March 22, 1966 R. E. LAPHAM 3,241,257

INFORMATION SUPPLYING UNIT

Filed June 24, 1963 4 Sheets-Sheet 1

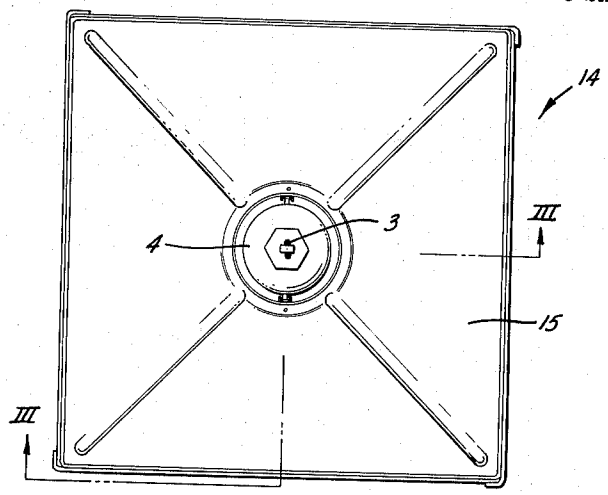


Fig. 1

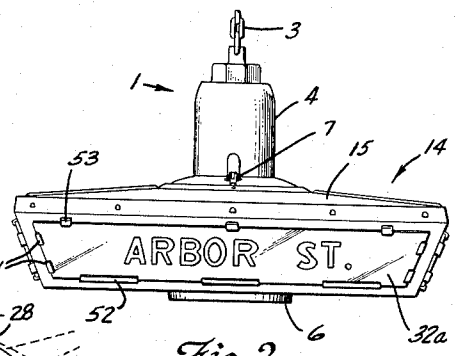


Fig. 2

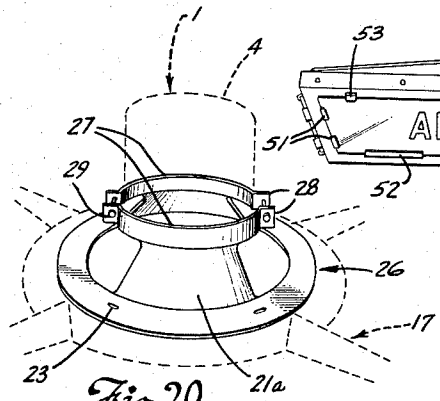


Fig. 20

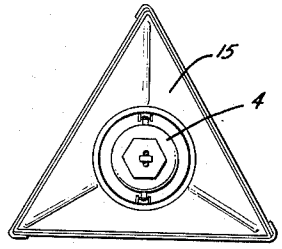


Fig. 7

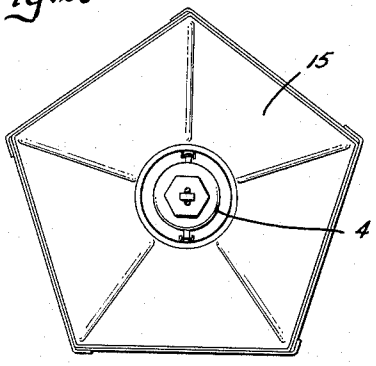


Fig. 6

INVENTOR

Ralph E. Lapham

BY Roy A. Plant

ATTORNEY

