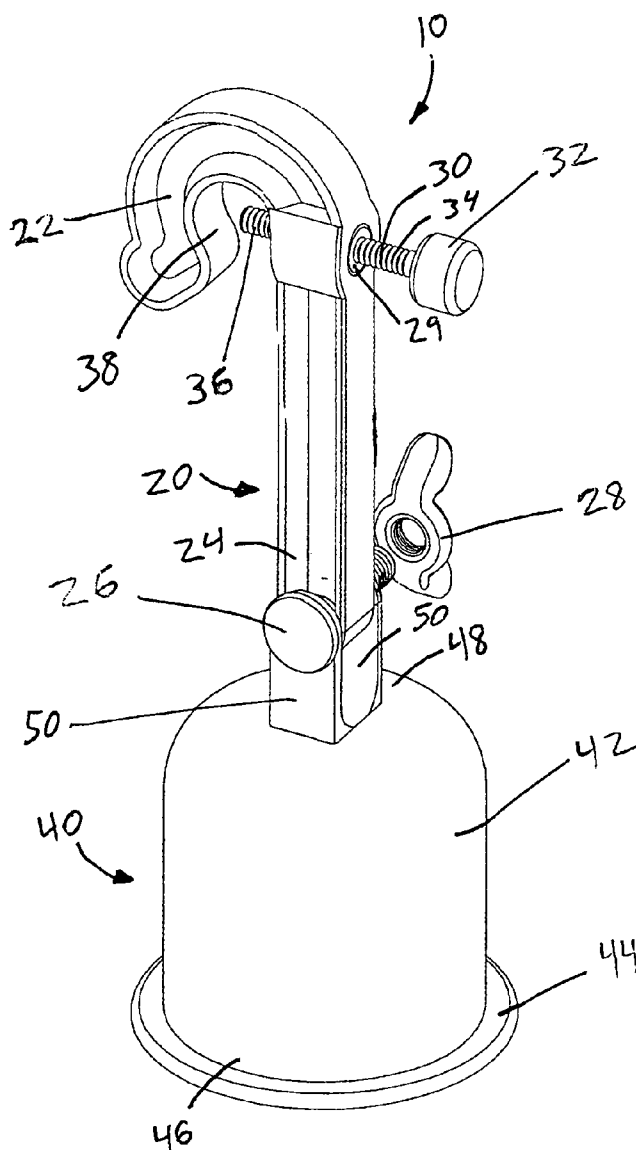




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(19) **United States**(12) **Patent Application Publication**
Ip(10) **Pub. No.: US 2007/0278370 A1**(43) **Pub. Date: Dec. 6, 2007**(54) **HANGING ADJUSTABLE LIGHT SUPPORT**(57) **ABSTRACT**(76) Inventor: **Ken Ip, Kowloon (HK)**Correspondence Address:
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CARLSBAD, CA 92011(21) Appl. No.: **11/445,968**(22) Filed: **Jun. 5, 2006****Publication Classification**(51) **Int. Cl.**
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The present invention involves a light support device having an attachment portion and a support portion. One end of the attachment portion is hook-shaped for hanging the device over a rod or beam. The hook-shaped end can be various sizes to fit over various-sized supports. The other end of the attachment portion includes an opening for attachment to the support portion. The support portion is preferably bell-shaped with a lip at one end for supporting an attached light source. The other end of the support portion includes preferably two prongs each having an opening for receiving the attachment portion, such that the support portion and attachment portion can be rotated about a common axis. A clamping screw is included within the hook-shaped region of the attachment portion for securely fixing the device to a rod or beam. In an alternate embodiment, the attachment portion can be adjustable in length.



