

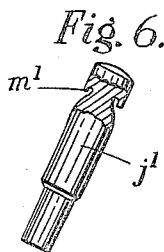
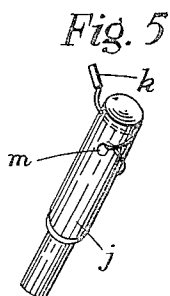
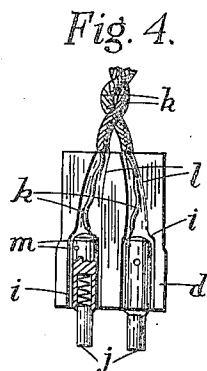
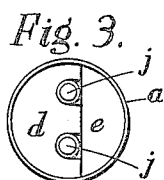
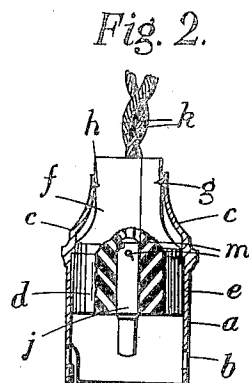
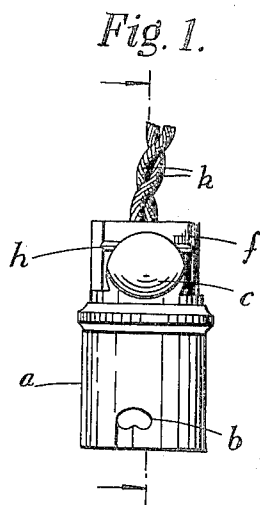
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ELECTRIC LAMP HOLDER

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ELECTRIC LAMP HOLDER

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This invention relates to improvements in electric lamp holders of the type more especially intended to be attached to the ends of flexible conductors in such a manner that the same are brought into electrical contact with spring pressed contact pins mounted in a block of insulating material comprised in the holder, the lamp being pressed against and held in contact with these pins by pins on the lamp cap engaging in bayonet slots in the holder.

The said invention comprises an improved method for attaching the ends of the flexible conductor to the spring contact pins, an improved form of insulating block in which the contact pins are held, and a novel form of lamp holder collar appropriate to the form of the insulating block.

The accompanying drawing shows how the said invention can be conveniently and advantageously carried into practice. In this drawing:—

Figure 1 is a side view and

Figure 2 a sectional view of a lamp holder in accordance with this invention.

Figure 3 is an end view thereof.

Figure 4 is a detail view showing one part of an insulating block comprised in the holder with contact pins and conducting wires laid therein.

Figures 5 and 6 are perspective views of different forms of spring contact pin.

As shown in this drawing, the lamp holder comprises a ring *a* having the usual bayonet slots *b* formed therein to receive the pins of a lamp cap. This ring may be provided, if required, with the usual screw threaded portion to receive a shade supporting ring. At the ends of the lamp holder opposite to that in which the bayonet slots are provided, lugs *c* are provided integral with the ring *a* and preferably bent inwardly substantially in the manner shown in Figure 2. An insulating block *d, e* divided on a plane substantially parallel to the axis of the block, is adapted to be held in this ring *a* and has a cylindrical or slightly tapered portion fitting therein and a reduced part providing flattened faces *f* intended in the use of the holder to occupy a position be-

tween the lugs *c* which may conveniently have ribs *g* formed thereon to engage in recesses, or grooves *h* in the insulating block or ribs may be formed in the insulating block to engage in grooves in the lugs. One part *d* of the insulating block is provided with slots or recesses *i* to receive spring contact pins *j* held therein by the cooperating part *e* and the conductors *k* attached to the pins *j* pass out through slots or channels *l* forming extensions of the recesses *i* in which the spring contact pins are lodged. However, if desired, the recesses may extend into each part of the block.

The two parts *d, e* of the insulating block having been placed together with their ends in alignment and holding between them contact pins *j* in the recesses *i*, can be inserted in the ring *a*, the faces *f* passing to a portion between the lugs *c* which having some degree of resiliency allow the grooves *h* to engage the ribs *g*. These grooves and ribs are however not essential to the construction as the lugs alone would operate as stops to prevent the cylindrical part of the block from passing out of the ring at this end thereof.

