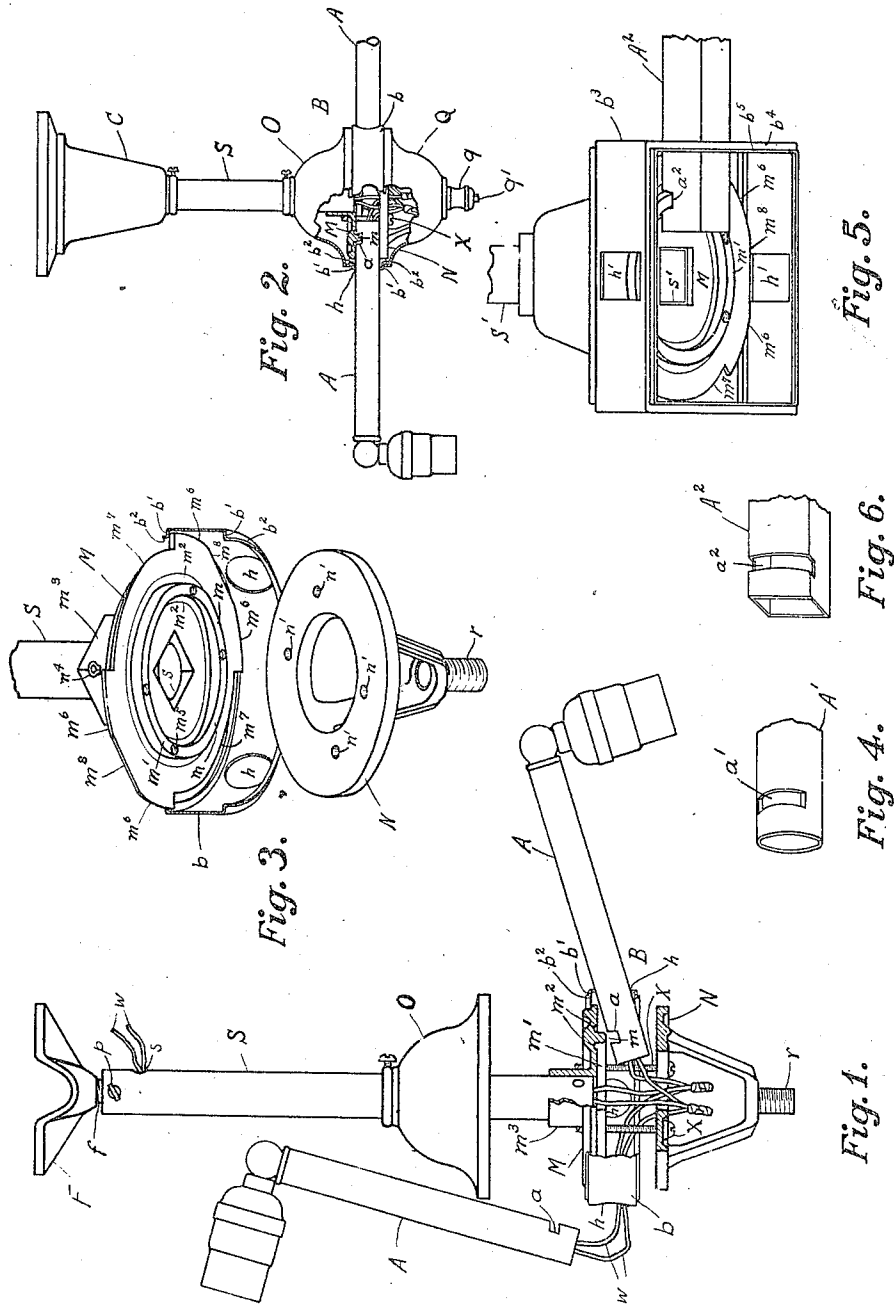


W. LUMLEY.
 FIXTURE.

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To all whom it may concern:

Be it known that I, WILFRID LUMLEY, a citizen of the United States, residing at Conneaut, county of Ashtabula, State of Ohio, have invented certain new and useful Improvements in Fixtures, of which the following is a specification.

