Dec. 28, 1943. S. B. KRAUT 2,337,824

UNIVERSAL STREET LIGHTING LUMINAIRE

Filed June 18, 1940 2 Sheets-Sheet 1

Fig. 1.

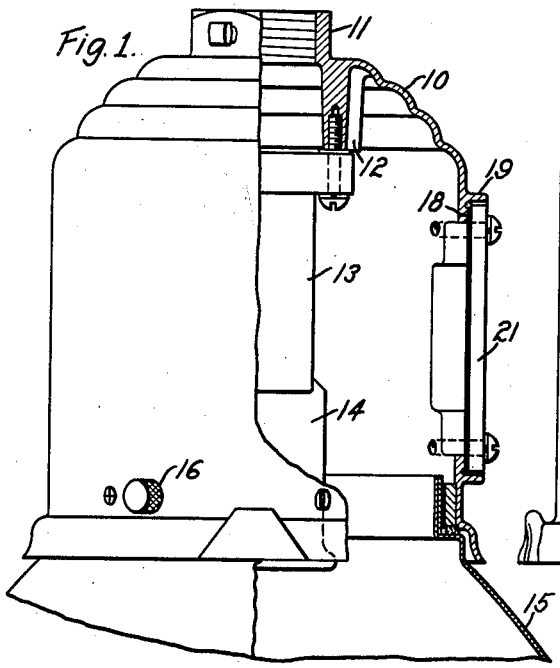



Fig. 2.

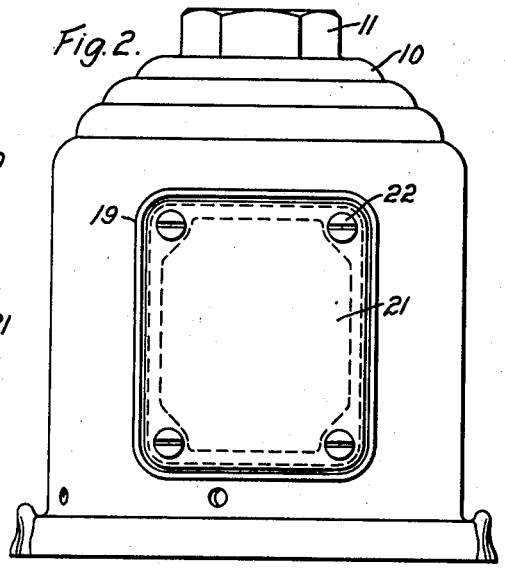



Fig. 3.

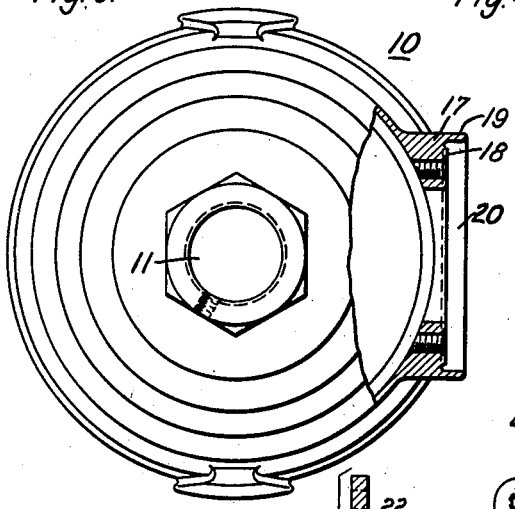



Fig. 4.

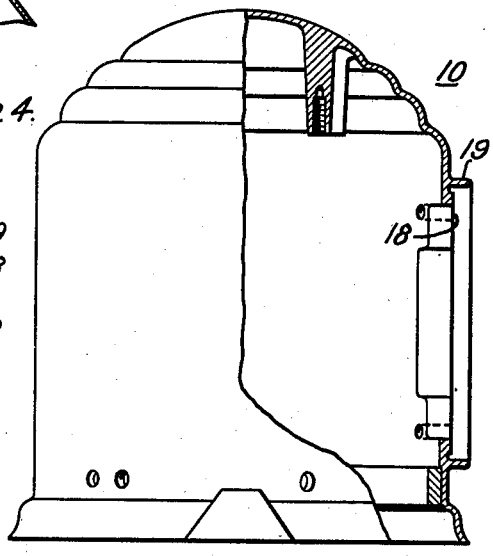
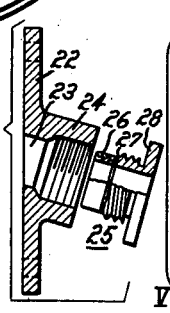



Fig. 5.