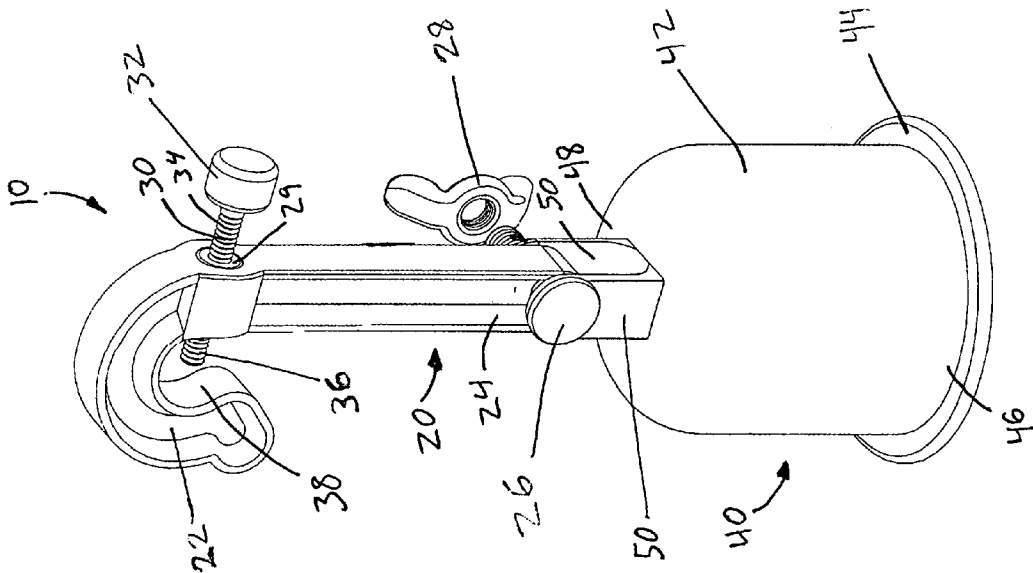


Fig. 1

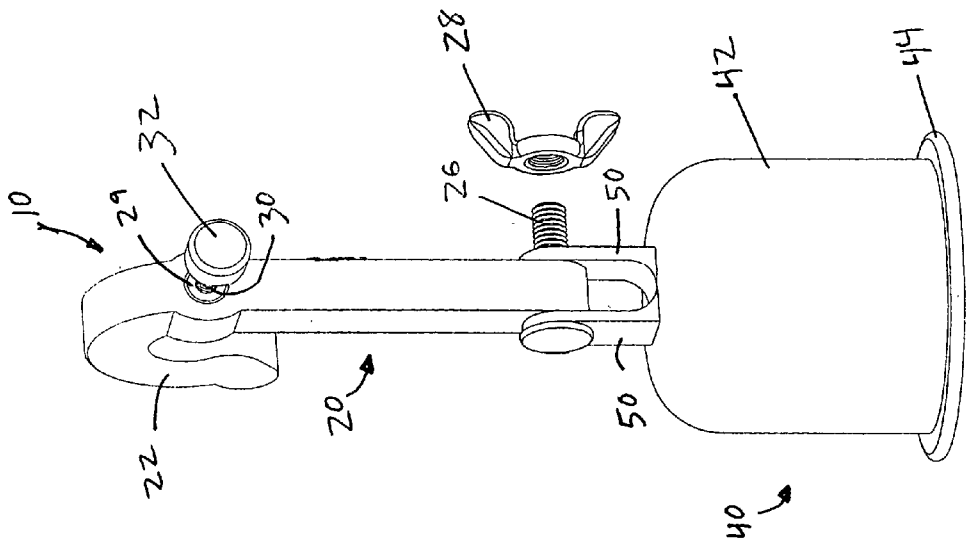


Fig. 2

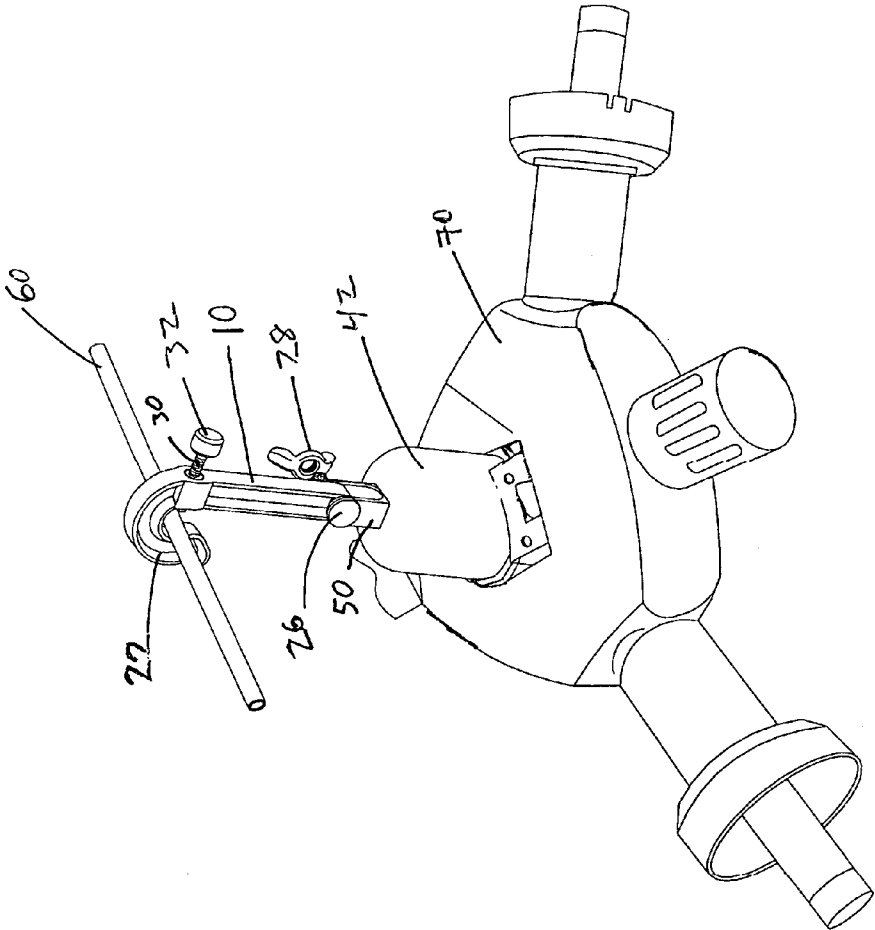
