

March 22, 1966

R. E. LAPHAM

3,241,257

INFORMATION SUPPLYING UNIT

Filed June 24, 1963

4 Sheets-Sheet 1

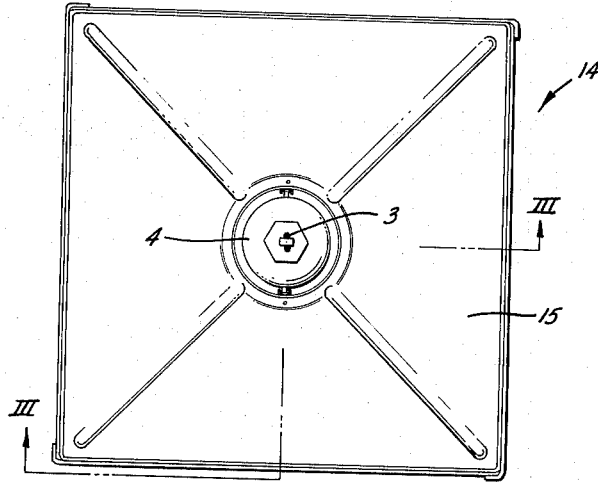


Fig. 1

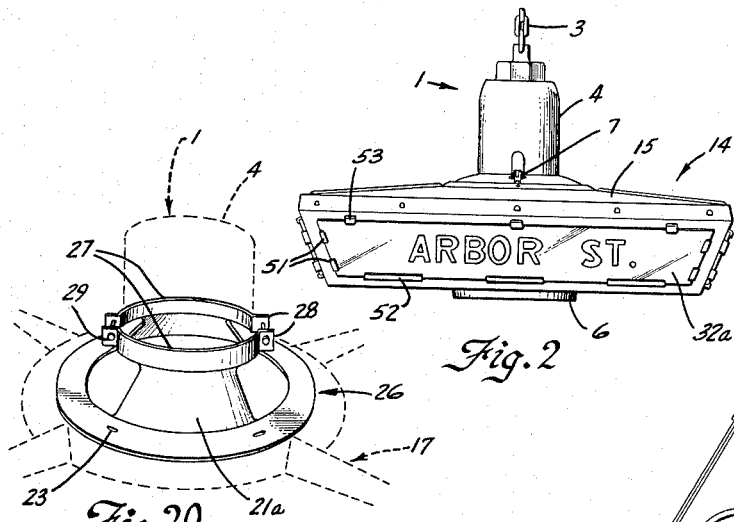


Fig. 2

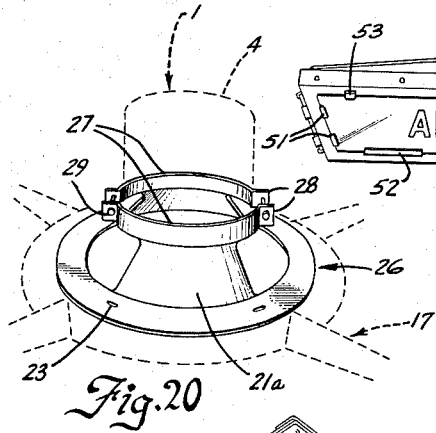


Fig. 20

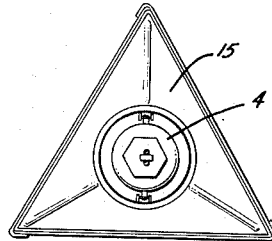


Fig. 7

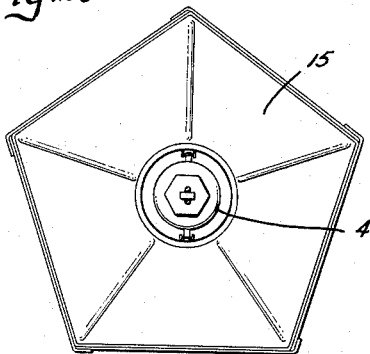


Fig. 6

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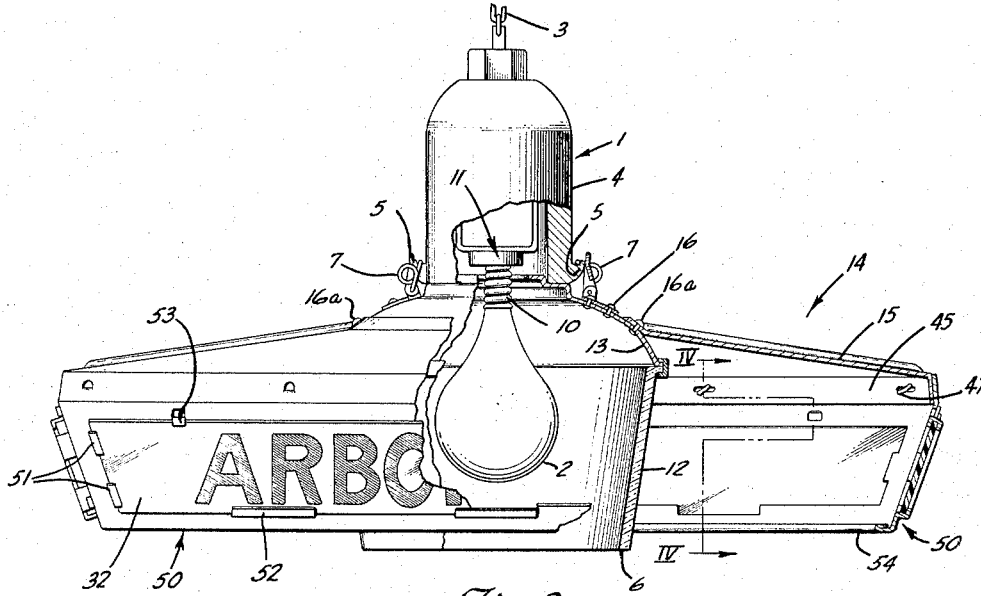