The two parts of the insulating block and also the ring may be tapered or of wedge shape decreasing in size towards the top. This facilitates insertion of the block in the ring. For example the block and ring may be formed with flat portions or grooves and ribs, or may be of oval form and in such cases the lugs, if desired, can be entirely dispensed with.

The block can alternatively be divided transversely or obliquely transversely to its axis, the pins being held in holes formed to prevent the pins passing out of the same while the two parts of the block are held together.

Each of the contact pins has two or more holes *m* drilled substantially diametrically through the pin at different points along its end and preferably having their axes arranged in angularly separated axial planes. The end of a flexible conductor *k* can then be threaded through one of the holes and then through a second or more holes in succession so as to be secured therein by the lapping

of the conductor wire as it is passed from one hole to another, as shown in Figure 5. The end of the wire can be tied to, threaded through, twisted around or looped on another part thereof, to firmly secure the wire and to ensure a good electrical contact.

Slots can be employed instead of holes or spring clips can be attached. Owing to the compression which can be exerted on the blocks *d, e* by the ring *a* and through them on the contact pins, both holes and slots could be dispensed with, or one hole or one slot employed, but two are preferable. Any slot can be cut so as to form a small tongue *m'* Figure 5, capable of being pressed against or towards the main body of the pin *j'* in which it is cut.

The spring contact pins with the wires are firmly clamped in the recesses in the insulating block between the two parts thereof when the latter are inserted into the ring *a*, and the ring is prevented from being drawn off from this block in ordinary usage by the lugs *c* or by the tapering or wedge shape portion of the ring preventing the cylindrical portion of the insulating block passing out of the holder at this end. The recesses in the insulating block may be of a tapered, angular or wedge shape so formed that the pins may be firmly clamped between the two parts of the block.

The arrangement of the ribs *g* on the lugs *c* entering the grooves in the insulating block *d, e* ensures the adjustment of the block to the right position within the ring to allow the cap of a lamp to be inserted into the ring *a* with the lamp pins properly engaged in the bayonet slots *b* and the contact plates of the lamp cap in electrical contact with the outer ends of the spring pins *j*. The travel of the spring pins allows a substantial variation in the position of said contact plates longitudinally without loss of effectiveness whilst slight inward projections in the ring *a* engaging in slots in the blocks as is usual in existing lamp holders would ensure a correct circumferential position.

The slots or channels can be so constructed as to grip the conductors throughout the length of the slots or by transverse ribs across the slots but these slots are preferably sufficiently deep to allow free play of the conductors, the object being to prevent the wires from being gripped tightly at any one point where the wire is liable to be bent through any substantial angle, as such tight gripping and bending at a particular point has a tendency to cause breakage of the wire at that point.

In case it is desired to screw the lamp-holder on to a wall fitting or like support the insulating blocks and ring can be made with enlarged portions which are not necessarily cylindrical or are formed with ribs or grooves, the enlargement being at the end away from

the bayonet slots and the blocks being inserted from that end. At the end of the blocks at the enlarged end within the ring a space may be provided to take surplus wire.

In lieu of a separate ring one or both of the insulating blocks can be extended so as to form a ring with bayonet slots to receive the lamp cap. The two portions of the block can be fixed together by a screw passing through them transversely or by sliding one portion into a slot in the other or into a tapering ring forming part of the other or into an undercut groove in the other portion.

One insulating block can be used instead of two either with bayonet slots in it or fitted into a ring having bayonet slots.

When only a single block is provided, the wires are inserted through holes therein and are then attached to the spring contact pillars which are then drawn upwards by the wires to positions within the block. Each spring contact pillar is prevented from entering the block beyond a predetermined distance either by a tapered formation of the hole into which it fits or by a shoulder on the pin of greater diameter than the hole or a pin or bar extending across the hole. In this form the spring contact pins and the holes into which they fit are preferably made to taper towards their upper ends. Alternatively either the contact pins or the corresponding holes can be tapered at parts thereof so that by rotating each pin about its longitudinal axis it can be jammed tightly in the hole. Moreover the pins and holes may be of a more or less oval cross section so that by rotating the pins as above mentioned they will be firmly held in the holes by a wedging action or frictional engagement. The pins or holes can in some cases be advantageously provided with either circumferential, spiral, longitudinal or transverse ribs or grooves.

