Aug. 4, 1942. F. D. BRYANT 2,292,043

SOCKET FOR TUBULAR LAMPS

Filed June 6, 1941

Fig. 1.

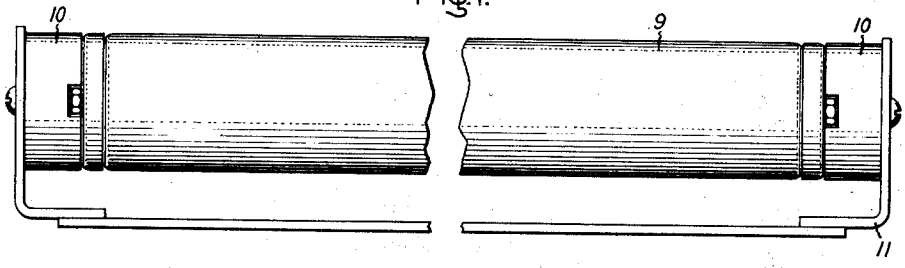



Fig. 2.

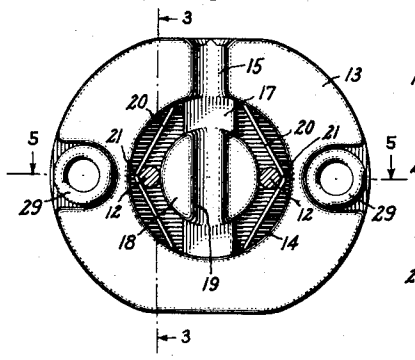



Fig. 3.

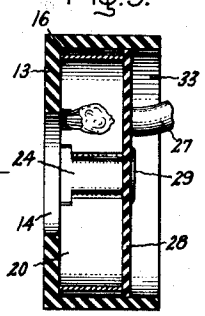



Fig. 4.

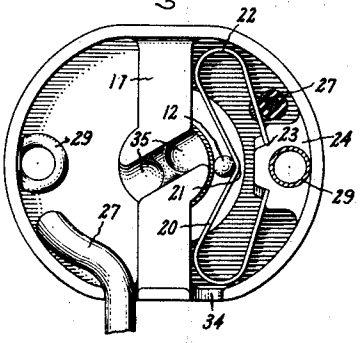



Fig. 5.

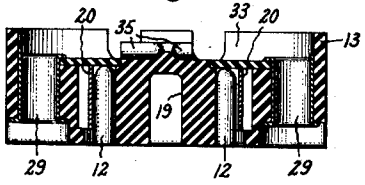



Fig. 6.




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# UNITED STATES PATENT OFFICE

2,292,043

## SOCKET FOR TUBULAR LAMPS

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Application June 6, 1941, Serial No. 396,860

2 Claims. (Cl. 173—328)

My invention relates to lamp sockets and more particularly to a socket for a fluorescent lamp of the type now in commercial use provided with spaced contact pins at each end.

My invention further relates to lamp sockets in which the lamp is mounted by rotary motion, such sockets being generally of the type described in the Marshaus Patent Reissue No. 21,545 issued August 27, 1940 and assigned to the same assignee as the instant application.

The object of my invention is the provision of a new and improved lamp socket of the type described which is extremely compact so that it is particularly adapted for use in restricted spaces and in which the number of molded parts has been reduced to effect a saving in cost.

In the accompanying drawing, Fig. 1 illustrates a fluorescent lamp mounted in lamp sockets constructed in accordance with my invention; Fig. 2 is a front view of the lamp socket showing the lamp contact pins in seated position; Fig. 3 is a sectional view through the socket taken along line 3—3 of Fig. 2; Fig. 4 is a rear view of the socket showing a portion of the interior thereof; Fig. 5 is a sectional view through the socket taken along line 5—5 of Fig. 2, and Fig. 6 is an exploded view showing the elements of the socket.

Referring to the drawing, I have shown a tubular electric lamp 9, such as a fluorescent lamp of the type now in commercial use, supported at each end in a socket 10, the sockets being mounted by way of illustration on a U-shaped bracket 11. Fluorescent lamps of the type referred to are provided at each end with spaced contact pins 12 which make electrical contact with the lamp socket and support the lamp in position on the socket.

The socket comprises a housing 13 of insulating material, such as a molded plastic, and the housing is given a substantially annular configuration so that it corresponds generally to the contour of the lamp. An opening 14 is formed in the front face of the housing and preferably is of circular form although not necessarily so; the opening merges with a slot 15 which extends from the opening to the outer edge of the housing. In the face opposite that in which the opening 14 is located the housing is formed with a recess 16 which merges with the opening 14. A supporting member 17 spans the recess 16 substantially in the center thereof and carries a guiding member or stud 18 which projects forwardly substantially into the plane of the opening 14. This guiding stud 18 is provided with a diametrical groove 19 in alignment with the slot 15. Contact members 20 are mounted in spaced relation on opposite sides of the guide stud 18 for engagement with the lamp pins. In mounting the lamp, the spaced contact pins 12 are moved in alignment through the slot 15 and groove 19 in a direction transverse to the axis of the lamp until the lowermost pin engages the wall of the opening 14; thereafter the lamp is rotated about its axis to move the contact pins into engagement with the contact member 20.

