

April 20, 1943.

W. R. YOUNG

2,317,163

LAMP SOCKET

Filed May 8, 1942

FIG. 1.

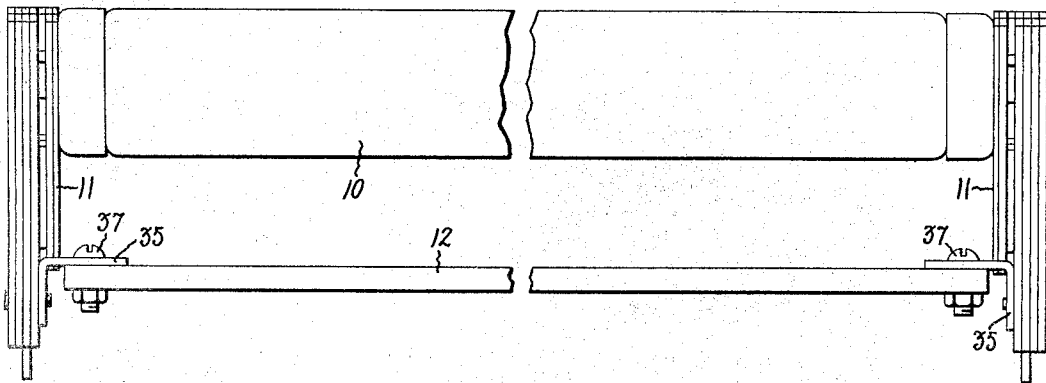


FIG. 2.

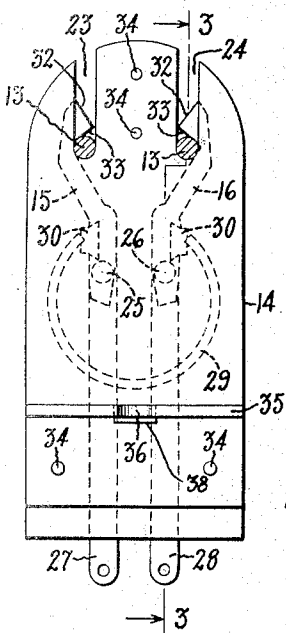


FIG. 3.

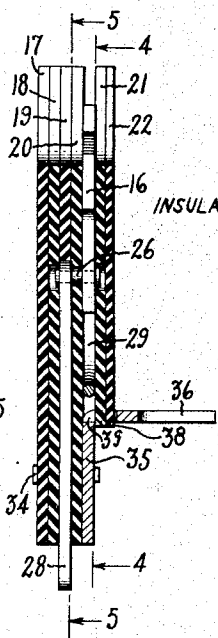


FIG. 4.

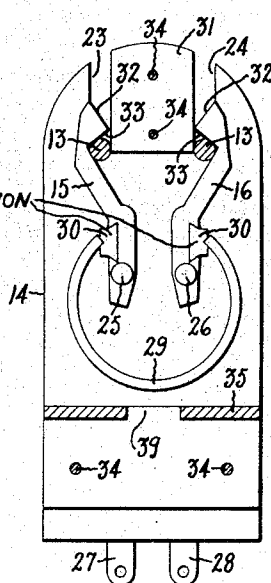


FIG. 5.

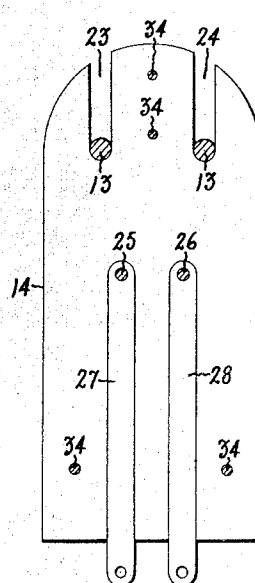
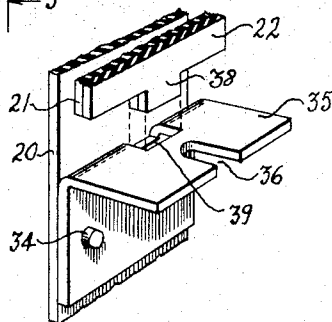


FIG. 6.