Fig. 3

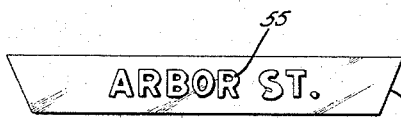


Fig. 8

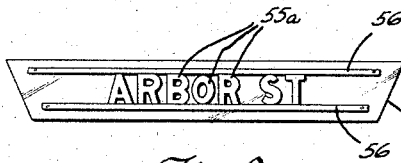


Fig. 9

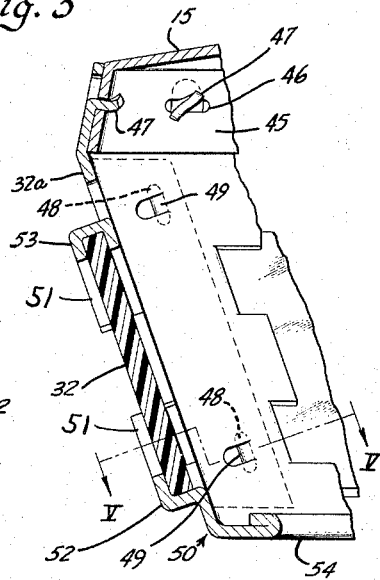


Fig. 4

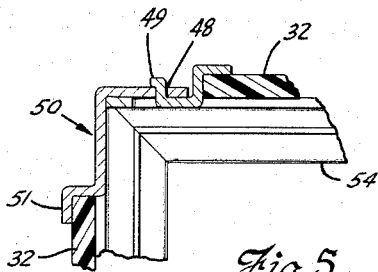


