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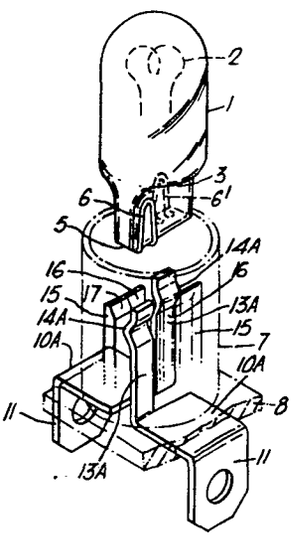
(54) Miniature lampholder.

(57) A lampholder for a wedge base lamp 1 comprises a flat base 8 and a cylindrical portion 7 enclosing two spaced pairs of jaws 14A, 15 for gripping the base of the lamp 1. Only two diagonally opposite jaws 14A are of conducting material and are connected to the lamp terminals 11 and the other two jaws 15 are of insulating material and are integral with the base 8, being formed with barriers 16. The inclusion of the insulated jaws 15 prevents a faulty lamp contact from making a direct short circuit between opposite jaws of a pair and the barriers 16 prevent a lamp being inserted at right angles to the correct alignment.



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Starpoint Electrics Limited

Miniature lampholders

This invention relates to miniature lampholders, particularly such lampholders for capless lamps. In order to cheapen the production of miniature electric lamps a construction has been developed in which the conductors to the filament of the lamp are led out to the outer surface of the pinch of the lamp, which is wedge shaped, the conductors being pressed agsinst the outside surfaces of the pinch so as to act directly as lamp contacts. Such a form of lamp is known as a wedge-base lamp.

The wedge shape facilitates fitting such a lamp into a holder and in order to assist in location the wedge is moulded with a slight central rib down the centre of each of the opposite flat faces. The lampholder then takes the form of two spaced pairs of contact-making jaws into which the wedge is inserted, with the rib on each side fitting into the space between the pairs. The conductors are led out axially, i.e. out of the end of the wedge, and are bent back into contact with opposite faces of the wedge, so as to lie on opposite sides of the respective ribs, i.e. so as to engage opposite jaws of the respective pairs.

In order to facilitate manufacture the two pairs of jaws are made from two bifurcated

conducting members, e.g. of brass, so that each member defines one side of both pairs of jaws. As long as the lamp is accurately made, this arrangement is quite adequate, the two conductors engaging diagonally opposite jaws and the remaining two jaws merely providing mechanical support.

Inaccuracy in the manufacture of the lamp can easily occur, however. For instance if either of the conductors is displaced from the centre line of the end of the wedge, it may project very slightly from the side to which it is displaced before being bent back and pressed into engagement with the opposite side. As a result, when such a lamp is pressed into the holder when the electrical supply is connected, the displaced conductor engages both jaws of the pair and causes a direct short circuit. The same may happen if a lamp is inadvertently inserted in a direction perpendicular to the correct direction. Even if the lamp has been correctly manufactured, one of the conductors may bridge across both jaws of a pair to produce a short circuit.

When a faulty lamp is used or a lamp is incorrectly inserted in an automotive indicator or control circuit the result will be a blown fuse which, though inconvenient, is not disastrous. On the other hand if the lamp is used in more complicated control or analytical equipment, such as a computer, the short circuit may cause the failure of a second component, thus leading to a cascade or knock-on effect which may lead to major damage.

According to the present invention, the diagonally opposite jaws which are required only for mechanical support are insulated from the electrical circuit and are preferably made of insulating material so that, even if a displaced conductor engages both jaws of a pair, no short circuit occurs.

Miniature lampholders of the type with which the present invention is concerned are almost invariably formed as mouldings of plastics material and the insulated jaws may thus be formed quite simply as extensions of the main moulding. As a result, only a comparatively minor modification is required to the existing design of lampholder. As previously described, the existing design comprises two bifurcated members and in order to modify this design in accordance with the present invention, one of the bifurcations of each member is omitted so that each member forms a single jaw for each of the two pairs of jaws, the co-operating jaw of each pair being formed as an extension of the moulding in which the conducting members are embedded.

In order to overcome the risk of inadvertently inserting a lamp in a direction perpendicular to the correct direction insulating barriers may be included and these may conveniently be integral with respective insulated jaws. The requirement is that the distance between the barriers should be less than the width of the wedge of a lamp, i.e. the width measured across each of the two faces defining the wedge.

A construction in accordance with the invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of an existing design of lampholder; and

Figure 2 is a similar view of a lampholder in accordance with the invention.

