

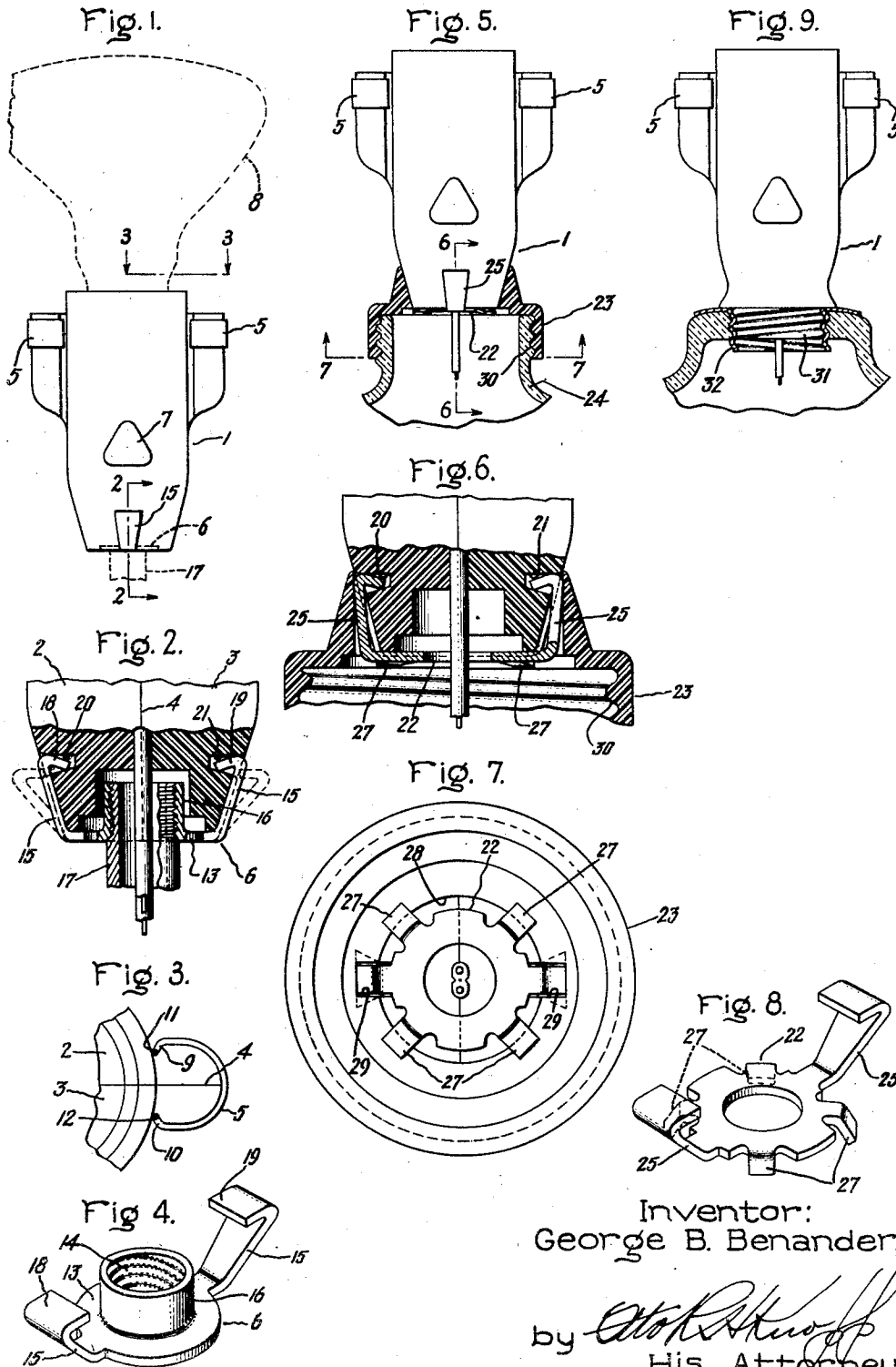
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THREADED NOZZLE CLIP FOR LAMP SOCKETS

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THREADED NOZZLE CLIP FOR LAMP
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This invention relates to sockets for portable electric lamps and, in particular, to an improved device which serves the dual function of holding socket halves together and of providing a mounting means for the socket.

In the manufacture of portable lamps, a lamp manufacturer usually receives a lamp base from one supplier and a lamp socket from another supplier. He then assembles the base and socket and ships the fabricated lamp to his distributors.

In shipping the assembled lamp, the manufacturer (while having cartons for the lamp base) usually has to provide new cartons, since the added socket increases the height of the lamp to such an extent that it will not fit in the lamp base carton.

