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Clark

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[54] **CEILING LAMP MOUNTING**

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[52] **U.S. Cl.** ..... **339/126 R,** 339/119 L

[51] **Int. Cl.** **H02b 1/02**

[58] **Field of Search**...339/119, 120, 125, 126 R, 127, 339/132, 176 L, 180, 188, 17 D, 17 T

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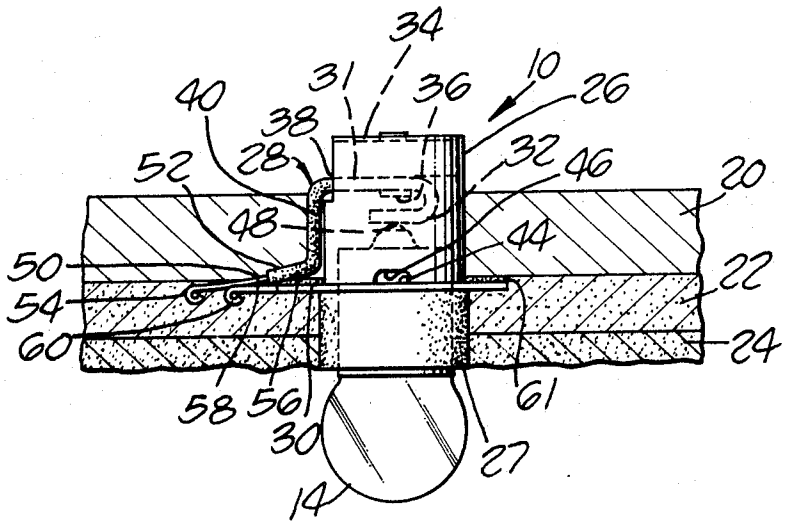
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Assistant Examiner—Lawrence J. Staab
Attorney, Agent, or Firm—Lyon & Lyon

[57] **ABSTRACT**

A bayonet type lamp socket for use with several such sockets randomly mounted in a ceiling to provide room lighting or a starlight effect depending on varying intensity, which has a tubular body portion, supporting flange member and a spring contact element mounted in the body portion in providing an external contact for the wiring together of the several sockets.

8 Claims, 5 Drawing Figures



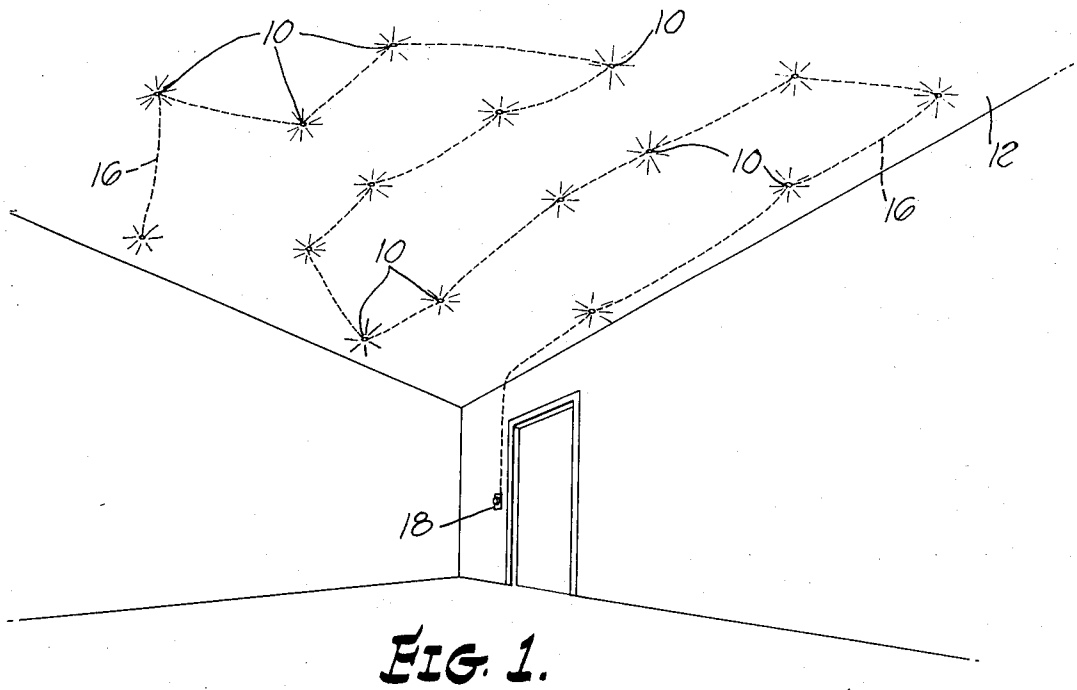


FIG. 1.

