PORTABLE FLUORESCENT LANTERN

Inventor: Robert E. Brindley, New York, N.Y.
Assignee: Union Carbide Corporation, New York, N.Y.

Filed: Feb. 8, 1974
Appl. No.: 440,797

Related U.S. Application Data

U.S. Cl........ 240/10.63, 240/11.4 R, 240/51.1
Int. Cl.......................... F21l7/00
Field of Search.......... 240/11.4 R, 11.2, 10.63

References Cited
UNITED STATES PATENTS
1,218,162 3/1917 Becker.................. 240/10.63 X
1,282,219 10/1918 Grether............... 240/10.63
2,413,599 12/1946 Beck .................. 240/11.4 R X
2,435,164 1/1948 Sobel.................. 240/11.4 R X
2,885,539 5/1959 McDermott ............ 240/10.63 X
3,604,920 9/1971 Niles .................. 240/11.4 R

Disclosed is a portable fluorescent lantern comprising two separate casings which are joined together in the normal portable mode of operation, one of which casings contains the main lantern parts including the fluorescent lamp, a lens and a reflector as well as the electrical circuit and related components for operating the lantern, and the other of which casings contains one or more high voltage batteries which serve as the DC power supply. The lantern may be operated with the two casings joined together or detached from one another with one of the casings being placed in a location remote from the other casing. An electrical cord is used for making electrical connection between the fluorescent lamp in one casing and the batteries in the other casing.

10 Claims, 9 Drawing Figures
PORTABLE FLUORESCENT LANTERN

This is a continuation, of application Ser No. 285,232, filed Aug. 31, 1972.

BACKGROUND OF THE INVENTION

The present invention relates to portable lighting devices in general, and more particularly to improvements in a portable fluorescent lantern of the type wherein the batteries that power the lantern are enclosed inside the lantern along with the lantern parts including the fluorescent lamp, lens and reflector.

Fluorescent lighting devices have been used for many years now both in industry and the household. These fluorescent lighting devices offer a number of outstanding advantages over the more conventional incandescent lighting devices among which may be mentioned the fact that they consume less power and are able to operate more efficiently and also they produce a softer and more widely distributed pattern of light. With these advantages in mind, attempts have been made in recent years to manufacture a portable fluorescent lantern. One of the requirements of such a lantern is the provision of a high voltage DC power supply to operate the fluorescent lamp. Although this requirement can be readily satisfied through the use of one or more special high voltage batteries which are now commercially available, the problem has been that these batteries are necessarily made of an unusually large size, that is, they comprise a plurality of individual flat electrochemical cells which are stacked in series in order to attain the high voltages required, and they are of course bulky and heavy. Since the lantern must be designed to accommodate these high voltage batteries along with the main lantern parts, the structure of the lantern must also be made unusually large, bulky and heavy. Consequently, the lantern is awkward and difficult to carry. This of course seriously limits the use of the lantern in many applications.

Accordingly, it is the principle object of the invention to provide a portable fluorescent lantern which uses one or more of the special high voltage batteries that are required for its operation but which at the same time is not limited by its size and weight and which can be easily carried from place to place without undue difficulty and which can be readily utilized in a variety of applications that were not heretofore practicable with the portable lanterns of the prior art.

SUMMARY OF THE INVENTION

Briefly the invention by means of which the above object is achieved comprises a portable fluorescent lantern including two separate casings which are joined together in the normal portable mode of operation but which may be detached from one another and used separately to operate the lantern, one of which casings contains the main lantern parts including the fluorescent lamp, a lens and a reflector as well as the electrical circuit and relating components for operating the lantern, and the other of which casings contains one or more of the high voltage batteries which serve as the DC power supply. The electrical components for operating the lantern include a ballast transformer and switches for starting and operating the fluorescent lamp. Means are also provided for electrically connecting the fluorescent lamp, transformer and switches in one casing with the high voltage batteries contained in the other casing. In the preferred embodiment of the invention, such means may include an electrical cord having a conventional two-prong plug at one end. The casing containing the batteries may also include a conventional electrical receptacle for receiving the two-prong plug of the extension cord. Both of the two casings are further provided with means for detachably joining the casings together, such as a slidable latch mechanism.

