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3,478,200

COMBINED STREET LIGHT AND IDENTIFICATION SIGN STRUCTURE

Filed April 4, 1967

2 Sheets-Sheet 1

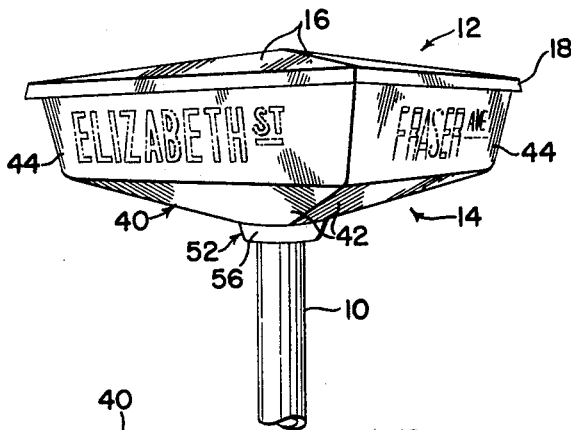


FIG. 1

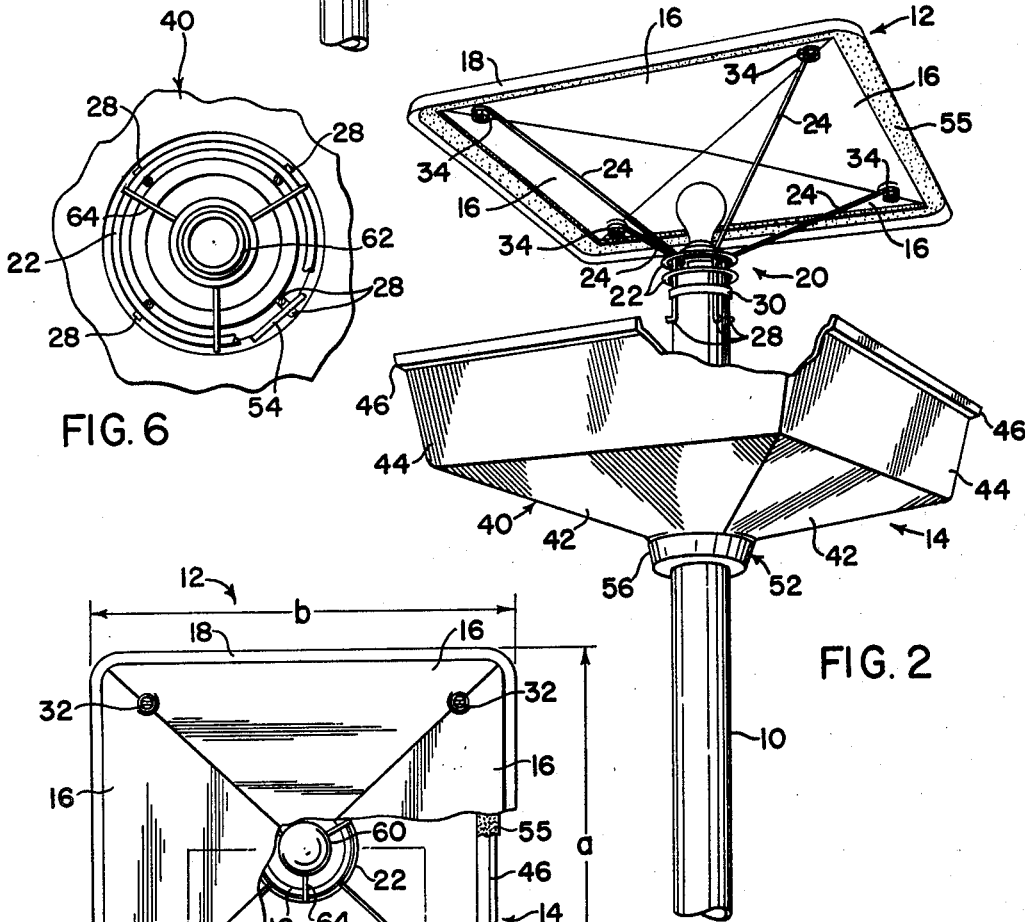


FIG. 2

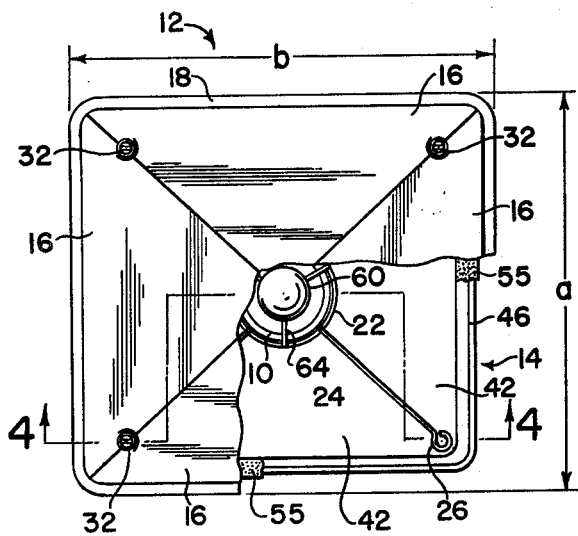


FIG. 3

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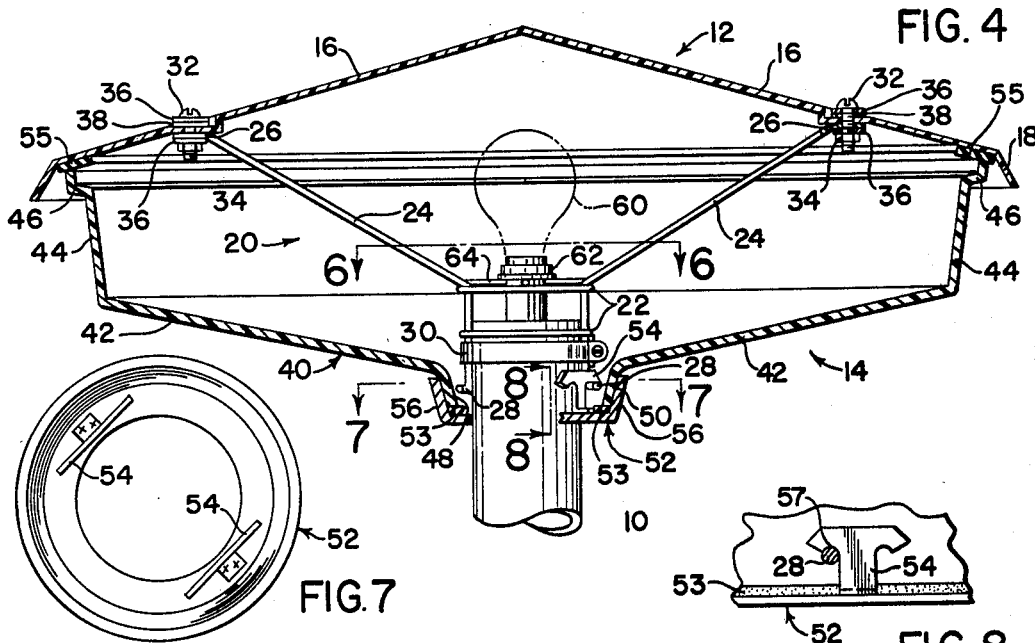