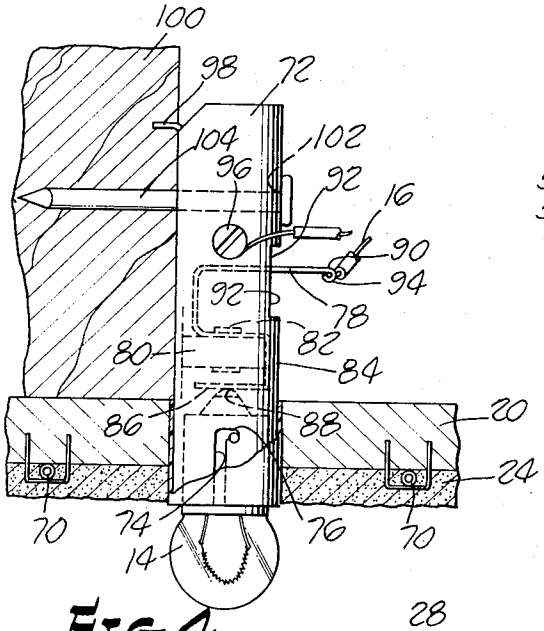


FIG. 4.

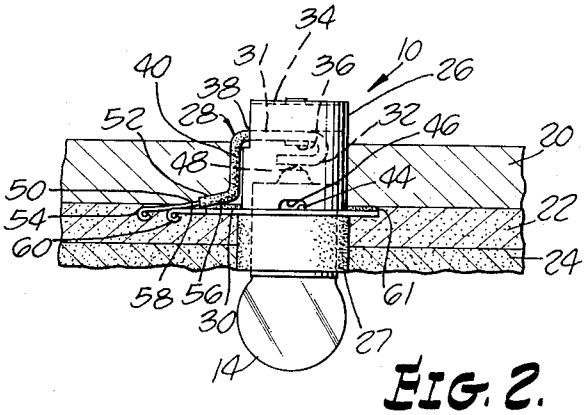


FIG. 2.

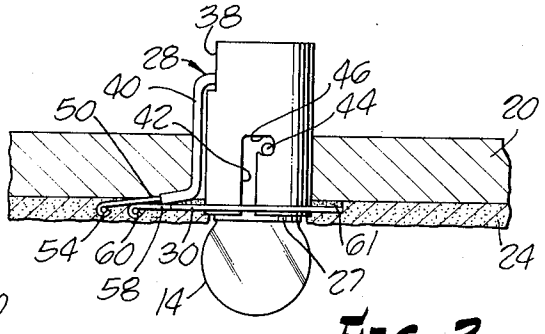


FIG. 3.

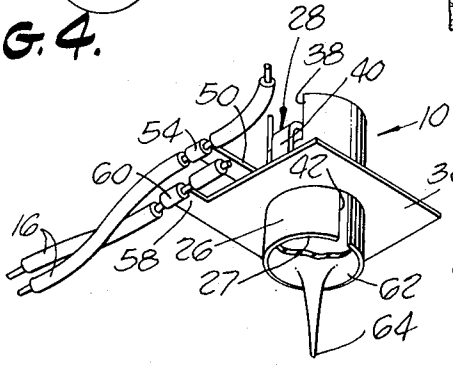


FIG. 5.

CEILING LAMP MOUNTING

BACKGROUND OF THE INVENTION

Special light effects such as starlight ceilings are generally only found in commercial establishments. This is partly a result of the cost involved in individually mounting and wiring each of the light sockets used in such a system. In addition, such a ceiling is generally unattractive during the daylight hours because of the protruding light sockets, and hence it is of little demand in home ceilings. In some commercial applications, the starlight is created by the use of a dark perforated false ceiling hanging under a light source. Such an installation is also unsuited for home use due to its unattractive appearance during the daylight hours and because of its quite limited usefulness due to the inability of such a ceiling to provide sufficient lighting for normal evening usage.