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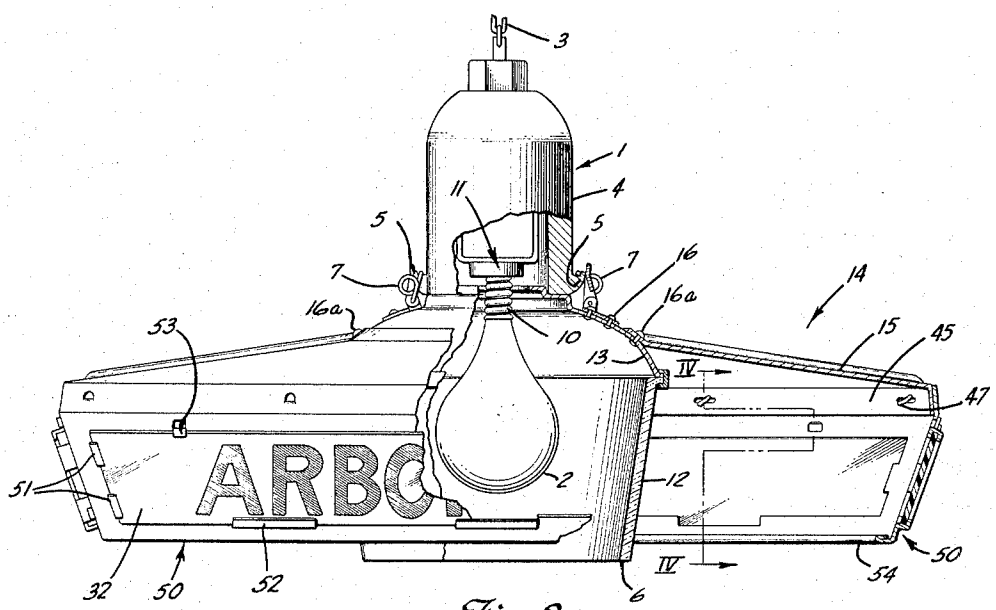


Fig. 3

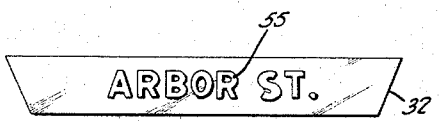


Fig. 8



Fig. 9

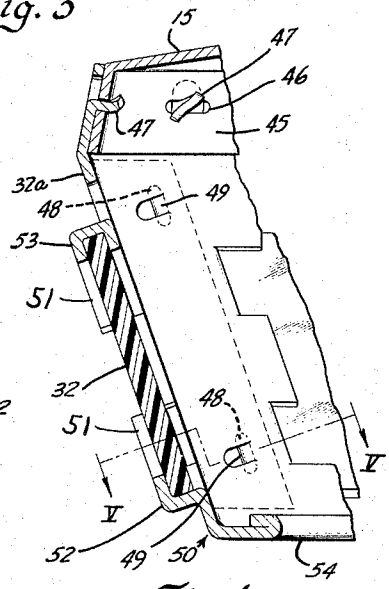


Fig. 4

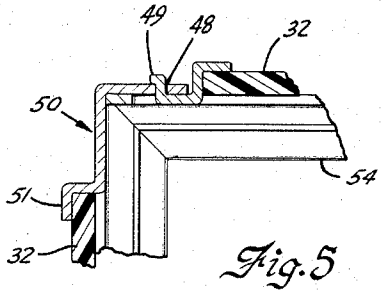


Fig. 5

INVENTOR

Ralph E. Lapham

BY Roy A. Plant

ATTORNEY

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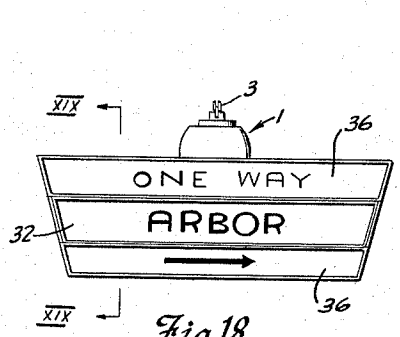
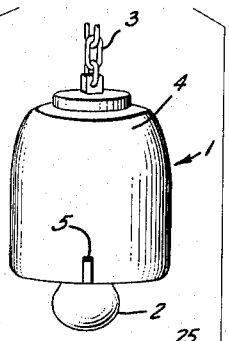