Fig. 5

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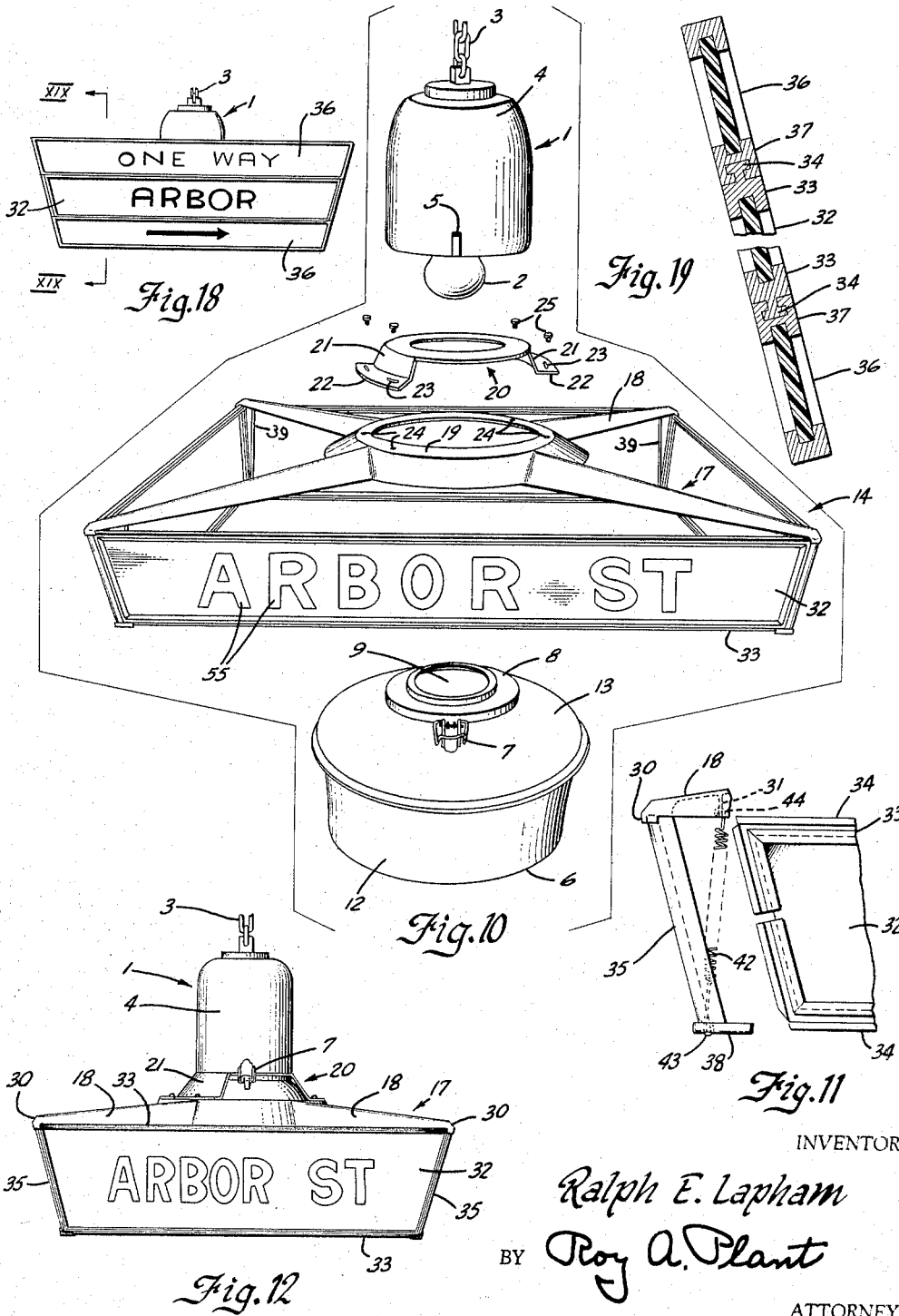
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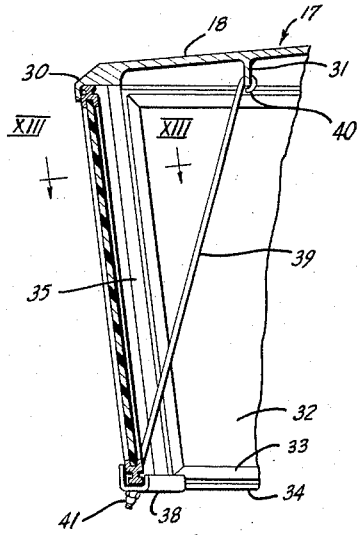