FIG. 4

FIG. 7

FIG. 8

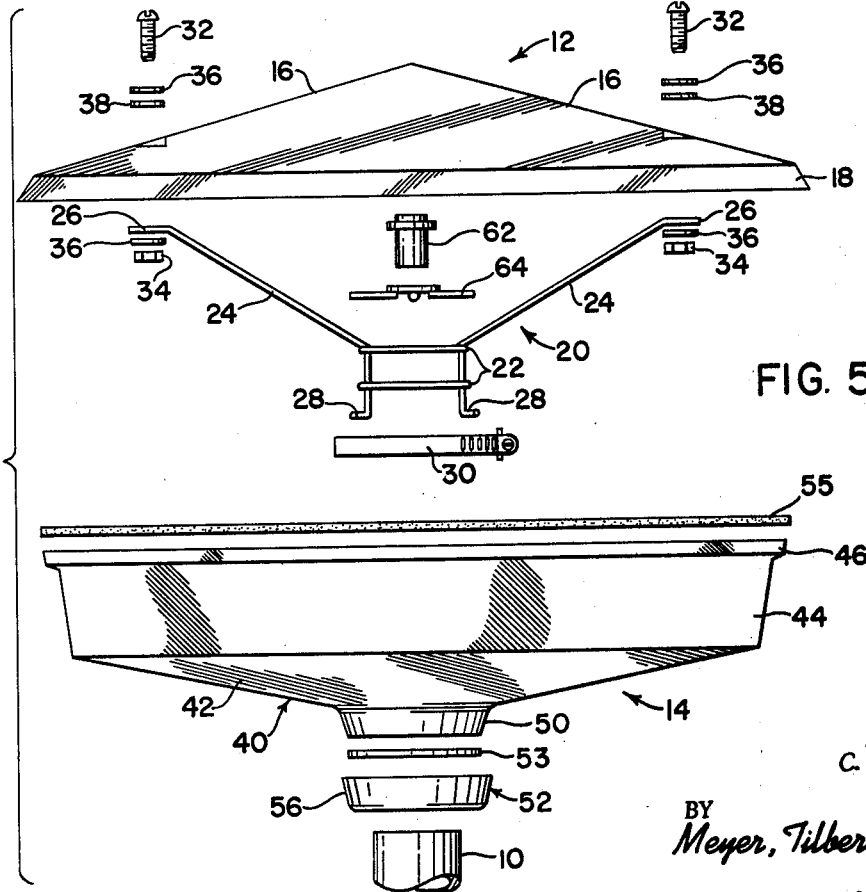


FIG. 5

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**COMBINED STREET LIGHT AND IDENTIFICATION SIGN STRUCTURE**

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8 Claims

**ABSTRACT OF THE DISCLOSURE**

An outdoor light structure particularly suited for use as a combined street light and sign. The structure includes a downwardly open hood carried on the top of a vertically extending support pole. A lens of dish-shaped configuration and formed entirely from light transmissive material is positioned beneath the hood and in releasable mating engagement therewith to form a sealed light chamber. The lens has a plurality of upwardly extending sides inclined slightly from the vertical which serve as indicia carrying surfaces. The engaging portions of the hood and lens are related so as to prevent misalignment of the lens and its indicia relative to the item identified after the structure has been originally put in position.

The present invention is directed to illuminating art and, more particularly, to an improved outdoor light structure.

The invention is especially adapted for use as a combined street light and sign structure, and it will be described with particular reference thereto; however, it is appreciated that the invention is capable of broader application and could be utilized wherever it is desired to provide both illumination and some type of identified marker, as for example, at parking lot entrances and exists, taxi cab and bus stops, etc.

In general, combined street light and sign structures are well known. Prior structures, however suffer from one or more disadvantage. They have involved complicated designs with attendant high manufacturing costs. They failed to provide adequate downwardly directed illumination. In some cases, no easy access to interior of the structure was provided for necessary maintenance, such as light bulb replacement. In addition, the interior of the structures was not adequately sealed from insects and the weather, the indicia was poorly positioned, thereby making reading difficult, and/or the indicia was easily misaligned during maintenance.

The present invention provides a combined street light and sign structure which overcomes the above, and other problems associated with prior structures. Additionally, the present invention provides a structure which has a pleasing appearance and a simple and durable construction.

In accordance with one aspect of the present invention, a light structure is provided which includes a vertically extending support pole and a shallow dish-shaped hood member having an open end of generally polygonal configuration. The hood member is mounted on the upper end of the pole with its open end facing downwardly. A dish-shaped lens member formed entirely from light transmissive material and having a bottom wall and upwardly extending side walls adapted to have indicia printed thereon and terminating in an open upper end of polygonal configuration, is positioned beneath the hood member with the pole passing through the bottom wall of the lens member. Means are provided to releasably maintain the open upper end of the lens member in sealing engagement with the

open end of the hood member to thereby form a closed chamber adapted to receive a light bulb.