My invention relates to chandeliers and fixtures, and its object is a novel fixture possessing various advantages.

Fixtures of the general type with which the invention is concerned have a body or junction part with a plurality of arms or branches extending therefrom.

My invention comprises various features of construction and various combinations and arrangements of parts, including, particularly, a novel body structure and a novel mode of attachment between the body and the arms.

As the invention affords an especially advantageous construction for electrical chandeliers which are intended, if desired, to be disassembled and packed for shipment without interruption or disturbance of the wiring connections between the body and the arms, I have hereinafter described in detail one form of electrical fixture of this sort. I have also indicated how this form of construction can be applied in fixtures of very different style and appearance. Although, however, the invention extends to some of the specific details of this particular form of fixture, which are of importance because of their specific advantages, yet it is not confined to this fixture and its details. That it can be carried out and embodied in a variety of ways will hereinafter become apparent,—as well as various advantages obtainable in connection with it,—while its scope will be indicated in my claims.

In the accompanying drawing, Figure 1 is a view of a round style of fixture, various parts being in section or displaced from their ordinary positions, and other parts being altogether removed. Fig. 2 is a view upon a somewhat smaller scale than Fig. 1 showing the parts of the fixture in their ordinary positions, some of the parts being broken away or in section. Fig. 3 is a perspective view on a larger scale than Figs. 1 and 2 showing certain internal features of the body, the parts shown being turned to an angle of 45° from their position

in Figs. 1 and 2 and one of them being in section and another displaced from its ordinary position with reference to the others. Fig. 4 is a fragmentary perspective view, upon a larger scale than Figs. 1, 2, and 3, illustrating a part that may be used in connection with round arms of the style of fixture shown in these figures. This figure also affords a correct idea of the end portion of a round arm. Fig. 5 is a perspective view upon the same scale as Fig. 2 showing the interior of the body of a rectangular style of fixture, various parts being omitted for the sake of clearness. Fig. 6 is a fragmentary perspective view of the end of a rectangular arm.

I will first describe the round style of chandelier shown in Figs. 1, 2, 3, and 4. Since this description will for the most part be equally applicable to the square style of chandelier shown in Figs. 5 and 6, a brief reference to a few special points will be all the separate consideration that this latter fixture calls for. The particular chandelier illustrated is of the so-called "stem" type. At the upper end of the round hollow stem or standard S (see Fig. 1) is a foot F by which the fixture may be secured to the ceiling, there being between the parts F and S a swivel connection comprising a part *f* which is threaded into the foot and is fastened in the upper end of the stem by a cotter pin *p*. The stem wires *w* through which current is transmitted from the ceiling connections enter the stem S through the lateral hole *s* and pass down through the stem into the body B secured at the lower end thereof, where they are connected to the wires *w* in the round hollow radial arms A. Only two of these arms are shown in Figs. 1 and 2 to avoid confusion of the drawing; but it will be understood that in practice a number of arms corresponding with the number of armholes *h* in the body will ordinarily be provided. The body B comprises arm-holding means by which each arm A is secured so that it is kept from tilting vertically. This may be accomplished by juxtaposed parts between which a portion of each arm extends and is held or even tightly clamped; and in the construction illustrated two parts M and N common to all the arms are employed for this purpose. Each arm is also secured in such a manner that it is

held against longitudinal movement and is prevented from turning about its own axis or from swinging horizontally, which may be satisfactorily effected by the engagement of means carried or afforded by one of the arm-holding parts M and N with means carried or afforded by the arm. In the construction shown, the engagement is between the surfaces of engagement means comprised in the upper part M and appropriate surfaces on the end portion of the arm, the engagement means of the arm being in the present case a single lateral socket or seat *a* therein into which a portion *m* of the part M extends, and the arm with its seat *a* and the part *m* being relatively movable in a direction transverse with respect to the arm to disengage them. From Fig. 1 and Fig. 4 (the latter of which affords a correct idea of the appearance presented by the end of an arm) it will be seen that the socket or seat *a* as a whole has the form of a transverse slot or elongated hole. The surfaces of this slot-like socket engagement means transverse to the longitudinal direction of the arm and the engagement means *m* therein afford each other bearing against longitudinal displacement or horizontal swinging of the arm and effectually prevent either. In the construction shown, the engagement means *m* in the elongated transverse seat or socket *a*—which engagement means *m* likewise lies transversely of the arm—extends between the sides of the socket and above and beyond its ends entirely across the arm, so that the socket or seat is in this case in effect a transverse notch or groove through which the engagement means passes and which is so deep as to penetrate the rather thin wall of the arm.