Fig. 15

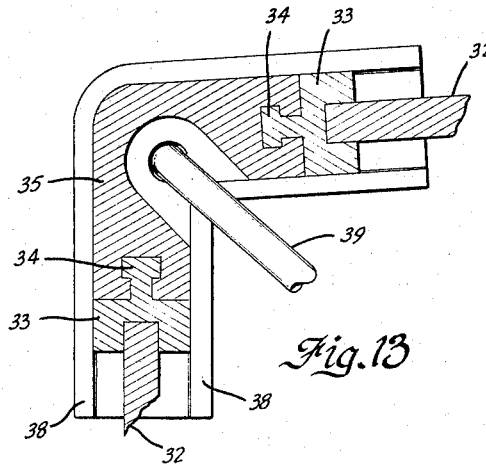


Fig. 13

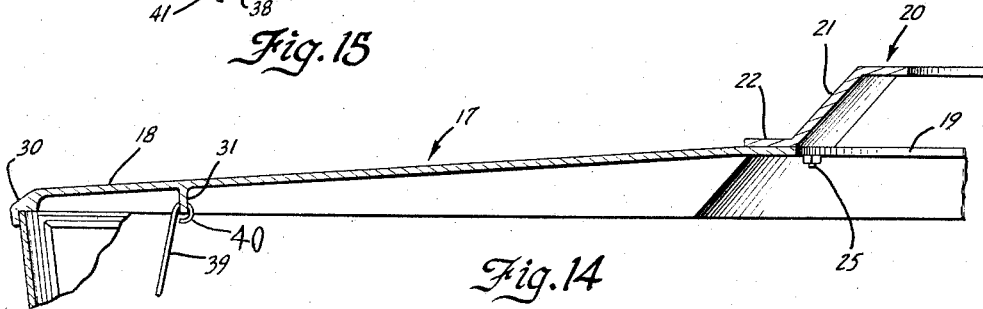


Fig. 14

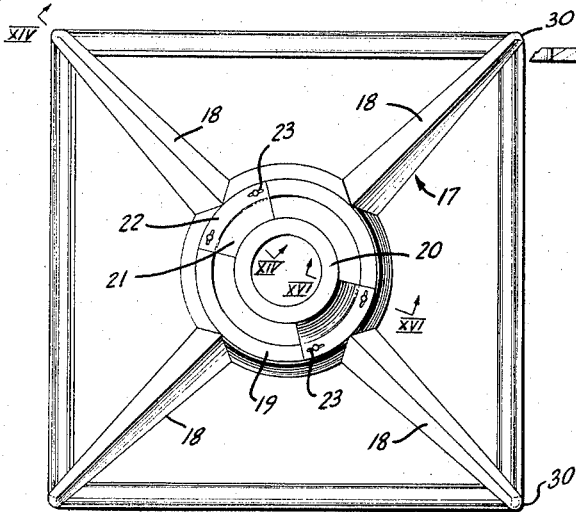


Fig. 17

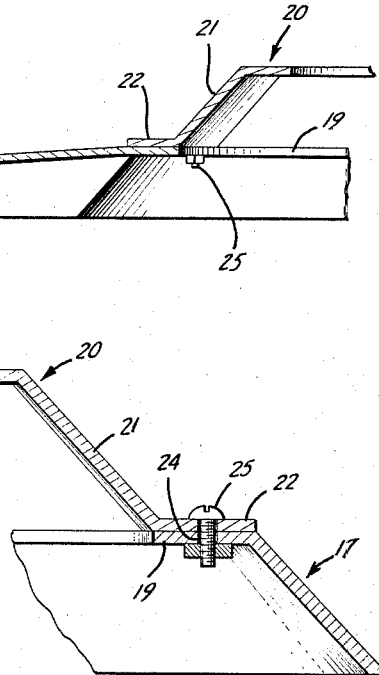


Fig. 16

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 4 Claims. (Cl. 40—131)

The present invention deals broadly with lightable structures, and in its specific phases with suspended street lights having street signs mounted thereon and with said overhead street lights being commonly substantially centered on street intersections in position for the street sign to be readily read in daylight and to be interiorly illuminated by the street light for easy reading at night.

Street signs are universally mounted on posts located on street corners, with some States by law requiring that there be a minimum of two signs with one mounted on one corner and the other on the opposite corner of each street intersection. Such street signs are substantially universally of the non-self-illuminated type, which makes locating of cross streets by name at night, as a usual thing, very difficult. Those corner post mounted street signs require the driver to keep looking to one side of the street in an effort to locate the name of a cross street being sought, and this taking of the eyes from looking ahead and directing same to the side, away from the line of traffic, had led to many accidents. It was a recognition of this problem and the complete lack of any commercially satisfactory solution to same which led to the conception and development of the present invention.

Accordingly among the objects of the present invention is the provision of an improved information supplying unit in the form of a street light and street sign combination with the street sign adapted to be supported on a suspended street light commonly centered on a street intersection, in position to be read without looking sidewise, and wherein at night, the street light interiorly illuminates the translucent panels of the sign for easy reading of the information on the outer face of said panels.

Another object is to provide an overhead suspended street sign which can be read night or day while always looking ahead and not sidewise.

Another object is to provide the combination of an overhead suspended street light and a street sign with means for releasably connecting said street sign in fixed position to said light.

Another object is to provide a street sign wherein a single unit will take the place of the minimum two units used in accordance with present day conventional corner post practice and do so more efficiently and at less cost.

A further object is to provide a suspended street light-street sign unit having readily changeable name panels or panels with interchangeable words or symbols, and which is vandal proof as compared with street corner post street signs now in use.

A further object is to provide a street sign mountable on a conventional suspended street light at a street intersection or the like wherein the street sign can be assembled on the job or preassembled before being taken to the point of installation on the street light to complete the unit, and further wherein the assembly and/or installation can be completed in a few minutes.