It is therefore the principal of this invention to provide a light socket which is adapted to be employed in a starlight ceiling effect and is suitable for home usage.

It is another object of this invention to provide a lamp mounting which can be easily installed in a ceiling to provide an unobtrusive light source.

It is a further object of this invention to provide a lamp mounting which is adaptable for use in ceilings of varying construction.

It is another object of this invention to provide a lamp mounting which is adapted for easy parallel or series connection with other similar mountings.

It is a still further object of this invention to provide a lamp mounting which is of simple construction and economical to manufacture.

SUMMARY OF THE INVENTION

Briefly the lamp mounting comprises a tubular body portion, a spring contact member mounted in the body portion and extending outwardly therefrom adjacent a supporting flange member. The extended contact member and a portion of the flange member provide external contact points near the forward portion of the socket for the wiring together of the several sockets. In addition to providing an electrical contact, the supporting flange allows the socket to be mounted in the ceiling during construction thereof and to withstand the continual jarring caused by the plastering process.

IN THE DRAWINGS

FIG. **1** is a perspective view showing a number of sockets mounted in a ceiling, interconnected by a electrical wiring and connected to a rheostat mounted on the wall.

FIG. **2** is an elevation of a lamp mounting in a ceiling of plaster and acoustic material.

FIG. **3** is an elevation of a lamp mounting in a ceiling of acoustic material.

FIG. **4** is an elevation of a separate embodiment of the lamp mounting for use in ceilings equipped with a radiant heating system.

FIG. **5** is an isometric elevation of a lamp mounting with a nipple covering thereon.

Referring now in detail to the drawings, FIG. **1** shows a number of sockets **10** positioned in a ceiling **12**, each having a small incandescent light bulb **14** mounted therein. The sockets **10** are inner connected preferably in parallel relation, through wiring **16**. When a large

number of sockets are mounted in the ceiling and connected to a rheostat **18**, which in FIG. **1** is shown mounted on a wall, either a starlight effect or normal lighting can be attained by varying the intensity of the bulb **14** through the rheostat **16**. When the intensity is lowered, an outdoor starlight effect is attained. When the individual lights are brightened the starlight effect deminishes and the room is lighted as though by the conventional overhead fixture.

FIG. **2** shows the light socket **10** which is adapted for mounting in a ceiling constructed of lathe **20** or the like and plaster **22**, having an acoustic finish **24**. The socket **10** is comprised of a tubular body member **26** having an open lower end **27** adapted to receive light bulb **14**, contact member **28** and supporting flange **30**. The flange **30** is positioned along the body member **26** a distance substantially equal to the thickness of the layers of plaster and acoustic material **24**. The contact member **28** has an internal portion **31**, terminating in a loop contact **32**. The contact member **28** is held within the body member by an insulating button **34** and rivet **36** which secure the looped portion **31** of contact member **28** to the button member. An area **38** of the upper portion of the body member is cut away to allow the external portion **40** of the contact member **28** to protrude from the body portion and to allow the body portion to be crimped about the button **34**, thereby securing the button within the body member and securing the contact member **28** with respect to the tubular body member **26**.

The tubular body member has a pair of bayonet slots **42** on each side thereof to receive studs **44** on light bulbs **14**. Slots **42** have recessed or laterally disposed portions **46**, so that upon inserting the light bulbs into the tubular body member **26** and the studs **44** into slots **42** and depressing the light bulb until the rearward contact point **48** on light bulb **14** depresses the loop contact **32**, said laterally disposed portions are aligned with studs **44**. Upon rotating the light bulb, the studs thereon move into the recessed area or disposed portions **46** of slot **42** and the bulb is locked in place by the biasing action of the loop contact **32** acting against the contact point **48** on the light bulb, which urges studs **44** against the walls of the laterally disposed portions **46** of slot **42**. In this manner, the light bulb **14** is held within the socket **10** and the electrical contact is made between the positive point contact **48** on the light bulb and the contact member **28** of the socket.