In accordance with another aspect of the present invention, the open ends of both the hood member and the lens member are of mating polygonal configuration, and at least one pair of intersecting sides of each of the openings are of unequal length. This arrangement prevents the lens and its associated identifying indicia from being misaligned relative the identified object after the light structure has once been installed.

An object of the present invention is to provide a street light structure which is extremely simple in construction.

An additional object is the provision of a combined street light and street sign structure which is designed to prevent misalignment of the street name indicia.

A still further object is the provision of a street light structure which has a lamp chamber that is completely sealed against insects and the weather.

A still further object is the provision of a street light structure which is easily disassembled for maintenance.

These and other objects and advantages will become apparent from the following description used to illustrate a preferred embodiment of the present invention when read in conjunction with the accompanying drawings wherein:

FIGURE 1 is a pictorial view of a combined street light and sign structure constructed in accordance with the present invention;

FIGURE 2 is a pictorial view of the street light structure shown in FIGURE 1 with the lens portion of the structure lowered from its operative position to show the internal arrangement of the structure;

FIGURE 3 is a top view of the street light of FIGURE 1 with a portion broken away to show certain of the internal details;

FIGURE 4 is a cross-sectional view taken on line 4—4 of FIGURE 3;

FIGURE 5 is an exploded view of the structure of FIGURE 1;

FIGURE 6 is a cross-sectional view taken on line 6—6 of FIGURE 4;

FIGURE 7 is a plan view taken on line 7—7 of FIGURE 4 of the means used to clamp the lens member in engagement with the hood member; and,

FIGURE 8 is a view taken on line 8—8 of FIGURE 4.

Referring now to the drawings wherein the showings are for the purpose of illustrating a preferred embodiment of the invention only and not for the purpose of limiting same, FIGURE 1 shows the overall arrangement of the light structure comprised, in general, of a vertically extending support pole 10, an upper hood 12 and a light transmissive lens member 14 provided with surfaces adapted to carry indicia such as street names.

The actual shape, configuration and arrangement of support pole 10 is not important to the present invention, and could, for example, be a conventional free standing pole formed from pipe. Alternately, it could be a short solid or tubular section supported from a bracket extending from an auxiliary structure such as a building or traffic signal support pole.

As best shown in FIGURES 2 and 4, hood member 12 comprises a downwardly facing dish-shaped member having an opening of generally polygonal configuration. The hood is preferably formed from aluminum or a light impervious impact resistant plastic having a light reflecting surface. The shape of hood 12 could vary slightly; however, as shown, it is pyramidal and comprised of four upwardly sloping surfaces 16. The lower edge of the hood is provided with a downwardly extending lip or edge portion 18 which extends entirely around the lower open end of the hood. As best shown in FIGURE 4, the hood

member is positioned with its open end facing downwardly and spaced a short distance above the upper end of the support pole 10.

The means for supporting the hood from the upper end of pole 10 could take a variety of forms; however, as shown, it preferably comprises a frame 20 formed from a heavy gauge steel wire. Frame 20 includes a pair of rings 22 of a diameter slightly greater than the diameter of support pole 10. These rings are joined, such as by welding or brazing, to four support legs 24. As shown, each of legs 24 is formed from a single piece of wire and includes a vertically extending central portion and an upper outwardly radiating portion which terminates in an upper eye 26. The lower end portion of each of the legs 24 is provided with a radially outward extending portion 28. Portions 28 provide means for maintaining lens member 14 in engagement with hood member 12 in a manner subsequently to be described.

Frame 20 is releasably secured to the upper end of pole 10 by a clamp 30 which extends around the vertically extending central portions of the leg members 24 and frictionally holds them in engagement with the support pole 10. Clamp 30 could be a variety of types but is shown as a conventional pipe clamp.

