Nov. 11, 1941. F. D. BRYANT 2,262,091

SOCKET FOR TUBULAR LAMPS

Filed March 27, 1941

Fig. 1.

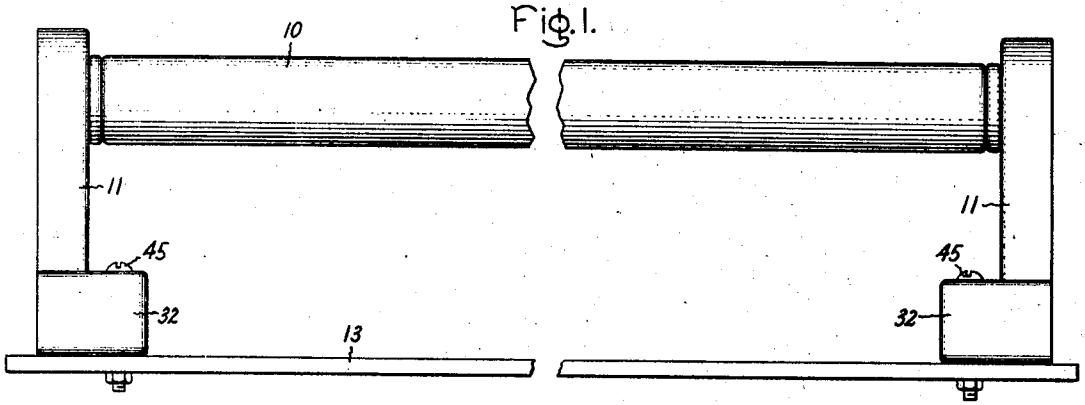



Fig. 2.

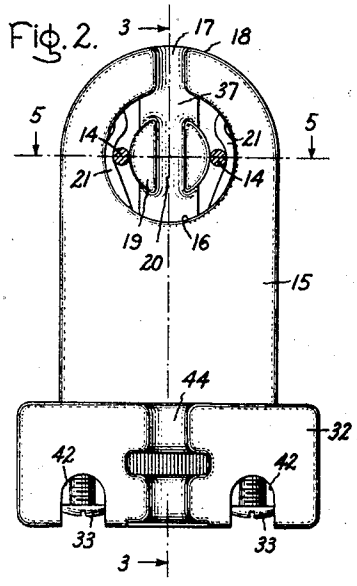



Fig. 3.

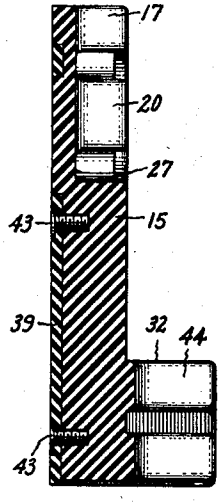



Fig. 4.

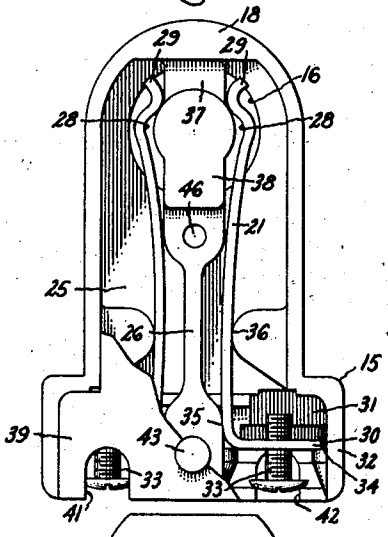



Fig. 5.

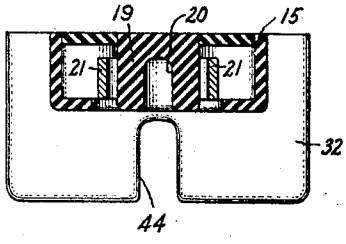
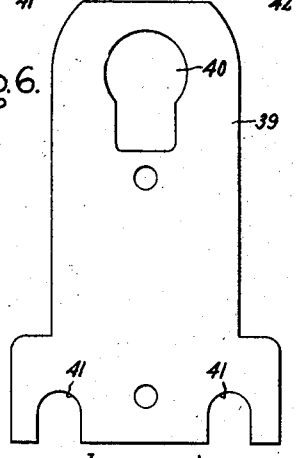



Fig. 6.




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2,262,091

# UNITED STATES PATENT OFFICE

2,262,091

## SOCKET FOR TUBULAR LAMPS

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Application March 27, 1941, Serial No. 385,451

6 Claims. (Cl. 173—328)

My invention relates to lamp sockets and more particularly to a socket for a double-ended discharge lamp, for example, a fluorescent lamp of the type now in commercial use.

