Nov. 25, 1958 J. SCHNEIDER 2,861,711

LIGHTING EQUIPMENT AND HOUSING AND HINGES FOR SAME

Filed Aug. 22, 1957 3 Sheets-Sheet 1

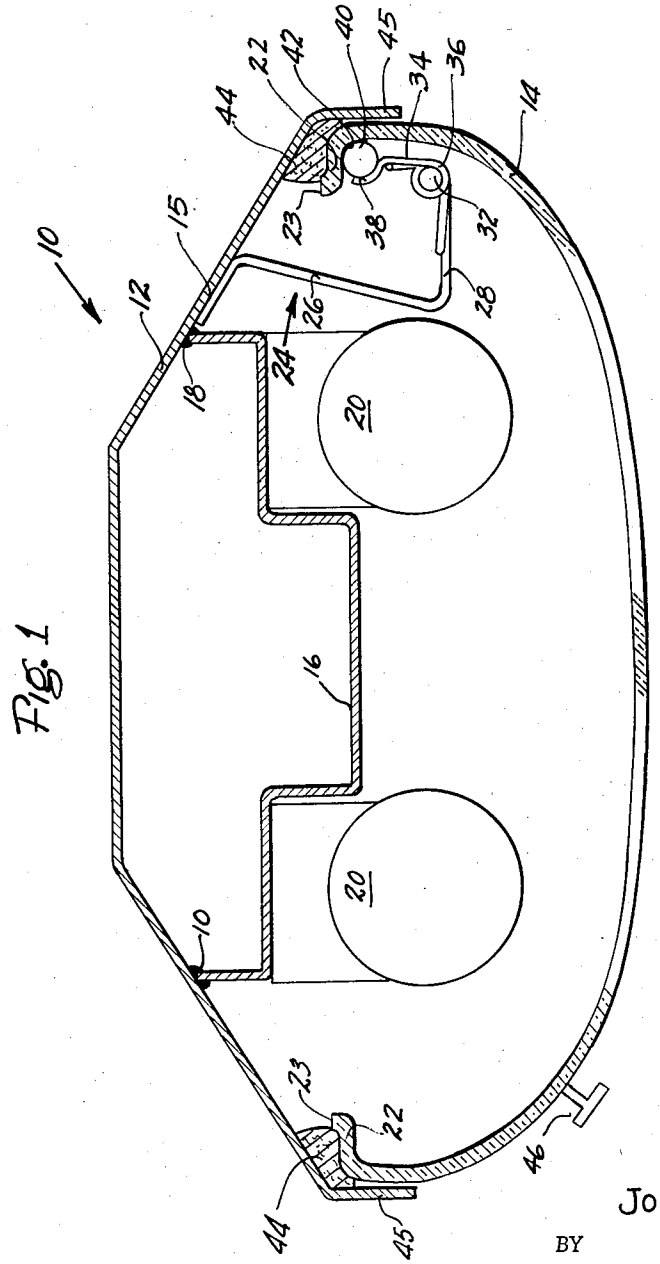


Fig. 1

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Fig. 2

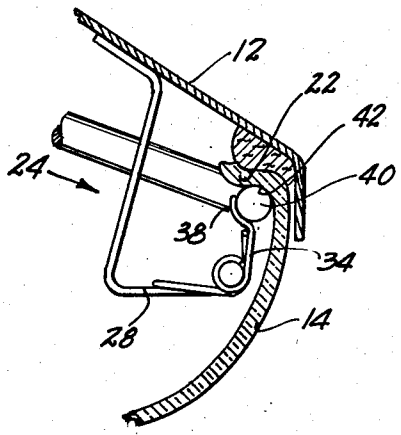


Fig. 3

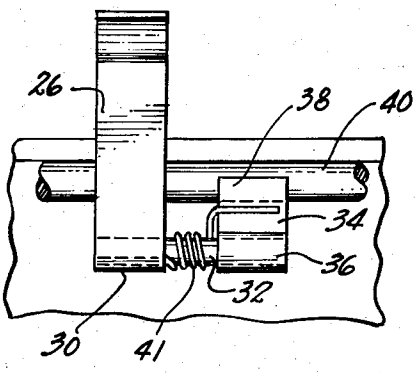


Fig. 4

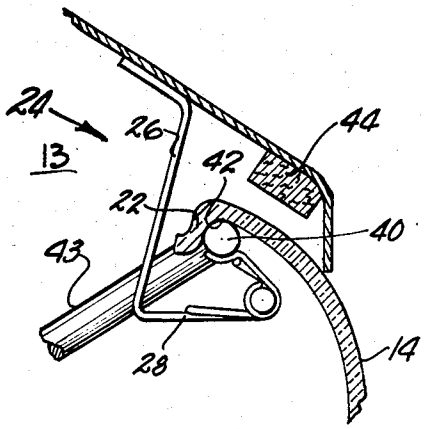
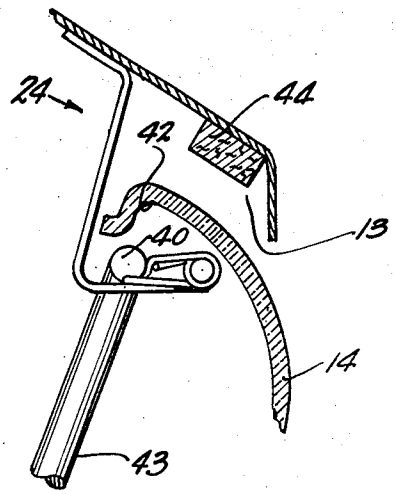


Fig. 5



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LIGHTING EQUIPMENT AND HOUSING AND HINGES FOR SAME