A further object is to provide a suspended street light with street sign which can be readily adjusted as to the direction of viewing.

A still further object is to provide a street sign mount-

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able on a conventional suspended street light to form a combination street light and sign, and wherein such street sign can be shipped and stored in knocked-down form and yet assembled ready for use in a few minutes by unskilled labor.

Still further objects and advantages of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the combination suspended street light and sign means hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain means for carrying out the invention, such disclosed means illustrating, however, but several of various ways in which the principle of the invention may be used.

In the annexed drawings:

FIGURE 1 is a top view of one form of the street light and sign assembly of the present invention with the sign mounted on a conventional suspended street light.

FIGURE 2 is a side view of the assembly shown in FIGURE 1.

FIGURE 3 is an enlarged and partially sectioned view of the street light and sign assembly shown in FIGURE 2 as taken along line III—III of FIGURE 1, looking in the direction of the arrows.

FIGURE 4 is a fragmentary sectional view as taken along line IV—IV of FIGURE 3, looking in the direction of the arrows.

FIGURE 5 is a fragmentary sectional view as taken along line V—V of FIGURE 4, looking in the direction of the arrows.

FIGURES 6 and 7 are top views of a street light and sign assembly similar to the showing in FIGURE 1, but respectively showing the street sign portion of same with five and three sides.

FIGURE 8 shows a street sign name panel for a suspended street sign of the general type shown in FIGURES 2 and 12, and wherein the informational material is painted or otherwise fixedly placed on the panel.

FIGURE 9 shows a modified informational panel similar to that shown in FIGURE 8, but with the letters used being of movable type.

FIGURE 10 is an exploded view of a preferred form of the combination suspended street light and sign assembly of the present invention.

FIGURE 11 is a fragmentary exploded view of one form of corner for a street sign of the type shown in FIGURE 10.

FIGURE 12 is an assembled side view of the preferred form of the suspended street light and sign shown in exploded form in FIGURE 10.

FIGURE 13 shows a fragmentary enlarged cross sectional view of a modified form of the corner of the assembly shown in FIGURE 12, as taken along line XIII—XIII of FIGURE 15, looking in the direction of the arrows.

FIGURE 14 shows a fragmentary enlarged cross sectional view as taken along line XIV—XIV of FIGURE 17, looking in the direction of the arrows.

FIGURE 15 shows a fragmentary enlarged cross sectional view of a side and corner portion of the street sign of the improved form of the present invention, and which is a modification of the construction shown in FIGURE 11.

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FIGURE 16 shows a fragmentary enlarged cross sectional view as taken along line XVI—XVI of FIGURE 17 looking in the direction of the arrows.

FIGURE 17 shows a top view of the street sign portion of the assembly shown in FIGURE 10.

FIGURE 18 shows a modified form of the assembly shown in FIGURE 12, and wherein extra information carrying panels have been added to supplement the street name.

FIGURE 19 shows an enlarged sectional view as taken along line XIX—XIX of FIGURE 18.

FIGURE 20 shows a modified form of mounting for fastening the street sign on the body of a conventional suspended street light by a clamping ring procedure.

Referring more particularly to the drawings, it will be noted as shown, for instance, in FIGURES 1 and 17 that the street sign assembly is more commonly of the square or rectangular form useable for suspension above the ordinary cross street type of intersections. Sometimes, however, as shown in FIGURE 7, a triangular street sign is required particularly where three streets come together at a common junction with the street light and sign substantially centered on same. Occasionally, however, there are more than four streets coming into a common junction and FIGURE 6 shows one such street sign where five streets meet at a common corner. It is thus to be seen that a street light and sign unit made in accordance with the present invention and to be supported overhead at the street intersection is very versatile in its adaptability to various street intersection conditions.

Referring more particularly to the preferred form of the present invention which is illustrated in exploded form in FIGURE 10, there is a street light 1 carrying the usual bulb 2 and conventional supporting means 3. It should be noted at this point that street lights have been substantially standardized as to body size and construction and wherein the street light housing 4 is provided on opposite sides with a pair of upturned hook-ended ears 5 from which the street light globe 6 may be suspended by means of latch members 7. The globe 6 preferably has a centering ring 8 with a central opening 9 through which the base portion 10, FIGURE 3, of the light bulb 2 may be passed for engaging the light socket 11. It is this general type of construction of the street light to which the street sign of the present invention is connected to form the street light and sign combination of the present invention, as will be hereinafter set forth in detail.

