# United States Patent

**Robinson**

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[54] **LIGHTING FIXTURE UNIT**


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[52] **U.S. Cl.** .....**240/10,** 240/2 BV

[51] **Int. Cl.**.....**F21p 1/02**

[58] **Field of Search**.....240/9, 2 BV, 10, 2 B, 10 T, 240/51.11



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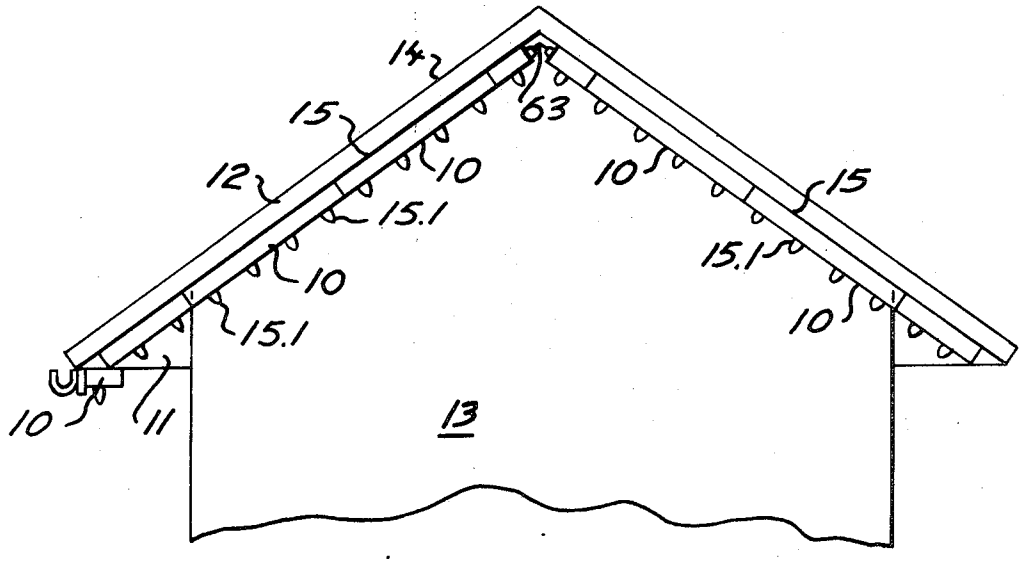
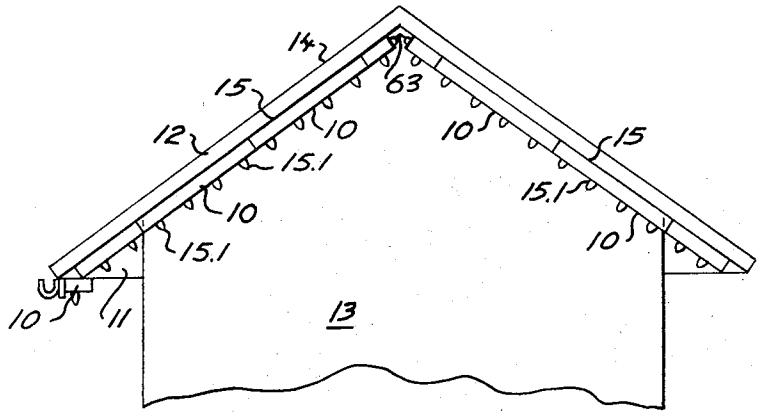
[57] **ABSTRACT**