Fig. 18



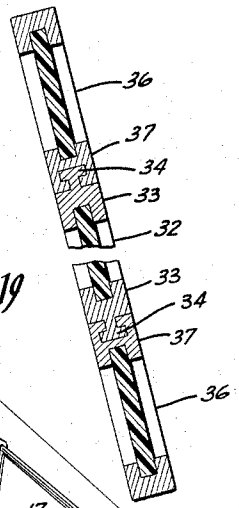


Fig. 19

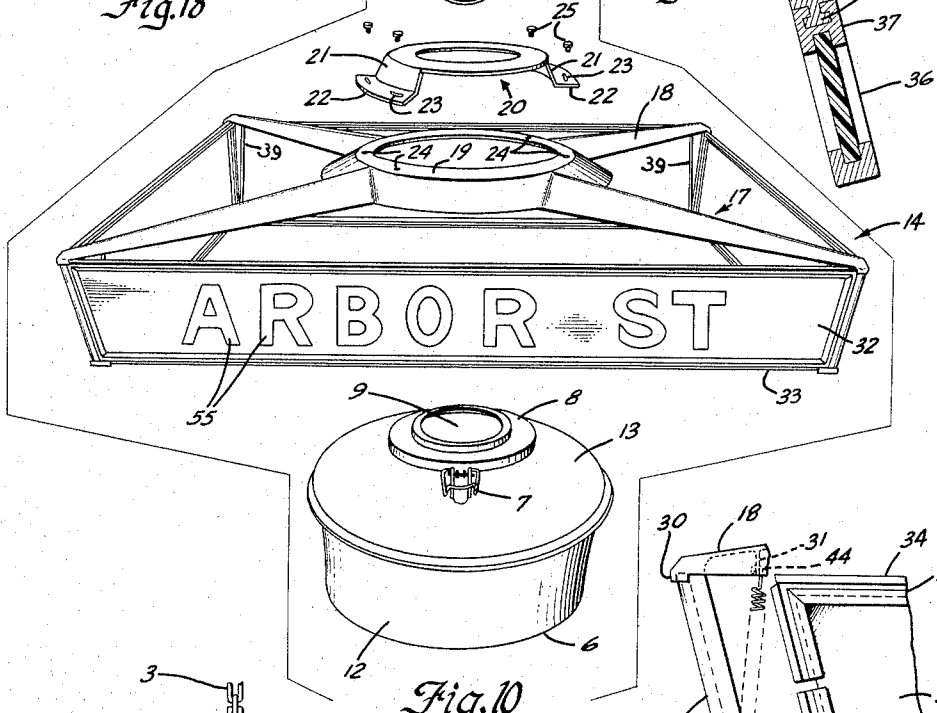


Fig. 10

Fig. 11

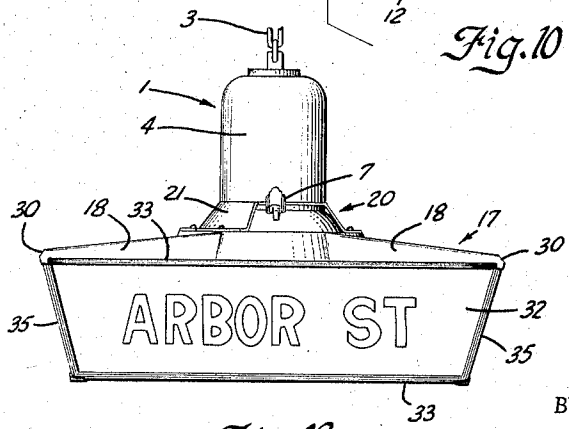


Fig. 12

INVENTOR

Ralph E. Lapham

BY Roy A. Plant

ATTORNEY

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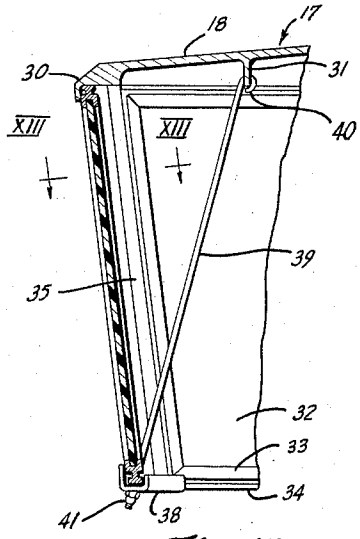