BRIEF DESCRIPTION OF THE DRAWING

A better understanding of the invention may be had by reference to the following detailed description of a preferred embodiment thereof taken in connection with the accompanying drawing, wherein:

FIG. 1 is a perspective elevational view of the portable fluorescent lantern;
FIG. 2 is a front elevation view thereof;
FIG. 3 is a perspective elevational view of the lantern with parts being shown in exploded fashion in order to illustrate the assembly in greater detail;
FIG. 4 is an elevational view taken along the line 4--4 in FIG. 3;
FIG. 5 is an elevational view taken along the line 5--5 in FIG. 3;
FIG. 6 is a top plan view of the lantern with part being broken away to show details of construction;
FIG. 7 is a side elevational view of the lantern also with part being broken away to show details of construction;
FIG. 8 is a schematic representation of the electrical circuit used in the lantern; and
FIG. 9 is a perspective view of the lantern in reduced scale showing the two casings detached from one another for use separately in operation of the lantern.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in detail and more particularly to FIGS. 1--3, it will be seen that the embodiment of the portable fluorescent lantern illustrated comprises two separate, complimentary, elongated rectangular shaped casings 10, 11 which are both made of a one-piece molded plastic structure. Both casings 10, 11 are preferably molded from a high shock resistant, flame retardant plastic composition such as a modified acrylonitrile butadiene styrene copolymer. The two casings 10, 11 in the normal portable mode of operation as illustrated are detachably joined together by means of a slidable latch mechanism which will be hereinafter described in detail.

The casing 10 incorporates the main lantern parts including an elongated rectangular lens 12, the fluorescent lamp 13, an elongated rectangular, metal reflector 14 as well as the electrical circuit and circuit components for operating the fluorescent lamp 13, while the casing 11 contains a pair of elongated rectangular high voltage batteries 15, 16 (see FIG. 5) which are mounted therein in side by side relation.

As more particularly shown in FIG. 3, the molded casing 10 has a top wall 17, bottom wall 18, two side walls 19, 20 and a partial front wall 21 which is located adjacent the top wall 17. The front wall 21 terminates a short distance below the top wall 17 and is formed integrally at its lower edge with an inner panel 22 (see FIG. 7) which projects rearwardly inside the casing 10. The panel 22 together with the top wall 17 and front
3,875,398

3,875,398 3 wall 21, defines an upper compartment 23 for receiving one of the fluorescent lamp holders as shall be herein-after described. To accommodate the switch components as shall also be described, the top wall 17 is formed with a generally U-shaped cut-out portion 24 which is open at the rearward end of the casing 10. Support for the two side walls 19, 20 is provided by three spaced apart rib structures 25, 26 and 27 which are molded integrally with the casing 10. The upper and lower rib structures 25 and 27 are each provided with two apertures through which pass metal screws 28 in assembly of the casing 10, only three of the apertures 25a, 25b on the rib structure 25 and the aperture 27b on the rib structure 27 being shown in the drawing. A second inner panel 29 is formed integrally with the side walls 19, 20 at the lower end of the casing 10. This panel 29 is spaced a short distance from the bottom wall 18 to form a narrow slot 30 (see FIG. 7) and is further provided with a semi-circular cut-out portion 31 in order to accommodate the other fluorescent lamp holder as shall be described. The casing 10 is open at its forward end between the two panels 22, 29 and has an open rearward end. Both of the side walls 19, 20 are formed with elongated rectangular recess portions 32, 33 respectively which extend along the length of the forward open end of the casing 10. The two side walls 19, 20 are further formed along the front longitudinal edge portion with shoulders 34, 35 (see FIG. 6) for purposes of mounting the lens 12 and reflector 14.

