Plate 10 is formed integrally with a number of pairs of arms 15 15, 16 16, 17 17, and 18 18, there being one pair for each lamp for which the fixture is adapted. These arms are twisted to occupy planes at right angles to that of the plate to which they are attached, and the members of each pair project beyond the edge of the block 7 and are separated sufficiently to admit between them the inner end of a threaded sleeve 19, known as the "Edison" sleeve and being a familiar part of the Edison incandescent-lamp socket. The sleeve is secured to the pair of

arms by means of rivets or screws 20, which pass through the sleeve on a diametrical line, and thus form a pivot on which the sleeve can swing in a vertical direction. The inner end of the threaded sleeve is entirely open and unobstructed, the partial web usually extending across the inner end for fastening-screws being omitted. The lower inner side of each sleeve is partially cut away, as indicated at 21, to separate the sleeve from the periphery of plate 11, which when the cluster is in operation is of opposite polarity to the shells. Plate 11 is formed with a number of upwardly-turned tongues 22, which rest against the periphery of the block 7 and terminate slightly above the pivotal axes of the shells. One of these tongues is provided for each lamp, and they occur at the center of the open inner end of the sleeves and constitute the contacts for the center terminals of the Edison lamp-base.

The structure illustrated in section in Fig. 3 is assembled in the cap 5 by passing the various shells 19 through the openings 5* in the cap. To facilitate getting the structure into place, one or more of the shells 19 can be tilted into the positions indicated in dotted lines in Fig. 3, which will readily admit them into the openings. Having placed all of the shells in the openings, the structure is rigidly secured to the cap by screwing over the outer end of each shell one of the well-known Edison insulating-bushings 23. These bushings have external flanges 24, which in bearing against the exterior cap when screwed home cause the shells to be swung upon their pivots into proper alinement. With all of the bushings screwed tightly in place the structure is rigid and capable of supporting the lamps.

When the bases of the lamps are screwed into position, the threaded sleeve on the lamp mechanically and electrically engages the threaded shell, and the metal button at the center of the base of the lamp electrically engages the tongue 22, presented at the inner end of the shell. It will thus be seen that when the current flows it passes from one of the binding-screws—say 13—through the plate 10, the arms 15 16, &c., the threaded shells 19, the filaments of the lamps, the tongues 22, the plate 11, and the binding-screw 14. Thus all of the lamps are connected in multiple. For a series connection of the lamps it is only necessary to split up the two plates 10 and 11 and connect them in succession with the lamps and each other in a manner well-known to the wireman's art.

While I have illustrated a cluster adapted for four lamps, it is obvious that substantially the same structure may be used for two, three, five, and possibly six lights, it being necessary only to increase the numbers of pairs of arms 15 16, &c., and the corresponding pairs of tongues 22. To accommodate the larger number of lamps, the arms 15 16, &c., may be secured to the inside of the shell instead of the outside, thus bringing them nearer together.

The broad idea of flexibly mounting the threaded shell of an Edison socket so that it can be alined with a casing or an opening therein either when the insulating-bushing is screwed into place between the shell and the casing or when the lamp is passed through the opening in the casing and screws into the shell is, I believe, a novel idea, and I therefore claim the same herein without reference to its application to a cluster-socket, although it is in a cluster-socket where I have found it most useful, as above described. In an ordinary single Edison socket it would sometimes be of advantage to have the threaded shell flexibly mounted, as they are not always found to be actually in line with the metallic casing of the socket, and when the bushing is screwed into place on such an imperfect socket the pressure exerted by the bushing in forcing the shell and casing into line puts a constant strain upon the various parts, which is likely at any time to break them or otherwise injure the socket.

Having described my invention, I claim—

1. An incandescent-lamp socket, comprising a threaded contact-shell flexibly supported upon the socket.

2. An incandescent-lamp socket, comprising a threaded contact-shell pivotally supported upon the socket.

3. An incandescent-lamp socket, comprising an external casing, a threaded contact-shell inside of said casing, a support within said casing to which said contact-shell is pivotally connected and an insulating-bushing interposed between the casing and the shell.

4. An incandescent-lamp socket comprising an external casing having a plurality of openings therein, a support located inside of said casing, and a plurality of threaded contact-shells arranged within said openings and flexibly connected with said support.

5. An incandescent-lamp socket having a plurality of threaded contact-shells and a single support therefor to which the shells are directly pivoted.

6. A cluster-socket for incandescent lamps, comprising an external casing having openings for the lamp-bases, a metallic plate inside of said casing, a plurality of threaded shells pivotally connected with said plate and respectively presented at the openings in the casing to receive the lamp-bases and a center contact for each shell.

7. A cluster-socket for electric lamps, comprising an external casing having openings for the lamp-bases, a metal plate therein having arms, a plurality of threaded contact-sleeves pivotally connected with said arms and respectively projecting into the openings of the casing and center contacts corresponding to each of the shells.

8. A cluster-socket for electric lamps, comprising an external casing having openings for the lamp-bases, a block of insulating material contained within said casing, two metal plates attached to said block and insulated from each other thereby, a plurality of threaded shells pivoted to one of said plates, and a plurality of tongues carried by the other plate, said shells and tongues constituting the contacts for the lamps, substantially as described.

9. In an incandescent-lamp socket, a casing having holes therein, bushings in said holes, threaded shells within said bushings, and a support pivoted to said shells and supported thereby.

In witness whereof I subscribe my signature in the presence of two witnesses.

JOHN HENRY DALE.

Witnesses:

FRANK S. OBER,

WALDO M. CHAPIN