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SUPPORT FOR A LAMP

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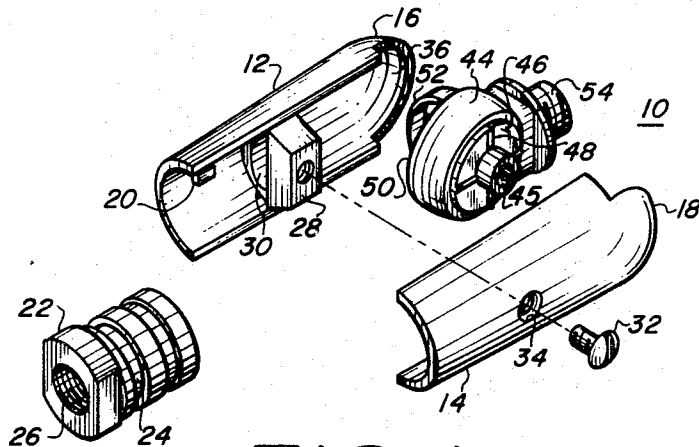


FIG. 1

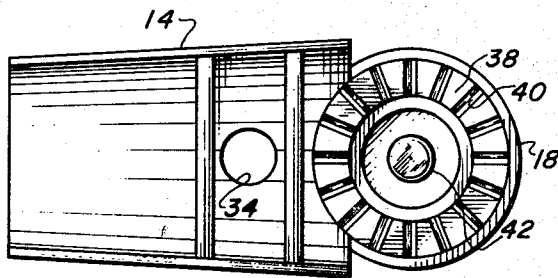


FIG. 2

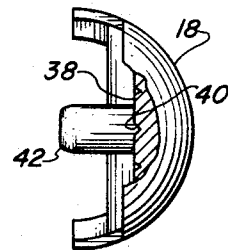


FIG. 3

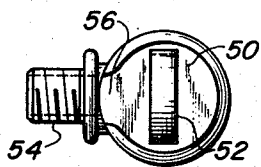


FIG. 4

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SUPPORT FOR A LAMP

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ABSTRACT OF THE DISCLOSURE

A swivel type lamp support which will stay in a fixed position by reason of an internal geared swivel utilized to support the lamp. The geared swivel is spring biased into engagement with teeth on the main body of the support and can be engaged and disengaged with little effort while allowing the lamp cord to be fed through the support to the lamp per se.

In the past, swivel type supports for lamps such as those commonly called pole lamps and wall mounted lamps have been manufactured which allow the lamp to be positioned at any angle as desired by the user. These lamps were operative by providing a frictional engagement between a swivel and the main body of the support. However, after a short period of time the frictional engagement is no longer operative because of the heating of the swivel while the lamp is "on" and because of the wearing of the frictional surfaces. Thus, after a short period of time the lamp will droop to its lowermost position by reason of gravity. Thus the swivel has lost its ability to perform the function for which it was designed. That is, it is no longer able to hold the lamp in a fixed preset position for long periods of time.

Additionally, since the lamp support and its associated swivel is obviously a small portion of the overall cost of manufacturing a lamp, the cost of the lamp support itself should be kept to a minimum. In this regard, lamp support parts should be manufacturable by the most economical manufacturing processes such as by die casting.

SUMMARY OF THE INVENTION

The lamp support of the present invention is a swivel type support for pole lamps comprising a cylindrical main body formed of two mating halves with the swivel mounted at one end thereof for supporting a lamp. The swivel has gear teeth thereon for engagement with gear teeth on the inner surface of one of the halves of the lamp support. The gear teeth on the swivel are pressed into engagement with the gear teeth on the support half by a leaf spring pressing against the other side of the swivel. By utilizing the leaf spring, it is possible to feed an electric wire through the center of the leaf spring while allowing 180-degree rotation of the swivel. All of the parts of the lamp support including the swivel can be die cast and, accordingly, the cost of manufacturing the swivel is kept to a minimum. The spacing and support of the swivel can be accomplished with wide variations in tolerance and thus avoid the necessity for accurate machining of parts.

For the purpose of illustrating the invention, there is shown in the drawings forms which are presently preferred; it being understood, however, that this invention

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is not limited to the precise arrangement and instrumentalities shown.

FIG. 1 is an exploded view of the lamp support of the present invention.

FIG. 2 is a side elevational view of one-half of the support of the present invention.

FIG. 3 is an end view of the half of FIG. 3.