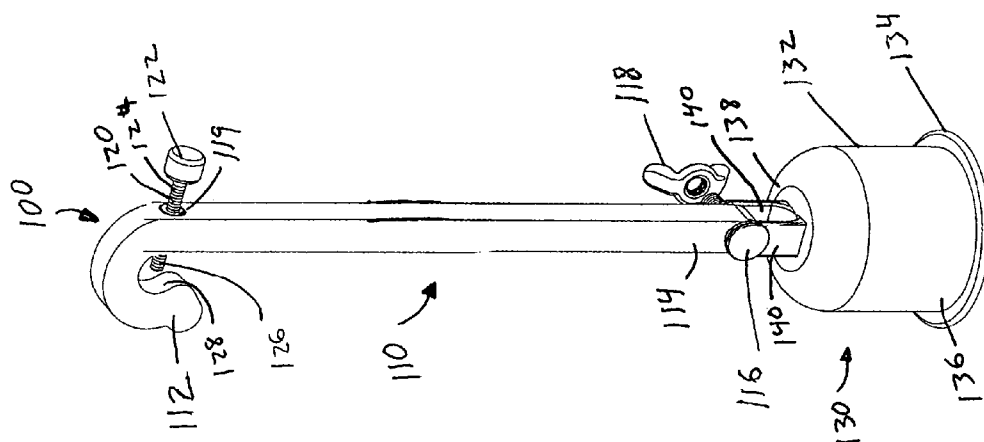


Fig. 3



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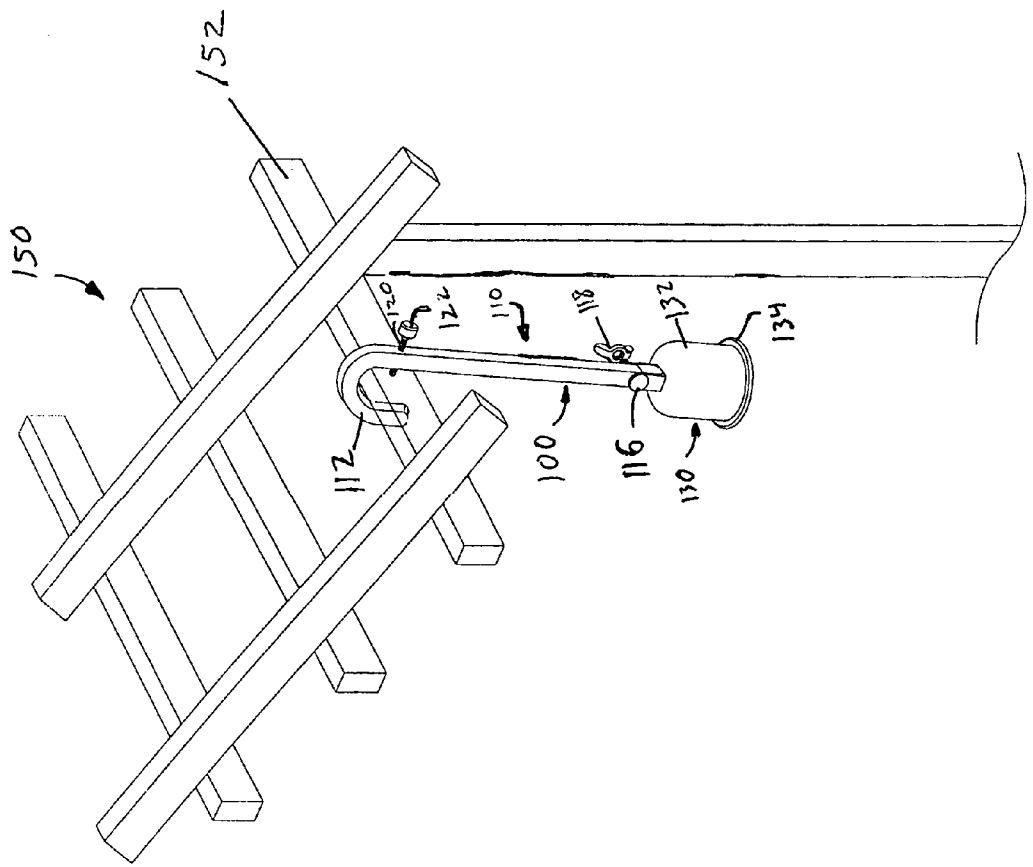