The rectangular metal reflector 14 is parabolic in shape as more particularly shown in the view of FIG. 1 and preferably is painted white on the front surface 14a thereof. The metal reflector 14 covers the forward open end of the casing 10 and is provided along its opposite longitudinal edges with V-channels 36, 37. In assembly, the metal reflector 14 is pressed within the forward open end of the casing 10 until the edges of the V-channels 36, 37 engage and lock with the shoulders 34, 35 formed on the two side walls 19, 20 (see FIG. 6). It will be noted that the metal reflector 14 is nearly flat prior to assembly as shown in the view of FIG. 3 but readily bends into parabolic shape when pressed into the forward open end of the casing 10. Preferably, the rib structures 25, 26 and 27 are also made parabolic in shape in order to support the metal reflector 14 in its proper configuration.

The rectangular lens 12 may be made from high impact styrene or other clear plastic composition and is made of a size corresponding substantially to the forward open end of the casing 10. The lens 12 is formed with a flat front wall 12a and two opposite longitudinal side walls 12b, 12c which fit within the rectangular recess portions 32, 33 on the two casing side walls 19, 20. The two opposite side walls 12b, 12c are each formed along their longitudinal edges with small outwardly projecting lips 38, 39, which fit underneath the reflector V-channels 36, 37. The lips 38, 39 also engage with the shoulders 34, 35 on the two casing side walls 19, 20 in order to lock the lens 12 in place (see FIG. 6). It will be noted of course that this fluorescent lamp 13 must be inserted into both of its lamp holders prior to assembly of the lens 12.

Mounted within the rear open end of the casing 10 is a one-piece molded plastic, elongated rectangular basal structure 40 which serves as a support for mounting the circuit components and also as a cover for the casing 10. This basal structure 40 is preferably molded from the same shock resistant, flame retardant plastic composition used for both casings 10, 11. The framework of the basal structure 40 includes a back wall 41, a top wall 42, a bottom wall 43 and two opposite longitudinal side walls 44, 45. The two side walls 44, 45 are formed respectively with stepped surface portions 44a, 45a which are adapted to fit inside the rear open end of the casing 10 while the remaining portion of the two side walls 44, 45 lie flush with the casing side walls 19, 20. The two side walls 44, 45 are further formed with rearward facing projections 44b, 45b which are adapted to fit inside the casing 11. Both the top wall 42 and bottom wall 43 lie in planes substantially perpendicular to the back cover 41 and are disposed a short distance respectively below and above the top and bottom edges thereof. It will be seen by this construction that the top wall 42 in assembly of the lantern fits inside the upper compartment 23 (see FIG. 7) while at the same time the bottom wall 43 fits inside the narrow slot 30 formed by the inner panel 29 at the lower end of the casing 10.

The top wall 42 of the basal structure 40 is further formed with an upstanding rib 46 which corresponds in both size and shape to the generally U-shaped cut-out portion 24 on the top wall 17 of the casing 10 and thus snugly fits into this opening. The basal structure 40 is further integrally formed with two spaced apart inner panels 47, 48 which substantially coincide with the two rib structures 25, 27 in the casing 10. Each of the two panels 47, 48 are further formed with two cylindrical studs 47a, 47b and 48a, 48b, respectively, which coincide with the two apertures, e.g. 25a, 25b, formed in each of the rib structures 25, 27. These studs are internally threaded for receiving the metal screws 28 which pass through the apertures formed in the rib structures 25, 27.

The basal structure 40 is further integrally formed with a third inner longitudinal panel 49 which intersects the two other inner panels 47, 48. It will be seen by this construction that the framework of the basal structure 40 is divided by the three panels 47, 48 and 49 into four separate compartments, that is, an upper compartment 50 between the top wall 42 and the upper panel 47, two longitudinal side by side compartments 51, 52 separated by the inner panel 49 and a bottom compartment 53 between the lower panel 48 and the bottom wall 43 (see FIG. 4).