The type of miniature lamp previously described and inaccuracies in which lead to the problem solved by the present invention is illustrated as 1, the filament being shown diagrammatically as 2. The pinch of the lamp is generally wedge-shaped, having opposing faces, one of which is seen at 3. Each of the opposite faces is formed with a slight central rib, which cannot be seen very clearly in the drawing, but the location of which is indicated by the dotted line 4. The conductors from the filament 2 are led out through the end face 5 of the pinch, emerging along the central line when the lamp is accurately manufactured. One conductor is bent forwardly and folded in an inverted U-shape 6 which is pressed against the face 3 while the glass is still plastic so that the conductor is partially embedded in the glass but has an exposed surface to constitute one contact of the lamp. As can be seen, the contact 6 lies to the left hand side of the central rib 4. The other conductor is folded against the opposite face of the wedge to form an inverted U-shape shown in dotted lines as 6' constituting the other contact of the lamp which, as can be seen, lies to the right hand side of the central rib 4.

The main body of the lampholder is illustrated diagrammatically in dotted lines as comprising a cylindrical portion 7 and a flat base 8 supporting a pair of angled conductive members 10. Such a body is normally formed as a plastics moulding. Each member 10 is formed with a tag 11 which projects from the rear of the lampholder for connection to the electrical supply and the opposite end of each member 10 is formed with a central opening or slot 12 which provides a bifurcated construction comprising a pair of spaced arms 13A and 13B. Each arm is shaped at its free end so that the four arms together define two pairs of jaws 14A, 14B.

When the lamp 1 is inserted in position in the lampholder, the opposite ribs 4 fit in the spaces 12 and the contacts 6, 6' engage the jaws 14A. The jaws 14B are intended to engage the surface of the wedge on the opposite side of the rib 4 from the contact 6 so as to provide only mechanical support and no electrical contact. If, however, the conductor forming either of the contacts 6 or 6' is displaced or otherwise deformed so as to engage one of the jaws 14B in addition to the corresponding jaw 14A, there is a danger that a direct short circuit will be established between opposite jaws 14A and 14B with the adverse effects already described.

By means of the modification in accordance with the invention, as illustrated in Figure 2, this risk is avoided. The lamp itself is identical and all its parts are identified by the same reference numerals. The conductive members shown

as 10A are very similar to the members 10 and the parts which correspond are again shown by the same numerals. Thus the conducting tags 11 and the arms 13A with the jaws 14A are identical to those shown in Figure 1. On the other hand, the arms 13B with the jaws 14B are omitted and are replaced by parts 15, of which only the upper portion is illustrated but which form integral extensions from the base 8 of the lampholder. The parts 15 are chamfered at 17 to assist the insertion of a lamp and co-operate with the jaws 14A to grip the wedge shaped pinch of the lamp. Since they provide only mechanical support, the parts 15 do not need to be conductive. The fact that they are of insulating material positively prevents the establishment of a short circuit between the two conducting members 10A. Each part 15 is formed with an extension 16 of reduced thickness which constitutes a barrier preventing the lamp being inserted incorrectly. The distance between the barriers 16 is less than the width W of a lamp so that it is impossible for the lamp to be inserted in a direction perpendicular to that illustrated which might cause a direct short circuit between the jaws 14A.

Although the parts 15 are illustrated as being formed of insulating material, this is not essential. If desired the parts may be made of conducting material provided a body of insulation is included which insulates each part from the remainder of the electrical circuit. There is no advantage in such a composite construction, however, and the parts 15 are therefore preferably made of insulating material as already described.

C L A I M S

1. A lampholder for a wedge base lamp comprising two spaced pairs of jaws for gripping the base of the lamp characterised in that only two diagonally opposite jaws are of conducting material and are connected to the lamp terminals and the other two jaws are insulated from the terminals.

2. A lampholder according to claim 1 characterised in that the jaws which are insulated from the terminals are made of insulating material.

3. A lampholder according to claim 2 characterised in that the insulated jaws are integral with an insulating base for the lampholder.

4. A lampholder according to any one of the preceding claims characterised by insulating barriers for preventing the insertion of a lamp out of alignment with a line joining the pairs of jaws.

5. A lampholder according to claim 4 and either claim 2 or claim 3 characterised in that the barriers are integral with respective insulated jaws.