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UNITED STATES PATENT OFFICE

2,317,163

LAMP SOCKET

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Application May 8, 1942, Serial No. 442,153

3 Claims. (Cl. 173—323)

My invention relates to lamp sockets and more particularly to lamp sockets for tubular discharge lamps such as fluorescent lamps of the type now in commercial use.

An object of my invention is to provide a new and improved socket construction of the type described in which the body of the socket is made of low cost sheet material.

A further object of my invention is to provide a lamp socket having relatively few parts of simple construction such that the socket may be manufactured at low cost.

In the accompanying drawing, Fig. 1 shows a fluorescent lamp supported at each end in a socket constructed in accordance with my invention; Fig. 2 is a front view of the socket; Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2; Fig. 4 is a view of the interior of the socket taken along the line 4—4 of Fig. 3; Fig. 5 is still another view of the interior of the socket taken along the line 5—5 of Fig. 3; and Fig. 6 is a perspective, exploded view of certain parts of the socket.

Referring to the drawing, I have shown a fluorescent lamp 10 supported at each end in sockets 11 constructed in accordance with my invention and which, in turn, are supported on a base 12 forming part of a lighting fixture. Each end of the lamp is provided with two spaced contact pins 13 which support the lamp in the sockets and which provide for an electrical connection to the lamp filaments.

Each socket comprises a body 14 of insulating material which houses spaced contact members 15 and 16 for cooperation with the lamp pins. Heretofore, the bodies of sockets of this type have usually been made of molded plastic material or of a phenolic condensation product and filler. Such compounds are becoming relatively scarce on the market and in an effort to obviate their use and, in addition, to reduce the cost of manufacture, I have so designed the body portion of my socket that it is unnecessary to use a molding compound. To this end, the body is composed of a plurality of sheets or laminations of insulating material, for example, sheet fiber. In the instant case, I provide six sheets or laminations of the insulating material designated 17, 18, 19, 20, 21 and 22, although the number may be increased or decreased at will within certain limits. The body formed by these laminations is provided with spaced parallel slots 23 and 24 which extend to an outer edge of the body. The slots are spaced apart a distance corresponding to the spacing of the lamp pins and are provided with straight side

walls to guide the lamp pins into engagement with the contact members of the socket.

The contact members 15 and 16 are pivotally mounted on pins 25 and 26, respectively, in a space between laminations 20 and 21. The pins themselves are mounted in lamination 20 and, in turn, are electrically connected to spaced terminal strips 27 and 28 which extend through slots in lamination 19 to a point spaced from the bottom wall of the body for connection to electrical conductors. In this way, an electrical connection to the contact members is effected. The contact members themselves are free to pivot in the space between the overlying laminations 20 and 21. They are biased into the planes of the spaced slots 23 and 24 by an arcuate spring 29 the ends of which rest in recess formed in inserts 30 carried by each contact member. The inserts 30 are formed of insulating material so that the spring does not form a short circuiting path between the contact members. A separate piece or filler 31 of sheet material is disposed in the space between laminations 20 and 21 at a point adjacent the slots 23 and 24 and properly positions the contact members with respect to the slots and maintains them separated against the biasing action of spring 29.

Each of the contact members 15 and 16 is identical in construction and is preferably punched from sheet metal of good conductivity. At a point to be located in the plane of the slot each member is formed with beveled surfaces 32 and 33 which cooperate with the lamp pins to move the contact members to permit seating of the lamp pins in the slots. When the lamp pins are moved downwardly through the slots 23 and 24, they engage the beveled surfaces 32 forcing the contact members to pivot outwardly away from each other against the action of the spring 29. This permits the pins to slip into seated position at the bottoms of the slots and the spring then moves the contact members back into position so that the beveled surfaces 33 engage the lamp pins to make an electrical connection therewith. The contact members thus hold the lamp pins securely in position on the socket and prevent them from becoming dislodged due to small jars or vibrations. This is important in those instances in which the sockets are mounted in inverted position on the ceiling of a room. At the same time, the strength of the spring 29 is such that a firm pull on the lamp will cause the lamp pins to move the contact members outwardly by acting on the beveled surfaces 33 thereby permitting removal of the lamp.