Mounted within the upper compartment 50 of the basal structure 40 is the switch component 54 which is secured to the top wall 42 by means of two metal screws 55, 56. The switch component 54 is of a conventional type including three individual cam operated, sliding contact switches which are represented by the reference symbols S1, S2 and S3 in the schematic circuit diagram shown in FIG. 8. Operation of the electrical circuit will be hereinafter described in detail but for the moment, suffice it to say that the switches S1, S2 and S3 each respectively include switch buttons 57, 58 and 59 which protrude through an elongated slot 60 formed within the top wall 42. Also included in the circuit as shall be described is a voltage dropping resistor 61 which is mounted beneath the switch component 54 and connected in parallel with one of the switches (S2) by soldering its leads to switch lugs 63, 64. Also mounted beneath the switch component 54 is a capacitor 65 (see FIG. 7) which is connected in parallel with one of the
3,875,398

other switches (S₃) by soldering its leads to switch lugs 66, 67.

A ballast transformer 68 which is necessary for starting the fluorescent lamp 13, is mounted to the back wall 41 of the basal structure 40 within one of the longitudinal compartments 51. One of the fluorescent lamp holders 69 is mounted beneath the top wall 42 at its forward end and is received in assembly within the upper compartment 23 of the casing 10. The other lamp holder 70 is mounted on top of the bottom wall 43 at its forward end and is received in assembly within the cut-out portion 31 formed in the bottom inner panel 29 on the casing 10. It will be noted here that both of the lamp holders 69, 70 are positioned to receive the fluorescent lamp contact pins 13a, 13b in the usual manner and to tightly hold the fluorescent lamp 13 in its place in front of the metal reflector 14. It will be further noted that the inner panel 22 which extends into the casing 10 is formed with a semi-circular cut-out portion 71 (see FIG. 2) in order to accommodate the upper end of the fluorescent lamp 13.

Mouther within the other longitudinal compartment 52 of the basal structure 40 is a double wire extension cord 72 having a conventional two-prong plug 73 at one end. It will be noted that the electrical cord 72 is shown broken away (FIGS. 3 and 4) but in actual practice the cord is made of a substantial length, say about six feet. The other end of the electrical cord 72 mounted mounted within slotted housing 74 which in turn is mounted within a slot 75 in the lower inner panel 48. The electrical cord 72 passes through the housing 74 into the lower compartment 53 where it is separated into two individual wires 72a, 72b. One of the wires 72a is connected by means of nut 76 to one of the terminal wires 68a of the ballast transformer 68. The remaining wire 72b passes through the longitudinal compartment 51 and into the upper compartment 50 where it is connected to one of the switch lugs (not shown) on the rear side of the switch component 54 in the view of FIG. 4. The other transformer terminal wire 68b is connected by means of nut 77 to one of the wire leads 70a from the lower lamp holder 70. The other lead wire 70b from the lamp holder 70 passes through the compartment 51 and into the upper compartment 50 where it is connected to the switch lug 67 (see FIG. 7). In a similar manner, one of the wire leads 69a from the upper fluorescent lamp holder 69 is connected to the switch lug 66 while the other lead 69b is connected to the switch lug 64.

