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OUTDOOR LIGHTING FIXTURES

Filed May 1, 1962

Fig. 1

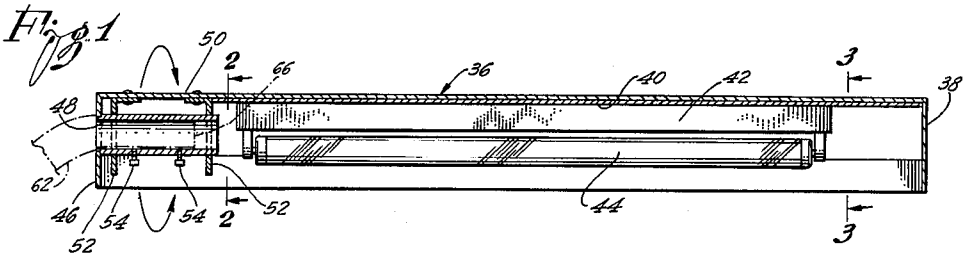


Fig. 2

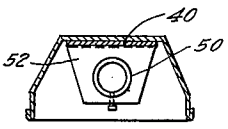
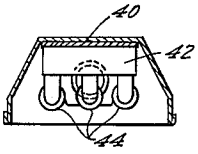


Fig. 3



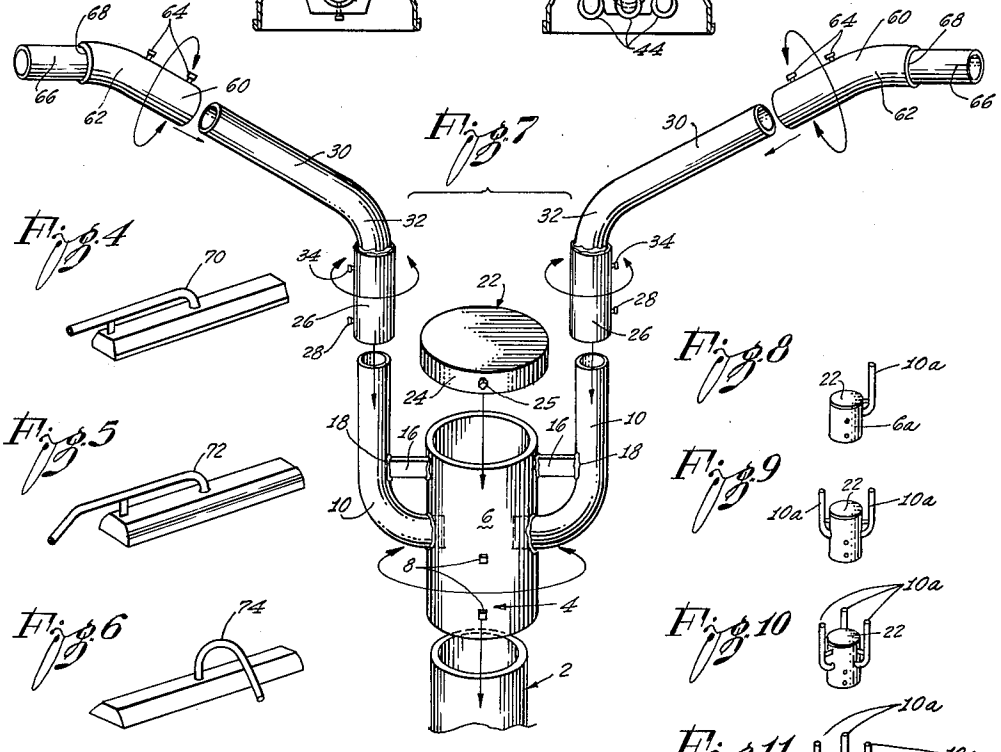


Fig. 7

Fig. 4

Fig. 5

Fig. 6

Fig. 8

Fig. 9

Fig. 10

Fig. 11

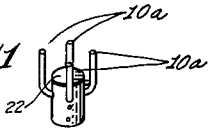
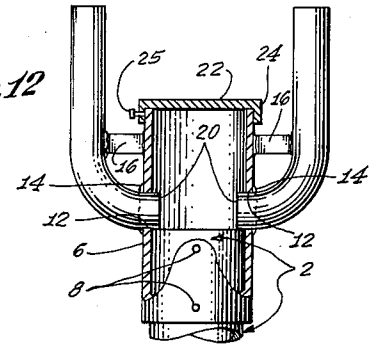


Fig. 12



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OUTDOOR LIGHTING FIXTURES

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The invention relates to the lighting art and particularly to a unique outdoor lighting fixture arrangement.