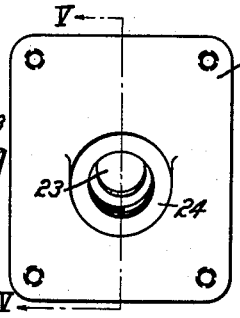




Fig. 6.

WITNESSES:

Wm. B. Sellers.

Fred C. Wilhelm

INVENTOR

Samuel B. Kraut.

BY G. M. Crawford

ATTORNEY

Dec. 28, 1943. S. B. KRAUT 2,337,824

UNIVERSAL STREET LIGHTING LUMINAIRE

Filed June 18, 1940 2 Sheets-Sheet 2

Fig. 7.

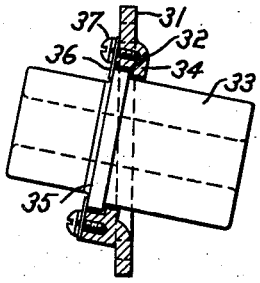



Fig. 8.

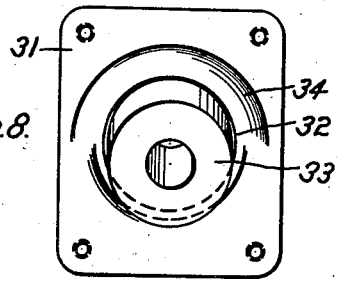



Fig. 9.

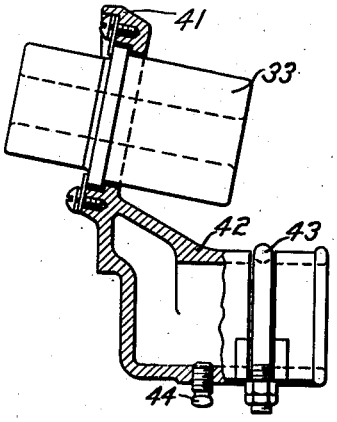



Fig. 10.

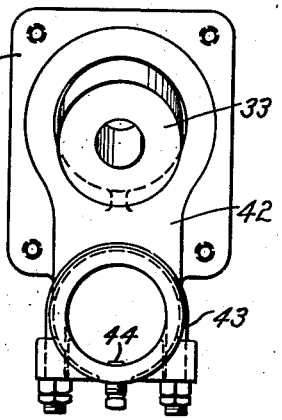



Fig. 11.

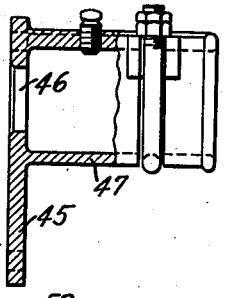



Fig. 12.

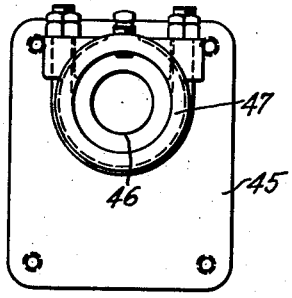



Fig. 13.

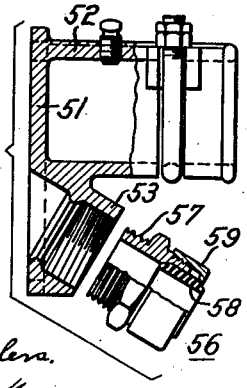
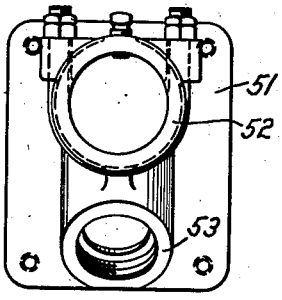



Fig. 14.