The one-piece molded plastic casing 11 which contains the two high voltage batteries 15, 16, is integrally formed with a top wall 78, bottom wall 79, back wall 80, two side walls 81, 82 and has an open forward end. The top wall 78 is formed with a generally U-shaped cut-out portion 83 which is open at the forward end of the casing 11. Depending from the top wall 78 are two short inner walls, only one of which is shown at 84 in the view of FIG. 3, which walls reside respectively in close parallel relation to the two side walls 81, 82. The two short inner walls are each provided with an aperture such as shown at 85 which correspond with apertures (not shown) in the top portion of both side walls 81, 82 for purposes of mounting a metal U-shaped handle 86. The handle 86 is mounted to the casing 11 by means of rivets 87, 88 (see both FIGS. 1 and 3) which passes through the coinciding apertures in both the two inner walls and the side walls 81, 82. The handle 86 can be rotated about the rivets 87, 88 to an upstanding position for purposes of carrying the lantern such as shown in the view of FIG. 3. Alternatively, the handle 86 can be rotated backwards until it lies flush with the back wall 80 as shown in the view of FIG. 1. The top rearward portion of the casing 11 is contoured to provide a space for accommodating the handle 86 when rotated to this position.

A one-piece molded plastic insert structure 89 is mounted within the uppermost portion of the casing 11. This insert structure 89 is also preferably molded from the same shock resistant, flame retardant plastic composition, and has a front wall 90 which resides within the open end of the casing 11. The front wall 90 is recessed a short distance back from the marginal edges of both the top wall 78 and the two side walls 81, 82. The insert structure 89 is further formed with a top wall 91 and a bottom partition wall 92. The top wall 91 is formed with an upstanding rib 93 which in assembly is adapted to fit snugly within the generally U-shaped cut-out portion 83 on the top casing wall 78. The bottom partition wall 92 is substantially perpendicular to and fits snugly inside the casing 11. It will be noted that the partition wall 92 deviates inwardly from the rear of the casing 11 into an upper compartment 94 and a lower compartment 95 (see FIG. 7). The two high voltage batteries 15, 16 are mounted inside the lower compartment 95 and rest on a plurality of supporting ribs 96 formed within the bottom of the casing wall 79. The front wall 90 of insert structure 89 is formed along its lower longitudinal edge portion with a slightly inwardly tapered recess 97 for receiving the upper edge of a flat metal battery cover 98. The front wall 90 is further integrally formed with two rectangular blocks 99, 100, the lower edges of which protrude over the inwardly tapered recess 97 for locking the battery cover 98 in place. Four spaced apart, hollow cylindrical studs 101–104 are integrally formed on the back side of front wall 90. These studs are adapted to mate with corresponding spaced apart, hollow cylindrical internally threaded studs 105–108 formed integrally with the back wall 80 of casing 11. The upper pair of studs 101, 102 communicate with apertures 109, 110 formed within the front wall 90 (see FIG. 5) while the lower pair of studs 103, 104 communicate with apertures 111, 112 formed within the blocks 99, 100. Four metal screws (only one being shown at 113 in FIG. 3) inserted through the apertures 109–112 and engaging the corresponding threaded studs 105–108, are used to secure the insert structure 89 in place within the casing 11. In order to secure the battery cover 98 within the open end of the casing 11, the forward marginal edge of the bottom wall 79 is formed with a lip 114 behind which resides the lowermost edge of the cover 98. It will be noted that the cover 98 can be readily removed in order to replace the batteries 15, 16 by simply lifting the cover 98 upwardly into the inwardly tapered recess 97 so that its lower end will freely clear the lip 114. An electrical receptacle 115 of conventional design adapted to receive the two-prong plug 73 of the electrical cord 72, is mounted within a rectangular slot 116 formed in the front wall 90 of insert structure 89 and has its rearward end portion projecting into the upper compartment 94. Four metal leaf spring clips (only two of which are shown at 117, 118 in the view of FIG. 7) are mounted beneath the partition wall 92 and are adapted to resiliently contact the positive and negative
terminal posts on each of the two high voltage batteries 15, 16. The wire lead 115a leading from the receptacle 115 is connected to one of the metal clips which contacts the positive terminal post of the battery 15 by soldering it to a part of the clip (not shown) which extends through the partition wall 92. The other wire lead 115b is connected to the metal clip 118 contacting the negative terminal post of the battery 16 also by soldering it to a part of the clip which extends through the partition wall 92. An arc stabilizing resistor 119 is connected in series between the negative terminal post of the battery 15 and the positive terminal post of the battery 16 by soldering its wire leads in a similar manner to the two remaining metal clips.