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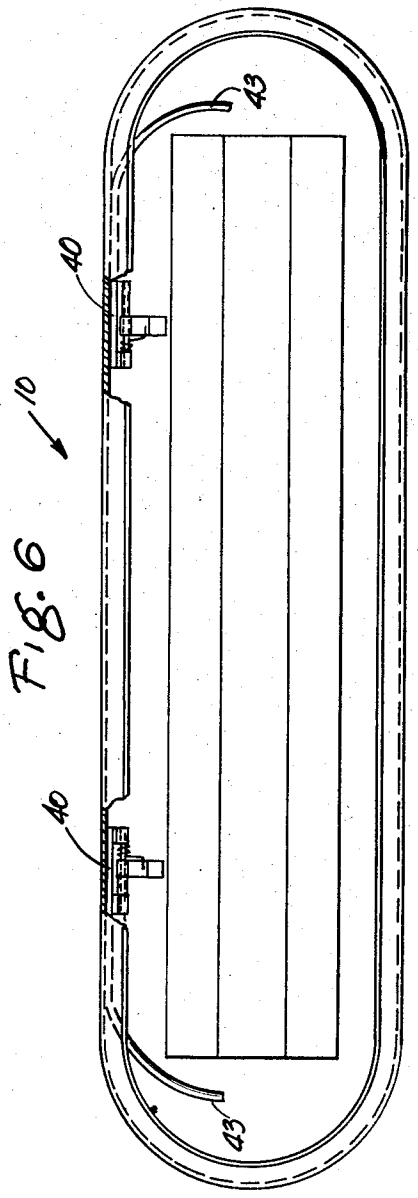


FIG. 6

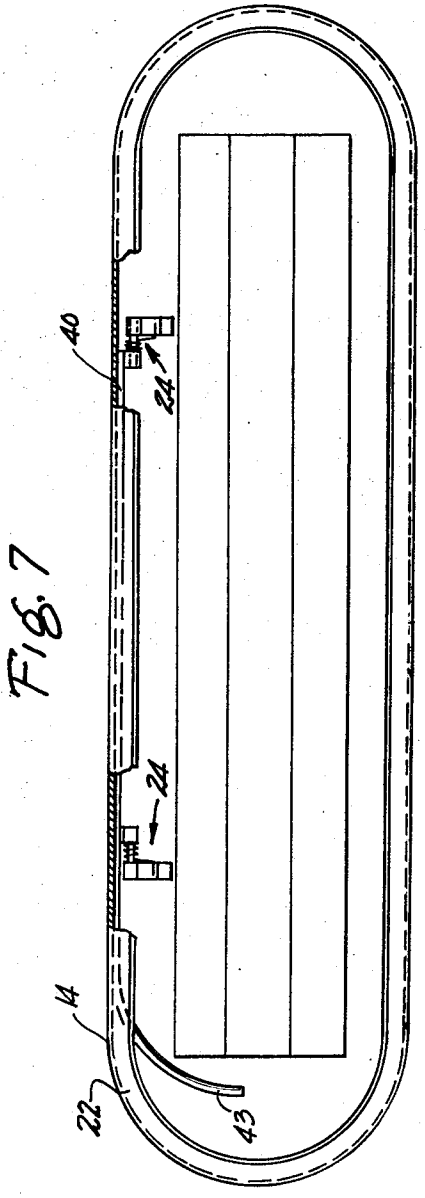


FIG. 7

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LIGHTING EQUIPMENT AND HOUSING AND HINGES FOR SAME

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Application August 22, 1957, Serial No. 679,726

8 Claims. (Cl. 220—35)

This invention relates to an outdoor light fixture and more particularly to an internally mounted hinge for an outdoor light fixture.

