

E. A. LEFEBRE, JR.
CLUSTER SOCKET.
APPLICATION FILED JULY 19, 1907.

949,541.

Patented Feb. 15, 1910.

Fig. 1.

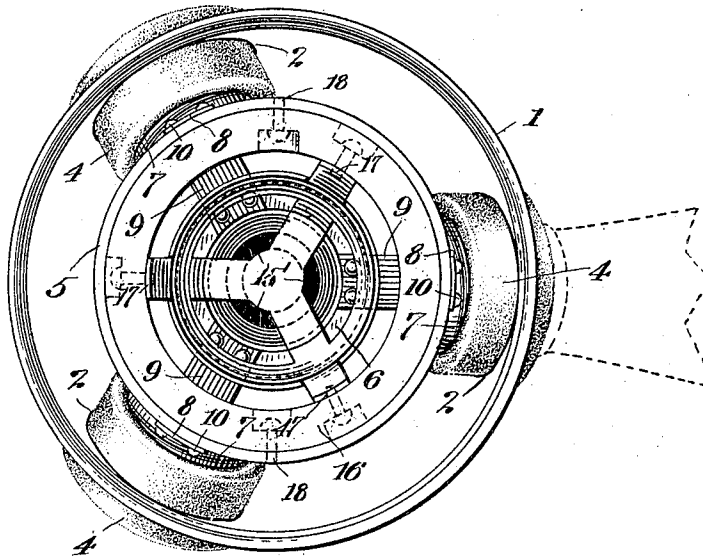


Fig. 2.

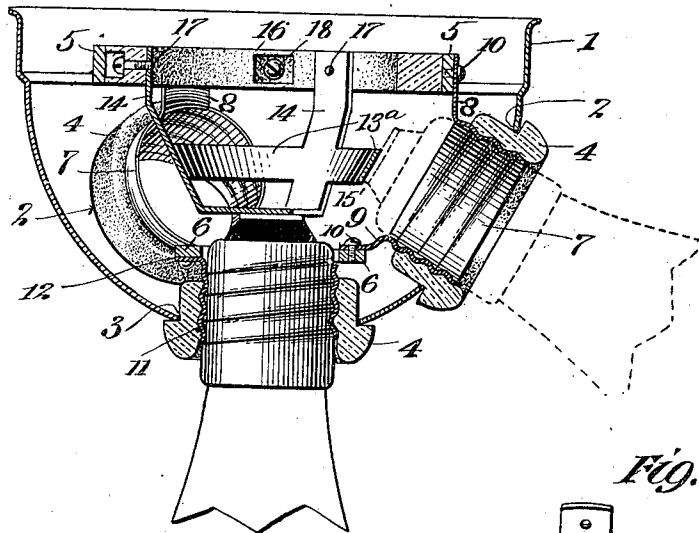


Fig. 4.

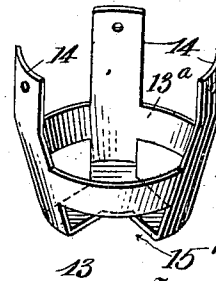
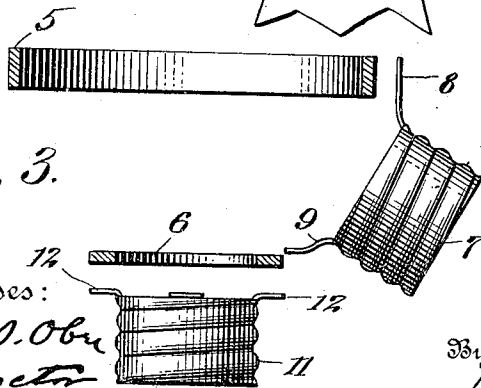


Fig. 3.



Witnesses:
Frank O. Ober
Carter

Inventor
Edward A. Lefebre Jr.
By his Attorneys
Rosenbaum & Stockbridge

UNITED STATES PATENT OFFICE.

EDWARD A. LEFÈBRE, JR., OF NEW YORK, N. Y., ASSIGNOR TO JOHN H. DALE, OF NEW YORK, N. Y.

CLUSTER-SOCKET.

949,541.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD A. LEFÈBRE, Jr., a citizen of the United States, residing in the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in Cluster-Sockets, of which the following is a full, clear, and exact description.

My invention relates to cluster lamp sockets or receptacles, and particularly those in which ordinary incandescent lamps having a threaded base may be symmetrically supported by a central frame or part and connected in a single multiple circuit.