A slidable latch mechanism indicated generally by the reference numeral 120 is provided for detachably joining together the two casings 10, 11. It will be noted first of all that the two casings 10, 11 are joined at the bottom of the assembly by the provision of a tongue 121 which is found at the lowermost edge of the basal structure 40 (see Fig. 7). This tongue 121 is locked behind the lip 114 on the forward marginal edge portion of the bottom wall 79 of casing 11. As best seen in the view of Fig. 5, the slidable latch mechanism includes an elongated button 122 which rests on the top wall 91 of the insert structure 89. The button 122 is attached to an elongated latch bar 123 located just underneath the top wall 91 by means of a rivet 124 which is free to slide along an elongated slot 125. The latch bar 123 is formed with two hooks 123a, 123b each of which passes through two coinciding slots 125, 126 provided respectively in the upper portions of both the basal structure 40 and the insert structure 89. It will be seen then that the two casings 10, 11 can be easily locked together or unlocked as the case may be, by simply sliding the elongated button 122 in one direction or the other along the top wall 91.

FIG. 9 shows schematically the manner in which the portable fluorescent lantern of the invention can be used when the two casings 10, 11 are detached. It will be evident of course that in certain applications the size and weight of the lantern assembly may be a limiting factor in the use of the lantern, such as for example when it is desired to employ the lantern as an overhead light. In these situations the casing 10 containing the main lantern parts, may be detached from the casing 11 and placed in the desired location remote from the casing 11. The electrical cord 72 is removed from inside the casing 10 through a rectangular opening 127 provided in the back wall 41 of basal structure 40. The lantern may then be operated simply by inserting the two-prong plug 73 into the electrical receptacle 118. If the electrical cord 72 is not long enough to span the distance between the two casings 10, 11 an extension cord can be used. As shall be more clearly brought out hereinafter, the portable lantern can also be operated from an AC power supply such as a conventional wall outlet as may be found in the household.

Operation of the portable fluorescent lantern of the invention will now be described in detail with reference to the circuit diagram shown in FIG. 8. It will be noted that the circuit comprises two loops, one of which contains the two high voltage batteries 15, 16, the transformer coil 68, switch S1, the main on-off switch, and switch S2, the low illumination switch, while the other loop contains the starting switch S3. The fluorescent lamp 13 is common to both loops. To start the lantern, the starting switch S3 is closed by depressing the starting button 59 which automatically closes the main on-off switch S1 and the low illumination switch S2. This connects the two circuit loops in series so that current from the two batteries 15, 16 is able to flow through the transformer coil 68 and all of the switches S1, S2 and S3. The field which is created by current passing through the transformer coil 68 causes the voltage to rise across the filament of the fluorescent lamp 13. As this current continues to flow, the filament heats up, the lamp fires and the current flows through the lamp 13 bypassing the circuit loop containing the switch S2. If it is desired to operate the fluorescent lamp 13 at low illumination, switch S2 is opened by depressing the switch button 58 whereby the current is caused to flow through the parallel branch including the voltage dropping resistor 61. The fluorescent lamp 13 may be turned off by depressing the switch button 57 which opens the main on-off switch S1. The same procedure is followed in order to again start the fluorescent lamp 13. The capacitor 64 which is connected in parallel with the starting switch S3 prevents arcing across the switch contacts when the switch S3 is opened. The arc stabilizing resistor 119 is necessary in order to maintain operation of the fluorescent lamp 13. Preferably the resistor 119 is connected in series between the two high voltage batteries 15, 16, although this is not necessary so long as the resistor is placed in the same circuit loop. It will be noted of course that the circuit loop containing the two high voltage batteries 15, 16, transformer coil 68 and the switches S1, S2 also includes the extension cord 72 with its plug 73 and the electrical receptacle 115 whereby the two lantern casings 11, 12 can be detached from one another and used separately to operate the lantern.