FIG. 4 is a rear elevational view of the swivel shown in FIG. 1.

In FIG. 1, there is shown an exploded view of a lamp support generally designated by the numeral 10 built in accordance with the principles of the present invention. Lamp support 10 consists of left and right support halves 12 and 14 respectively. The left and right support halves 12 and 14 are generally semitubular in shape and have partially closed frusto-spherical ends 16 and 18, respectively. The other end of the left and right halves 12 and 14 are open with one of the halves having a limit stop 20 therein. A bracket hub 22 is adapted to be placed within the end of the left and right halves 12 and 14 with the stop 20 being positioned within annular groove 24 on the hub 22. The hub 22 is adapted to be connected to a pole or other support for the lamp and has a threaded opening 26 for mounting to the pole or other support (not shown). Electrical wire for feeding through the lamp support 10 is fed through the opening 26 and thus through the hub 22. The left half 12 has a screw threaded member 28 mounted across the open edges of and between the ends of the semitubular half 12 so as to leave an opening 30 through which wire passing through the hub 22 can be fed along the length of the left half 12. The right half 14 has a hole therein aligned with the screw threaded member 28 so that a bolt 32 can secure the two halves together by engaging the screw threaded member 28 through the opening 34.

The left half frusto-spherical end 16 leaves a partially spherical inner surface 36 for reasons which will be discussed below. The inner surface of the frusto-spherical end 18 on the right half 14 is best shown in FIG. 2 wherein, as indicated, the frusto-spherical end 18 has a flat face 38 with gear teeth 40 spaced radially on the flat surface 38. Inwardly extending tubular flange 42 is formed in the center of the frusto-spherical end 18 and is used as a bearing surface and axis for a swivel 44. Swivel 44 has an axial opening 45 into which the hub 42 fits so that the swivel 44 will rotate about the hub 42.

Swivel 44 has a right side flat face 46 having gear teeth 48 formed thereon positioned for engagement with the gear teeth 40 on right half 14. The left side face 50 of the swivel 44 has mounted thereon a leaf spring 52 which is U-shaped and has its open ends secured to the left side face 50. The height of the leaf spring 52 is slightly more than the distance to the inner surface 36 of the frusto-spherical end member 16 so that, when the halves 12 and 14 are brought together by action of the bolt 32 and screw threaded member 28, the leaf spring 52 will be slightly depressed so as to provide a biasing force holding the gears 48 in engagement with the gear teeth 40.

The swivel 44 has a screw threaded tubular hub 54 at the end thereof in communication with suitable opening 56 adjacent the left side 50 of the swivel 44. Threaded tubular hub 54 is adapted to be screw threaded onto a lamp such as a bullet lamp found on pole lamp or the like. It will be noted that, when the halves 12 and 14 are

place together with the member 22 and the swivel 44 in place, a wire may be threaded through the lamp support end by feeding it through the opening 26 through opening 30, underneath spring 52, and into opening 56 leading through tubular hub 54.

The mating edges of the tubular halves 12 and 14 act as limit stops to prevent overcompression of spring 52 and to thus limit the amount of biasing force on the swivel 44.

It will be understood that, in operation, it is possible to rotate the swivel 44 about its axis on hub 42 engaging and disengaging the teeth 48 on the teeth 40 by reason of the compression of leaf spring 52. It is further understood that, once positioned in a particular axial position as determined by the user, the gear teeth 48 and 40 will maintain the swivel 44 in a fixed axial position until it is desired to rotate the swivel 44 once again to vary the position of the lamp supported on the hub 54.

It will be understood that all of the parts including the hub 22, swivel 44, and left and right halves 12 and 14 can be manufactured by die casting. Further, the assembly of the lamp support 10 is no more complicated than the frictional type swivel, which is presently being utilized with the additional feature that, by utilizing the spring biased gearing rings swivel 44 will hold a lamp in a given annular position without fatigue and without dropping, thus eliminating a major problem found in existing lamp supports.

I claim as my invention:

1. A support for a lamp comprising:

- (a) a hollow main body having two bifurcations at one end thereof,
- (b) one of said bifurcations having gear teeth on the surface thereof facing the other bifurcation,
- (c) a swivel pivotally mounted between said bifurcations,
- (d) gear teeth on said swivel engaging the gear teeth on said one bifurcation,
- (e) spring biasing means biasing said swivel teeth into engagement with said one bifurcation gear teeth,
- (f) lamp mounting means operative with said swivel to support a lamp on said swivel, and
- (g) said hollow main body, said spring biasing means, and said swivel being operative to allow an electric wire to extend from the end of said main body opposite from said bifurcation through said main body, spring biasing means, and swivel to a lamp supported by said swivel.