Those familiar with current developments in the outdoor lighting field will understand that many commercial requirements dictate a high degree of illumination be provided in specific areas. For example, it has been found that appropriate local high intensity illumination has a marked effect on improved sales in, for example, automobile sales businesses, service stations, shopping centers, vehicle parking areas of all types, as well as freight terminals of both the trucking type and railroad type. The results of proper illumination form the standpoint of increased sales and increased efficiency of operating personnel and the like has been frequenly demonstrated. Giving attention to this facet of normal business operation, it will be readily understood that the lighting fixtures employed should desirably meet certain functional requirements. Initially, the fixture should be of such design and construction so as to be electrically sound. That is to say, in view of the fact that the fixture is an outdoor fixture, the wiring and electrically operating parts reasonably should be adequately shielded from all climatic conditions. Additionally, the fixture arrangement should be of such design and construction as to offer flexibility to meet varied illumination requirements of a particular user. For example, in a given installation, it may be desirable at a certain point to vary the total amount of illumination available or to change its direction and thereby have the effect of highlighting a particular area of the total area to be illuminated. The advantage of such flexibility in many commercial operations will be obvious as, for example, in the sale of automotive vehicles, it may be desirable at a given point in time to spotlight a given vehicle or vehicles and thereby enhance the possibility of attracting customer attention. Additionally, the fixture should be of such construction so as to afford a pleasing apearance and, as a result of its functional characteristics, meet the requirements of modern design. It has further been found that a desirable lighting fixture structure reasonably will possess simplicity in construction and economy in initial cost.

The herein disclosed invention meets all of the requirements mentioned above and more. Initially, the invention comprehends a basic mounting unit which is selectably adaptable to a wide variety of fixture constructions. Thus, a high degree of concentrated illumination may be provided in a variety of applications. The structure is electrically sound and possesses a simplicity of construction which is not only ornamental in appearance but additionally offers a high degree of flexibility to the user.

The specific construction and other features of the invention will be apparent from an examination of the following specification and the associated drawings, wherein:

FIGURE 1 is a side elevational view taken in central longitudinal section and illustrating a typical constuction of a first lighting fixture that may be employed in the invention;

FIGURE 2 is a sectional view taken along line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken along line 3—3 of FIGURE 1;

FIGURE 4 is a perspective view of a modified embodiment of the fixture;

FIGURE 5 is a perspective view of yet another modification of an employed fixture;

FIGURE 6 is a perspective view of a further modification of a fixture;

FIGURE 7 is an expanded pre-assembly view of a fixture mounting employed in the invention;

FIGURES 8 to 11, inclusive, are perspective views of modifications of the mounting disclosed in FIGURE 7; and

FIGURE 12 is a central vertical, partially sectioned view of the structure illustrated in FIGURE 7.

Describing the invention in detail, attention is initially directed to FIGURES 7 and 12. It will be understood that a base member is indicated generally at **2**. In the preferred embodiment of the invention, said base member comprises an elongated, generally cylindrical pipe-like element which has one end (not shown) which may be adapted for mounting on the ground surface or other fixed location in any conventional manner. The base member **2** comprises the entire support for the typical arrangement herein illustrated. While the base member is here shown to be a cylindrical pipe, it will be understood that a variety of configurations may be employed such as rectangular or other geometric form and still fulfill the functional requirements of the disclosed invention. A fixture supporting element is indicated generally at **4** and in the preferred embodiment comprises a cylindrical pipe **6** having an inner diameter of such dimension so as to telescopically receive the upper end of the base member **2**. Again, the cylindrical characteristics of the pipe **6** represent only a preferred embodiment of the invention, it being understood that any geometric configuration may be used so long as the design employed bears a concurrent relationship in the base member **2**.