Fig. 5

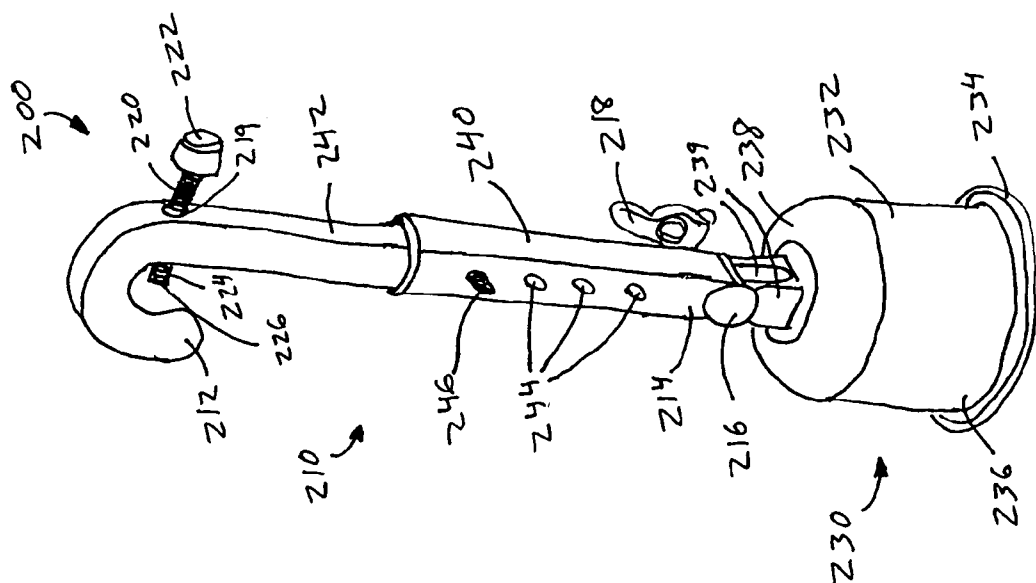


FIG. 6

HANGING ADJUSTABLE LIGHT SUPPORT**CROSS REFERENCE TO RELATED APPLICATIONS**

[0001] None.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] This invention was not federally sponsored.

BACKGROUND OF INVENTION

[0003] 1. Field of the Invention

[0004] The invention generally relates to the field of lighting apparatus. More particularly, the present invention relates to adjustable light supports.

[0005] 2. Description of the Related Art

[0006] With patio use by homeowners becoming more popular over the past several decades, there has been a corresponding increase in the number and variety of inventions involving patio furniture and accessories. Lights that can be attached to upright members, such as umbrella poles, have become an accessory commonly utilized in the lighting of outdoor areas and are well known in the art. Using umbrella style lights as an example, these lights generally contain a clamping mechanism that is used to removably attach the light around the umbrella pole. The clamping mechanism also typically contains an adjustable means located thereon for tightening or loosening the clamping mechanism so that the light can be adjusted either up or down the umbrella pole. Umbrella style lights have become popular for their adjustment features and the ability to adequately light up an outdoor area.

[0007] The use of an umbrella style light however, requires a person to purchase a table umbrella having a pole support, or to install some kind of upright support member for the umbrella style light to clamp around. In many outdoor settings however, such as in a gazebo or under an open covered area, a table umbrella having a pole support is not desired or feasible due to space limitations or decorative purposes. Therefore, the traditional umbrella style light cannot be utilized in such settings, leaving many outdoor areas without convenient and adequate light supporting options.