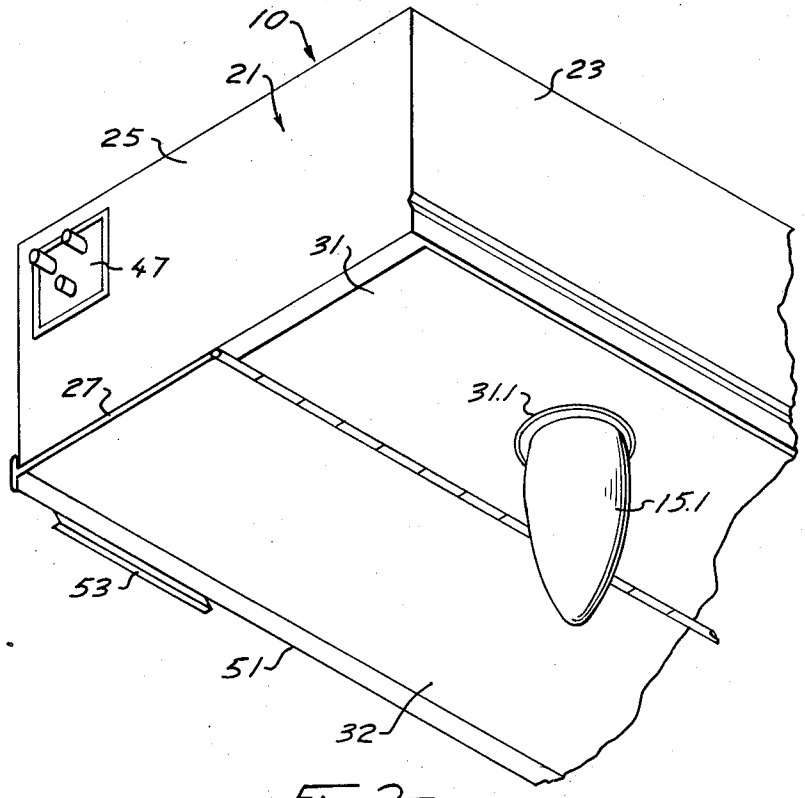
A lighting fixture unit having a housing adapted to be mounted on a building or similar structure, the housing having an opening in a wall on which a door is mounted for movement between open and closed positions. Electric lights are carried in a holder which is swingable in the housing for moving the lights between a hidden portion in the housing and an exposed position extending through the opening.


**7 Claims, 7 Drawing Figures**






-Fig. 1-




-Fig. 2-

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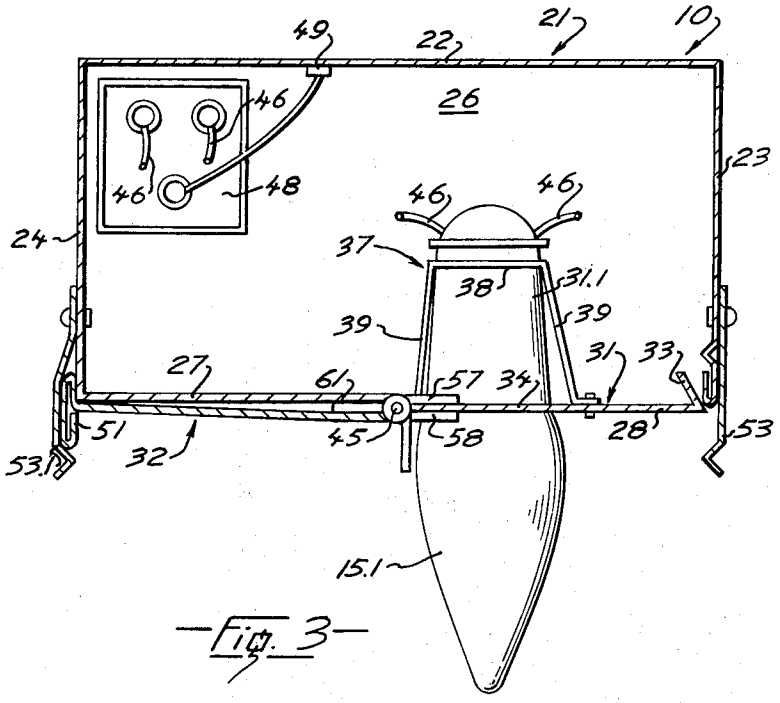