The pipe or element **6**, as specifically shown in FIGURE 12, telescopically receives the upper end of the base member **2** and is provided with locking means such as the set screws **8**, **8** which are threadably received in the pipe **6** and, by manual manipulation, fixedly secure the pipe **6** to the base member **2**. It will be noted that the pipe **6** may be rotatably positioned on the base member **2** in a virtual infinite number of positions thereon within the 360° arc of the base member **2**. In addition, the cylindrical pipe **6** is provided with a plurality of fixture supporting horn elements **10**, **10**, said fixture supporting elements in the preferred embodiment constituting pipes of truncated J form having their lower ends received within the appropriate apertures **12**, **12** within the pipe **6**. To fixedly secure the elements **10** to the pipe **6**, the lower ends of the latter may be welded as at **14**, **14** or secured thereto in any other conventional manner. To add stability to each element **10**, the preferred embodiment employs supporting bars **16**, **16** having opposed ends secured in any conventional manner as, for example, by welding at **18**, **18** to intermediate portions of the element **10** and the carrying pipe **6**.

While accurate location of the cylindrical pipe **6** on the supporting member **2** may be achieved in a variety of ways, the preferred embodiment dictates that the lower inner ends **20**, **20** of the elements **10** project inwardly of the pipe **6** to overlie the upper edge of the base member **2** and provide an effective abutment for engagement by the upper end of said base member. It will thus be understood that a proper physical relationship is thereby established between the hollow base member **2**, the hollow pipe member **6**, and the hollow elements **10**. An appropriate cap **22** may be congruently sized to overlie the upper end of the pipe member **6**, said cap **22** having a peripheral flange **24** therearound which receives the

upper end of the pipe member 6 and effectively seals said open end in addition to providing locking means as, for example, the set screw 25 to physically secure the cap 22 to the pipe member 6. It will be readily apparent to those skilled in the art that with the arrangement just described, electrical wiring for the lighting fixture hereinafter referred to will be trained through the hollow base member 2, the hollow cylindrical pipe 6, and the hollow supporting elements 10. Thus, the wiring is effectively shielded, by the structure described and the cooperating function of the cap 22, from all climatic conditions rendering the structure highly practical from the standpoint of outdoor lighting.

It will be understood that the supporting elements 10 are here illustrated in vertical relation to the horizontal. However, the structure shown is a preferred embodiment of the invention and it will be understood that the supporting elements 10 may be positioned in any angular relation to the horizontal and still meet the functional requirements of the disclosed invention.

Each of the supporting elements 10 is adapted to be telescopically received within one end of connectors 26, 26; each connector 26 additionally is provided with a lower set screw 28 or other suitable connecting means whereby the connector 26 may be fixedly secured to the upper end of the related supporting element 10 and in any angular position thereon. The upper segments of each connector 26 are adapted to telescopically receive one end of a connecting pipe 30. The connecting pipe 30, in the preferred embodiment, may be bent as at 32 adjacent its lower end, said bent portion 32 being received within the connector 26 and again secured thereto in any desired angular position thereon by virtue of any conventional securing means such as the set screws 34.

Leaving the above described structure, attention is now directed to the typical fixture illustrated in FIGURE 1 and indicated generally at 36. It will be understood that the fixture 36 comprises an outer housing 38 of open-ended, box-like construction and carrying adjacent its inner upper surface a supporting plate 40. The supporting plate 40 may be secured to the housing 38 in any conventional manner as, for example, by bolting. The plate 40 mounts a conventional lighting fixture 42 which includes a fluorescent lighting tube 44. Adjacent one end of the housing 42, an end wall 46 is provided, said end wall 46 having an aperture 48 therein, said aperture being in registering communication with a cylindrical tube 50. The tube 50 is secured to the housing 36 in any conventional manner as, for example, by the spaced supporting plates 52, 52. Additionally, the tube 50 is provided with locking set screws 54, 54, the purpose of which will be hereafter described. Further considering the lighting fixture 36, it will be understood that the tube 50 is dimensioned so that it may, for example, telescopically receive the outer end of one of the connecting pipes 30. It will thus be understood that the fixture may be carried on the end of the pipe 30 and in angular relation to the horizontal. Obviously, the set screws 54 will accommodate fixed mounting of the fixture 36 to the connecting pipe 30 which, by virtue of the cylindrical construction of the pipe 30, as well as the tube 50, the fixture may be rotated on the pipe 30 at any desired angle.