[0008] Although it may be possible to install light supporting apparatus, such as those that utilize brackets and screws for support, these supports require the use of additional parts (ex: brackets and screws) as well as power tools for manual installation, which can be costly to purchase. Also, installation of these supports can cause permanent damage/deformation of the upright member (ex: holes drilled in wood), which can be unsightly if the supports are removed. Further, as these light supporting apparatus are more permanently fixed in nature than traditional umbrella style light supports, they cannot be easily repositioned or adjusted to suit changing environments.

[0009] Therefore, there is a present need for a light support that is cost-effective, portable, does not damage the supporting member, can be easily adjusted, supports various umbrella style lighting devices, and can be easily removed and transported to a different support member.

[0010] In this respect, before explaining at least one embodiment of the invention in detail it is to be understood that the invention is not limited in its application to the

details of construction and to the arrangement of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. In addition, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

BRIEF SUMMARY OF INVENTION

[0011] It is therefore an object of this invention to provide a light supporting device that can be easily attached to a supporting member without the use of a tool.

[0012] It is a further object of this invention to provide a light supporting device that can be easily adjusted.

[0013] It is still a further object of this invention to provide a light supporting device that can support various umbrella style lights that utilize clamping mechanisms.

[0014] It is another object of this invention to provide a light supporting device that can be quickly removed from the supporting member and fixed to another supporting member.

[0015] It is a yet a further object of this invention to provide a light supporting device that is economical to manufacture.

[0016] It is still yet a further object of this invention to provide a new and unique light supporting device to the field of light supports.

[0017] These objects and further objects and features of the invention will be apparent to one skilled in the art from the disclosure of the present invention as set forth herein.

[0018] The present invention involves a light support device having an attachment portion and a support portion. One end of the attachment portion is hook-shaped for hanging the device over a rod or beam. The hook-shaped end can be various sizes to fit over various-sized supports. The other end of the attachment portion includes an opening for attachment to the support portion. The support portion is preferably bell-shaped with a lip at one end for supporting an attached light source. The other end of the support portion includes preferably two prongs each having an opening for receiving the attachment portion, such that the support portion and attachment portion can be rotated about a common axis. A clamping screw is included within the hook-shaped region of the attachment portion for securely fixing the device to a rod or beam. In an alternate embodiment, the attachment portion can be adjustable in length.

[0019] There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0020] The accompanying drawings, which are incorporated in and form a part of this specification, illustrate embodiments of the invention and together with the description, serve to explain the principals of this invention.

[0021] FIG. 1 shows a side perspective view of the preferred embodiment of the hanging adjustable light support device with the locking nut detached.

[0022] FIG. 2 shows a front perspective view of the preferred embodiment of the hanging adjustable light support device with the locking nut detached.

[0023] FIG. 3 shows a perspective view of the preferred embodiment of the hanging adjustable light support device hanging from a support, having a light fixture assembly attached.

[0024] FIG. 4 shows a side perspective view of an alternate embodiment of the hanging adjustable light support device having an elongated attachment portion.

[0025] FIG. 5 shows a perspective view of the alternate embodiment of the hanging adjustable light support device hanging from a deck support beam.

[0026] FIG. 6 shows a side perspective view of an alternate embodiment of the hanging adjustable light support device having an adjustable attachment portion.

DETAILED DESCRIPTION OF THE INVENTION

[0027] Referring now to the drawings, wherein similar parts are identified by like reference numerals, FIG. 1 shows a side perspective view of the preferred embodiment of the hanging adjustable light support device 10. Light support device 10 comprises an attachment portion 20 and a support portion 40. Attachment portion and support portion are both preferably comprised of a durable, resilient, and rust-proof material, such as hard plastic, but can be comprised of other materials having similar characteristics as would be recognized by one with ordinary skill in the art.

[0028] Attachment portion 20 includes a hook-shaped end 22 for hanging the device over a rod or beam (see FIG. 5). The hook-shaped end 22 can be various sizes to fit over various-sized supports. Attachment portion 20 also includes an attachment end 24. Attachment end 24 preferably has an opening (not shown) through which an attachment bolt 26 passes through to secure attachment portion 20 to support portion 40. Attachment bolt 26 can be secured to attachment portion 20 by an attachment nut 28. However, other securing means can be used as would be recognized by one with ordinary skill in the art.

[0029] Attachment portion 20 also contains an adjustable clamping screw 30 to secure light support device 10 to a beam, rod, or other support member. Clamping screw 30 is removably engaged within clamping screw opening 29 located in attachment portion 20. Clamping screw 30 contains a circular head 32 located at one end and a plurality of threads 34 located along its axis towards the opposite end 36. To provide the secure clamping of light support device 10 to a beam, rod, or other support member positioned within the interior space defined by hook-shaped end 22, clamping screw 30 is rotated such that end 36 tightly presses the support member against the distal inner wall portion 38 of hook shaped end 22.