Each contact member comprises a strip of spring material. It is formed at a substantially central portion thereof with a bearing surface 21 which is somewhat V-shaped, as shown in Figs. 2 and 4, for engagement with the contact pin of the lamp. The outer ends of the spring strip are bent back upon themselves to form loops 22 on opposite sides of the bearing surface 21 and the ends of the spring strip are inserted in recesses 23 formed in a boss 24 extending from the wall of the recess. This means that the spring tension exerted by the loops 22 biases the bearing surface 21 into engagement with the lamp pin to insure a good electrical contact between the lamp pin and the socket contact member. The aforesaid supporting member 17 substantially bisects the recess 16 into two chambers 25 and 26 into each one of which a contact member 20 is placed so that they normally rest against opposite sides of the guide stud 18. An electrical connection with the contact members is made by means of conductors 27, the bared ends of which are looped over a portion of a corresponding contact member and secured thereto by any suitable fastening means, such as solder or the like. The contact members are held in position in the recess by cover plates 28 of insulating material, such as sheet fibre. The cover plates are inserted in corresponding compartments 25 and 26 and rest on the bosses 24. They are held in assembled position by any suitable means such as hollow rivets 29, which extend through openings 30 in the plates and openings 31 in the bosses and are peened over on opposite ends to secure them in position. One advantage of using hollow rivets is that they serve the additional purpose of forming a mounting means for the lamp socket. A screw or other suitable means may be passed through the rivets to secure the socket in position on a lighting fixture.

When the socket is mounted in position, the conductors extend beyond the confines thereof

for connection to the lamp operating circuit. To this end, the cover plates are provided with slots 32 through which the conductors extend. In assembled position, the cover plates 28 are set in from the rear face of the housing, as shown by Fig. 3, so that a space 33 is provided to receive the conductors 27 in those cases where it is desired to mount the lamp socket flush against a supporting surface. In such cases, the conductors 27 extend downwardly into slots 34 formed in the outer wall of the housing so that the socket lies flush against the supporting surface. Alternatively, the conductors may be turned to rest in grooves 35 formed in the supporting wall 17 if it is desired to bunch them together at the rear central portion of the socket in those cases where the socket is attached to a plate mounted on a pipe.

My construction provides a lamp socket which is extremely compact in that the contact members are bent back upon themselves to form the looped portions thereby permitting them to be assembled in a housing which is of substantially the same diameter as the lamp. Moreover, the loop portions of the contact members cause the bearing surface 21 to exert a strong pressure on the lamp pins thereby holding them securely in position on the socket.

The number of parts has been considerably reduced and the construction greatly simplified. The housing 13 is molded in one piece of plastic material while the cover plates 28 may be punched from relatively inexpensive material such as sheet fiber. The spaced contacts are identical in construction and the conductors are fastened to the contacts at the same point thereby facilitating the soldering operation. This means that during assembly the contacts are simply reversed in position when inserted in the housing so that the conductors extend outwardly at points adjacent the top and bottom of the housing, as viewed in Fig. 4. This, in turn, means that both covers may be made identical in form and simply assembled in reversed position. As a result of this arrangement, only three parts need be manufactured, i. e., the molded housing, the contact member, and the cover plate. A considerable saving is thereby effected in the cost of manufacture.

While in the form of the invention illustrated, the opening 14 is annular in shape, it should be manifest that it may be given other configurations as long as provision is made for rotating the lamp prongs into engagement with the contact members. Moreover, in those cases where the recess 14 and guiding member 18 are so proportioned as to permit the lamp pins to be moved at an angle into the socket, it will be apparent that the guide slot 19 may be omitted.

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

1. A socket for use with a lamp having spaced contact pins comprising, in combination, a housing of insulating material having a recess extending inwardly from one face thereof and an opening extending inwardly from an opposite face and merging with said recess, a portion of said opening extending to an edge of the housing, a bridging member spanning said recess and having a guiding member extending into the plane of said opening, contact members in said recess on opposite sides of said guiding member for cooperation with the lamp contact pins as the latter are moved transversely of the lamp axis into said opening and rotated into engagement with the contact members, each contact member comprising a strip of spring material formed with a centrally disposed pin engaging surface, the ends of said strip being looped back upon themselves and being disposed in engagement with the wall of the recess whereby said pin engaging surfaces are spring biased into engagement with the lamp pins and closure means for said recess.

2. A socket for use with a lamp having spaced contact pins comprising, in combination, a housing of insulating material having a recess extending inwardly from one face thereof and an opening extending inwardly from an opposite face and merging with said recess, a portion of said opening extending to an edge of the housing, spaced contact members in said recess for cooperating with the lamp contact pins as the latter are moved transversely of the lamp axis into said opening and rotated into engagement with the contact members, each contact member comprising a strip of spring material formed with a centrally disposed pin engaging surface, the ends of said strips being looped back upon themselves and being disposed in engagement with the wall of the recess whereby said pin engaging surfaces are spring biased into engagement with the lamp pins and closure means for said recess.

FRANK D. BRYANT.