WITNESSES:

Wm. B. Sellers.

Fred C. Wilkins

INVENTOR

Samuel B. Kraut.

BY

G. M. Crawford

ATTORNEY

Patented Dec. 28, 1943

2,337,824

# UNITED STATES PATENT OFFICE

2,337,824

## UNIVERSAL STREET LIGHTING LUMINAIRE

Samuel B. Kraut, Cleveland Heights, Ohio, assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania

Application June 18, 1940, Serial No. 341,087

9 Claims. (Cl. 240—25)

My invention relates, generally, to luminaries, and more particularly, to hood assemblies for street lighting luminaires of the pendant type.

Heretofore, it has been common practice to make hoods for street lighting luminaires to suit the kind of installation desired, i. e., the hood, which houses the lamp socket and other accessories and to the bottom of which the reflector and/or glassware is attached, was designed for either top or side mounting or inner or outer wiring which was expensive and inefficient both from the standpoint of manufacture and use. The manufacturer had to make up and stock many different designs or styles of complete hoods and the user could not readily and economically change his lighting equipment to meet changing conditions requiring different kinds of mounting, light distribution, etc., without discarding the old equipment and purchasing entirely new and up-to-date equipment. There was not sufficient flexibility in the equipment to permit of the necessary selection of mounting and wiring arrangements, glassware and light distribution. Therefore, with limited municipal appropriations prevalent in many communities, the modernization of street lighting equipment was prohibitive resulting in the continued use of obsolete, inefficient, and perhaps unsafe equipment.

Accordingly, the object of my invention, generally stated, is to provide a new universal hood assembly for street lighting luminaires and the like which shall be of simple and economical construction, which may be readily and economically used, and which shall provide greatly increased flexibility insofar as mounting and wiring arrangements of the luminaire are concerned.

A more specific object of my invention is to provide a hood assembly of the character described which may be readily and economically converted from one type to another to provide for top or side mounting, inner or outer wiring on high and low voltage circuits and various combinations thereof.

Another object of my invention is to provide for converting a hood from one type to another by means of the use of side fittings or conversion plates of different kinds detachably secured to the hood over a side opening therein.

A further object of my invention is to provide a hood assembly for street lighting luminaires the various parts of which are composed of different materials to provide increased strength at reduced cost of manufacture and greater utility.

A still further object of my invention is to provide a construction for universal hood assemblies for luminaires wherein the hood proper may be made of light or inexpensive material, as aluminum or cast-iron, and the conversion plates may be made of stronger and more substantial material, such as steel or the like, especially where side mounting is desired, and thereby eliminate the necessity and expense of making the complete hood including the mounting bracket or socket out of steel or other high-strength and expensive or heavy material.

These and other objects of my invention will become more apparent from the following detailed description when read in conjunction with the accompanying drawings in which:

Figure 1 is a partially sectionalized view in elevation of one form of hood assembly embodying the principal features of my invention;

Fig. 2 is a front elevational view of the hood assembly of Fig. 1 showing one form of side fitting or conversion plate attached thereto;

Fig. 3 is a partially sectionalized top view of the hood assembly of Fig. 1;

Fig. 4 is a partially sectionalized view in elevation of a modification of the hood of Fig. 1;

Fig. 5 is a cross-section view in elevation along line V—V of Fig. 6 of one form of side fitting or conversion plate;

Fig. 6 is a front view in elevation of the fitting of Fig. 5;

Fig. 7 is a side elevational view, partially in section, of a side fitting provided with a high-voltage insulator for the lead-in cable;

Fig. 8 is a front view in elevation of the fitting of Fig. 7;

Fig. 9 is a side elevational view, partly in section, of another form of side fitting provided with a high-voltage insulator and bracket for side mounting;

Fig. 10 is a front view in elevation of the fitting of Fig. 9;

Fig. 11 is a side elevational view, partly in section, of another form of fitting provided only with a bracket for side mounting;

Fig. 12 is a front view in elevation of the fitting of Fig. 11;

Fig. 13 is a side elevation view, partly in section, of another form of fitting provided with a bracket and threaded opening for lead-in cable and packing gland; and

Fig. 14 is a front view in elevation of the fitting of Fig. 13.