Fig. 3

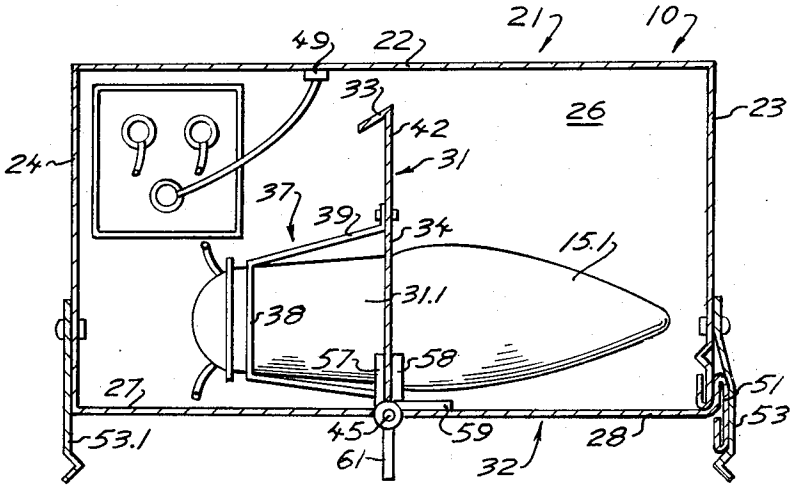


Fig. 4

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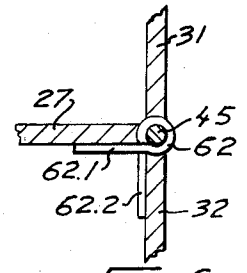


