United States Patent [19]

McCarthy

[11] **3,757,105**

[45] **Sept. 4, 1973**

[54] **ELECTRIC LIGHT DEVICE**

[76] Inventor: **Jack N. McCarthy,** Meadowood Rd., Tolland, Conn. 06084

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[21] Appl. No.: **185,934**

[52] **U.S. Cl.** ..... **240/10 R,** 240/153, 313/220, 339/146

[51] **Int. Cl.** **F21v 21/00,** H01k 1/14, H01j 17/16

[58] **Field of Search** ..... 313/220, 318, 317, 313/312, 315, 222; 339/143 T, 144 R, 145 R, 145 D, 146; 240/10 R, 10 A, 10 T, 151, 152, 153

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Primary Examiner—Joseph F. Peters, Jr.

[57] **ABSTRACT**

An electric light device having a bulb and base assembly wherein the bulb is formed having external screw threads. Means are provided for engaging said screw threads wherein the bulb can support said means or the means can support said bulb. This means can be a cover through which light from the bulb can pass and which, in turn, has an attachment means for supporting the whole device. Means are provided to take up tension through the electric light when necessary.

30 Claims, 14 Drawing Figures

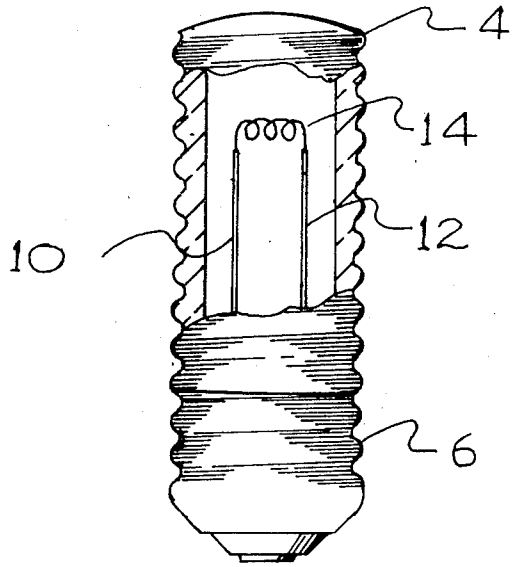


FIG. 1

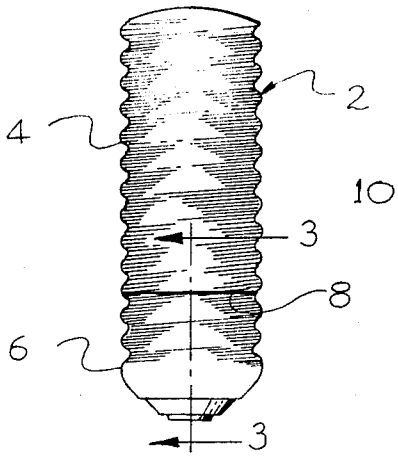


FIG. 2

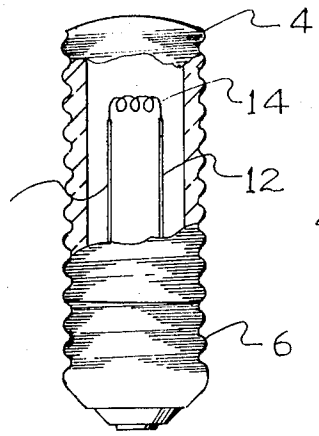


FIG. 3

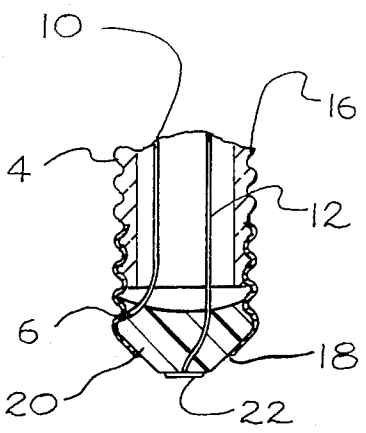


FIG. 4

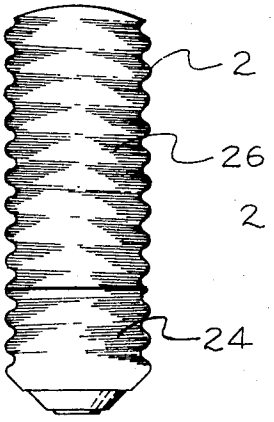


FIG. 5

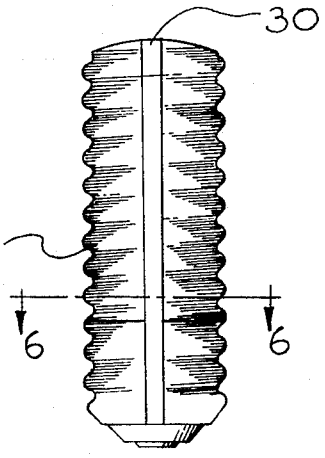


FIG. 6

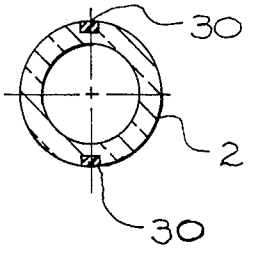


FIG. 7

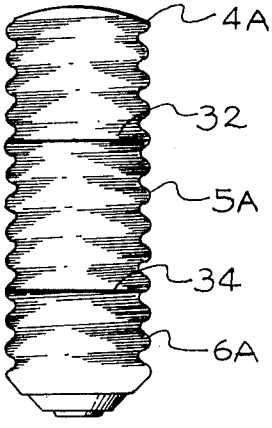


FIG. 8

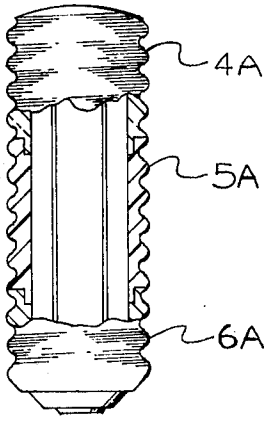
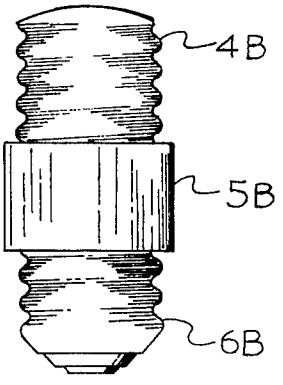