My invention is further concerned with improvements in a lamp socket of the type in which the lamp is mounted by rotary motion, for example, a socket such as described in the Marshaus Patent Re. 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 of rugged construction and in which the number of molded parts has been reduced so that it may be manufactured at low cost.

In the accompanying drawing, Fig. 1 is a view of a lamp mounted in position on the lamp socket; Fig. 2 is a front view of my improved socket showing the lamp contact prongs in seated position; Fig. 3 is a sectional view through the socket taken along the line 3—3 of Fig. 2; Fig. 4 is a rear view of the socket with the cover plate removed; Fig. 5 is another sectional view through the socket taken along the line 5—5 of Fig. 2; and Fig. 6 is a view of the closure plate.

Referring to the drawing, I have shown a tubular discharge lamp 10, such as a fluorescent lamp, supported at each end by means of spaced lamp sockets 11 mounted on any convenient support, such as a reflector base 13. Tubular lamps of the type described are provided with spaced contact prongs 14 for engagement with the lamp socket; the contact prongs are shown in seated position on the socket by Fig. 2. The lamp socket for receiving the contact prongs comprises a housing of insulating material 15 provided in a face thereof with an annular recess 16 which merges with a slot 17 extending from the recess to an outer edge 18 of the housing. Within the plane of the recess 16 is an upstanding guiding post or stud 19 provided with a slot 20 in alignment with the slot 17. The stud serves to separate spaced flexible contact blades 21 disposed on each side of the stud and which are biased into engagement with the periphery thereof. The spaced contact prongs of the lamp are moved laterally in alignment through the slots 17 and 20 until the lowermost prong contacts the wall of the recess 16; thereafter the lamp is rotated to move the prongs into engagement with the spaced contact members, as shown by Fig. 2. The contact members 21 grip the prongs and held them in fixed position against the stud 19. This is the type of lamp socket shown and described in the aforementioned Marshaus Patent Re. 21,545.

In the socket shown in the Marshaus patent, the body is formed in two parts of molded material, one part being provided with recesses on each side of the stud for receiving the contact members, the other part being provided with the vertical slot and annular recess which serves as a portion of the guiding means for moving the lamp prongs into engagement with the contact members. While this arrangement of the elements provides an excellent construction for holding the lamp prongs securely in engagement with the contact members, it is one which is relatively high in cost in that two molded parts are required. Moreover, it is one in which there is some likelihood of damage arising from carelessness in inserting the lamp since breakage may occur at the points forming the guide slot. I propose to overcome these deficiencies by providing a socket construction which is exceptionally rugged and which is formed substantially as one integral molded piece, thereby effecting a considerable saving in the cost of manufacture.

Turning now to a consideration of my improved form of socket and referring particularly to Fig. 4, it will be seen that the housing is provided in the rear portion thereof with a recess 25 which is separated into two compartments by a dividing wall 26 extending from the bottom of the housing to the lower edge of the wall of the recess 16 at the point 27 shown by Fig. 3. One of the contact blades 21 is mounted in each compartment. At its upper end each contact blade is provided with an inwardly extending recess 28 for receiving the contact prongs of the lamp as shown by Fig. 2, while adjacent the recess 28 the end of the blade is flared outwardly as shown at 29 to guide the connector prong into the recess. At its opposite end the blade is provided with a laterally extending terminal portion 30 which is located in a recess 31 formed in an enlarged base portion 32 of the housing; each terminal portion of the contact blade is provided with a terminal screw 33 for connection to the electrical operating circuit of the lamp. The terminal portion of the contact blade rests in a slot 34 formed in the recess 31 while the lower main portion of the blade bears against an outwardly flared portion of the dividing wall 26 at the point 35. An abutment 36 is provided in the recess for bearing against an intermediate portion of the length of the blade; this means

that the contact blade is biased into engagement with the central stud 15 so that it will closely engage the lamp prong as the latter is positioned between the blade and the central stud.

The housing is provided with an integrally formed web 37 which extends from the upper edge 27 of the dividing wall 26 to the outer edge 18 of the housing and forms in effect an extension of the dividing wall 26 but of reduced thickness. The web carries the aforementioned stud 19 which projects forwardly into the plane of the recess 16 formed in the front face of the housing 15. This means that the stud 19 is supported centrally of the recess 16 yet spaced from the walls thereof so that room is provided for the lamp pins to rotate between the stud and the wall of the recess 16 into engagement with the contact blades. The contact blades are positioned in each of the compartments in the rear portion of the housing alongside the stud 19 in back of the face of the housing. The web 37 is provided with an upraised portion 38, as shown by Fig. 4, which increases the thickness thereof and strengthens the web at the point where the stud joins it. A cover plate 39 of insulating material, such as sheet fiber, closes the recess 25 of the housing by resting on the surfaces of the wall 26 and abutments 36 which are made slightly lower than the outer perimeter of the housing forming the recess 25 so that in seated position the cover plate lies flush with the outer edge of the housing in the manner shown by Fig. 3. The cover plate is formed with an opening 40 for receiving the upraised portion 38 of the web 37; in addition, it is formed with slots 41 at its lower edge for receiving the conductors to be wired to the terminal screws 33. The base portion of the housing is likewise provided with slots 42 to facilitate wiring to the terminal screws, these slots being shown by Figs. 2 and 4. The cover plate is held in position on the housing by means of drive pins 43 located in openings 46 formed in the dividing wall 26.