From Figs. 1, 2, and 3 it will be seen that the engagement means or portion *m* by which each arm is held is of a generally rectangular cross-section and has the form of a curved projecting member or ridge on the lower side of the part M, and that these various portions *m* are in the present instance all part of one continuous annular member or ridge *m'*. Preferably the member *m'* projects from the face of the part M a distance just equal to the depth of the seat *a* of an arm, in order that when the member *m'* is at the bottom of the seat the upper side of the arm may lie against the surface of the part M at the sides of the member *m'*. Preferably, also, the seat *a* is curved to conform to the curvature of the member *m'*,—this being more readily apparent in the case of the square arm shown in Fig. 6.

To facilitate the finishing of the member *m'* and of the flat portions of the lower face of the part M on either side thereof, and to insure that when the parts are brought into engagement the member *m'* shall extend to

the bottom of the seats *a* of the arms,—even in spite of any slight bur or the like at the edges of the seats,—it is advantageous not to make sharp corners between the member *m'* and the lower surface of the part M, but to have or cut a shallow groove *m²* in the lower face of this part at each side of the member *M'*. (As shown in Figs. 1 and 3, the part M has an annular thickened portion to provide for this.) For similar reasons, it is also advantageous to finish the corners of the member *m'* with a slight bevel or bluntness (as shown with some exaggeration in Fig. 1) rather than perfectly sharp. If the walls of the arms are so thin as to make it desirable, suitably heavy iron sleeves or liners *A'* like that shown in Fig. 4 may be used to reinforce their ends and prevent them from being collapsed, these liners *A'* being fitted tightly or otherwise secured within the ends of the arms and having in their walls slots *a'* corresponding to the slots *a* in the arms.

As shown in Fig. 3, the annular part N which holds each arm against the part M has a plain upper surface, since the engagement of the part M alone with the arm as described will suffice to keep it from swinging, etc. In the construction shown, the stem S is attached to the body by being fastened to the upper one of the arm-holding parts M and N, the round end portion of the stem lying in a square hole in the square hollow boss *m³* on the part M and being secured by a cotter pin *m⁴* (Fig. 3). While the parts M and N can be mounted or secured in proper relative position in various ways, a simple and advantageous method is to employ screws X which pass loosely through holes *n'* in the part N and engage in threaded holes *m⁵* in the part M. These screws can be made long enough to permit the parts M and N to be separated so as to unclamp the arms and allow them to be withdrawn (as will hereinafter be explained) without being wholly detached from one another; and to guard against any annoyance that might be caused by the accidental unscrewing of the screws much further than is necessary for this purpose, their upper ends can be enlarged (as by upsetting) after the parts are assembled in the factory so that they will not readily pass through the holes *m⁵* again. In the chandelier illustrated there is an ornamental casing that serves as the visible exterior of the body, and the portion of this casing that contains the four arm holes *h* has the form of a circular casing part or band *b* which is shown as a separate part mounted on the part M and ordinarily secured so as to be rigid with respect thereto. At its upper and lower edges this "sight" part or casing *b* has inwardly extending flanges *b'* with rims *b²*. The interior diameter of the inter-