With the above structure in mind, it will be apparent that a high degree of flexibility is provided within the lighting fixture generally, it being noted that the pipe 6 is securable to the supporting member 20 in any angular relation thereon, that a further swivel or rotatable connection is provided by virtue of the connector 26 and its telescopically interfitting relation with the element 10 and pipe 30, and that additionally, a further swivel or variable connection is provided by virtue of the telescopic swivel connection between the pipe 50 and the outer end of the pipe 30.

To provide additoinal flexibility to the lighting fixture arrangement, as well as to accommodate a wide variety of lighting fixtures per se, it may be desirable in some applications to provide an additional connector 60 which may be mounted in telescopic interfitting relationship with the outer end of pipe 30. The connector 60 may be angled as at 62 as desired by the particular installation, and additionally may be provided with conventional locking means such as set screw 54 to fixedly secure the connector to the outer end of the related pipe 30. A fixture supporting pipe 66 may be optionally telescopically fitted into the connector 64 and may be secured thereto in any conventional manner as, for example, by welding as at 68. The pipe 66 then may serve as a mounting for the typical fixture 36 illustrated in FIGURE 1 and in the manner earlier described.

Directing attention to FIGURES 4 to 6, inclusive, it will be understood that they illustrate alternate lighting fixture arrangements which may be employed. The lighting fixtures of FIGURES 4 to 6, inclusive, differ little functionally from that described with reference to FIGURE 1 except that a variety of mounting pipes 70, 72, and 74 may be provided which, in turn, are readily adaptable to the structure described with reference to FIGURES 7 to 12, inclusive. For example, the fixture supporting element 66 associated with the connector 60 may be optionally removed and the pipe 70 of the fixture shown in FIGURE 4 may be mounted in the connector 60 to provide appropriate support for said fixture. In a similar manner, the pipe 72 of the fixture shown in FIGURE 5 may also be so mounted. Alternately, the supporting pipe 70 in the fixture shown in FIGURE 6 may be mounted in the connector 60 or, if desired, may be physically associated with the connector 26, it being understood that the pipe 30 is then not utilized in the arrangement. From the description given, it will be apparent that the disclosed structure provides a high degree of flexibility in the variable mounting of appropriate lighting fixtures. The unique result of this flexibility is that the arrangement is therefore readily adaptable to the particular user's requirements under a wide range of commercial applications.

In addition to the flexibility described above, further flexibility in design and function is provided by the structures illustrated in FIGURES 8 to 11, inclusive. Considering FIGURE 8, it will be noted that the cylindrical pipe 6*a* is provided with a single mounting element 10*a*. The structure of FIGURE 9, on the other hand, duplicates the structures of FIGURES 7 and 12 in that two mounting elements 10*a* are provided and preferably arranged in opposed relationship to each other. Alternately, the structure of FIGURE 10 provides three mounting elements 10*a*, the latter being arranged in equal angular relationship to each other. Still a further modification is illustrated by FIGURE 11 in that four mounting elements 10*a* are provided, said mounting elements 10*a* here illustrated in 90° relationship to each other. The disclosure thus illustrates the fact that the particular invention may be utilized to support a plurality of lighting fixtures and, while the mounting elements 10*a* are illustrated in equi-angular relationship to each other, it will be understood that any number of mounting elements of any angular spacing therebetween may be employed as the dictates of any installation may require.

The invention as shown is by way of illustration and not limitation and may be subject to modification without departing from the scope of the appended claims.

What is claimed is:

1. In an outdoor lighting fixture arrangement for providing light by the passage of electricity through wires wherein the arrangement includes

a base member extending in a first direction and having a hollow configuration to receive the wires, the combination of

a pipe mounted on the base member and having a

hollow configuration and receiving the wires extending through the base member and pivotable on a first axis relative to the base member wherein the first axis corresponds substantially to the first direction,

a plurality of horn elements extending from the pipe at spaced positions around the periphery of the pipe in a direction transverse to the first axis, each of the horn elements having a hollow configuration and receiving the wires extending through the base member and the pipe,

a plurality of connector means each mounted on a different one of the horn elements and each having a hollow configuration and receiving the wires extending through the base member and the pipe and the horn elements,

a plurality of lighting fixtures each including at least one light source connected to receive the wires for the energizing of the light source and each provided with a hollow tube receiving a different one of the connector means and receiving the wires extending through the connector means, the connector means extending into the tubes in the lighting fixtures, the lighting fixtures being pivotable relative to the connector means on a second axis transverse to the first axis, and

means connecting the connector means and the tubes in the lighting fixtures.