Fig. 6

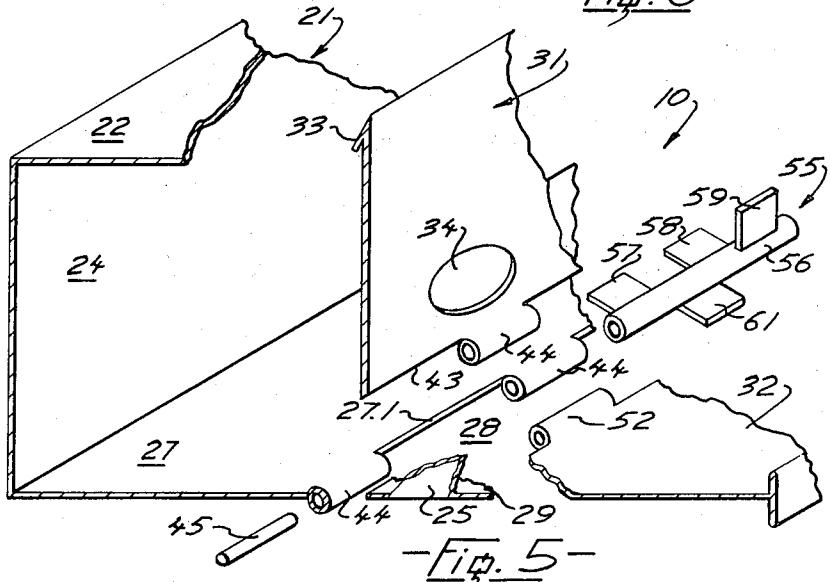


Fig. 5

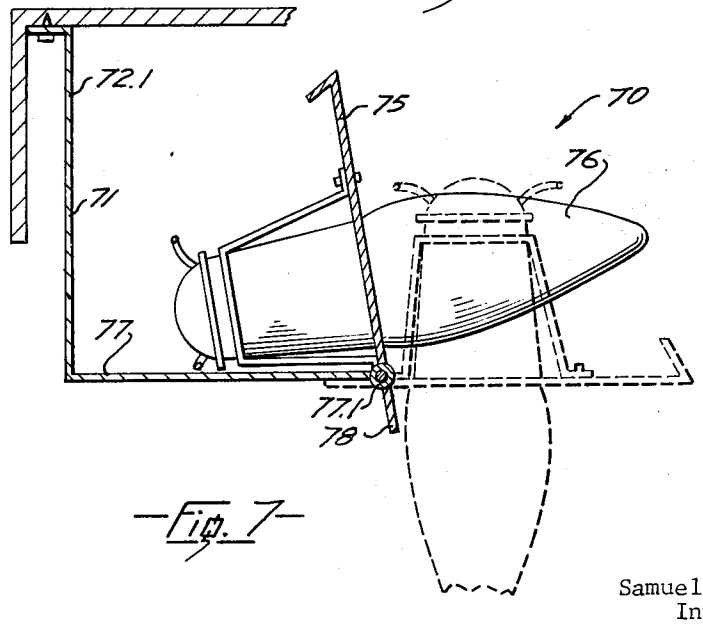


Fig. 7

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# LIGHTING FIXTURE UNIT

## BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to lighting fixtures and in particular, but not restricted to, fixtures for mounting electric lights such as Christmas lights on buildings.

2. Prior Art

It has become common practice to decorate homes during the Christmas holiday season by attaching strings of lights to achieve a decorative effect. The strings of lights are usually secured beneath overhanding eaves and around gables, and are also positioned to outline architectural features of the homes.

The strings of lights are usually secured in place by connectors such as staples, which results, due to repetitive installation and removal, in considerable marring of wooden surfaces. Long strings of lights are difficult to install, consequently a householder is often inclined to leave the lights in place once they are secured. Although this avoids yearly installation and removal, the strings of lights are exposed to weather for the full year resulting in their early deterioration and, furthermore, they add nothing to, and in fact detract from, the appearance of a house between Christmas seasons.

Present methods of securing strings of lights as above mentioned, furthermore often result in a hap-hazard disposition of the lights.

Christmas light holders have heretofore been devised for attachment to houses for presenting strings of Christmas lights in a regular manner and which afford the lights some protection from rain, snow, and the like. The lights, however, are always exposed to view, consequently unless the householder is content to accept detraction from the aesthetic qualities of his home the holders must be installed and removed each Christmas season.

## SUMMARY OF THE INVENTION

The present invention provides a lighting fixture unit which is particularly adapted for permanently securing decorative lighting to houses and other structures and enables lights to be moved between hidden and exposed positions thus overcoming objections above to permanent installation.

The lighting fixture unit of the present invention, furthermore, protects electric lights and wiring from the elements and, furthermore, is relatively inexpensive and simple to install and operate.

The lighting fixture unit of the present invention includes a housing adapted to be mounted on a building, the housing having an opening, a door at the opening moveable between open and closed positions, an electric light holder mounted within the housing for movement between positions in which the lights are disposed in a hidden position within the housing, and an exposed position projecting through the opening.

A detailed description following, related to drawings, gives exemplification of apparatus which, however, is capable of expression in means other than those particularly described and illustrated.

## DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevation of a house showing lighting fixture units, in accordance with the invention, installed,



FIG. 2 is an isometric view of a portion of a unit with lights in an exposed position,

FIG. 3 is a transverse section of the unit with the lights in an exposed position,

FIG. 4 is a view similar to FIG. 3 with the lights in a hidden position,

FIG. 5 is an exploded isometric view of a portion of the unit, parts being removed for clarity of illustration,

FIG. 6 is an enlarged fragmented transverse section of a portion of a unit,

FIG. 7 is a transverse section of a unit of another embodiment of the invention.

## DETAILED DESCRIPTION

FIG. 1

FIG. 1 shows a plurality of lighting fixture units, generally **10**, secured beneath an overhanging eave **11** and a gable **12** of a house **13** to outline a roof **14** of the house. The units, each of which houses a string **15** of electric lights **15.1**, are disposed in end to end relationship, the string of lights in one unit being electrically connected to strings of lights in adjacent units.