FIG. 9



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FIG. 10

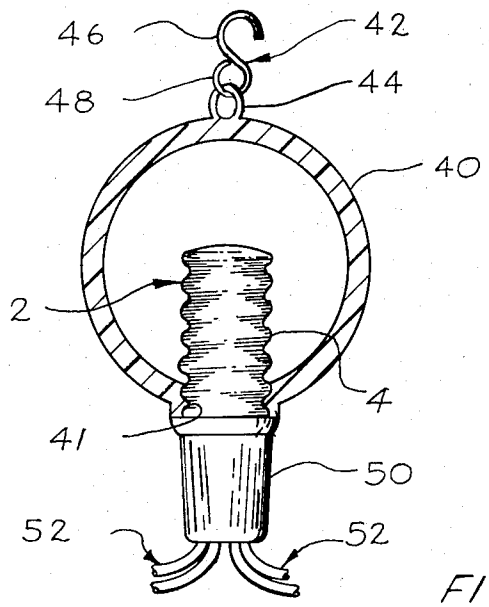


FIG. 11

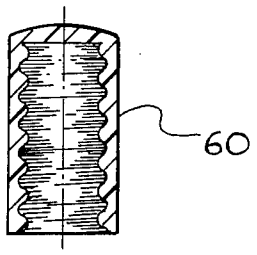


FIG. 12

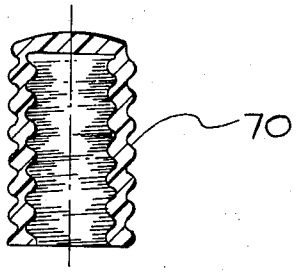


FIG. 13

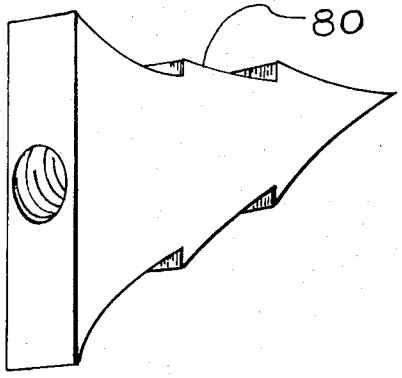
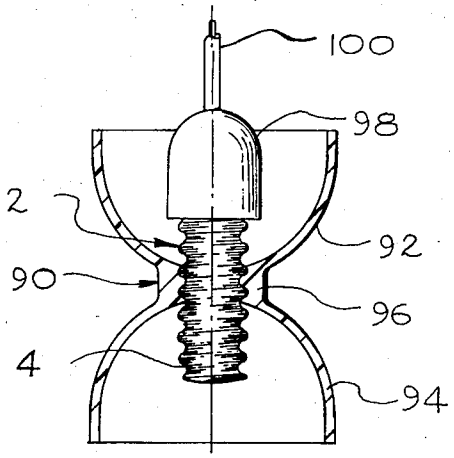


FIG. 14



ELECTRIC LIGHT DEVICE

BACKGROUND OF THE INVENTION

This invention relates to the field of electric light devices and more particularly to means for mounting electric light devices or placing covers thereover. While no electric light device was found similar to the construction shown herein, two patents were uncovered which show two different types of bulb construction. They are U. S. Pat. No. 3,188,512 and U. S. Pat. No. 1,951,569.

SUMMARY OF THE INVENTION

An object of this invention is to provide an electric light device wherein the bulb is formed having external screw threads for engaging means which the bulb can support or which can support the bulb.

Another object of the invention is to provide an electric bulb wherein the threads on the bulb and on the base assembly are formed in an opposite direction. A further object of this invention is to provide a cover member threadably mounted on the bulb with an attachment means fixed thereto for supporting the cover, bulb and socket assembly fixed to the base assembly of the electric light device.

A further object of this invention is to provide an electric light device having a separate center section made of a material other than bulb material and base metal material which can support an axial load. This section can be non-threaded to fit in a recess and provide support against bending.

Another object of this invention is to provide a tension carrying member lengthwise of the electric light device to relieve the electric light of any undue loads.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of an electric light device having a bulb shaped as a screw thread.

FIG. 2 is a view similar to FIG. 1 with the portion of the bulb broken away.

FIG. 3 is a view taken along the line 3—3 of FIG. 1.

FIG. 4 is a view similar to FIG. 1 wherein the screw threads of the bulb are opposite to those at the base.

FIG. 5 is a view similar to FIG. 1 wherein mounting strips of material extend down the axial length of the bulb and base.

FIG. 6 is a view taken through the line 6—6 of FIG. 5.

FIG. 7 is a view similar to FIG. 1 wherein the center section of the electric light device is formed of a material that separates the glass bulb from the metallic base.

FIG. 8 is a view similar to FIG. 7 wherein a section is broken away.

FIG. 9 is a view similar to FIG. 7 wherein the center section of the electric light device is formed as a cylinder.

FIG. 10 is a view showing a cover for a bulb as shown in FIG. 1.

FIG. 11 is a modification of a cover.

FIG. 12 is another modification of a cover.

FIG. 13 is another modification of a cover.