As best shown in FIGURES 4 and 5, hood 12 is connected to frame 20 through bolts and nuts 32 and 34, respectively. Bolts 32 extend through openings formed in hood 12 and through eyes 26 of legs 24. A pair of metal washers 36 and a resilient rubber washer 38 are also provided to form weather and insect proof seals around each bolt 32.

As best shown in FIGURES 2 and 4, lens member 14 is of generally dish-shaped configuration and is formed entirely from a light transmissive material. This permits the structure to provide complete downward illumination without shadows, as well as to properly illuminate the indicia. Preferably, the lens is formed from a translucent high impact strength plastic such as cellulose acetate butyrate, or one of the polyacrylates or polymethacrylates. Because of the configuration of lens 14 it can be readily formed by the use of conventional vacuum forming techniques. As shown, lens 14 is comprised of a bottom wall, indicated generally by the numeral 40, formed by four intersecting surfaces 42 which extend radially outward and upward a slight angle to the horizontal. Four side walls 44 extend upwardly from the outer ends of surfaces 42. Although walls 44 could extend vertically or be inwardly inclined, they are preferably outwardly inclined by approximately 10° from the vertical. Thus, when street identifying indicia are painted or otherwise affixed to these surfaces, the indicia are in a more favorable position for reading from ground level. Each of the four walls 44 terminate in an upper flange portion 46 which serves to give the lens more torsional rigidity.

The bottom wall 40 of lens 14 is provided at its center with an opening 48 of a size to freely receive pole 10. Opening 48 is defined by a collar 50 which extends downwardly and inwardly toward the pole from surfaces 42.

The lens member 14 has been described and is shown in the drawing as having a horizontal cross-sectional shape which is generally rectangular. This is the shape which would be used at an intersection of two streets meeting at a right angle. However, at intersections of more than two streets, or at intersections of streets meeting at an angle other than 90°, the lens and hood would preferably have other horizontal cross-sectional configurations so as to provide surfaces for street name indicia which extend generally parallel to the intersecting streets.

In all cases, however, the horizontal cross-sectional configuration would preferably be a polygon.

Of particular importance to the present invention, is the arrangement to prevent misalignment of the lens member relative to the streets when it is lowered, and subsequently again brought to its upper operative position. As shown in FIGURE 3, in order to prevent the

lens from inadvertently being rotated 90° during a maintenance operation, and hence, placing the street name indicia in the wrong orientation relative to the streets, the adjacent sides of the polygon are of slightly different lengths. As shown in FIGURE 3, side *b* is slightly longer than side *a*. Thus, when the street light has been installed in its proper position, subsequent misorientation of the lens member and its indicia is not possible because the lens will not properly mate with the hood member because of the variation in length of the sides. This same general arrangement could be utilized in street lights having a different number of sides. The important point being that the mating polygonal openings of the hood and lens each have at least two of their intersecting sides of unequal length. For example, if the horizontal cross-sectional shape of the light and openings were triangular, then the triangle should be an isosceles or scalene triangle as opposed to an equilateral triangle.

The means used to maintain lens 14 in position relative to hood 12 could take a variety of forms. However, according to the preferred embodiment, these means comprise a cup-shaped annular member 52 provided with a pair of clips 54. As best shown in FIGURE 4, member 52 has an outer rim portion 56 which extends vertically upward at an angle generally corresponding to the angle of flange 50 around opening 48 of lens member 14. This tends to provide a sealing engagement between flange 50 and cup member 52 when the cup member is forced vertically upward against the lens member. Additionally, a resilient annular gasket 53 is positioned between the lower edge of flange 50 and the lower wall of cup member 52, to provide a further seal between the lens and the cup member. Preferably, the internal diameter of the gasket 53 is slightly smaller than the diameter of the pole 10 so as to also provide a seal between the pole and the cup member.