My socket provides a construction which is formed substantially in one molded piece thereby reducing the number of molded parts required to one. A piece of sheet fiber insulation is utilized to complete the assembly and to hold the contact blade in position in the housing. This provides a construction which is low in cost since the housing may be manufactured in a two-part mold and the closure plate punched from sheet material. At the same time the construction is one which is exceptionally rugged inasmuch as the lamp prong guiding means comprising the stud 19 and recess 16 are formed integrally in one piece. This strengthens the edges of the housing forming the slot 17 and prevents them from being broken off.

In order to mount the socket upon the support 13, the base 32 is provided with a slot 44 which receives any suitable fastening means such as the bolt 45.

While in the form of the invention illustrated, the recess 16 is annular in shape it should be manifest that it may be given any other configuration as long as provision is made for rotating the lamp prongs into engagement with the contact members. Similarly, it will be apparent that the slot in the guiding stud may be omitted in those cases where the recess 16 is made of sufficient size to permit the lamp prongs to be moved directly into engagement with the contact members upon insertion of the lamp.

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

1. In a socket for use with a lamp having spaced contact prongs, a housing of insulating material having a recess extending inwardly from one side thereof, said housing being provided in an opposite face with an opening merging with said recess and a slot extending from said opening to an outer edge of the housing, said housing also being provided with a wall dividing said recess into two compartments, said wall extending across the space defined by said opening and carrying a guiding stud projecting into the plane of said opening, a contact member in each compartment, said contact members having portions located on opposite sides of said guiding stud in the space defined by said opening for engaging the lamp contact prongs and a plate for closing said recess.

2. In a socket for use with a lamp having spaced contact prongs, a housing of insulating material having a recess extending inwardly from one side thereof and an opening merging with said recess formed in an opposite face, said housing being provided with a slot extending from said opening to an outer edge thereof, said housing also being provided with a wall in said recess extending across the space defined by said opening and carrying a guiding stud projecting substantially into the plane of said opening, contact members in said recess on opposite sides of said stud for engaging the lamp contact prongs as the latter are moved in line through said slot and rotated within said opening into engagement with the contact member, and a closure plate for said recess.

3. A socket for use with a lamp having spaced contact prongs comprising a housing of insulating material having a recess extending inwardly from one face thereof and an opening in an opposite face merging with said recess, a portion of said opening extending to an outer edge of the housing whereby the lamp prongs may be moved laterally into said opening, said housing being formed with an integral dividing wall in said recess extending across the space defined by said opening and carrying a guiding stud projecting substantially into the plane of said opening, contact members in said recess on opposite sides of said guiding member and adapted to engage the the lamp prongs as they are rotated within said opening, and a plate of insulating material for closing said recess.

4. A socket for use with a lamp having spaced contact prongs comprising a housing of insulating material having a recess extending inwardly from one side thereof and being provided in an opposite face with an annular opening merging with said recess, said housing being provided with a slot extending from said opening to an outer edge of the housing, said housing also being provided with an integral wall in said recess extending across the space defined by said opening and carrying a guiding stud projecting substantially into the plane of said opening, said guiding stud being formed with a slot in alignment with said first mentioned slot, contact members in said recess on opposite sides of said guiding stud and adapted to engage the lamp prongs as the latter are moved laterally through said slots and rotated within the opening into engagement with the contact members and a plate of insulating material covering said recess.

5. A socket for use with a lamp having spaced contact prongs comprising a one-piece housing

of insulating material having an opening in one face, a portion of which extends to the outer edge of said housing and being provided with a recess in an opposite face merging with said opening, said housing being provided with a web in said recess extending across the space defined by said opening and carrying a guiding member projecting into the plane of said opening, and contact members in said recess on opposite sides of said guiding member, said contact members being adapted to engage the lamp prongs as the latter are moved laterally into said opening and rotated into engagement with the contact members.

6. A socket for use with a lamp having spaced contact prongs comprising a one-piece housing of insulating material having an opening in one face, a portion of which extends to the outer edge of said housing and being provided with a recess in an opposite face merging with said opening, said housing being provided with a web in said recess extending across the space defined by said opening and spaced contact members in said recess, said contact members being adapted to engage the lamp prongs as the latter are moved laterally into said opening and rotated into engagement with the contact members.

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