FIGS. 2, 3, 4 and 5

The unit **10**, see FIG. 2, has a sheet metal housing **21** which is rectangular in section and which has a top wall **22**, side walls **23** and **24**, end walls **25** and **26**, see FIGS. 2 and 3, and a bottom wall **27**. The bottom wall has a width approximately one-half width of that of the housing and extends from a lower edge of the side wall **24** to a free edge **27.1**, see FIG. 5, so as to provide a longitudinally extending opening **28** width of which is approximately half the housing width. The end wall **25**, see FIG. 5, has an inwardly turned lip **26** defining one end of the opening **28**. The end wall **26** also has an inwardly turned lip, not shown, which defines an opposite end of the opening **28**. The free edge **27.1** of the bottom wall and a lower edge of the side wall define sides of the opening.

The unit includes a holder **31** to which light sockets **31.1** are connected and a door **32** both of which have a hinged connection with the bottom wall **27** at the edge **27.1** of the latter. The holder is a strip of sheet metal, see FIGS. 3, 4 and 5, bent along one edge **33** to stiffen the strip longitudinally, and has a plurality of uniformly spaced apart longitudinally aligned holes **34** for receiving light sockets **31.1**. A connector **37** having a collar **38** engaging a socket, and connecting straps **39** rivetted to the holder, holds each socket in place. Electric lights **15.1** screwed onto the sockets extend outwards of an outer face **42** of the holder.

The light holder is connected to the bottom wall in a piano hinge arrangement, the edge **27.1** of the bottom wall and an edge **43** of the light holder having rolled extensions **44** which form sleeves having a rotatable fit on a longitudinally extending hinge pin **45**. The connection the the holder with the bottom wall enables the holder to be swung between a position extending substantially normal to the bottom wall as seen in FIG. 4 and a position extending across the opening in which it rests on the lip **29** of the end wall **25** and the corresponding lip of the end wall **26**, see FIG. 3. The lights can thus be disposed either in a hidden position within the housing, FIG. 3, or an exposed position in which they extend outwards of the opening beyond the bottom wall, FIGS. 4 and 5. Wiring **46**, see FIGS. 3 and 4,

connects the sockets with a three-conductor plug **47** secured to the end wall **25**, and with a three-conductor receptacle **48** secured to the end wall **26**. The receptacle and plug are grounded as seen at **49** to the housing, and are disposed so that plugs of one unit engage receptacles of an adjacent unit when the units are disposed in end to end relationship as seen in FIG. **1**.

The door **32** is also made of a strip of sheet metal and, as seen in FIGS. **3**, **4** and **5**, is reversely bent along one edge **51** to a T-shape to provide longitudinal stiffness, and has rolled extensions **52** at an opposite edge for engagement with the hinge pin **45**. The door swings between a fully closed position, see FIG. **4**, in which it extends across the opening and a fully open position, FIG. **3**, in which it extends below and parallel to the bottom wall of the housing. Spring clips **53–53.1** are secured to the side walls **23** and **24** of the housing for releasably engaging the edge **51** of the door so as to maintain the door in either its fully open or fully closed positions.

The unit includes a holder operator **55**, see FIG. **5**, mounted on the hinge pin for effecting automatic movement of the light holder when the door is swung between its fully closed and fully opened positions.

The operator **55** has a sleeve **56** from which tabs **57**, **58**, **59** and **61** project laterally. The sleeve has a rotatable fit on the hinge pin and the tabs are disposed so that with the door in its closed position, see FIG. **4**, tabs **57** and **58** extend upwards on opposite sides of and effectively grasp the holder the tab **59** extends at right angles to tabs **57** and **58** in engagement with an inner surface of the door, while the tab **61** extends outwards of the housing at right angles to the door. The door, when swung to its open position, engages the tab **61** after swinging through an arc of 90° thus rotating the operator so that the tab **57** swings the holder to a position across the opening, see FIG. **5**. The door, when swung from its open position to its closed position meets the tab **61** after swinging through an arc of 90° resulting in reverse rotation of the operator so that the tab **58** swings the holder upwards and away from the holder, the lights swinging to their hidden position. The operator is formed from a single piece of sheet steel which is thicker than the sheet metal forming the door so that deflection of the tabs under load, is small.