2. A support for a lamp comprising:

- (a) a hollow main body having two bifurcations at one end thereof,
- (b) one of said bifurcations having gear teeth on the surface thereof facing the other bifurcation,
- (c) a swivel pivotally mounted between said bifurcations,
- (d) gear teeth on said swivel engaging the gear teeth on said one bifurcation,
- (e) spring biasing means biasing said swivel teeth into engagement with said one bifurcation gear teeth,
- (f) lamp mounting means operative with said swivel to support a lamp on said swivel, and
- (g) said hollow main body, said spring biasing means, and said swivel being operative to allow an electric wire to extend from the end of said main body opposite from said bifurcation through said main body, spring biasing means, and swivel to a lamp supported by said swivel, said spring biasing means being a leaf spring having its open ends fixedly secured to said swivel and its central portion biased against the inner surface of said other bifurcation to provide a space underneath said leaf spring and between said leaf spring and said swivel for passing an electric wire therethrough.

3. The support for a lamp of claim 1 wherein said bifurcation gear teeth are recessed from the surface of the

one bifurcation facing the other bifurcation so as to cover the operation of said gear teeth.

4. A support for a lamp comprising:

- (a) a hollow main body having two bifurcations at one end thereof,
- (b) one of said bifurcations having gear teeth on the surface thereof facing the other bifurcation,
- (c) a swivel pivotally mounted between said bifurcations,
- (d) gear teeth on said swivel engaging the gear teeth on said one bifurcation,
- (e) spring biasing means biasing said swivel teeth into engagement with said one bifurcation gear teeth,
- (f) lamp mounting means operative with said swivel to support a lamp on said swivel, and
- (g) said hollow main body, said spring biasing means, and said swivel being operative to allow an electric wire to extend from the end of said main body opposite from said bifurcation through said main body, spring biasing means, and swivel to a lamp supported by said swivel, limit stop means, said limit stop means being operative to limit the movement of said swivel away from said one bifurcation, said limit stop means being operative to allow said swivel to move axially away from said one bifurcation a distance greater than the depth of said one bifurcation gear teeth so as to allow said swivel to be moved to a different radial position relative to said one bifurcation, said spring biasing means being operative to hold said swivel into engagement with said one bifurcation under normal load conditions.

5. The support for a lamp of claim 1 wherein said hollow main body is formed by mating halves, each of said mating halves having one of said bifurcations at the end thereof, and means for securing said mating halves together.

6. A support for a lamp comprising:

- (a) a hollow main body having two bifurcations at one end thereof,
- (b) one of said bifurcations having gear teeth on the surface thereof facing the other bifurcation,
- (c) a swivel pivotally mounted between said bifurcations,
- (d) gear teeth on said swivel engaging the gear teeth on said one bifurcation,
- (e) spring biasing means biasing said swivel teeth into engagement with said one bifurcation gear teeth,
- (f) lamp mounting means operative with said swivel to support a lamp on said swivel, and
- (g) said hollow main body, said spring biasing means, and said swivel being operative to allow an electric wire to extend from the end of said main body opposite from said bifurcation through said main body, spring biasing means, and swivel to a lamp supported by said swivel, wherein said hollow main body is formed by mating halves, one of said main body halves including said one bifurcation, said swivel and said one main body half bifurcation having cooperative axial support means for allowing said swivel to rotate relative to said one bifurcation.

7. A support for a lamp comprising:

- (a) a hollow main body having two bifurcations at one end thereof,
- (b) one of said bifurcations having gear teeth on the surface thereof facing the other bifurcation,
- (c) a swivel pivotally mounted between said bifurcations,
- (d) gear teeth on said swivel engaging the gear teeth on said one bifurcation,
- (e) spring biasing means biasing said swivel teeth into engagement with said one bifurcation gear teeth,
- (f) lamp mounting means operative with said swivel to support a lamp on said swivel, and

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(g) said hollow main body, said spring biasing means, and said swivel being operative to allow an electric wire to extend from the end of said main body opposite from said bifurcation through said main body, spring biasing means, and swivel to a lamp supported by said swivel, axial swivel means mounted at the end of said main body opposite from said bifurcations, said axial swivel means being operative to allow said main body to rotate about its axis and perpendicular to the axis of said first mentioned swivel.

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