An important feature of the invention resides in the provision of a transformer coil 68 whose impedance is chosen to substantially match the value of the arc stabilizing resistance 119. Thus when the casing 10 is detached and the lantern is operated from an AC power supply, the coil 68 takes the place of the arc stabilizing resistor 119 to permit continued operation of the fluorescent lamp 13.

It will be evident of course that a number of modifications may be made in the portable fluorescent lantern described hereinafore without departing from the spirit of the present invention. Thus it is possible for example to modify the construction of the casing 11 in order to incorporate the electrical cord 72 or to incorporate either one or both of the switch component 54 and ballast transformer 68. Other modifications will of course be apparent to those skilled in the art.

What is claimed is:

1. A portable fluorescent lantern comprising, in combination:
   a. a first rectangular casing having top and bottom walls and an open forward and rearward end;
   b. a second rectangular casing having top and bottom walls, an open forward end and a closed rearward end, said first and second casings being normally joined together with the forward end of said second casing facing the rearward end of said first casing;
   c. a fluorescent lamp;
   d. a reflector mounted inside said first casing, said fluorescent lamp being positioned in front of said reflector;
   e. a lens mounted within the open forward end of said first casing;
3,875,398

f. a rectangular basal structure mounted within the open rearward end of said first casing, said basal structure including a rear wall which covers the open rearward end of said first casing and a pair of wall members which lie in a plane substantially perpendicular to said rear wall at opposite ends thereof and which protrude within said first casing in close proximity to the top and bottom walls of said first casing;
g. a pair of lamp holders one of which is mounted on one of said pair of wall members for holding said fluorescent lamp in front of said reflector;
h. switch means mounted on a portion of said basal structure and extending through an opening within a corresponding wall portion of said first casing;
i. a ballast transformer for starting said fluorescent lamp mounted on said basal structure within said first casing;
j. an insert structure mounted within a portion of said second casing, said insert structure including a front wall and a partition member which lies in a plane substantially perpendicular to said front wall at one end thereof and which defines a separate compartment within said second casing for containing a battery;
k. means for detachably joining said first and second casings together whereby said lantern may be operated with said first and second casings being joined in an assemblage or detached from one another with one of said casings being placed at a location remote from the other casing;
l. an electrical cord in said first casing connected at one end in series with said fluorescent lamp, switch means and said ballast transformer and having at the other end an electrical plug adapted for connection with an AC power supply receptacle for operating said fluorescent lamp therefrom;
m. an electrical receptacle mounted in the front wall of said insert structure and adapted to receive said electrical plug for operating said fluorescent lamp from said battery in said second casing when said first and second casings are joined together or detached from one another with one casing placed in a location remote from the other casing; and
n. means for making electrical connection between said electrical receptacle and said battery in said second casing.

2. A portable fluorescent lantern as defined by claim 1, wherein said basal structure includes partition wall members which protrude within said first casing and which define separate compartments for said switch means, ballast transformer and said electrical cord.

3. A portable fluorescent lantern as defined by claim 2, wherein the rear wall of said basal structure includes an opening communicating with the compartment containing said electrical cord and through which said cord extends for making electrical connection with the AC power supply receptacle or said electrical receptacle mounted within said insert structure in said second casing.

4. A portable fluorescent lantern as defined by claim 1, wherein said insert structure includes a wall member which protrudes inside said second casing and wherein the means for detachably joining said first and second casing together includes a slidable latch mounted in said wall member and extending through an opening within a corresponding wall portion of said second casing.

5. A portable fluorescent lantern as defined by claim 4, wherein said means for making electrical connection between said electrical receptacle and said battery includes leaf springs mounted within the partition member of said insert structure and adapted to resiliently contact the terminals of said battery.