FIG. **6**

To facilitate movement of the door from its open to its closed position a helical spring **62** having spring arms **62.1** and **62.2** can be mounted under tension on the hinge pin with the arms reacting against the bottom wall and the door for urging the door to swing to a normal closed position. Provision of the spring is desirable but not necessary. It is evident, and to be understood, that provision of the operator, although desirable, also is not necessary. The door and the light holder can be moved by hand, independent of each other.

FIG. **7**

FIG. **7** shows a lighting fixture unit **70** which has an L-shaped housing **71**, one leg **72.1** of the housing being connectable to a holder **75**, similar to the holder **31**, and carrying lights **76** is mounted on a free edge **77.1** of the other leg **77** of the housing in a piano hinge arrangement for swinging the lights between a hidden position as shown in solid outline and an exposed position as shown in broken outline. A tab **78** on the holder engages the leg **77** restraining swinging movement of the holder past the dotted outline position.

## OPERATION AND INSTALLATION

A string of units can be secured in end to end relationship beneath the roof of a house so as to outline the gable or the eaves, the units being secured to the house by screws which are extended through suitable holes in the top wall **22**. The units are disposed in end to end relationship with plugs of each unit extending into receptacles of a unit adjacent so that the strings of lights in the units are electrically interconnected. Connection of strings of lights of a pair of units can also be effected by a short length of electric cable **63**, see FIG. **1**, having a plug receptacle for connection with a receptacle and plug of said pair of units.

The housing and door of each of the units can be colored to match the house trim. The under surface of the holder can be similarly colored or can be reflectorized.

I claim:

**1.** A lighting fixture unit including:

a. a housing having an opening,

b. a light holder carrying a string of interconnected electric lights, swingably mounted in the housing for swinging the lights between a hidden position in the housing and an exposed position projecting through the opening,

c. a door connected to the housing at the opening for movement between an open position and a closed position,

d. means responsive to movement of the door for automatically moving the lights from their hidden to their exposed positions when the door is moved from its closed position to its open position, and for returning the lights to their hidden positions when the door is moved from its open to its closed position.

**2.** A lighting fixture unit including:

a. a housing having a bottom wall and opposite end walls, the bottom wall having an opening,

b. a light holder carrying an interconnected string of electric lights hingedly connected to the bottom wall at the opening for swinging the lights between a hidden position in the housing and an exposed position in which the lights project through the opening,

c. a door connected to the bottom wall at the opening for swinging movement between a fully closed position extending across the opening and a fully closed position against the bottom wall,

d. means for releasably holding the door in its fully open and fully closed position.

**3.** A lighting fixture unit as claimed in claim **2** in which the means (d) includes spring clips connected to the housing for releasably engaging the door in its fully opened and its fully closed positions.

**4.** A lighting fixture unit as claimed in claim **2** including:

e. means operable when the door is moved between its open and its closed position for swinging the holder and the lights between the hidden position and the exposed position.

**5.** A lighting fixture unit as claimed in claim **4** in which the means (e) includes an operator grasping the

holder, the operator having projecting tabs, one of the tabs being disposed so as to be engaged by the door when the latter is swung from its closed to its open position for moving the holder and lights to the exposed position, and one of the tabs being disposed so as to be engaged by the door when the latter is swung from its open to its closed position for moving the holder and lights to the hidden position.

6. A lighting fixture unit as claimed in claim 2 including:

f. spring means engaging the door and the bottom wall of the housing normally urging the door from its open to its closed position.

7. A lighting fixture unit as claimed in claim 2 including:

g. electrical connecting means at opposite end walls of the housing of the unit for electrically interconnecting the strings of lights of a plurality of units extending in end to end relationship.

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