FIG. 14 is another modification of a cover.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows an electric light device 2 having a bulb or envelope 4 fixed to a base assembly 6. The base assembly 6 has an external metallic portion threaded to be adaptable for engagement with an electric socket and the bulb 4 has threads to be adaptable for engagement with a mounting member. The threads of the bulb properly mate with the base where they engage at the line 8 forming a continuously threaded member throughout the length of the electric light device. The bulb can be glass and lead-in wires 10 and 12 are connected to a filament 14 within the bulb.

The base assembly 6 can have the metallic portion fixed to the bulb 4 by any means desired. In FIG. 3, the metallic portion is shown as a stamped member having internal threads as well as external threads. The internal threads are threadably mounted on an axial extension 16 of the bulb which has mating external threads thereon. A sealant is provided between the surfaces. This type connection provides a good resistance to said bulb 4 and base assembly 6 being pulled apart. The bottom of the metallic portion has an opening 18 therein. The interior of the metallic portion contains an insulating material 20 which fills the opening 18. A metallic button 22 is fixed to the insulating material where it appears externally and the lead-in wire 12 is connected thereto through the insulating material. The lead-in wire 10 is fixed to the interior of the metallic portion, such as by soldering.

FIG. 4 shows an electric light device similar to the one shown in FIG. 1 where the threads of the bulb are formed opposite in direction to those of the base. In other words, if the threads at 24 are right-handed, then the threads at 26 are left-handed.

FIG. 5 shows an electric light device having a bulb shaped as a screw thread (see FIG. 1) with mounting strips 30 extending down each side thereof in grooves formed in the bulb 4 and base assembly 6. The stamped metallic base member can have a groove stamped in where necessary. The mounting strips 30 are formed to complete the threads of the bulb 4 and base assembly 6. These mounting strips are designed to take any tension applied in the length of the electric light. The material should also be non-conductive. It may be that with the base assembly 6 engaged with an electric socket and the bulb 4 threaded into another device that an excessive axial load might be placed through the bulb 4 and the base assembly 6 of the electric light 2.

FIG. 7 shows an electric light device formed of three sections, one section is the base assembly 6A, which is similar to the base assembly 6 of FIG. 1; a second section is the bulb 4A which is formed like the bulb 4 in FIG. 1; and the third section 5A, is located between 4A and 6A and is formed of the same material as the mounting strips 30. This material, for example, could be one of many plastics, as long as the proper support is provided, that is, the resistance to elongation. The three sections are threaded and mate at the lines 32 and 34 so that a continuously threaded member is formed throughout the length of the electric light device. FIG. 8 shows how the three sections can be fixed together. The connection shown between each of the adjoining sections is merely a slidable joint having means fixing or cementing the mating surfaces together. This also serves as a sealant between the surfaces. The connection could be similar to that shown in FIG. 3.

The third section 5A, as shown in FIG. 7 and FIG. 8, can have projections extending lengthwise thereof in either or both directions which can be formed as the mounting strips 30 as shown in FIGS. 5 and 6. The base

assembly 6A and the bulb 4A can be formed having grooves, similar to the manner shown in FIGS. 5 and 6, to receive the projections from the third section 5A. These can be formed completing the threads of the bulb 4A and base assembly 6A, as mentioned hereinbefore for the mounting strips 30. These projections would help align the three sections for assembly.

FIG. 9 shows an electric light device formed of three sections similar to that in FIG. 7 where the third section 5B is formed cylindrical in shape and having a larger diameter than the outer edge of the threaded portions 4B and 6B. This section can extend into a recessed portion on a mating mounting means or electrical socket to provide a more rigid assembly. This type or connection would aid more against a bending movement set up in the bulb due to the means mounted on each of the bulb 4B and base assembly 6B. Here again, while the threads are shown having the same direction in the bulb 4B and the base assembly 6B, these threads can be formed in the opposite direction such as shown in FIG. 4. An advantage to this type of threading is that the electric light device can be held between a threaded electric socket and a threaded mounting member and by turning the electric light device in one direction, both the bulb and the base assembly will be screwed into their respective mating parts at the same time.