The contact member **28** has an external portion **50** which extends out of the tubular body member and through cut away area **38**. The external portion of the contact member extends along the body of the socket towards the light bulb **14** held therein, bends outwardly at **52** and terminates in a crimp **54** adjacent flange **30**. Insulation **56** is provided about contact member **28**, as shown in the drawings, to prevent a shorting contact with either the body member **26** or flange **30**. Flange **30** which is in electrical contact with the tubular body member **26**, has a portion **58** extending therefrom and terminating in a crimp **60**, which defines a negative contact in substantially the same horizontal plane as crimp **54** in positive contact **28**.

In mounting the socket on the ceiling, it can be seen from the drawings, that the body portion extends upwardly through a hole cut in the lathe **20**. A small amount of adhesive **61**, such as "3M" brand adhesive No. 8001 or other suitable adhesive, is applied to the

underside of flange **30** and the socket is pushed flush with the lathe. In wiring the several sockets together, it is necessary only to strip the two bell wires **16** or other suitable electrical connectors, insert the positive strip wire into the crimp **54** and the grounded wire into crimp **60**, as shown in FIG. **5**, and depress the respective crimps. The use of the forwardly extending contact member **28** and the flange member **30** as a contact allows for the two contact points for crimps **54** and **60** to be positioned close together on the same horizontal plane as the supporting flange **30.** This obviates the unwinding of the inner wound bell wires during construction thereby saving labor time and places all the electrical wires in a flat plane against the lathe **20**, thereby preventing any proteuberances which would otherwise complicate the task of plastering. After plaster is applied over the lathe, flange, crimps and wires, a layer of acoustical material **24** is sprayed over the plaster, bring the ceiling substantially flush with the lower end of socket **10.** As shown in FIG. **5**, during construction, a plug **62** having a nipple **64** thereon is placed in lower opening **27** of the tubular body member **26.** This covering prevents plaster and acoustic material from entering the interior of the body of the socket and thereby interfering with the electrical contacts. The nipple **64** allows the cover to be easily withdrawn after the final finishing operation, whereupon the light bulbs can be installed.

FIG. **3** shows a second embodiment of the invention, wherein the supporting flange **30** is positioned substantially adjacent the opening **27** of the tubular body member **26.** This embodiment of the envention is adaptable for use in ceilings already constructed and requires solely the application of the acoustical material **24** over the ceiling to hide the electrical wiring from view. As shown in FIG. **3**, the body of the socket is placed through a layer of lathe, gypsum board or the like, affixed thereto as in the prior embodiment and the acoustical material sprayed directly over the lathe and frontal portion of the socket, thereby providing the same finished product as in the first embodiment. As with the first embodiment, a cover **62** with a nipple **64** thereon is used during the application of the acoustic material to prevent any coating of the electrical contacts.

A third embodiment of the invention is shown in FIG. **4.** This form of light socket is adapted for use with ceilings having radiant heating coils **70** therein and avoids the danger of crossed wires in the acoustical material. This embodiment comprises an elongated tubular body member **72** having a pair of bayonet slots **74** cut therein with laterally disposed portions **76**, as in the prior embodiments. A contact member **78** is provided, which is secured at one end thereof to an insulated button member **80** by a rivet **82.** The tubular body is crimped at **84** adjacent the button member to maintain the button member firmly within the body portion and thereby secure the contact member **78.** As in the prior embodiment, the internal end of the contact member terminates in a looped portion **86** which makes a biasing contact with the positive point contact **88** on the light bulb **14** placed within the tubular body member. The external end **90** of contact **78** extends outwardly of the socket through an aperture **92** in the side of the tubular body portion. The external end of contact **90** terminates in a crimp **94** which receives the positive wire as did crimp **54** in the earlier embodiments. A screw **96** is placed in the side of the elongated body portion and provides the ground terminal for the ground wire. To properly support the elongated body member **72**, in the absence of a supporting flange, a portion **98** of the upper end of the body member is bend outwardly and shaped to a point whereby it can be driven into the joist **100** which supports the ceiling above the lathe or gypsum board. To provide further support, an aperture **102** is provided perpendicular to the longitudinal axis of the body portion, through which a nail **104** can be placed and driven into the joist. In this manner, the sockets are supported by the joist and the wiring is maintained above the lathe and acoustical material, thereby avoiding any cross wiring with the radiant heating coil **70** with which run throughout the acoustical material.