It is an object of this invention, therefore, to provide a lamp socket which can be so simply connected to a lamp base that the assembly can be made by the ultimate consumer, thus allowing the manufacturer to ship the lamp in its original carton with the resultant saving in carton cost.

It is a further object of this invention to provide an improved device which serves the dual function of holding the halves of an electric socket together and of mounting the socket on a lamp base.

It is a further object of this invention to provide an improved securing device for holding parts of an electric socket in assembled relationship.

It is a still further object of this invention to provide an improved device for mounting an electric lamp socket in a portable lamp base.

Further objects and advantages of this invention will become apparent and the invention will be more clearly understood from the following description referring to the accompanying drawing, and the features of novelty which characterize this invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

Briefly, this invention relates to a combined securing device and mounting means which has ears for holding socket halves in assembled relationship. The device further has a portion including either a threaded bore or other securing means whereby the clip serves the dual function of holding socket halves together and of providing a mounting means for the lamp socket.

In the drawing, Fig. 1 is a front elevation of a lamp socket including my improved securing device; Fig. 2 is a side elevation partly in section taken along the plane 2-2 of Fig. 1 in the direction of the arrows; Fig. 3 is a top elevation of a

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portion of each of the two halves of the lamp socket with a spring clip holding the halves together; Fig. 4 is a perspective view of the embodiment of my new device which is used in Figs. 1 and 2; Fig. 5 is a front elevation of a second embodiment of my improved device including a mounting element or coupling; Fig. 6 is a side elevation partly in section taken along the plane 6-6 of Fig. 5 in the direction of the arrows; Fig. 7 is a bottom view of the mounting device shown in Fig. 6; Fig. 8 is a perspective view of the device used in the second embodiment; while Fig. 9 is a front elevation of still a further embodiment of my improved combined securing device and mounting means.

Referring to the drawing, and particularly to Figs. 1 through 4, a socket 1 for a portable electric lamp is shown as comprising a pair of molded plastic members 2, 3 which mate along the plane 4 to form a somewhat cylindrical socket. The socket halves 2, 3 are held together near one end by clips 5 and at the other end by my improved combined clip and mounting device 6. The socket is shown as having a switch operating knob 7 and a lamp 8; the latter being shown in dotted outline. A more complete description of my lamp socket is given in my copending application Serial No. 182,243 filed August 30, 1950. Basically, it is made of any of the phenol or urea compounds commonly used in molding electrical devices. For example, it could be made from alkyl compounds or any materials approved for this use by Underwriters Laboratories, Inc.

The clips 5, which are used to hold the upper halves of the socket together, are more completely described in my copending application bearing Serial No. 252,935, filed October 24, 1951. Basically, they comprise a U-shaped strip of resilient material having bent-in ears 9 and 10 which engage complementary grooves 11 and 12 in the socket halves 2, 3 respectively. The spring action of the resilient clips 5 holds the upper end of the socket halves together.

My improved combined securing device and mounting means 6 comprises a machined nozzle which might be made of cold rolled steel or other suitable alloy. The nozzle, through simple machining processes is formed to have a base 13, a threaded portion 14, and a pair of arms 15. After a collar 16 is extruded from base 13, the threaded portion 14 is formed to be engageable with the threaded end of conventional $\frac{1}{8}$ " straight pipe such as that shown at 17 and which is commonly used in lamp fabrication.

The arms 15, which are diametrically opposite,

extend radially outwardly and upwardly from the base 13, and they are provided with hooked ends 18 and 19 which are engageable with notches 20, 21 in casing halves 2, 3 respectively. The arms 15 preferably are made of a rigid metal such that they will maintain any position to which they are moved; that is, when the arms 15 are bent into the notches 20, 21 respectively, the hooked ends 18, 19 will stay in engagement with the notches to hold the socket halves 2, 3 together.

In this connection it will be noted that the hooked ends 18 and 19 are reversely bent with respect to arms 15, extending inwardly at a low angle to the plane of the arms and that notches 20 and 21 are of a width at their outer ends somewhat larger than the width of the hooked ends and taper inwardly to a width somewhat less than that of the hooked ends, it being understood that by the width of the hooked ends is meant the vertical distance between the top of a hooked end and the lower inner edge of a hooked end; and arms 15 are of a length with respect to the distance between the bottom wall of lamp socket members 2 and 3 which is flat and notches 20 and 21 such that when the arms are bent inwardly to bring the hooked ends into the notches, such ends will be wedged between the top and bottom walls of the notches as shown clearly in Fig. 2 to bring the two halves of the lamp socket tightly together and draw base 13 tightly up into engagement with the bottom wall of socket members 2 and 3.