[0030] Support portion 40 is preferably comprises a bell-shaped structure 42 with a lip 44 located at an end 46 for supporting an attached light source (see FIG. 3). Bell-shaped structure 42 is preferably designed to accompany light fixtures having circular clamping mechanisms. However, bell-shaped structure 42 can embody different shapes and sizes to accompany light fixtures having clamping mechanisms with various shapes and sizes. The other end 48 of structure 42 preferably contains two prongs 50 extending therefrom. Prongs 50 each have an opening (not shown) for receiving attachment bolt 26 to secure attachment portion 20 to support portion 40. When attached, attachment portion 20 and support portion 40 can both be rotated about a common

axis, namely attachment bolt 26, to achieve a desired positioning of an attached light fixture.

[0031] FIG. 2 shows a front perspective view of the preferred embodiment of the hanging adjustable light support device 10 with attachment nut 28 detached, illustrating the relative positioning of attachment portion 20, support portion 40, clamping screw 30, hook shaped end 22, attachment bolt 26, prongs 50, bell-shaped structure 42, and lip 44.

[0032] FIG. 3 shows a perspective view of the preferred embodiment of the hanging adjustable light support device 10 hanging from a support 60, having a light fixture assembly 70 attached. Because light support device 10 contains an adjustable clamping screw 30, light support device 10 can hang from a range of supports 60 with varying thicknesses, provided supports 60 fit within the interior region bounded by hook-shaped end 22. Light fixture assembly 70 can be a variety of light assemblies containing a mechanism for clamping to an upright member, in this case bell-shaped structure 42. Because structure 42 can vary in dimension, including both length and circumference, light fixture assemblies 70 do not necessarily need to contain an adjustable clamping mechanism. As mentioned, lip 44 (not shown) helps to ensure light fixture assembly 70 remains secured to light support device 10.

[0033] FIG. 4 shows a side perspective view of an alternate embodiment of the hanging adjustable light support device 100. Light support device 100 comprises an attachment portion 110 and a support portion 130. Attachment portion and support portion are both preferably comprises of a durable, resilient, and rust-proof material, such as hard plastic, but can be comprised of other materials having similar characteristics as would be recognized by one with ordinary skill in the art.

[0034] Attachment portion 110 includes a hook-shaped end 112 for hanging the device over a rod or beam (see FIG. 5). The hook-shaped end 112 can be various sizes to fit over various-sized supports. Attachment portion 110 also includes an attachment end 114. Attachment end 114 preferably has an opening (not shown) through which an attachment bolt 116 passes through to secure attachment portion 110 to support portion 130. Attachment bolt 116 can be secured to attachment portion 110 by an attachment nut 118. However, other securing means can be used as would be recognized by one with ordinary skill in the art. Attachment portion 110 is preferably longer than attachment portion 20 of light support device 10, to enable use of light support device 100 with tall structures (see FIG. 5), either indoor or outdoor.

[0035] Attachment portion 110 also contains an adjustable clamping screw 120 to secure light support device 100 to a beam, rod, or other support member. Clamping screw 120 is removably engaged within clamping screw opening 119 located in attachment portion 110. Clamping screw 120 contains a circular head 122 located at one end and a plurality of threads 124 located along its axis towards the opposite end 126. To provide the secure clamping of light support device 100 to a beam, rod, or other support member positioned within the interior space defined by hook-shaped end 112, clamping screw 120 is rotated such that end 126 tightly presses the support member against the distal inner wall portion 128 of hook shaped end 112.

[0036] Support portion 130 is preferably comprises a bell-shaped structure 132 with a lip 134 located at an end 136 for supporting an attached light fixture (see FIG. 3). Bell-shaped structure 132 is preferably designed to accompany light fixtures having circular clamping mechanisms. However, bell-shaped structure 132 can embody different

shapes and sizes to accompany light fixtures having clamping mechanisms with various shapes and sizes. The other end **138** of structure **132** preferably contains two prongs **140** extending therefrom. Prongs **140** each have an opening (not shown) for receiving attachment bolt **116** to secure attachment portion **110** to support portion **130**. When attached, attachment portion **110** and support portion **130** can both be rotated about a common axis, namely attachment bolt **116**, to achieve a desired positioning of an attached light fixture.