The laminations of insulating material are fastened together in any suitable manner as by rivets 34. Two of these rivets are located in the upper portion of the socket body between the slots 23 and 24 to bind the laminations together into a unitary structure at the portion of the socket which engages the lamp pins. Two others of the rivets are located in the lower portion of the socket body and are used to fasten an angular mounting bracket 35 to the socket. The bracket is provided with a slot 36 to receive a bolt 37 for fastening the bracket to the support 12, as shown by Fig. 1. The bracket 35 also constitutes a means for spacing the laminations 20, 21. This is best shown in Fig. 6. The laminations 21, 22 (shown in raised position in Fig. 6) have tongues 38 projecting into a slot 39 formed in the horizontal portion of the bracket 35 adjacent the vertical bracket portion. Thus, the plate 20 engages one side of the vertical portion of the bracket 35 while the lamination 21 engages the opposite side of the vertical bracket portion.

From another viewpoint, a socket according to my invention has a housing made up of a plurality of punched laminations of insulating material. One of the laminations 19 has two parallel slots or recesses to form together with adjacent laminations 18, 20 a pair of channels for accommodating a pair of terminals or prongs 27, 28. Spacing means 31, 35 are disposed between a pair of laminations 20, 21 to define a contact space, that is, a space for accommodating two contacts 15, 16, each of which is pivotally supported on the spaced laminations and electrically connected to one of the terminals 27, 28. Means (29, 30) including a spring 29 are also located in the contact space to engage the contacts 15, 16 and bias them into parallel slots formed in the housing.

My socket provides a construction which may be manufactured at low cost since the laminations may be punched from sheet insulating material. Similarly, the contact members as well as the terminal strips 27 and 28 may be punched from sheet metal and since they are of identical construction, the number of parts is reduced. Assembly of the socket is effected simply by fastening the laminations together after the contact members, spring and terminal strips have been placed in proper position.

The socket is of somewhat reduced thickness compared to prior constructions. This is of ad-

vantage in those instances in which the sockets are placed back to back to secure a continuous line of light. Moreover, my socket is one in which the lamp may be inserted from either side thereby simplifying the installation of the socket in lighting fixtures.

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

1. A socket for use with an electric lamp having spaced contact prongs comprising a housing formed of a plurality of laminations made of insulating material, said housing having two spaced parallel slots extending inwardly from an edge of the housing through all the laminations for receiving and guiding contact prongs of a lamp, at least one lamination having a pair of slots and forming together with adjacent laminations two channels, a pair of terminals projecting into said channels, spacing means between another pair of laminations, a pair of contacts located in the space formed between the last mentioned pair of laminations, and means supporting the contacts in said space and electrically connecting them to the respective terminals.

2. A socket comprising a housing made up of a plurality of laminations and means for fastening the laminations together, one lamination having a pair of spaced parallel slots, a pair of terminals positioned in the slots, means spacing a pair of adjacent laminations, a pair of contacts accommodated in the space formed between said pair of laminations, means pivotally supporting each contact on said pair of laminations and electrically connecting each contact to one of the terminals, at least some of the laminations forming two parallel slots for guiding prongs of a lamp into engagement with the contacts.

3. A socket comprising a housing made up of a plurality of laminations of insulating material and means securing the laminations together, the housing having a pair of parallel slots, one lamination having two parallel recesses, a pair of terminals accommodated in said recesses, means spacing a pair of laminations to form a contact space, a pair of contacts disposed in the space, separate means pivotally supporting each contact and electrically connecting it to one of the terminals, and means including a spring engaging the contacts and biasing each into one of the slots.

WILLIAM R. YOUNG.