mediate portion of the part *b* is slightly greater than the diameter of the part *M* between its opposite curved edges *m*^o, so that the part *b* fits rather loosely around the part *M* with the shoulder formed by the lower side of the upper flange *b'* on the flat upper surfaces of the edge portions *m*^o, as most clearly shown in Fig. 3. The location of the holes *h* in the part *b* is such that their upper edges are about in the plane of the lower face of the part *M*, or a very little above this plane. When the "upper shell" casing part *O* which forms the upper sight part of the body is out of the way, as shown in Fig. 1, the part *M* can by tilting the casing part *b* be made to pass within the inner edge of either flange *b'* (the diameter of the part *M* between its opposite curved edges *m*^o being smaller than the diameter of the openings within the inner edges of the flanges *b'*) so as to be easily put in place or removed. When the part *O* is brought down from the position shown in Fig. 1 so as to fit over the upper rim *b*² and secured in its ordinary position, as shown in Fig. 2, the casing part *b* is securely and rigidly fixed with reference to the part *M*, and firmness and rigidity of the body *B* as a whole with reference to the stem *S* is insured. Ordinarily the bottom of the fixture is closed by a sight part consisting of a "bottom shell" casing part *Q* which fits over the lower rim *b*² of the casing part *b* and is held in place by the ornamental nut or knob *g* on the externally threaded tubular nipple *r* at the bottom of the part *N*, as shown in Fig. 2; but when the arms are to be withdrawn the nut *g* is unscrewed and the bottom shell *Q* removed.

When the parts *M* and *N* are separated as shown in Fig. 1, the arms *A* can be inserted slantwise in their holes *h* until the seats *a* come over the member *m'* (the holes *h* being made slightly larger than the arms or a little elongated in a vertical direction to allow for the upward tilt of the arms), and they can then be swung downward to cause the member *m'* to become engaged at *m* in the seats *a* as shown in Fig. 2. To facilitate the engagement of the member or ridge *m'* in the seat *a* of an arm in this manner without excessive trouble in working the arm in and out and swinging it horizontally to "feel" for the ridge, the seat *a* may be made to present to the ridge as it is about to enter therein a width slightly greater than that of the ridge. In the construction shown, this is accomplished by cutting the lateral walls or edges of the seat *a* parallel with one another but at a slightly acute angle to the axis of the arm instead of at right angles thereto, making the perpendicular distance between these lateral walls or edges a very little greater than the thickness of the ridge. (These features are

shown with some considerable exaggeration in Figs. 1 and 2).

The slight slope and excess width of the seat *a* and the slightly beveled corners of the ridge *m'* will cause the ridge to enter the seat easily and loosely at first; but when the arm has swung downward until the ridge is at the bottom of the seat the inner side of the ridge will engage the corresponding side of the seat at the root or heel of the ridge and at the same time the outer side of the ridge will engage the corresponding side of the seat at the toe or corner of the ridge, so that there will be no looseness and no possibility of horizontal swinging of the arm with reference to the ridge. The bottom of the seat will, furthermore, be in engagement with the flat lower surface of the ridge by the time the upper side of the arm reaches the lower surface of the part *M* at the sides of the ridge, so that when the part *N* is brought up and secured in the position shown in Fig. 2 the arm *A* will also be prevented from turning about its own axis. Friction between the side or edges of the seat *a* and the ridge will practically prevent an arm from traveling along the ridge so as to swing about the vertical axis of the body *B*; and the arms are, furthermore, secured against displacement in this manner by the casing part *b*.

The lamp sockets at the outer free ends of the arms *A* may be of any desired type, and may be attached in any preferred or approved way. By merely inserting the arms *A* aslant and swinging them downward, therefore, and tightening the four screws *X* so as to bring the parts *M* and *N* together upon them, the arms are securely fastened in the body against displacement in any manner whatsoever. By the mere reversal of these operations, the arms can be withdrawn again so as to be swung up into a position approximately parallel with the stem *S* (as shown at the right of Fig. 1), and the chandelier thus brought into a small compass for carrying or for packing for shipment,—the arms *A* all the while remaining attached to the body *B* by the wiring, which need not be disconnected or in any manner interrupted or interfered with. The only parts besides the screws *X* which need be disturbed in the packing, unpacking, and installation of the chandelier are the nut *g* and the bottom shell *Q* (it being understood that of course the ceiling canopy *C* will be shifted on the stem *S* so as to be out of the way when the foot *F* is attached to the ceiling support and the wires *w* connected, and afterward brought up and set in the usual way). Also, the removal of the bottom shell *Q* as already described leaves the wiring connections to the converging arms readily accessible for any purpose through the open center of the angular

part N, without the loosening or disturbance of the arms themselves in any manner. The easy detachability of the arms and the accessibility of the wiring connections in the body are also of importance if it is desired to manufacture the body and the arms in a variety of styles as separate standard interchangeable parts, so that a dealer may make up any desired style of chandelier from his own or a customer's selection of parts. By the removal of a plug q' from the bottom of the knob q an opening may be made for the cord of a pendant switch.