Fig. 15

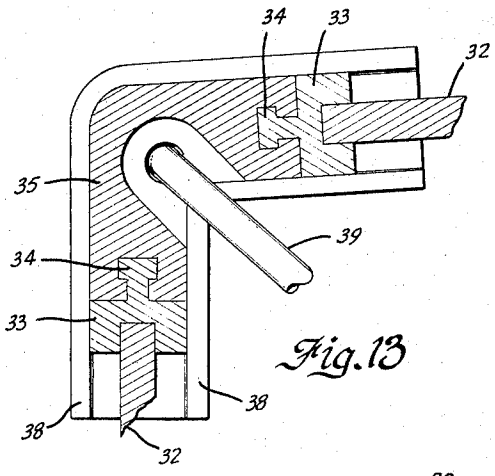


Fig. 13

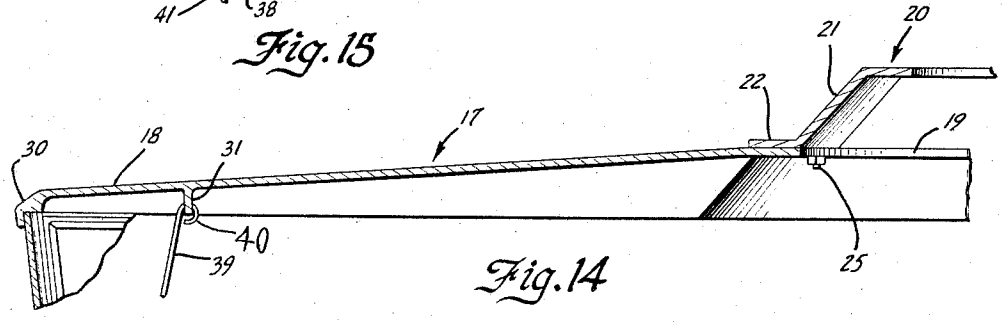


Fig. 14

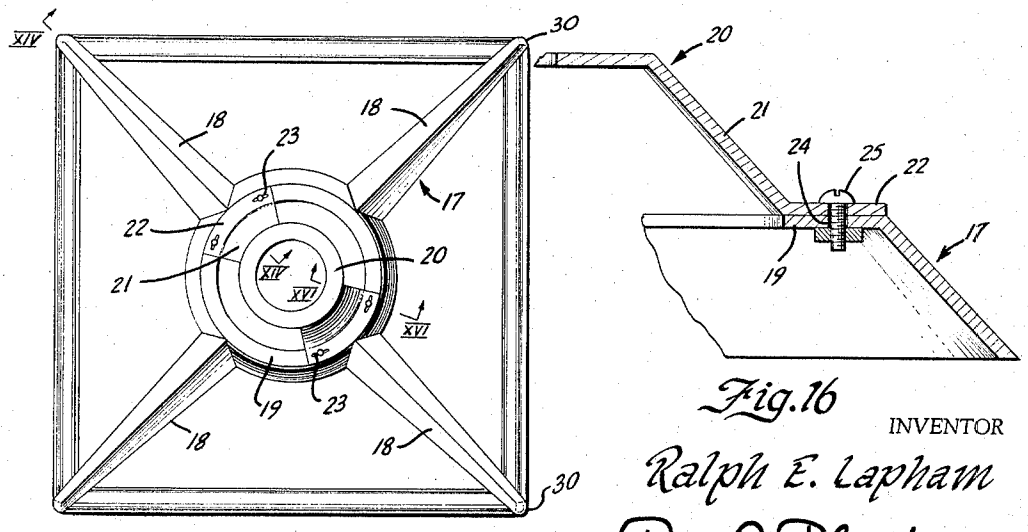


Fig. 16

Fig. 17

INVENTOR

Ralph E. Lapham

BY Roy A. Plant

ATTORNEY

United States Patent Office

3,241,257

Patented Mar. 22, 1966

3,241,257

INFORMATION SUPPLYING UNIT

Ralph E. Lapham, R.R. 9, Box 1390, Battle Creek, Mich.

Filed June 24, 1963, Ser. No. 289,862
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 mountable 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.

tional 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 13 shows a fragmentary enlarged cross sec-

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.

FIGURE 16 shows a fragmentary enlarged cross sectional vview 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 **16***a* 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 subassembly 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 **16***a* 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 **55***a* 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 heren 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;

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.

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 on end to said mounting means and at the other end to the bottom of said corner members.

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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

EUGENE R. CAPOZIO, *Primary Examiner.*

JEROME SCHNALL, *Examiner.*