[0037] FIG. 5 shows a perspective view of the alternate embodiment of the hanging adjustable light support device **100** hanging from a support beam **152** of a structure **150**. As shown, hook-shaped end **112** is sized large enough to fit over and be securely clamped to support beam **152** by clamping screw **120**. Structure **150** can be a range of structures including, but not limited to, a gazebo, awning, arbor, and patio cover.

[0038] FIG. 6 shows a side perspective view of an alternate embodiment of the hanging adjustable light support device **200**. Light support device **200** comprises an attachment portion **210** and a support portion **230**. Attachment portion **210** and support portion **230** are both preferably comprised of a durable, resilient, and rust-proof material, such as hard plastic, but can be comprised of other materials having similar characteristics as would be recognized by one with ordinary skill in the art.

[0039] Attachment portion **210** includes a hook-shaped end **212** for hanging the device over a rod or beam (see FIG. 5). The hook-shaped end **212** can be various sizes to fit over various-sized supports. Attachment portion **210** also includes an attachment end **214**. Attachment end **214** preferably has an opening (not shown) through which an attachment bolt **216** passes through to secure attachment portion **210** to support portion **230**. Attachment bolt **216** can be secured to attachment portion **210** by an attachment nut **218**. However, other securing means can also be used.

[0040] Attachment portion **210** also contains an adjustable clamping screw **220** to secure light support device **200** to a beam, rod, or other support member. Clamping screw **220** is removably engaged within clamping screw opening **219** located in attachment portion **210**. Clamping screw **220** contains a circular head **222** located at one end and a plurality of threads **224** located along its axis towards the opposite end **226**. To provide the secure clamping of light support device **200** to a beam, rod, or other support member positioned within the interior space defined by hook-shaped end **212**, clamping screw **220** is rotated such that end **216** tightly presses the support member against the distal inner wall portion of hook shaped end **212**.

[0041] Attachment portion **210** can be adjustable in length to enable light support device **200** to be suspended from support members of varying heights. In this embodiment, attachment portion **210** is comprised of an outer adjustment member **240** and an inner adjustment member **242** partially disposed within outer adjustment member **240**. Outer adjustment member **240** contains a plurality of holes **244** through which a spring-loaded plunger **246** located on inner adjustment member **242** can pass through to secure the length of attachment portion **210**. To adjust the length of attachment portion **210**, a user can depress spring-loaded plunger **246** such that it does not engage with one of holes **244**, while simultaneously moving inner adjustment member **242** up or down to align with the hole **244** representing the desired length, then can release spring-loaded plunger **246** so that plunger **246** passes through one of holes **244** and secures the length of attachment portion **210**. Outer adjustment member **240** and inner adjustment member **242** can be tubular,

rectangular, or other shapes to accomplish different purposes. Further, holes **244** are not limited in amount, spacing, or positioning on outer adjustment member **240**. Also, it is to be recognized that attachment portion **210** can embody alternative adjustment mechanisms as would be recognized by one with skill in the art, including an adjustment screw, a scissor extending portion, or other conventional adjustment means.

[0042] Support portion **230** is preferably comprises a bell-shaped structure **232** with a lip **234** located at an end **236** for supporting an attached light source (see FIG. 3). Bell-shaped structure **232** is preferably designed to accompany light fixtures having circular clamping mechanisms. However, bell-shaped structure **232** can embody different shapes and sizes to accompany light fixtures having clamping mechanisms with various shapes and sizes. The other end **238** of structure **232** preferably contains two prongs **239** extending therefrom. Prongs **239** each have an opening (not shown) for receiving attachment bolt **216** to secure attachment portion **210** to support portion **230**. When attached, attachment portion **210** and support portion **230** can both be rotated about a common axis, namely attachment bolt **216**, to achieve a desired positioning of an attached light fixture.

[0043] With respect to the above description it is to be realized that the optimum dimensional relationships for the parts of the invention, including variations in size, materials, shape, form, function and manner of operation, assembly, and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention. Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described. Accordingly, all suitable modifications and equivalents fall within the scope of the present invention.

[0044] The above description, together with the advantages of the invention and the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific advantages attained by its uses, reference should be made to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

[0045] Further, the purpose of the foregoing abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers, and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of the application, which is measured by the claims, nor is it intended to be limiting, as to the scope of the invention in any way.