2. The combination set forth in claim 1 wherein the horn elements have first and second portions in transverse relationship to each other and wherein the connector means have first and second portions in transverse relationship to each other and wherein the first portions of the connector means are mounted on the second portions of the horn elements and wherein the second portions of the connector means extend in a direction substantially parallel to the second axis and wherein the first portions of the horn elements extend in a direction substantially parallel to the first axis.

3. The combination set forth in claim 2 wherein supporting bars extend between the horn elements and the pipe and are coupled at opposite ends to the horn elements and the pipe to support the horn elements in fixed relationship to the pipe and wherein a cap is disposed on the pipe to cover the open end of the pipe.

4. In an outdoor lighting fixture arrangement for providing light by the passage of electricity through wires wherein the arrangement includes

a vertically disposed base member having a hollow configuration to receive the wires,

a pipe mounted on the base member and pivotable on a vertical axis relative to the base member, the pipe being hollow to receive the wires,

means mounting the pipe on the base member,

a plurality of horn elements extending from the pipe at spaced positions in the horizontal direction, each of the horn elements having a first portion horizontally disposed adjacent to the pipe and having a second portion vertically disposed at a position displaced from the pipe, the horn elements being hollow to receive the wires,

a plurality of connector means each mounted on a different one of the horn elements and each pivotable on the vertical axis of the associated horn element, each of the connector means having a first portion vertically disposed on the associated horn element and having a second portion horizontally disposed at a position displaced from the associated horn element, the connector means being hollow to receive the wires,

a plurality of lighting fixtures each including a light source connected to receive the wires for the energizing of the light source and each including a hollow tube receiving the second portion of an associated one of the connector means, the lighting fixtures being pivotable on substantially a horizontal axis relative to the associated connector elements, and

means securing the lighting fixtures to the associated connector means.

5. The combination set forth in claim 4 wherein a cap is disposed on the upper end of the pipe to cover the pipe and wherein supporting bars extend horizontally between the pipe and the horn elements to fixedly secure the horn elements to the pipes.

6. In an outdoor lighting arrangement including

a hollow supporting pipe adapted for permanent mounting in a fixed, generally vertical position, the combination of:

a first cylindrical element telescopically mounted to receive the upper end of the supporting pipe, there being apertures in the first cylindrical element;

a plurality of truncated J-shaped horn pipes having lower and upper ends and having their lower ends positioned in the apertures in the element whereby the truncated ends of the horn pipes project inwardly of the internal peripheral surface of said element,

said horn pipes being hollow whereby communication is established with the hollow element and the hollow base pipe,

a demountable generally cylindrical cap closing the upper end of the first cylindrical element and fixedly secured thereto,

the upper ends of said J-shaped horn pipes terminating above the level of the cap,

a plurality of first collars each mounted on a different one of the horn pipes to telescopically receive the upper end of each J-shaped horn pipe,

said first collars being hollow to admit wire passage therethrough,

a plurality of second pipes each having first and second ends and having a bend at the first end therein and having the first end telescopically received within a different one of said collars and vertically positionable relative thereto,

means securing the first collars to the horn pipes and the second pipes at opposite ends of the first collars,

a plurality of second collars each having first and second ends and each having the first end telescopically disposed relative to the second end of a different one of the second pipes respectively,

a plurality of fixture mounting pipes each positioned within the second end of a different one of said second collars,

a plurality of lighting fixtures, each of said lighting fixtures having a hollow tube fixedly mounted thereon,

said last mentioned tubes being arranged for the telescopic reception of the fixture mounting pipes, and

means selectively locking said fixtures to said fixture mounting pipes in any selected position about the axis of said fixture mounting pipe.

7. The combination set forth in claim 6 wherein first means support the pipe on the base member and second means support the connector means on the horn elements.

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