The invention consists particularly in the mechanical features of construction and in the arrangement by which the electrical connections are made.

The main purpose or object in view is to reduce the number of parts and material required, and generally to simplify and cheapen the construction of this type of lamp socket as much as possible.

In the drawings: Figure 1 is a plan view looking into a multiple cluster socket embodying the principles of my invention; the usual cover is removed in this figure; Fig. 2 is a vertical sectional view of the same; Fig. 3 is a sectional view showing certain parts in position about to be assembled; and Fig. 4 is a perspective view of another part.

In the ordinary cluster socket a hemispherical shell or casing is employed, with various openings in which the bases of the incandescent lamps are received and from which the lamps project radially outward. This shell or casing by reason of its shape is quite stiff or rigid and is capable of exerting a considerable supporting function on the interior sockets and parts. For this purpose insulating bushings have been employed to engage the various threaded shells of the lamp sockets with the hemispherical casing. But such bushings are not effective unless the various sockets are securely fastened to one another. In practice, the insurance regulations prescribe that the engagement of the various socket parts within the hemispherical casing be very secure and substantial, so that the socket parts are not grounded on the hemispherical casing, even if one or more of the insulating bushings are broken or removed.

The present invention consists particularly in the means by which the various

lamp sockets and their associated parts within the hemispherical casing are secured or fastened together by a construction of maximum simplicity and employing a minimum amount of material (usually brass).

A second object of the invention is to provide a construction in which the parts of different polarity are separated by an adequate air gap and insulating material, and furthermore in which the various lamps are bound in their threaded sockets with a certain amount of spring resiliency, so that they will not be easily jarred loose.

Finally I provide a construction which is particularly well suited to sockets where there is a central lamp projecting directly downward in addition to the circular series of lamps which project laterally from the hemispherical casing.

Referring to the drawings in which like parts are designated by the same reference sign, 1 indicates a hemispherical casing of substantially the ordinary form, having a circular series of openings 2, spaced symmetrically thereabout. 3 indicates an additional opening at the bottom of the casing concentric with the vertical axis thereof. This hemispherical casing, together with the various insulating bushings 4, constitutes the means for supporting all of the sockets and their associated parts for the incandescent lamps.

The various sockets, including the threaded shells and their central stud terminals, are organized and assembled into a complete rigid unit. It is desirable to have this unit very strong and unyielding, and this is accomplished by my invention with a minimum amount of material and number of parts.

5 indicates a ring and 6 denotes a flat perforated plate, also constitutes a ring or washer.

7 indicates the threaded shells for the lamps, each of which has ears 8 and 9, which project outward from the shell at diametrically opposite points in directions diagonal to the axis of the shell and perpendicular to one another. The length and relation of these ears are such that the series 8 lie adjacent the ring 5, while the series 9 fall on the top face of the plate or ring 6 (see Fig. 3). In this relation the parts may be permanently assembled by screws or fastening devices 10. 11 indicates an additional threaded shell

with ears 12, and which may be secured coaxially upon the plate or washer 6 so as to project downward therefrom. In this way the various threaded shells are fixed in electric and mechanical union with great security and in alinement with the various openings 2 and 3 of the hemispherical casing.

In order to provide a central terminal for the lamps I form a sheet metal basket 13, the lower face of which is flat, and the side walls of which are conical, as clearly shown in Figs. 2 and 4.

14 indicates ears or extensions upstanding from the basket 13 and bent to conform to a cylindrical outline with one another. The bottom face of the basket 13 is preferably cut away or slotted with openings, corresponding in position and number to the lamps of the socket and the conical side wall is also cut away at intervals around its periphery as shown at 15' producing a skeleton framework with a continuous zone or band 13^a at the position of the central stud terminals. The purpose is to give the basket a high degree of resiliency. It is evident that this construction is a very simple and practically advantageous one, but I do not desire to be limited or restricted to the particular form shown.