Various changes and modifications may be made in carrying out the present invention without departing from the scope and spirit thereof. Insofar as these changes and modifications are within the purview of the appended claims, they are to be considered as part of the invention.

What is claimed is:

1. A lamp socket for mounting in a ceiling having an aperture therefor and adapted to be used in electrical contact with the plurality of such sockets, comprising a tubular body member constructed on an electrically conductive material, the rearward end thereof being adapted to be positioned within said aperture in said ceiling and the forward end to hold the base of an electric light bulb therein, a flange member constructed of an electrically conductive material extending about said body member and in rigid contact therewith, said flange member defining a supporting surface adapted to abut said ceiling such that when an adhesive is positioned between said flange member and said ceiling said socket is supported from said ceiling, a portion of said flange member defining an electrical terminal, a spring contact member being carried by said body member, one end of said contact member being positioned within said tubular body member and terminating in a loop portion, said loop portion being adapted to abut a contact formed on the end of said light bulb base and making an electrical contact therewith, the other end of said contact member extending outwardly of said body member, near the rearward end thereof and forward along said body member to said flange member, said contact extending radially outward from said body member at said flange member and ending in a second electrical terminal, said second electrical terminal being adjacent and in substantially the same horizontal plane as said first terminal on said flange member, said contact member being electrically insulated from said body member and said flange member between said second terminal and said loop portion positioned within said body member.

2. The combination of claim **1** wherein said socket is adapted for mounting in a plaster ceiling having an acoustic covering, said flange member being positioned rearward of said forward end of said tubular body member a distance substantially equal to the thickness of said plaster and said acoustic finishing.

3. The combination of claim **1** wherein said socket is adapted for mounting in a ceiling having an acoustic covering, said flange member being positioned substantially adjacent the forward end of said tubular body portion.

4. The combination of claim 2 wherein said tubular body member has a pair of oppositely disposed longitudinal slots near the forward end thereof, each of said slots having a laterally disposed portion thereof, said slots being adapted to receive a pair of oppositely disposed studs mounted on the base of said light bulb.

5. The combination of claim 3 wherein said tubular body member has a pair of oppositely disposed longitudinal slots near the forward end thereof, said slots being adapted to receive a pair of oppositely disposed studs mounted on the base of said light bulb.

6. A lamp socket for mounting in a ceiling having radiant heating coils therein and an aperture for said socket extending through the ceiling, adjacent the ceiling joist and adapted to be used in electrical contact with the plurality of such sockets similarly mounted comprising a elongated tubular body member, the rearward end thereof being adapted to be positioned within said aperature in said ceiling and the forward end to hold the base of an electric light bulb therein, a spring contact member being carried by said body member, one end of said contact member being positioned within said tubular body member and terminating in a loop portion, said loop portion being adapted to abut a contact formed on the end of said light bulb base making an electrical contact therewith, the other end of said contact extending outwardly of said body member near the rearward end thereof and ending in an electrical terminal, a screw member extending into said tubular body portion and defining a second electrical contact, and a pointed flange extending radially outward from said tubular body portion near the rearward end thereof, said flange being adapted to be positioned within said ceiling joist, thereby supporting said lamp socket in said ceiling.

7. The combination of claim 6 wherein an aperture is provided in said tubular body portion said aperture extending through said body portion and perpendicular to the longitudinal axis thereof, whereby a nail can be driven through said aperture and into said ceiling joist thereby further supporting said socket in said ceiling.

8. The combination of claim 6 wherein said tubular body member has a pair of oppositely disposed longitudinal slots near the forward end thereof, each of said slots having a laterally disposed portion thereof, said slots being adapted to receive a pair of studs mounted on the opposite side of the base of said light bulb, whereby said light bulb is maintained within said tubular member by the urging of said loop portion of said contact member against said contact on the end of said light bulb base thereby forcing said stud members against the forward side of said laterally disposed portions of said slots.

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