FIG. 10 shows a round cover 40 with a threaded opening 41 threaded onto the threads of the bulb 4 of an electric light device 2. The cover can be made transparent or solid with cut-out portions or windows. Attachment means 42 for hanging or mounting said cover 40 are fixed to the cover. The attachment means shown include a loop 44 fixed to the outer surface of said cover 40 and a hook 46 having a loop 48 engaging the loop 44. The base assembly of the electric light device 2 is threaded into an electric socket 50 which is one of a plurality of sockets on a cord 52 which forms a Christmas-type decoration electric cord. It can be seen that a string of decoration lights can be hung very easily in this manner while permitting interchangeability of colors, materials, and shapes of covers.

Other covers are shown in FIGS. 11 – 14. FIG. 11 shows a cover having a substantially cylindrical outer surface 60 while FIG. 12 shows a cover having an externally threaded surface 70. This permits other decorative covers or mounting devices to be threaded thereover. This cover can have a smooth inner surface and be the means for providing a cylindrical bulb with threads. The cover could be fixed to the bulb by cementing. A projection on the bulb could prevent the cover from moving in one direction. FIG. 13 shows a solid-shaped decoration 80 which can be formed of a plastic, such as lucite, into which the threads of the bulb 4 of an electric light device 2 can be screwed.

FIG. 14 shows a cover 90 having an upwardly extending portion 92 and a downwardly extending portion 94. A portion 96 intermediate the ends is formed having an internally threaded section so as to be threaded onto the threaded bulb 4 of the electric light device 2. The base assembly of the electric light device is connected to a socket 98 which is hanging down on a cord 100. The cover 90 can be positioned anywhere on the bulb 4 and each of the portions 92 and 94 can be separate colors, or one portion can be clear while one portion is colored.

I claim:

1. In combination, an electric socket, cover means having an area which permits the passage of light therethrough, means connecting said cover means to said electric socket and for providing light in said cover means, said connecting means having one end with means fixedly engaging said electric socket, said connecting means having another end with means for providing light and fixedly engaging said cover means, said means for providing light and fixedly engaging said cover means comprising a bulb having a closed end, said bulb having a filament therein and external threads thereon, said connecting means having means electrically connecting said filament to said electric socket, said cover means having an opening means therein engaging said external threads, said closed end of said bulb being insertable in said opening means, said external threads on said bulb being threadably engageable by said opening means of said cover means from said closed end of said bulb.

2. A combination as set forth in claim 1 wherein said cover means is transparent.

3. A combination as set forth in claim 1 wherein said cover means has attachment means for supporting said cover means, connecting means, and electric socket.

4. A combination as set forth in claim 1 wherein said external threads are formed integrally on said bulb.

5. A combination as set forth in claim 1 wherein said external threads are formed on a member fixed to said bulb.

6. A combination as set forth in claim 1 wherein said cover means, bulb, and electric socket are positively fixed against direct relative axial movement.

7. A combination as set forth in claim 1 wherein said external threads extend on said bulb to a point adjacent the electric socket so that said cover means is adapted to engage said socket and fix said cover means, connecting means, and electric socket together.

8. An electric light device comprising a base assembly, said base assembly having means for mechanically and electrically connecting it to an electrical source, bulb means fixed to said base assembly, said bulb means having a first portion projecting into said base assembly, said first portion being fixed to said base assembly, said bulb means having a second portion for providing light therethrough, filament means in said bulb means, said filament means being operatively connected to said base assembly, and external threads on said second portion of said bulb means for mating engagement with an internally threaded portion of a device for which light is desired, said second portion having a closed end, said external threads being threadably engageable from the closed end of said second portion of said bulb means.

9. A combination as set forth in claim 8 wherein the external threads on said second portion of said bulb means extend for a length thereon from the closed end of said second portion.