Various styles of the globe 6 have been used in the past, but at the present time the one shown in FIGURES 3 and 10 has become popular. This globe has an open bottom for ease of insertion of a replacement bulb 2 and unobstructed downward passage of light from the bulb to the ground directly below the assembly. This globe 6 preferably has a glass or plastic body 12 of good light diffusion properties, and a top portion 13 having a centering ring portion 8 with hole 9 through the latter, as previously described. Top portion 13 preferably is of metal with its underface having good light reflection properties. Mounted on the upper face of this top portion 13, by rivets 16 or the like, FIGURE 3, are a pair of clamping latch members 7 which are engageable with the upturned hook ended ears 5 on the street light housing 4.

Where the street sign 14 has a closed top 15, FIGURE 3, same may be anchored to top portion 13 of globe 6, by means of rivets 16a or the like to hold the assembly in fixed assembled position. On the other hand, another mode of supporting the street sign assembly 14 on the street light 1 is shown in FIGURES 10 and 12. Here the top portion of the street sign 14 is shown as an open spider 17 which allows free flow of air, rain and snow between the arms or spokes 18 of the spider so that resistance to flow of the elements is held at a minimum and the assembly stabilized. This spider 17 has a center ring portion 19 on which may be mounted a supporting ring 20 which has a pair of legs 21 with outturned lower ends 22

adapted to rest on said center ring 19 of spider 17. The outturned lower ends 22 of ring 20 are preferably provided with short slots 23 while the center ring 19 of spider 17 is provided with suitably located openings 24 to receive bolts 25, FIGURE 16, to facilitate minor rotary adjustment of supporting ring 20 on center ring 19 of spider 17. This minor adjustment of supporting ring 20 on center ring 19 of spider 17, and the rotary adjustment of supporting ring 20 on the bottom of housing 4 of street light 1 gives ample adjustment of the rotary position of street sign 14 on street light 1 so that the informational name faces of the street sign will face in the proper direction. It is to be noted, of course, that to assemble the street sign 14 on the street light 1 it is only necessary to remove bulb 2 (when of large diameter) and globe 6 from street light 1, as shown in FIGURE 10, move the street sign 14 under street light 1 with supporting ring 20 in contact with the bottom of the housing 4 of the street light and then move globe 6 up in under street sign 14 and into position where latch members 7 can be hooked over hook ears 5, the street sign adjusted for direction, and then latch members 7 tightened to grip the street sign 14 positively to street light 1, following which bulb 2 can be screwed in place and the assembly is ready for use.

This gripping of the inturned flange portion of supporting ring 20 between globe 6 and housing 4 of the street light firmly holds the sign assembly against rotation, and wherein, of course, the street sign will have been previously adjusted for direction before the clamping takes place.

Another mode of anchoring the street sign 14 to the street light 1 is shown in FIGURE 20 where a special mounting member 26 is used in the place of supporting ring 20. This mounting member 26 may be of various specific forms and there is diagrammatically illustrated in FIGURE 20 one convenient way of clamping the mounting member on the street light housing 4. Here it will be noted that the upper portion of the mounting member 26 is in the form of substantially semi-circular bands 27 adapted to fit around housing 4 of the street light 1 and with such bands having outturned ends 28 with those ends being perforated and provided with stove bolts 29 or the like so that when these bolts are tightened the mounting member 26 will be positively gripped onto housing 4 of the street light 1 and thus provide an alternate form of support for connecting the street sign 14 with the street light 1.

Now referring to the construction shown in FIGURES 10 to 19, inclusive, which cover a preferred form of the present invention, it will be noted that the street sign assembly utilizes a spider 17 which has arms 18 reaching to the various corners of the assembly and tentatively to the top of those corners. This spider also has a center ring 19 with openings 24 in the top edge of same for the attachment of any suitable means for connecting the street sign to the street light. This spider can be made in various ways, with a preferred one involving making same as an aluminum casting, which type of material is of relatively lightweight and substantially corrosion resistant for long periods of time. For rigidity, these arms 18 are preferably of inverted V-section with downturned outer end portions 30, FIGURES 11 and 15, for a purpose to be hereinafter set forth. Each of these spider arms 18 is also provided a short distance back from its outer end with a support ring 31, FIGURE 14, the use of which will be hereinafter set forth.