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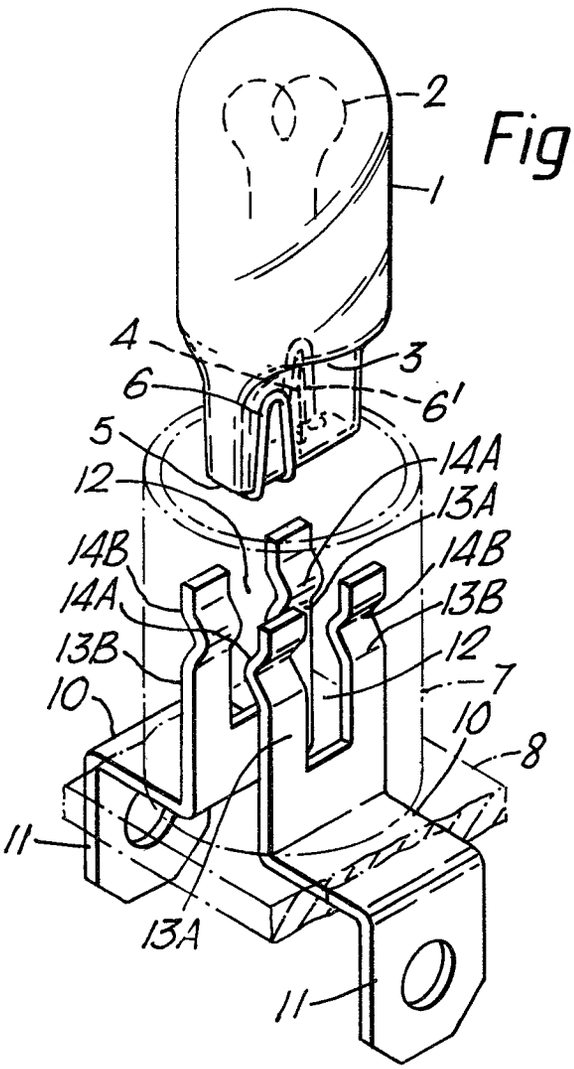

Fig. 1.

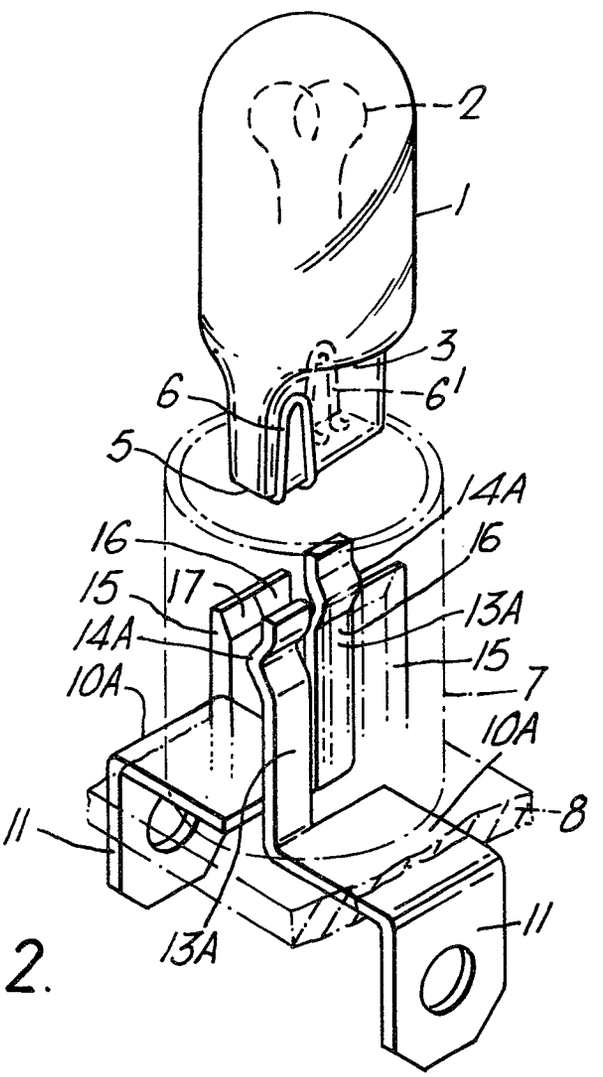

Fig. 2.

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EUROPEAN SEARCH REPORT

Application number
0035366
EP 81 30 0788

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	GB - A - 1 223 424 (RAYDYOT LTD) * Page 2, lines 84-94 *	1-3
X	US - A - 3 617 984 (R. ROSSI) * Column 2, lines 22-30; column 3, lines 30-32, 48-52; column 4, lines 19-25 *	1-3
X	GB - A - 1 056 742 (CARR FASTENER) * The whole document *	1-3
	FR - A - 2 131 556 (FRIEDRICH PETRICK) * The whole document *	1-3
	GB - A - 865 868 (ASSOCIATED ELECTRICAL INDUSTRIES) * Page 2, lines 24-39 *	1-3

CLASSIFICATION OF THE APPLICATION (Int. Cl.³)

H 01 R 33/06

TECHNICAL FIELDS SEARCHED (Int. Cl.³)

H 01 R 33/06

CATEGORY OF CITED DOCUMENTS

X: particularly relevant
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention
E: conflicting application
D: document cited in the application
L: citation for other reasons

&: member of the same patent family, corresponding document

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15-06-1981	MOBOUCK

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