10. A combination as claimed in claim 8 wherein said base assembly includes an outer metallic portion, and external threads on said metallic portion for mating engagement with an internally threaded portion of an electrical source.

11. A combination as set forth in claim 10 wherein the external threads on said second portion of said bulb means and the external threads on said metallic portion form a continuous threaded means.

12. A combination as set forth in claim 10 wherein the external threads on said second portion of said bulb means extend in one direction and the external threads on said metallic portion of said base assembly extend in the opposite direction.

13. A combination as set forth in claim 10 wherein an unthreaded intermediate section is provided between the external threads of said second portion of said bulb means and the external threads of said metallic portion of said base assembly.

14. A combination as set forth in claim 13 wherein said unthreaded intermediate section has an outer periphery which is greater than that of the threads on said metallic portion of said base assembly for engagement with a mating recessed portion in a mounting member.

15. A combination as set forth in claim 10 wherein external threads are provided on an intermediate section between the external threads of said second portion of said bulb means and the external threads of said metallic portion of said base assembly.

16. A combination as set forth in claim 15 wherein said external threads on said second portion of said bulb means and said external threads on said intermediate section form a continuous threaded means.

17. A combination as set forth in claim 8 wherein said external threads on said second portion of said bulb means are formed on sleeve means fixed to said second portion.

18. A combination as set forth in claim 8 wherein tension carrying means extend between the bulb means and base assembly so that a minimum of tension will be placed through the bulb means and base assembly.

19. A combination as set forth in claim 18 wherein a groove extends longitudinally along the length of the bulb means and base assembly, and a tension carrying member is fixedly located in said groove.

20. A combination as set forth in claim 19 wherein the outer surface of the tension carrying member is shaped to conform to the shape of the sides of the groove completing the threads where they are intersected.

21. A combination as set forth in claim 8 wherein sleeve means having internal threads is threadably mounted on the external threads of the second portion of said bulb means.

22. A combination as set forth in claim 21 wherein said sleeve means is a cover having attachment means thereon.

23. A combination as set forth in claim 8 wherein a cover means is threadably mounted on the external threads of the second portion of said bulb means, said cover means permitting light from said bulb to pass therethrough.

24. A combination as set forth in claim 23 wherein said cover means has attachment means thereon.

25. A combination as set forth in claim 24 wherein said attachment means is a hook.

26. An electric light device comprising an envelope for providing light therethrough, a base assembly fixed to said envelope, said base assembly having means for mechanically and electrically connecting it to an electric source, said envelope having a first closed end portion for providing light therethrough and a second end portion with opening means for the passage of lead-in wires for filament means, filament means in said envelope for providing light therethrough, lead-in wires connecting said filament means to said base assembly, said lead-in wires passing through said opening means of said second end portion, and external threads on said first closed end portion of said envelope for mating engagement with an internally threaded portion of a device in which light is desired, said external threads being threadably engageable from the first closed end portion of said envelope.

27. An electric light device comprising a base, said base having means for electrically connecting it to an electrical source, bulb means fixed to said base, said bulb means having a portion extending outwardly from said base for providing light therethrough, filament means in said bulb means, said filament means being electrically connected to said means for electrically connecting said base to an electrical source, external threads on said portion extending outwardly of said bulb means for mating engagement with an internally threaded portion of a device for which light is desired, said portion extending outwardly of said bulb means having a closed end, said external threads being threadably engageable from the closed end of said portion extending outwardly of said bulb means.

28. An electric light device as set forth in claim 27 wherein said external threads extend from said closed end of said portion of said bulb means towards said base.

29. An electric light device as set forth in claim 27 wherein cover means is included having an opening means with an internally threaded portion, said internally threaded portion of said cover means engaging the external threads of said bulb means, said closed end of said bulb means being insertable in said opening means.

30. An electric light device as set forth in claim 29 wherein said cover means is formed of plastic.

* * * * *