The basket 13 is assembled within the ring 5 by means of an insulating ring or spacing block or blocks 16. The basket 13 and the ring 5, are secured to this spacing ring by any suitable fastening devices 17 and 18, passed through the extensions 14 of the basket 13, and the ring respectively. This arrangement maintains the basket 13 rigidly within the frame of which the various socket shells form a part, and in this relation the basket is adapted to constitute a central terminal for all of said socket shells. The bottom flat face of the basket 13 is engaged by the central stud terminal of a central downwardly projecting lamp in the threaded shell 11, while the conical side zone or surface 13^a of the basket is engaged by the central stud terminals of the various laterally projecting lamps in the sockets 7. By reason of the holes or recesses 15' in the basket, the latter is made inwardly yielding or resilient, so that the engagement of the lamps therewith is an elastic one, and the electrical connection is not liable to be broken by jarring or vibration which occurs in many relations where these cluster sockets are used.

By the above there is formed a complete unit or part including complete sockets for a plurality of lamps, with threaded shells and central stud terminals all rigidly secured together, but having adequate insulation between the parts of opposite polarity. This unitary frame is adapted to be assembled within any desired hemispherical or other

casing by the engagement of the bushings 4 with the various threaded shells. This engagement is so secure that the parts are not deranged or grounded in case one of the bushings is broken or removed. The various threaded shells and also the various central terminals are obviously in permanent electrical connection with one another, so that in order to establish all necessary connections, it is merely necessary to connect the circuit wires to any part of these respective elements. Any suitable cover plate (not shown) may be applied to the top of the hemispherical casing if desired.

What I claim is:

1. A multiple cluster socket comprising a cup-shaped casing having a plurality of perforations, bushings received in said perforations, a plurality of threaded shells engaged in said bushings, each of said threaded shells having a metallic connection extending therefrom, a ring joining all of said connections and supported thereby, and a common central terminal depending from the interior of said ring and operatively supported in insulated relation therefrom.

2. A multiple cluster socket comprising a cup-shaped casing having a plurality of openings, bushings received in said openings, threaded shells engaged in said bushings and having metallic connections extending therefrom, a single insulating ring operatively joined to a metallic connection of each shell and supported thereby, additional means for joining the remaining metallic connections of said shells, and a common central terminal depending from the interior of said ring and operatively supported in insulated relation therefrom.

3. A multiple cluster socket comprising a cup-shaped casing having socket holes, bushings received in said holes, threaded shells engaged in said bushings, said threaded shells each having a metallic connection extending from one side thereof, a single insulating ring having a metallic portion joined to all of said connections on its exterior surface, and a common central terminal depending from the interior surface of said ring.

4. A multiple cluster socket comprising a ring, a plate, threaded shells fixed to said ring and plate, and means forming a common central terminal and secured to said ring in insulated relation therefrom.

5. A multiple cluster socket comprising threaded shells, a ring and a plate separate from and coaxial with one another and attached to said shells, and a basket forming a central terminal and attached to said ring in insulated relation therefrom.

6. A multiple cluster socket comprising two rings of different diameter in spaced apart and coaxial relation to one another, threaded shells secured to said rings in

downwardly diverging relation from the common axis, an insulating ring secured inside of one of said rings, and a basket secured to said insulating ring and forming a common central terminal.

5 7. A multiple cluster socket comprising two rings of different diameter in spaced apart and coaxial relation to one another, the larger of said rings being formed of a
10 strip of metal bent into cylindrical form, threaded shells secured to said rings and extending diagonally downward from the common axis, an additional shell extending
15 downward from the smaller ring, and coaxial therewith, insulating means secured inside the larger of said rings, and a resilient basket secured within said means and forming a central terminal.

20 8. A multiple cluster socket comprising two rings of different diameter in spaced apart and coaxial relation to one another, the larger of said rings being formed of a strip of metal bent into cylindrical form, threaded shells secured to said rings and
25 extending diagonally downward from the common axis, and coaxial therewith, insulating means secured inside the larger of said rings,

and a resilient basket secured within said means and forming a central terminal.

9. A multiple cluster socket comprising 30 two rings of different diameter in spaced apart and coaxial relation to one another, threaded shells secured to said rings and extending diagonally downward from the common axis, an additional shell extending
35 downward from the smaller ring, and coaxial therewith, and a resilient basket having up-standing extensions secured to the larger ring in insulated relation therefrom, said basket constituting a central terminal. 40

10. A multiple cluster socket comprising two rings of different diameter in spaced part and coaxial relation to one another, threaded shells secured to said rings and extending diagonally downward from the common axis and a resilient basket having cut
45 away portions to increase its elasticity and constituting a central terminal.

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

EDWARD A. LEFÈBRE, JR.

Witnesses:

WM. M. STOCKBRIDGE,
WALDO M. CHAPIN.