Referring, now, to the square style of fixture illustrated by Figs. 5 and 6, it will be seen that a part M exactly like that shown in Fig. 3 is secured on the lower end of a square stem S' and is arranged within a square casing part b^3 which likewise has inwardly extending flanges b^4 with rims b^5 . The distance between the straight parallel opposite edges m^8 of the part M is such that the part b^3 fits them rather snugly, but not tightly. The shoulder formed by the lower side of the upper flange b^4 lies against the flat upper surfaces of the edge portions m^8 and m^9 , and the upper edges of the arm-holes h' are very slightly above the plane of the lower face of the part M, just as in the case of the round style of fixture. The distance between the opposite edges of each flange b^4 is somewhat greater than the diameter of the part M between its opposite curved edges m^7 , and by tilting the square casing b^3 it can be put in place on the part M or removed just as the round casing b can be. The square arms A^2 and the engagement of the member m' in the seats a^2 therein so as to secure them against movement in a horizontal plane present no points of difference. Of course the bearing afforded by the engagement of the arms A^2 in the square arm-holes h' and with the lower surface of the part M at the sides of the member m' and with the part N is sufficient to prevent them from turning (as well as to secure them against vertical tilting); but the engagement of the member M at the bottom of the seats a^2 will still afford bearing against and act to prevent turning just as in the case of the round arms. The part N and its arrangements are the same; and it is therefore omitted from the drawing.

Besides the advantages of a fixture of the form hereinbefore described that have already been made apparent, it will readily be seen that this fixture is simple and strong in construction and is not liable to get out of order easily, and that it comprises a small number of simple and rugged parts that can be cheaply and quickly manufactured and assembled. The exterior parts may have simple forms that can be made of ordinary stock (such as brass tubing and sheet brass) by the usual methods, and they require a

minimum of simple drilling, threading or the like to complete them. The arm-holding parts M and N, also, can be made as ordinary iron castings, and require but a small amount of turning, drilling, threading, or other finishing. By giving the engagement means whereby an arm is kept from displacement in a horizontal plane a curved form so that the arm can be engaged with any portion thereof, each of the parts M and N can be made in one simple design that can be used interchangeably for fixtures having different numbers of arms, as well as for fixtures having bodies of various different shapes.

I claim as new and desire to secure by Letters Patent of the United States:

1. A chandelier having arms with seats in their end portions and a body comprising arm-holding means with juxtaposed flat surfaces between which the arms are held so that they cannot tilt, said arm-holding means comprising a member engaged in the seat in the end portion of each arm whereby it is kept from longitudinal displacement or from horizontal swinging and prevented from turning about its own axis.

2. A chandelier comprising a body having arm-holding parts and arms with seats therein ordinarily held between juxtaposed flat surfaces of said parts so that they cannot tilt and secured against horizontal swinging or longitudinal displacement by means comprised in one of said parts engaging in said seats, said parts being separable to permit the arms to be disengaged and withdrawn.

3. A chandelier comprising a body having arm-holding means and arms with elongated transverse seats in their ends held between juxtaposed parts of said arm-holding means so that they cannot tilt and secured against horizontal swinging or longitudinal displacement by means engaged in the elongated transverse seats in the ends of said arms.

4. A chandelier comprising arms each having transversely extending engagement means and a body in which the arms are secured comprising engagement means extending transversely with respect to each arm and engaged with its engagement means, the said arm and body engagement means mutually affording bearing against both longitudinal displacement and horizontal swinging of the arms and so preventing such displacement or swinging thereof.