The sign panels 32, shown in place in FIGURES 10 and 12 of the drawings, are preferably mounted in an extruded metal frame 33 preferably having a cross section as more particularly shown in FIGURE 13, wherein the T-section outer edge portion 34 facilitates locking the side edges of the sign panels 32 to a corner member 35, by a key slot procedure, FIGURE 13. By having this same T-section edge on the top and bottom of the frame 33 of sign panel 32 it also facilitates fitting on the top

and/or bottom of such sign panel added instruction panels 36 such as are shown in FIGURE 18. These panels 36, of course, would have grooved-edge framing 37, FIGURE 19, for tightly and securely joining the added instruction panels 36 to the main sign panels 32. It should be noted, of course, that the T-section outer edge portion 34 of the metal frame 33 is cut away at the corners as is shown, for instance, in FIGURE 11 to facilitate bending metal frame 33 into shape and also to leave the ends of the T-section outer edge portion clear so that instruction panels 36 can be slid into place on the metal frame of sign panel 32. The anchoring of the instruction panels 36 to the main sign panel 32 can be accomplished in any conventional manner even by denting the frame 33 at each end of the sign panel to interfere with the endwise sliding of the instruction panel 36 once it has been slid into place.

With the main sign panels 32 connected together by means of corner members 35 in the manner shown in FIGURE 13 the next procedure is to mount such sub-assembly of the main sign panels and corner members on the outer ends of arms 18 of the spider 17. FIGURE 15 shows one such construction where a corner plate 38 is engaged with the bottom of corner member 35 and the bottom side edges of the adjacent sign panels 32. To hold the assembly in this position a rod 39 having a hook 40 on its upper end engaging support ring 31 on the lower side of spider arm 18 extends down through corner plate 38 with that portion of the rod being threaded and provided with nuts 41, one of which can act as a locking nut. This type of construction rigidly holds the assembly together at each corner and makes a very stable construction.

A modification of the construction shown in FIGURE 15 is illustrated in FIGURE 11 where in the place of rod 39 there is provided a suitable tension spring 42 with a hook 43 on the lower end of said spring and engaging corner plate 38 through the same opening which accommodated the lower end of rod 39 as shown in FIGURE 15. The upper end of tension spring 42 is also provided with a hook end 44 for engagement with the support ring 31 of spider arm 18. This type of construction makes possible quick assembly of the street sign and spider portion of the present invention without the use of tools.

In the preferred form of the invention as shown in FIGURES 10 and 12, a preferred size is 28" x 28" with the panels 32 being 8" high and approximately 26" long at their bottom edge so that, as shown in FIGURE 12, the panels in the final assembly will incline to provide better viewing from an approaching vehicle without seriously interfering with reading the information carried on the outer face of the panel even at considerable distances normally up to the length of an average city block. The test model was made almost entirely from aluminum and plastic and weighed only about nine (9) pounds so that no additional supporting rigging is required for the assembly.

Another form of the present invention is shown in FIGURES 1 through 5, inclusive. The construction here involved does not utilize a spider, but rather a solid sheet metal or relatively rigid tough plastic panel 15 which, as shown in FIGURE 3, may be anchored to the top portion 13 of the globe assembly 6 by means of rivets 16a or the like as previously explained. The side edges 45 of this panel 15 are preferably provided with slits 46 adapted to receive inturned ears 47, FIGURE 4, of the sign panel assembly 50, of which there is one for each side of the sign assembly. These sign panel assemblies 50, FIGURES 4 and 5, are adapted to overlap each other at the corners of the assembly, with one end of each of said sign panel assemblies 50 being provided with slots 48 and the other end with ears 49 so that in assembling the street sign portion of the assembly the side panels can have their upper edges anchored by means of inturned ears 47 engaging slots 46 while the side edges of

the sign panel assemblies 50 have their ears 49 engage slots 48 at their adjacent ends and then have the ears 49 bent back to lock the sign panel assemblies together. The information carrying sign panels 32 of the sign panel assemblies 50, FIGURE 3, in this case would be supported on the sign panel side ears 51 and bottom ears 52 while the top edge would be held down by means of top ears 53. For rigidity these sign panel assemblies 50 would preferably be provided with inturned bottom flanges 54, FIGURE 4.