In practicing my invention, the hood assembly may comprise the hood itself and a plurality of side fittings therefor in the form of conversion plates of various types to adapt the hood for top

mounting with inner or outer wiring, with one two-conductor cable or two single-conductor cables on low voltage circuits, or one two-conductor cable on high-voltage circuits, as the case may be.

The hood may be provided with a threaded top opening for top mounting and this opening closed by a pipe plug when side mounting is used or where top mounting will not be required at all, the hood may have a solid top. The hood is further provided with a relatively large side opening surrounded by a flange and flat seating or bearing surface to receive the various types of side fittings, all of which have corresponding bearing surfaces. The side fittings are all interchangeable and are attached to the hood by means of suitable screws or stud bolts. Various kinds or types of side fittings are provided. Where the hood is provided with a threaded top opening and is to be top mounted with inner wiring, a plain or solid side fitting or conversion plate is used to entirely enclose the side opening. Where top mounting is desired with side outer wiring, different types of side fittings are used, depending upon the kind of conductor cable to be used and the voltage of the circuit. For low voltage circuits, a side fitting having either a single opening with an entrance bushing or gland for a double conductor cable or two openings with entrance bushings for single conductor cables are used. For high-voltage circuits the side fitting is provided with a porcelain insulator for one double conductor cable or two single conductor cables. Where side mounting is desired the side fitting is provided with a bracket or socket to receive the end of a mastarm or the like, and the top opening in the hood is closed by a pipe plug. Inner wiring may be made through the mastarm and bracket on the fitting. If outer side wiring is desired, the side fitting is provided with suitable bushings or glands to accommodate low voltage conductor cable or a porcelain insulator for high-voltage conductor cable. This design of hood assembly makes it possible to use the most suitable materials for economy and strength as the hood proper may be made of cast-iron and the fitting plates of other suitable high-strength material such as brass, malleable iron, etc.

Referring to Figures 1, 2, 3 and 4 of the drawings, there is shown a hood assembly embodying the principal features of my invention. The hood assembly comprises a metal hood member 10 of the usual shape having an internally threaded boss 11 at the top thereof and downwardly extending portions 12 on the interior thereof for supporting the receptacle 13 and lamp socket 14 in a well known manner.

The hood 10 may be utilized with street lighting luminaries of the totally enclosed type or open type and reflectors and globes may be attached thereto in a well known manner. As shown in Fig. 1 a reflector 15 is attached to the hood 10 by means of the thumb screws 16. It will be understood that the enclosing globe (not shown) is attached to the bottom of the reflector 15 thereby forming a totally enclosed luminaire of the pendant type. If desired, the hood may be used with an open reflector which is usually attached thereto by means of an adapter.

In order to provide a hood assembly which may be utilized for top or side mounting or inner or outer wiring, or either high or low voltage circuits, the hood 10 is provided with a relatively large side opening 20, preferably rectangular in shape as shown. The side opening is formed in the side of the hood as shown best in Fig. 2, and is defined by an outwardly extending boss or shoulder portion 17 so as to provide a relatively flat bearing surface 18. This bearing surface is preferably surrounded by a flange 19 as shown in Figs. 1 and 2. It is to be understood, however, that any other shape of side opening may be used and that the bearing surface 18 may be shaped in any other suitable way.

The purpose of this side opening 20 is to provide for utilizing conversion plates or side fittings of different types depending upon the kind of mounting and wiring desired. One form of fitting 21 is shown in Figs. 1 and 2 and this is nothing more than a solid flat plate which is utilized to completely enclose the side opening in the hood. The plate 21 may be detachably secured to the hood in any suitable manner such as by means of the screws 22 which engage threaded openings in the corners of the bearing surface 18 as shown in Fig. 3. When the solid plate 21 is used the hood assembly is adapted for top mounting and inner wiring through the threaded boss 11.