5. A chandelier comprising a body having juxtaposed arm-holding parts one of which comprises engagement means for securing the arms and an exterior casing with arm-holes therein fixed with reference to said latter arm-holding part, and arms ordinarily held between said parts having in them seats for said engagement means which afford bearing for said means against both longi-

tudinal displacement and horizontal swinging of the arms, so that by the engagement of said means in said seats such displacement or swinging of the arms will be prevented, said arm-holding parts being separable to allow the arms to be tilted and disengaged.

6. A chandelier comprising as one element a body having engagement means and as another element an arm having engagement means engaging with the aforesaid engagement means of the body, the engagement means of one of said elements having surfaces transverse to the longitudinal direction of the arm and the engagement means of the other element extending between the surfaces aforesaid and being by them afforded bearing against horizontal swinging of the arm.

7. A chandelier comprising as one element a body and as another element an arm, one of said elements having socket engagement means and the other of said elements having projecting engagement means seated and engaged therein, and such engagement means of the body and of the arm mutually affording bearing against both longitudinal displacement and horizontal swinging of the arm and being adapted to be disengaged by relative movement in a direction transverse with respect to the arm.

8. In a chandelier, the combination with an arm holding part comprised in the body, as one element, of an arm laterally engaged therewith, as another element, one of said elements having socket engagement means and the other of said elements comprising engagement means seated and engaged therein and afforded bearing thereby against horizontal swinging of the arm, said part and said arm also affording each other bearing against turning of the arm about its own axis.

9. A chandelier comprising a casing having arm-holes, a member fixed with reference to each arm-hole and extending transversely with reference to the longitudinal direction of an arm when in the arm-hole, and arms each having in its end portion a transverse lateral seat adapted to engage with the member adjacent an arm-hole when the arm is therein, the parts being so arranged that an arm may be inserted in a tilted position in each arm-hole and swung vertically to cause engagement of said member in the seat, and said seat initially presenting an opening wider than the portion of the member that initially enters it but when the arm is swung to its final position fitting tightly upon the member so as to prevent longitudinal movement or swinging of the arm.

10. A chandelier body comprising a casing having arm-holes and means for holding a chandelier arm in each arm-hole comprising a member fixed with respect to the cas-

ing which is adapted to be engaged in a transverse lateral notch in the arm so as to extend across the arm through the notch, and means whereby the arm may be held against the member so that by the engagement of the member in the notch the arm shall be kept from longitudinal displacement or from swinging horizontally or turning about its own axis.

11. A chandelier body comprising an exterior casing having arm-holes and an annular engagement member within said casing adapted to be engaged in transverse seats in the chandelier arms so as to keep them from longitudinal movement or from swinging horizontally.

12. A chandelier body having arm-holding parts adapted to hold the ends of the chandelier arms between them so as to keep them from tilting, one of said parts comprising a member extending transversely with respect to each arm when the latter is in place and adapted to engage in a lateral seat in the arm, which is elongated transversely thereof and to afford bearing for the surfaces of the seat against horizontal swinging of the arm.

13. A chandelier body comprising arm-holding parts between which the chandelier arms are ordinarily held so that they cannot tilt, one of said parts having a curved portion at any point on which a transverse notch in an arm may be engaged.

14. A chandelier body comprising arm-holding parts between which the chandelier arms are ordinarily held so that they cannot tilt, one of said parts comprising annular engagement means adapted to engage with transverse lateral engagement means on the arms.

15. A chandelier body comprising arm-holding parts between which the chandelier arms are ordinarily held so that they cannot tilt, and a casing having arm-holes therein fixed with reference to the upper one of said parts, said upper part comprising engagement means adapted to engage in a transversely extending seat in each arm and keep the arm from horizontal swinging, and said parts being separable to allow the arms to be tilted upward to disengage them so that they may be withdrawn.

16. A chandelier body comprising a casing part having arm-holes for the chandelier arms, an arm-holding part inclosed in said casing part one side of which lies against an inwardly extending portion thereof, and an additional casing part mounted and secured against said inwardly extending portion of the casing part first mentioned so that said first-mentioned casing part is thus held on said arm-holding part with the arm holes in proper position with respect thereto.

17. An arm-holding part for a chandelier body adapted to engage the converging