I claim:—

1. A lamp holder comprising a ring slotted to receive lamp cap pins, lugs on the said ring remote from the slots, an insulating block slidable axially in the ring, the said block being divided on a plane parallel to the axis of the ring and comprising a cylindrical portion and a portion provided with flattened faces clamped between the said lugs, inter-engaging means between said lugs and said flattened faces for holding said block against axial movement in said ring, and spring contacts clamped between the parts of the divided block.

2. A lamp holder comprising a ring slotted to receive lamp cap pins, resilient lugs on the said ring remote from the slots, an insulating block divided on a plane parallel to the axis of the ring and comprising a portion fitting and slidable within the said ring and a portion clamped between the said

- lugs, said lugs having ribs on their inner sides and said last-named portion of the block having notches to receive said ribs, and spring contact pins clamped between the parts of the divided block. 70
3. A lamp holder comprising a ring slotted to receive lamp cap pins, resilient lugs on the said ring remote from the slots bent inwardly, and an insulating block divided on a plane parallel to the axis of the ring and having a portion fitting within the ring and a portion of smaller size provided with horizontal grooves and clamped between the lugs, ribs on the lugs to engage said grooves and spring contact pins clamped between the parts of the divided block. 80
4. A lamp holder comprising a ring slotted to receive lamp cap pins, resilient lugs on the said ring remote from said slots, an insulating block divided on a plane parallel to the axis of the ring, the said block comprising a cylindrical portion slidably fitting within the said ring and a flattened portion with horizontal grooves therein clamped between the said lugs, ribs on the lugs to engage the said grooves, and spring contact pins clamped between the parts of the divided block. 85
5. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block divided on a plane parallel to the axis of the ring and fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring engaging and pressing the parts of the block together and locking them against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 90
6. A lamp holder comprising a ring slotted to receive lamp cap pins, lugs on said ring remote from the slots, an insulating block divided on a plane parallel to the axis of the ring and slidably fitting within the ring, ribs on said lugs for pressing the parts of the block together and locking them against longitudinal movement, and spring contact pins clamped between the parts of the said block, each contact pin having a passageway for retaining part of a conductor wire attached to the pin in a position transverse to the axis of said pin. 95
7. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block provided with horizontal grooves and divided on a plane parallel to the axis of the ring, said block fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring for pressing the parts of the block together, ribs on the lugs engaging the grooves of the block to hold the block against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 100
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8. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block provided with horizontal grooves and divided on a plane parallel to the axis of the ring, said block fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring for pressing the parts of the block together, ribs on the lugs engaging the grooves of the block to hold the block against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 110
9. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block provided with horizontal grooves and divided on a plane parallel to the axis of the ring, said block fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring for pressing the parts of the block together, ribs on the lugs engaging the grooves of the block to hold the block against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 115
10. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block provided with horizontal grooves and divided on a plane parallel to the axis of the ring, said block fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring for pressing the parts of the block together, ribs on the lugs engaging the grooves of the block to hold the block against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 120
11. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block provided with horizontal grooves and divided on a plane parallel to the axis of the ring, said block fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring for pressing the parts of the block together, ribs on the lugs engaging the grooves of the block to hold the block against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 125
12. A lamp holder comprising a ring having a part thereof shaped to receive a lamp cap and a part thereof of different shape to provide a shoulder, an insulating block provided with horizontal grooves and divided on a plane parallel to the axis of the ring, said block fitting within the ring and held against longitudinal movement in one direction therein by engagement of part of the block against the said shoulder, lugs on said ring for pressing the parts of the block together, ribs on the lugs engaging the grooves of the block to hold the block against longitudinal movement in the opposite direction, and contact pins clamped between the parts of said block, each of said pins having a transverse wire-receiving passageway. 130