With such a structure, a molded socket which is provided with notches 20, 21 is placed in engagement with my improved clip 6 whereupon its arms 15 are bent in against the sides of the portions 2, 3 so that the hooked ends 18, 19 are wedged in the notches 20, 21. This structure provides for holding the socket halves together and for preventing axial movement of the securing device 6 relative to the lamp socket 1.

With such a mounting means provided for a lamp socket, it is a simple matter to insert a suitable piece of $\frac{1}{8}$ " straight pipe through the lamp base to be engageable with my securing device 6, thereby to hold the lamp and lamp socket in assembled relation.

The second modification of this invention is shown in Figs. 5, 6, 7 and 8 wherein a lamp socket 1 and the clips 5 are identical to those shown in Figs. 1 through 4. In this embodiment, however, my improved combined securing device and mounting means 22 does not have the threaded portion 14 as shown in Fig. 2. Instead, a separate collar or coupling 23 is provided and made of some molded plastic which is similar to that used for the lamp socket, and the lamp socket is then secured to a lamp base 24 by threading the coupling 23 onto it. In order to secure the lamp socket 1 to the coupling 23, arms 25 (similar to arms 15 of Fig. 4) of mounting device 22 are secured to the lamp socket 1 by engaging the notches 20, 21 just as shown in Figs. 1 through 4. In the device 22, however, the base portion 22 includes a plurality of radial fingers 27 which are spaced somewhat uniformly about the periphery. The fingers 27 are deflected downwardly from the plane of the base so that they can pass through a bore 28 in the collar 23. After the fingers 27 have been passed through the bore 23, they are upset against the periphery of the bore 23 to hold my improved mounting device 22 to the collar 23.

Before inserting collar 23 on the lamp socket 1,

however, the ears 25 must be installed on the lamp socket as described for the arms 15 of Figs. 1 through 4; then, when coupling 23 is secured to mounting device 22 by means of bending the fingers 27 into engagement with the periphery of bore 28, the coupling serves the decorative function of covering the arms 25 while preventing axial movement between the socket and mounting device.

A pair of notches 29 is cut in the periphery of the bore 23 to permit the arms 25 to extend upward into engagement with the socket 1. By means of the interengagement between the arms and notches 29, the coupling 23 is prevented from being rotated about the axis of socket 1.

In assembling a lamp, the ultimate consumer simply screws coupling 23 onto a threaded portion 30 of lamp base 24 to fabricate a completed lamp.

In a still further embodiment of my invention, a combined securing device and mounting means is provided by molding a threaded end 31 onto the bottom of lamp socket 1 as shown in Fig. 9. A metal ring or ferrule 32, threaded to engage threaded portion 31, is then screwed onto the lamp socket 1 whereby the socket halves are held together by the threaded ring 32. Thus a mounting device is provided whereby the threaded ring can be cemented onto a porcelain base or screwed into a complementary threaded nozzle.

In each of the embodiments shown, the lamp socket 1 may be held together by the combined use of clips 5 and one of the devices 6, 22, or 32. However, if it is necessary, the socket halves may be further held together by means of a screw passing through the two halves of the socket 2, 3.

Modifications of this invention will occur to those skilled in the art and it is desired to be understood, therefore, that this invention is not intended to be limited to the particular embodiments disclosed, but rather it is intended to cover all modifications which are within the true spirit and scope of this invention.

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

1. In a lamp socket, a housing split longitudinally to provide housing halves and means for fastening together the housing halves at their lower ends and forming a mounting means for the lamp socket comprising walls which define in opposed outer sides of the halves opposite outwardly facing notches, the top and bottom walls of which taper inwardly with respect to each other whereby the notches in a vertical direction are wider at their outer ends than at their inner ends, and a combined securing device and mounting means having a base which fits against the bottom surface of the housing halves, means forming a part of the base to which a supporting member may be attached for supporting the lamp socket, and arms integral with the base which extend up along the side of the socket housing and have inwardly turned downwardly sloping hooked ends positioned in said notches, said arms being of a length and said hook ends having a width such that when the hooked ends are pushed into the notches, they are wedged between the top and bottom tapered walls of the notches and draw the base up into tight engagement with the bottom surface of the housing halves.

2. A lamp socket structure as defined by claim 1 wherein the means forming a part of the base to which a supporting member may be attached

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is in the form of a threaded collar integral with the base.

3. A lamp socket structure as defined by claim 1 wherein the means forming a part of the base to which a supporting member may be attached comprises a threaded coupling of insulating material attached to the base by fingers integral with the base.

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