In the event that it is not desired to support the hood from an overhead bracket, it may be constructed in the form shown in Fig. 4 which is generally the same as the hood shown in Fig. 1 except that it does not have a top opening. It is, however, provided with a side opening of the kind shown in Fig. 1.

Another form of side fitting is shown in Figs. 5 and 6. In this instance the fitting 22 is in the form of a plate similar to the fitting 21 except that it is provided with an opening 23 to receive a two-conductor cable for outer wiring. An outwardly extending boss 24 on the face of the plate is internally threaded to receive a suitable bushing or gland 25. The bushing comprises a packing member 26, washer 27 and a nut 28 which engages the threaded boss 24 to compress the packing 26 tightly about the conductor. This plate is provided with a single opening for double-conductor cables, round or oval. However, it will be understood that two openings of this kind may be provided when it is desired to use single-conductor cable.

When it is desired to use top mounting and side wiring on high-voltage circuits, a side fitting of the kind shown in Figs. 7 and 8 may be utilized. This fitting comprises a plate member 31 having a relatively large opening 32 therein adapted to receive a tubular insulator 33 which may be composed of porcelain or other suitable insulating material. The opening 32 is defined by a flange 34 which engages the external flange 35 on the insulator and the flanges 34 and 35 are held in engagement by means of a holding ring 36 attached to the plate by means of screws 37.

In the event that it is desired to use side mounting and side wiring of the outer or exposed type on high-voltage circuits, a side fitting of the kind shown in Figs. 9 and 10 may be utilized. In this instance, the plate member 41 of the fitting is generally the same as that shown in Fig. 7 except that it is also provided with a socket or bracket portion 42 adapted to receive the end of a mastarm. The socket is provided with a suitable U-bolt 43 for securing it to the end of the mastarm and a setscrew 44 for preventing any relative rotational movement therebetween.

The side fitting shown in Figs. 11 and 12 may be utilized where it is desired to use side mounting

and inner wiring, and in this instance the plate 45 is provided with an opening 46 and a socket member 47 of similar construction to that shown in Fig. 9. The conductor cable in this instance extends through the mastarm and into the interior of the hood through the opening 46.

Where it is desired to use side mounting and outer wiring on low voltage circuits, the fitting shown in Figs. 13 and 14 may be utilized. In this instance, the plate 51 is provided with a socket 52 of the same general construction as the sockets of Figs. 9 and 11, and also with a threaded boss 53 of the same construction as that shown in Fig. 5. In this instance a bushing or gland 56 of the water-tight type is utilized to close the opening in the boss 53 through which the double-conductor cable may extend. The gland 56 comprises an externally threaded nipple 57, a rubber packing 58 and a nut 59 which is threaded onto the outside of the nipple and serves to compress the rubber gasket 58 into engagement with the outside of the conductor cable, thereby providing a water-tight joint.

It will be readily understood that this type of construction of the hood assembly makes it possible to use materials of different kinds in the construction of the hood proper and the conversion plates or side fittings. For example, the hood proper may be constructed of cast-iron and the side plates or fittings may be constructed of a material having a higher strength such as malleable iron or brass. This not only reduces the cost of manufacture, but provides the necessary strength and flexibility in the part of the assembly which is subjected to strain.

In view of the foregoing description, it will be apparent that my invention provides a hood assembly for use with street lighting luminaires which is not only more economical to manufacture, but which may be used more economically for the reason that one hood may be converted for a number of different kinds of installation by merely changing the form of side fitting or conversion plate used. By the use of this arrangement the manufacturer or user is required to carry only one type of hood in stock, together with a number of conversion plates of different kinds instead of a complete integral hood assembly for each kind of mounting and wiring which may be used. In addition, the cost of patterns and tools in the manufacture of a device of this kind is considerably reduced by making the hood and conversion plates or side fittings in separate pieces instead of in a single piece as heretofore practiced.

By the use of the hood assembly of the kind described, the user may readily and economically change from one kind of mounting or wiring as desired. This enables municipalities with limited budgets to modernize their street lighting equipment without going to a considerable expense caused by the scrapping of luminaires in use. When the assembly as disclosed is utilized in the original installation regardless of the type of mounting or wiring, it may be readily and economically changed over to any different type of mounting or wiring in order to meet changing conditions.