As best shown in FIGURES 7 and 8, the cup member has a pair of vertically extending clips 54 which are welded or otherwise joined to its lower wall. The clips are provided with recessed portions 57 arranged so that when member 52 is forced vertically upward to place the lens into engagement with the hood via a sealing gasket 55, a slight rotation of the member in either direction causes one of the recessed portions 57 of the clips to engage the radially outward extending portions 28 of two of the legs 24 of frame 20, to thus firmly lock the lens in position relative to the hood. As can be seen, this clamp arrangement is extremely simple and permits ready access to the lamp chamber between the hood and the lens merely by forcing the member upward slightly and rotating it in the opposite direction.

Any convenient type of light bulb or bulbs could be mounted within the lamp chamber to provide the necessary illumination, however, a conventional incandescent bulb 60 is shown. Bulb 60 is received in a standard electrical socket 62 which is mounted by a spider member 64, carried for example, by the upper ring 22 of frame 20. The necessary electrical leads to the socket are not shown but would normally extend up the center of support pole 10.

As can be seen from the foregoing description a combined street light and street identification structure has been provided which is extremely simple in construction and which overcomes the problems inherent in prior structures.

The invention has been described in great detail sufficient to enable one of ordinary skill in the illuminating art to duplicate the invention. Obviously modifications and alterations of the preferred embodiment will occur to others upon a reading and understanding of the specification and it is my intention to include all such modifications and alterations as part of my invention insofar as they come within the scope of the appended claims.

Having thus described my invention, I claim:

1. A light structure comprising: a vertically extending

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support pole terminating in an upper end, a light impervious hood member of shallow dish-shaped configuration having an open end of generally polygonal configuration, support means extending upwardly from said pole for supporting said hood member with its open end facing downwardly and spaced a short distance above the end of said pole, a dish-shaped lens member surrounding said support means and formed entirely from light transmissive material and having a bottom wall and upwardly extending side walls terminating in an open upper end of polygonal configuration of a size and shape to mate with the open end of said hood member, an opening formed centrally of said bottom wall with said support pole passing freely therethrough, and releasable means for engaging said bottom wall and having a portion extending upwardly into releasable engagement with said support means for releasably maintaining the open upper end of said lens member in sealing engagement with the open end of said hood member to thereby define a closed lamp chamber between said lens and said hood.

2. A light structure as defined in claim 1 wherein said open ends of both the hood member and the lens member are of mating polygonal configuration, and at least one pair of intersecting sides of each of said open ends are of unequal length.

3. A light structure as defined in claim 1 wherein said support means for mounting said hood member comprises a wire frame clamped to said pole.

4. A light structure as defined in claim 1 wherein said releasable means for releasably maintaining said lens member in engagement with said hood member comprises a member having clip portions adapted to engage the support means for said hood member.

5. A light structure comprising: a vertically extending support pole terminating in an upper end, a light impervious hood member of shallow dish-shaped configuration having an open end of generally polygonal configuration, support means extending upwardly from said pole for supporting said hood member with its open end facing downwardly and spaced a short distance above the end of said pole, a dish-shaped lens member surrounding said support means and formed entirely from light transmissive material and having a bottom wall and upwardly extending side walls terminating in an open upper end of polygonal configuration of a size and shape to mate

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with the open end of said hood member, an opening formed centrally of said bottom wall with said support pole passing freely therethrough, releasable means for engaging said bottom wall and said support means and releasably maintaining the open upper end of said lens member in sealing engagement with the open end of said hood member to thereby define a closed lamp chamber between said lens and said hood, said lens member having a downwardly and inwardly extending flange formed about said opening in said bottom wall, and said means for releasably maintaining said lens member in engagement with said hood member comprising an annular shaped member having an upwardly extending flange portion adapted to sealingly engage said flange formed about said opening in said bottom wall, said annular shaped member further including clip portions adapted to engage the means for mounting said hood member.

6. The light structure as defined in claim 5 wherein said open ends of both the hood member and the lens member are of mating polygonal configuration, and at least one pair of intersecting sides of each said open ends are of unequal length.

7. The light structure as defined in claim 1 wherein said releasable means comprises an annular member adapted to engage the lens member having upwardly extending clip portions for engaging said support means.

8. The light structure as defined in claim 1 wherein said releasable means includes portions extending between said support means and said lens means.

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40—131; 240—84