What is claimed is:

1. A hanging light support apparatus comprising:

- a) an attachment portion, the attachment portion having a hook-shaped end for the purpose of hanging the apparatus on a support, the hook-shaped end defining an interior end region;
- b) a support portion coupled on one end to the attachment portion, the support portion having at least one surface

for the purpose of engaging a removable light fixture, the support portion further comprising a lip on the distal portion thereof for supporting an attached light fixture;

c) means for securely affixing the apparatus to a support coupled to said attachment portion,

whereby, after the apparatus is securely attached to a beam, rod, or other support member positioned within the interior end region by the means for securely affixing the apparatus to a support, a user can removably attach a light fixture to the support portion to provide lighting for various indoor and outdoor environments.

2. The hanging light support apparatus of claim 1, wherein the support portion comprises a bell-shaped structure for the purpose of allowing light fixtures with circular clamping mechanisms to be removably attached thereto.

3. The hanging light support apparatus of claim 1, wherein the support portion further comprises a lip on the distal end for the purpose of providing support to an attached light fixture.

4. The hanging light support apparatus of claim 1, wherein the support portion is rotatably coupled to the attachment portion to allow the support portion to be angularly adjusted.

5. The hanging light support apparatus of claim 4, wherein the support portion is rotatably coupled to the attachment portion by an attachment bolt, the attachment bolt passing through an attachment opening within the attachment portion and a correspondingly aligned opening within at least one attachment prong extending from the support portion, the attachment bolt removably coupled to the apparatus by an attachment nut.

6. The hanging light support apparatus of claim 1, wherein the means for securely affixing the apparatus to a support is a clamping screw removably engaged within an opening in the hook-shaped end of the attachment portion.

7. The hanging light support apparatus of claim 1, wherein the attachment portion is adjustable in length for the purpose of allowing the apparatus to be suspended from support members of varying height.

8. The hanging light support apparatus of claim 1, wherein the attachment portion and the support portion are comprised of a strong and durable material.

9. A hanging light support apparatus comprising:

a) an attachment portion, the attachment portion having a hook-shaped end for the purpose of hanging the apparatus on a support, the hook-shaped end defining an interior end region;

b) a support portion coupled on one end to the attachment portion, the support portion comprising a bell-shaped structure for the purpose of allowing light fixtures with circular clamping mechanisms to be removably attached thereto, the support portion further comprising a lip on the distal portion thereof for the purpose of providing support to an attached light fixture;

c) means for securely affixing the apparatus to a support coupled to said attachment portion,

whereby, after the apparatus is securely attached to a beam, rod, or other support member positioned within the interior end region by the means for securely affixing the apparatus to a support, a user can remov-

ably attach a light fixture to the support portion to provide lighting for various indoor and outdoor environments.

10. The hanging light support apparatus of claim 9, wherein the support portion is rotatably coupled to the attachment portion to allow the support portion to be angularly adjusted.

11. The hanging light support apparatus of claim 10, wherein the support portion is rotatably coupled to the attachment portion by an attachment bolt, the attachment bolt passing through an attachment opening within the attachment portion and a correspondingly aligned opening within at least one attachment prong extending from the support portion, the attachment bolt removably coupled to the apparatus by an attachment nut.

12. The hanging light support apparatus of claim 9, wherein the means for securely affixing the apparatus to a support is a clamping screw removably engaged within an opening in the hook-shaped end of the attachment portion.

13. The hanging light support apparatus of claim 9, wherein the attachment portion is adjustable in length for the purpose of allowing the apparatus to be suspended from support members of varying height.

14. The hanging light support apparatus of claim 9, wherein the attachment portion and the support portion are comprised of a strong and durable material.

15. (canceled)

16. (canceled)

17. (canceled)

18. The method for making a hanging light support apparatus of claim 15, wherein the attachment portion is adjustable in length for the purpose of allowing the apparatus to be suspended from support members of varying height.

19. (canceled)

20. (canceled)

21. A light support apparatus comprising:

a) an attachment portion, the attachment portion comprising an elongated member having a hook-shaped end;

b) a support portion rotatably coupled to one end of the attachment portion, the support portion substantially comprising a bell-shaped structure with a lip on the distal portion thereof for providing support to an attached light fixture;

c) a clamping screw coupled to the attachment portion for securely fixing the apparatus to a support, the clamping screw removably engaged within an opening in the hook-shaped end;

22. The hanging light support apparatus of claim 21, wherein the support portion is rotatably coupled to the attachment portion by an attachment bolt, the attachment bolt passing through an attachment opening within the attachment portion and a correspondingly aligned opening within at least one attachment prong extending from the support portion, the attachment bolt removably coupled to the apparatus by an attachment nut.

23. The hanging light support apparatus of claim 21, wherein the attachment portion and the support portion are comprised of a strong and durable material.

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