

O. DURDLE.
 MEANS FOR SUPPORTING ELECTRODES IN IONIC TUBES.
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Fig. 1.

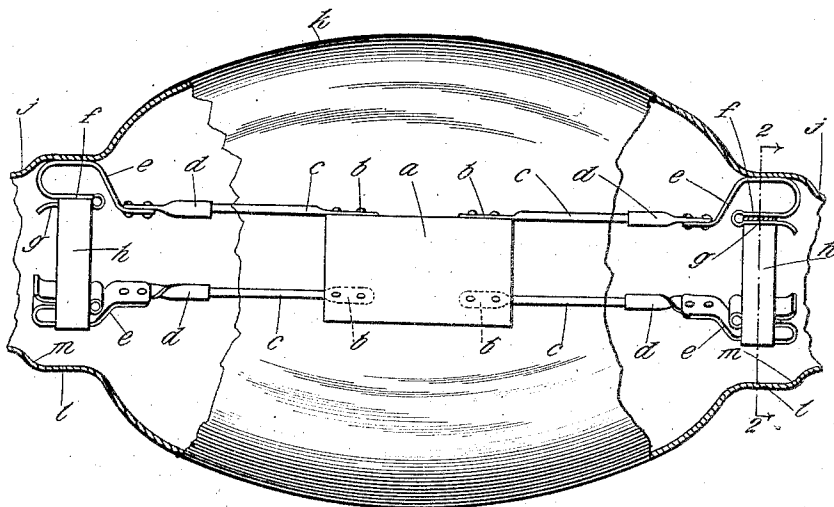
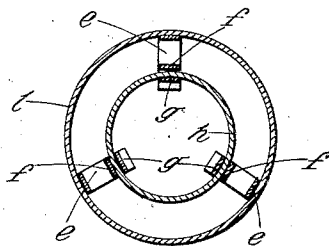


Fig. 2.



WITNESSES

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MEANS FOR SUPPORTING ELECTRODES IN IONIC TUBES.

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To all whom it may concern:

Be it known that I, OSWALD DURDLÉ, a subject of the King of Great Britain, residing in London, England, have invented new and useful Improved Means for Supporting Electrodes in Ionic Tubes, of which the following is a specification.

This invention relates to means for supporting electrodes within ionic tubes such as are used more particularly in wireless telegraphy, and has for its object to provide improved supporting means for a substantially cylindrical anode which is supported from both ends of the ionic tube.

According to the present invention the anode cylinder is provided at each end with a set of longitudinally-extending carrier-rods whereof the outer ends terminate in elastic fingers which, by being sprung outward from the axis of the anode, become seated within an annular recess formed in the tube at or near the point whereat the corresponding neck of the tube opens into the bulb; the annular recesses at the respective ends of the tube being of such diameter relatively to the adjacent necks as to present, for engagement by the respective sets of fingers, oppositely-directed annular shoulders adapted to prevent longitudinal movement of the anode structure as a whole in either direction when once inserted in position; while such deformation of the elastic fingers as would allow displacement or withdrawal of the anode structure is prevented, in the case of each set of fingers, by means of a substantially rigid locking-ring which, after the anode structure has been inserted in position, is caused to engage with the elastic fingers of the set in such manner as to hold them distended within the corresponding annular recess.

One embodiment of the invention is illustrated in the accompanying drawings, wherein Figure 1 is a side elevation partly in section, of the bulb and portions of the necks of an ionic tube, showing its cylindrical anode supported in the improved manner; Fig. 2 being a cross-section on the line 2—2 of Fig. 1. All such elements or details of the general structure of the ionic tube as are not directly related to the present invention are omitted from the drawings.

In the form of the invention illustrated in

the drawings, the anode cylinder *a* has riveted to it at *b, b*, near each of its ends, a set of three light metal rods *c, c, c* of circular cross-section which extend parallel to the axis of the cylinder and are spaced at equal intervals apart around its circumference, and to the outer end of each rod *c* is removably attached, by means of a cylindrical socket *d*, a leaf-spring *e* (constituting one of the elastic fingers already mentioned) which is directed outward from the axis of the anode, the terminal portion of each spring being recurved at *f* radially inward and toward the anode *a*, and again doubled upon itself at *g* in such manner that the three elastic fingers of a set present as many pairs *f, g* of longitudinally-opening spring jaws for the reception of a single locking-ring *h* of metal inserted from the outer end of the corresponding neck *j* of the tube so as to enter and become firmly gripped by the three pairs of spring jaws. Each neck *j* of the tube has an internal diameter sufficient to give passage to the anode cylinder *a* and the corresponding locking-ring *h*, and is joined to the bulb *k* by a short cylindrical enlargement *l* which opens directly into the bulb and, at its junction with the neck, presents an annular shoulder *m*; the distance between the shoulders *m, m*, at the respective ends of the tube corresponding to the total effective length of the anode structure measured over the carrier-rods *c*, and springs *e* where the latter are recurved toward the anode, while the springs *e, e, e* of each set, when the locking-ring *h* has been engaged with their spring jaws *f, g* bear elastically but securely, in radially outward directions, against the cylindrical inner surface of the corresponding enlargement *l* of the neck *j*.

The leaf-springs *e* forming the elastic fingers and spring jaws are of rectangular cross-section, and (if necessary) may be turned inward by rotating their sockets *d* about the carrier-rods *c* so as to facilitate the introduction of the entire anode structure through one of the necks *j* of the tube, after which the springs *e* may be turned outward into the operative position shown. Each locking-ring *h* is in the form of a short and substantially rigid cylinder so as, when engaged with the spring jaws *f, g* of a set, to effectually prevent the elastic fingers *e* from

becoming displaced by rotation of their sockets *d* about the carrier-rods *c*. Each locking-ring *h* may be made from a short length of metal tubing, or from a strip of metal bent into a hoop with its ends riveted together.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Means for supporting a substantially cylindrical anode in an ionic tube, consisting in the combination with two sets of carrier-rods attached to the anode and extending longitudinally therefrom in opposite directions respectively, of elastic fingers on the outer ends of the carrier-rods adapted to be sprung radially outward from the axis of the anode so as to become seated within annular recesses formed in the tube at or near the junctions of the respective necks of the tube with the bulb, and a pair of substantially rigid locking-rings adapted to be so engaged with the elastic fingers of the respective sets as to hold them distended within said annular recesses, substantially as set forth.

2. The combination of an ionic tube having spaced annular recesses therein, an anode located between said recesses in said tube, carrier rods extending in opposite directions from said anode and attached thereto, sockets rotatably mounted upon said carrier rods and elastic fingers carried by said sockets and seated in said annular recesses

whereby said anode is supported in said tube.

3. The combination of an ionic tube having spaced annular recesses therein, an anode located between said recesses in said tube, carrier rods extending in opposite directions from said anode and attached thereto, elastic fingers connected with said carrier rods and including longitudinally opening spring jaws, and locking rings located in and gripped by said spring jaws whereby said elastic fingers are distended within said annular recesses to support said anode in said tube.

4. The combination of an ionic tube, an anode therein, carrier rods extending in opposite directions from said anode and attached thereto, and resilient members rotatably mounted on said rods and arranged to engage the inner surfaces of said tube for supporting the anode therein.

5. The combination of an ionic tube, an anode therein, carrier rods extending in opposite directions from said anode and attached thereto, resilient fingers on the outer ends of said rods engaging the inner surface of said tube for supporting the anode therein, end members forming return continuations of said fingers and spaced therefrom and locking-rings engaging said end members and exerting a radially outward pressure thereon whereby said fingers are distended into engagement with said tube.

OSWALD DURDLE.