Since certain changes may be made in the above described construction and different embodiments of the invention may be made without departing from the spirit thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. In combination, a cup-shaped metallic hood for street lighting luminaires, said hood having a relatively large side opening, a separate metallic side fitting detachably secured to the hood over said opening, said fitting having a cover plate portion with an opening therein to receive a lead-in conductor and a bracket portion thereon adapted to receive a side mounting support, and a separate insulator member mounted in said opening in the plate portion of the fitting.

2. In combination, a cup-shaped hood for street lighting luminaires, said hood having a relatively large side opening, a separate side fitting detachably secured to the hood over said opening, said fitting having a cover plate portion with an opening therein provided with a seating flange to receive a lead-in conductor, an insulator mounted within the said opening and having a mounting flange engaging the seating flange on the fitting, and means detachably securing the insulator to the fitting.

3. A hood assembly for luminaires comprising, an inverted cup-shaped metallic hood member, said hood member having a relatively large rectangular side opening surrounded by a bearing surface, a separate metallic side fitting for attachment to the hood over the side opening, said fitting having a plate portion with a complementary bearing surface and having an integral outwardly extending socket portion thereon for engaging a side mounting support member, and separate means extending through the plate portion of the fitting into engagement with the hood member for detachably securing the fitting to the side of the hood member over the side opening.

4. A hood assembly for luminaires comprising, an inverted cup-shaped metallic hood member, said hood member having an outwardly extending shoulder portion on one side with a relatively large side opening in the shoulder portion, said shoulder portion forming a flat side bearing surface around the opening, a side fitting comprising a plate portion with a supporting bracket thereon and with a complementary bearing surface, said side fitting being detachably secured to the bearing surface of the shoulder portion over said side opening to provide a hood assembly adapted for side mounting.

5. A hood assembly for luminaires comprising, an inverted cup-shaped hood member, said hood member having a relatively large side opening defined by a bearing surface on the side of the hood member surrounded by an outwardly extending flange portion, a side fitting having an integral plate portion with a complementary bearing surface positioned upon the bearing surface within the flange portion to close the side opening, said side fitting being provided with an outwardly extending bracket portion for mounting the hood assembly for side support, and a plurality of screw members extending through openings in the plate portion into threaded openings in the hood member for detachably securing the side fitting thereto.

6. A hood assembly for luminaires comprising, an inverted cup-shaped metallic hood member provided with a relatively large side opening surrounded by a bearing surface, and a separate side fitting detachably secured to the hood member over the side opening, said side fitting

comprising a cover plate portion engaging the bearing surface of the hood member and a bracket portion for mounting the hood assembly on a support.

7. A hood assembly for luminaires comprising, an inverted cup-shaped metallic hood member provided with a relatively large side opening surrounded by a bearing surface, and a separate side fitting detachably secured to the hood member over the side opening, said side fitting comprising a cover plate portion with a conductor lead-in opening therein and a bracket portion for supporting the hood assembly.

8. A hood assembly for luminaires comprising, an inverted cup-shaped metallic hood member, said hood member having a relatively large rectangular opening in the side thereof surrounded by a flat outwardly facing bearing surface with spaced threaded openings therein, a separate side fitting having a cover plate portion with a complementary bearing surface positioned over said side opening in the hood member, said plate portion having an integral bracket portion thereon for attaching the head assembly to a support and openings therein corresponding in position to the threaded openings in the bearing surface of the hood member, and screws extending through the openings in the said plate portion into engagement with said threaded openings to detachably secure the side fitting to the hood member.

9. In combination, a cup-shaped metallic hood for street lighting luminaires, said hood having a relatively large side opening with an outwardly extending flange portion disposed thereabout and spaced from the edges of said side opening, and a separate metallic side fitting having a cover plate portion detachably secured to the hood over said side opening within the flange portion, said cover plate portion being provided with a supporting bracket portion thereon, said flange portion extending outwardly over the joint between the side of the hood and cover plate portion of the side fitting.

SAMUEL B. KRAUT.