6. A portable fluorescent lantern as defined by claim 5, wherein a cover is mounted within the open forward end of said second casing overlying the compartment containing said battery and wherein said insert structure includes means for locking said cover in place.

7. A portable fluorescent lantern comprising, in combination:

a. a first rectangular molded plastic casing having top and bottom walls and an open forward and rearward end;
b. a second rectangular molded plastic casing having top and bottom walls, an open forward end and a closed rearward end, said first and second casings being complementary in both size and shape and being normally joined together with the forward end of said second casing facing the rearward end of said first casing, said first and second casings having openings in the top walls thereof adjacent to the open rearward end of said first casing and to the open forward end of said second casing respectively, said openings being coincident when said first and second casings are normally joined together;
c. a fluorescent lamp;
d. a rectangular parabolic reflector mounted inside said first casing, said fluorescent lamp being positioned in front of said reflector;
e. a rectangular molded plastic transparent lens mounted within the open forward end of said first casing;
f. a rectangular molded plastic basal structure mounted within the open rearward end of said first casing, said basal structure including a rear wall which covers the open rearward end of said first casing and a pair of wall members which lie in a plane substantially perpendicular to said rear wall at opposite ends thereof and which protrude within said first casing in close proximity to the top and bottom walls of said first casing;
g. a pair of lamp holders one of which is mounted on one of said pair of wall members for holding said fluorescent lamp in front of said reflector;
h. switch means mounted on one of said wall members and extending through said opening in the top wall of said first casing;
i. a ballast transformer for starting said fluorescent lamp mounted on the rear wall of said basal structure within said first casing;
j. a rectangular molded plastic insert structure mounted within the uppermost portion of said second casing, said insert structure including a front wall, a top wall and a bottom partition member, said top wall and bottom partition member lying in a plane substantially perpendicular to said front wall at opposite ends thereof, said top wall protruding within said second casing in close proximity to the top wall of said second casing, said bottom wall defining a separate compartment within the lower-
most portion of said second casing for containing a battery;
k. a cover overlying said separate compartment for said battery;
l. a slidable latch mounted in the top wall of said insert structure and extending through said opening in the top wall of said second casing, said latch being adapted to detachably join said first and second casings together whereby said lantern may be operated with said first and second casings being joined in one assemblage or detached from one another with one of said casings being placed at a location remote from the other casing;
m. an electrical cord in said first casing connected at one end in series with said fluorescent lamp, switch means and said ballast transformer and having at the other end an electrical plug adapted for connection with an AC power supply receptacle for operating said fluorescent lamp therefrom, said electrical cord extending through an opening in the rear wall of said basal structure;
n. an electrical receptacle mounted in the front wall of said insert structure and adapted to receive said electrical plug for operating said fluorescent lamp from said battery in said second casing when said first and second casings are joined together or detached from one another with one casing placed in a location remote from the other; and
o. means for making electrical connection between said electrical receptacle and said battery in said second casing.

8. A portable fluorescent lantern as defined by claim 7, wherein said basal structure includes partition wall members which protrude within said first casing and which define separate compartments for said switch means, ballast transformer and said electrical cord.

9. A portable fluorescent lantern as defined by claim 8, wherein said first casing is integrally formed with a plurality of rib structures which support said parabolic reflector and which coincide with the partition wall members of said basal structure defining the separate compartments in said first casing.

10. A portable fluorescent lantern as defined by claim 9 wherein said means for making electrical connection between said electrical receptacle and said battery includes leaf springs mounted within the bottom partition member of said insert structure and adapted to resiliently contact the terminals of said battery.

* * * *
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,875,398 Dated April 1, 1975

Inventor(s) Robert E. Brindley

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 3 - line 60, "thhe" should read -- the -- .
5 - " 23, "extension" should read -- electrical -- .
5 - " 29, "mounted monted" should read --is mounted -- .

Signed and Sealed this
twenty-eight Day of October 1975

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks