

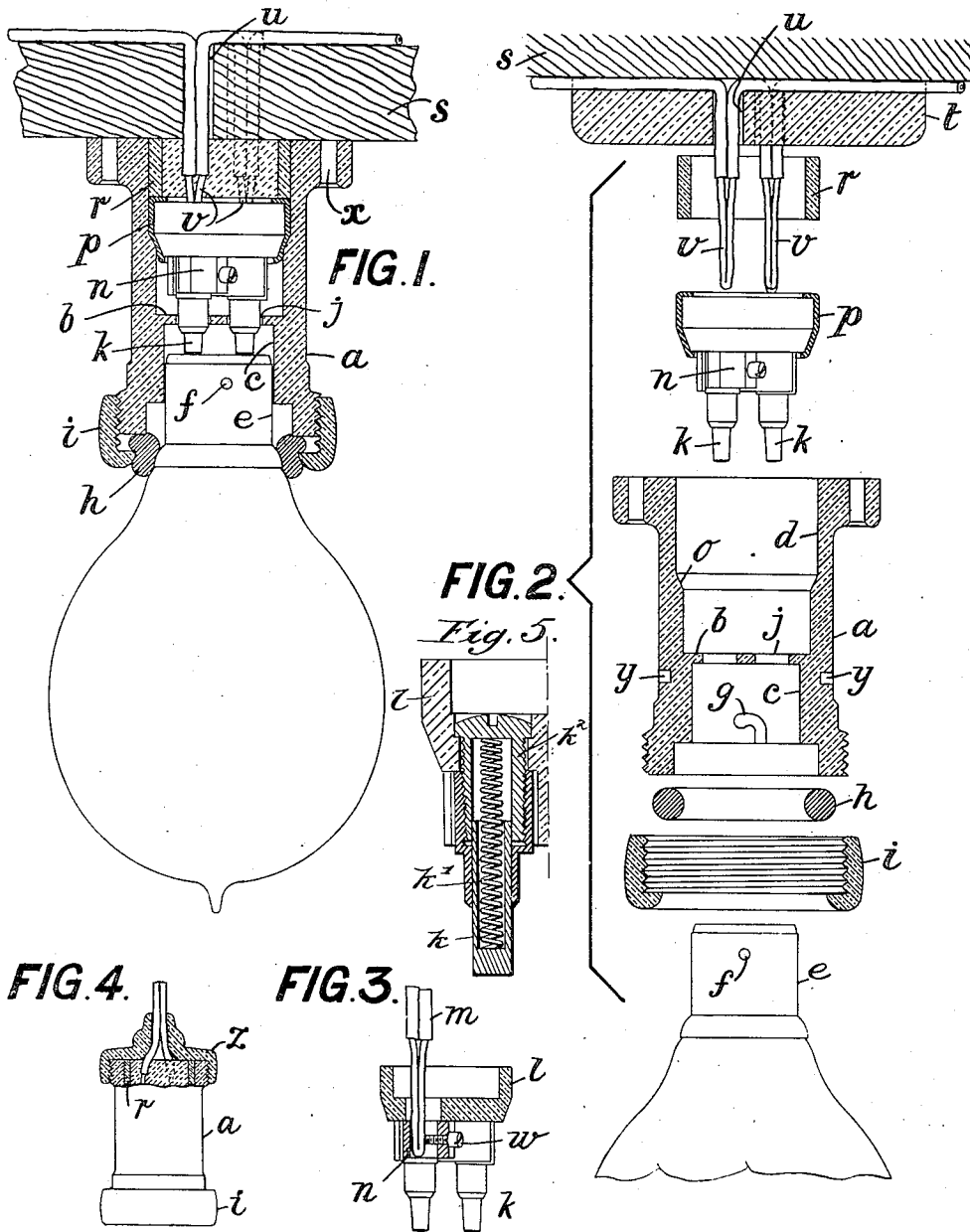
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P. LEONARD & C. H. JONES.

HOLDER FOR ELECTRIC INCANDESCENT LAMPS.

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Witnesses
 William J. Firth,
 Henry S. Rose

Inventors:
 Peter Leonard
 Charles H. Jones
 by Henry C. Barrett
 Attorneys

UNITED STATES PATENT OFFICE.

PETER LEONARD AND CHARLES HAROLD JONES, OF GREAT CROSBY,
NEAR LIVERPOOL, ENGLAND.

HOLDER FOR ELECTRIC INCANDESCENT LAMPS.

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Specification of Letters Patent.

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Application filed February 17, 1904. Serial No. 193,953.

To all whom it may concern:

Be it known that we, PETER LEONARD and CHARLES HAROLD JONES, subjects of the King of Great Britain, and residents of Great Crosby, near Liverpool, in the county of Lancaster, England, (whose post-office addresses are, respectively, 25 Cook's road and 3 Little Crosby road, Great Crosby aforesaid,) have invented certain new and useful Improvements in Holders for Electric Incandescent Lamps, (for which application has been made in Great Britain, No. 14,721, dated July 2, 1903, also No. 4,703, dated February 28, 1903,) of which the following is a specification.

This invention is in relation to holders for electric incandescent lamps, more especially for outdoor illumination or in situations where the lamps are subjected to damp or the weather; and the object of the invention is mainly to facilitate the wiring of the lamps so that there will be no slack wire and to secure an absolute water-tight or weatherproof connection from the ends of the cable insulation to the glass of the lamp.

In the drawings, Figure 1 is a sectional elevation of the lamp-holder and lamp with part of the lamp-board; Fig. 2, a sectional elevation of the parts of the lamp-holder separated from each other; Fig. 3, a detail sectional view of the plunger and terminal; and Fig. 4 a view, on a smaller scale, of the invention applied to a hanging lamp. Fig. 5 is an enlarged sectional detail view of one of the spring-plungers.

Referring first to Figs. 1, 2, and 3, the main portion of the holder consists of a shell *a*, of porcelain or other suitable material, made tubular, but provided with a diaphragm at or near mid-length, which separates it into two chambers *c* and *d*. The chamber *c* forms a socket into which the lamp-cap *e* can be inserted, and its lugs *f* are held by the bayonet-slots *g*. These bayonet-slots are only on the inside of the shell *a* and do not allow of the lugs of the lamp to go through to the outside surface. Round the edge of this socket *c* we place a loose rubber ring or washer *h*, and *i* is a threaded ring, of porcelain or other suitable material, which is screwed onto the part *a*, so as to compress the rubber washer *h* between them and force it against the lamp-cap *e* all round, so as to produce a damp-proof joint. When it is desired to renew or remove the

lamp, all that is necessary is to unscrew the ring *i*. In the diaphragm *b* are holes *j*, through which the plungers *k* project, so that they and the shell are retained in their proper relative positions. The plug *l* carries the spring-plungers *k* and terminals *n*, the latter being slotted to receive the wires *m*, which are slipped into the slots and pinched tight by the screws *w* without the necessity of cutting the wires. The interior of the chamber *d* of the shell *a* is so shaped that its plug *l* fits within it and rests against a beveled set-off or coned seat *o*. A packing of rubber or the like, such as *p*, or washer of any suitable kind on the plug makes a water-tight joint at that end. *r* is an earthenware tube to span the space between the plug *l* and the lamp-board *s*, or if an adapting-piece *t* is used then it spans the space between the plug and said adapting-piece.

Supposing that a sign-board is to be wired through from the back, as shown in Fig. 1, holes *u* are made in it opposite where each lamp is to be, and the wires are doubled or looped, as shown, and the bights passed through, the wires then passing on to the next in series, and so on. This obviates cutting the wires or of branch wires to each lamp, as the two main wires pass into and out again of the chamber and are coupled to the terminals. One of the tubes *r* above described is placed over each pair of bights, the ends whereof are first bared of insulation, as shown at *v*. An insulating compound—such, for example, as sealing-wax—is filled in the tube *r*, leaving the bared ends of the bight projecting. This may be repeated until all the board is wired. The plugs *l* are then placed over the tops of the tubes *r* and the projecting ends of the bights of the wires inserted in the terminals *n* and pinched by means of the screws *w*. The shells *a* are placed over the whole and fastened down onto the board by screws inserted through the holes *x*. This makes a water-tight joint at the base end, and when the lamps are placed in their sockets *c* and the rings *i* screwed down a water-tight joint is made at the outer end, and the connection of the lamp-terminals with the leads that supply current to the lamp is complete. When the board is wired on its front surface, we provide adapting-pieces *t* with slots or grooves therein to accommodate the wires.

It will be noticed that by this invention we

avoid branch wires and the numerous joints which have hitherto been usual, and we also avoid any slack wire whatever. The shell being entirely of white glazed china, there is
 5 no metal-work exposed, and there is complete protection of cable ends, spring-plungers, terminals, and junction of lamp-cap with its glass, and there is no liability of electrical leakage or any one sustaining a shock.

10 *y* represents holes in the shell *a* to enable a shade or reflector to be fastened on.

Although our invention is more especially useful for electric signs, it may be used in other situations. For instance, it can be
 15 used as a hanging-lamp holder, as shown in Fig. 4. In this case, *a* is the outer shell, as before; *i*, the screwed ring, and *r* the tube at base of the plug *l*. The cap *z* is first threaded onto the pair of bights, the ends whereof are first
 20 bared, as shown, and then the tube *r* is placed on. An insulating compound, such as sealing-wax, is filled into the tube *r*. The plug is then placed over the top of tube *r* and the wires pinched in the terminals and the shell *a*
 25 placed over the whole and screwed or otherwise fastened to the cap *z*. This makes a water-tight joint.

Fig. 5 shows the preferred construction of the spring-contact *k*. This view shows the
 30 contact slidable and hollow and backed by a spring *k'*, which abuts at its opposite end against a hollow screw *k²* in the plug. Spring-contacts are not broadly new, and this construction is not herein claimed.

35 We declare that what we claim is—

1. A holder for an incandescent lamp, having a hollow shell with a coned seat in its interior, a plug in said shell, said plug being constructively independent of the lamp and provided with spring-contacts, with means for
 40 securing the leading-in wires of the circuit, and with a packing which fits snugly in said coned seat and forming a water-tight joint, and means for preventing the displacement

outwardly of the plug toward the attaching
 end of the shell. 45

2. An electric incandescent-lamp holder, having a shell, a plug which fits water-tight into said shell, the spring-plungers carried by said plug, the leading-in wires, the ring *r* in
 50 the shell exterior to the plug and embracing said wires, and insulating material which fills said ring about the wires, said ring being disposed between the said plug and the attaching end of the shell. 55

3. In electric incandescent-lamp holders, the combination with an outer tubular shell of earthenware, of an earthenware plug inserted therein, spring-plungers and terminals carried by the plug, the terminals
 60 being slotted to receive the leading-in wires and provided with screws to pinch them tight in the slots, a rubber ring for making a water-tight joint between the plug and the hollow shell, and an earthenware tube placed
 65 round the leading-in wires for spanning the space between the plug and the lamp board or base, said ring being filled with sealing-wax or other insulating compound.

4. The combination with a lamp board or
 70 base, of a hollow lamp-holder secured to said base, leading-in wires having partially-naked bights which project from said base or board into said holder, a ring of earthenware which fits into said holder about the bights of
 75 the wires, and a filling of insulating material in said ring and about the wires, a portion of the naked bights of the wires projecting through and beyond the filling in said ring.

In witness whereof we have hereunto
 80 signed our names, this 3d day of February, 1904, in the presence of two subscribing witnesses.

PETER LEONARD.

CHARLES HAROLD JONES.

Witnesses:

G. C. DYMOND,

JOHN McLACHLAN.