The information carrying sign panels 32 may be of various types, two forms of which are shown in FIGURES 8 and 9. In FIGURE 8, for instance, the information items 55 on the sign panels 32 can be in the form of painted-on words or other items. The sign panels 32 themselves can be made of any suitable material having diffused light transmitting properties. Preferably, the sign panels 32 are made from "Filon Fiberglass" which presents a white surface making the printed information items 55, normally placed on the outside face of same, stand out sharply in daylight, and yet at night when the street light is lit, the sign panel transmits light so as to make the information items again stand out sharply and clearly. It is also to be noted that this type of panel made from "Filon Fiberglass" is tough and will strongly resist breakage if hit by a stone or bullet. The latter may put a hole through the panel, but will not break it seriously as might be the case with glass. In FIGURE 9 the sign panel 32 is provided with undercut ribs 56 adapted to receive individual information items 55 which, for instance, may be in the form of letters 55a which can be slid on from the end of undercut ribs 32 or these letters can be of thinner flexible material which can be flexibly bent and when placed between the undercut ribs 56 and released will straighten out and be of self-gripping and holding type. The showing in FIGURE 9, accordingly, is intended to diagrammatically show the various types of individually adaptable information items.

From the foregoing, it will be readily apparent that there have been disclosed several embodiments of the invention suitable for carrying out the desired ends in very practical manner. However, it is to be noted that equivalent modifications may be made in view of the teachings of the disclosed invention, and which will fall within the obvious spirit and scope of the invention as herein illustrated and described and thus are to be considered as a part of same.

Other modes of applying the principle of my invention may be employed instead of those explained, change being made as regards the street sign assembly and combinations herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. An information display device adapted to be suspended over the intersection of several streets to clearly identify each of said streets during both daylight and dark; said display device comprising a light fixture having a base; a socket for a source of light mounted on said base; means for conducting electricity to said socket also mounted on said base; a shade made of light transmitting material adapted to substantially surround a source of light mounted in said socket; a sign comprising a spider having a central ring and a plurality of arms radiating from said ring; a support means on each of said arms spaced from the outside ends of said arms; a polyhedron formed of a plurality of frames; each of said frames having a top member, a bottom member, and two end members; corner members for connecting together adjacent frames; the top members of said frames being longer than the bottom members of said frames so that when said frames are connected together to form the polyhedron, said frames slope outwardly from the bottom to the top;

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said polyhedron being formed of as many frames as there are arms on said spider; means extending between each of said support means and the bottom of said individual corner members for holding the top members of said frames firmly against said arms; a panel for each of said frames adapted to be mounted therein; each of said panels being formed of light transmitting material and carrying information thereon in characters which are opaque and in a color contrasting with the color of the panel itself; means for detachably mounting said shade to said base with said ring interposed between said shade and said base; and means attached to said base for supporting said base in hanging relation over the approximate center of said intersection so that the panels are individually visible by reflection during daylight and by silhouette at night from each of said intersecting streets.

2. The device defined in claim 1 further including means on said spider for accommodating relative rotation between said polyhedron and said base for aligning said panels with their respective streets.

3. The device defined in claim 2 wherein the bottoms of said frames are formed to accommodate the tops of additional frames, and wherein said device further comprises additional frames attached at their tops to the bottoms of the frames of said polyhedron, and additional panels for insertion into said additional frames, each of said additional panels bearing additional informaton.

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4. The device defined in claim 1 wherein said means for holding said tops of said frames firmly against the arms of said spider comprises an elongated resilient member attached at one end to said mounting means and at the other end to the bottom of said corner members.

References Cited by the Examiner

UNITED STATES PATENTS

| | | | | | |
|----|--|---------|------------|--------|---|
| 10 | 123,324 | 2/1872 | Bell | 40—131 | X |
| | 395,317 | 1/1889 | Dubey | 40—131 | |
| | 420,675 | 2/1890 | Cocheu | 40—131 | |
| | 1,542,789 | 6/1925 | Machintosh | 40—64 | |
| | 1,716,214 | 6/1929 | Ducker | 40—131 | |
| 15 | 1,847,775 | 3/1932 | Manfre | 40—132 | |
| | 1,881,372 | 10/1932 | O'Rourke | 40—64 | |
| | 1,929,020 | 10/1933 | Exelmans | 40—131 | |
| | 1,990,151 | 2/1935 | Wilkinson | 40—131 | |
| 20 | 2,114,943 | 4/1938 | Taylor | 40—128 | |
| | 2,316,539 | 4/1943 | Patterson | 40—131 | |
| | 2,802,291 | 8/1957 | Bach | 40—64 | |
| | 3,080,475 | 3/1963 | Corwin | 240—25 | |
| 25 | EUGENE R. CAPOZIO, <i>Primary Examiner</i> . | | | | |
| | JEROME SCHNALL, <i>Examiner</i> . | | | | |