Light bowls for outdoor lighting fixtures are usually removable to provide access to the interior of the housing for replacing burnt out lights or repairing the appliances inside. Since these outdoor lighting fixtures are frequently at elevated positions, it is desirable for the light bowls to be pivotally connected to the fixture so the serviceman will not have to support it while he is occupied making other repairs. Internally mounted hinges pivotally connecting the light bowl to the housing have been employed in these outdoor light fixtures to reduce corrosion caused by exposure to the elements. Heretofore these internally mounted hinges required the use of precision made fasteners and various other relatively expensive machined parts. This added expense, when multiplied by the cost of these fixtures when they are employed in large numbers as street lamps, is an important consideration and one well worth eliminating. What is needed, therefore, and comprises the chief object of this invention is an internally mounted hinge for outdoor lighting fixtures which does not require the use of precision made parts and which can be installed on the light fixture without recourse to expensive precision fasteners or specially machined operations on the fixture.

Another object of this invention is to provide an internally mounted hinge for an outdoor light fixture which is simple to make and economical to manufacture.

Still another object of this invention is to provide an internally mounted hinge for an outdoor light fixture which is compact and durable.

These and other objects of this invention will become more apparent when read in the light of the accompanying drawings and specification wherein—

Fig. 1 is a cross-section of a light fixture with the internally mounted hinge constructed according to this invention;

Fig. 2 is an enlarged fragment of a cross-section of the lighting fixture with the light bowl in closed position;

Fig. 3 is a longitudinal view of the hinge constructed according to this invention;

Fig. 4 is an enlarged fragment of a cross-section of the fixture with the light bowl in open position;

Fig. 5 is an enlarged fragment of the fixture with the light bowl about to be separated from the hinge;

Fig. 6 is a longitudinal view of the light fixture showing hinges mounted inside in spaced relation; and

Fig. 7 is a longitudinal view of a modified lighting fixture.

Referring now to Fig. 1 of the drawings, an outdoor lighting fixture indicated generally by the reference numeral **10** comprises a housing section **12**. The housing section has an opening **13** and a transparent or translucent glass light or cover bowl section **14** is provided for closing the housing section opening. A resilient packing member **44** is provided for reasons to be described below

and this packing member is secured to the housing section **12** in spaced relation to the periphery of the opening **13**. An internal support member **16** is mounted inside the fixture housing **12**, and this support member is secured to the housing at **18** by any conventional means such as welding. The support member is adapted to support a light source **20**.

The glass cover bowl section **14** is provided with arcuately bent inturned flanges **22** at its periphery. The inner edges of these flanges are bent upwardly to form gripping portions **23**. These gripping portions **23** are so arranged that when the cover section is in closed position over the housing section opening, they will engage the sides of the resilient packing member **44** to frictionally hold the glass cover bowl in closed position. A handle **46** may be secured to the glass cover bowl by any conventional means (not shown) to permit the glass bowl to be conveniently opened and closed. In addition, the housing **12** is provided with downwardly extending flanges **45** at its peripheral edges which acts as rain shields to further seal the fixture.

A plurality of hinges indicated generally by the reference numeral **24** are mounted inside these lighting fixtures in spaced relation, see Figs. 6 and 7. These hinges are designed to press the closed cover bowl **14** against the packing member **44** to seal the fixture and protect the hinge portions inside from the corrosive effects of the elements and in addition these hinges must reliably connect the cover bowl with the housing section to prevent their accidental separation while the cover bowl is opened. As shown, the hinges include integrally attached depending support members **26**. These support members are secured at one end to the inner surface of the top of the housing section at **15** by any conventional means, such as welding. The lower end of these support members **26** are bent to form integral substantially horizontal first hinge leaf members **28**. The outer edge of the first hinge leaf members is shaped to form a first substantially cylindrical bushing **30**, see Fig. 3. The second hinge leaf member **34** is also bent at one end to form a second substantially cylindrical bushing **36**. These bushings are provided to rotatably support a pivot pin **32** therein. The opposite end of the second hinge leaf member is bent arcuately at **38**, and this arcuate part is rigidly secured to a cylindrical pivot and actuating rod **40** by any conventional means (not shown), see Fig. 2. A spiral spring **41**, as shown in Fig. 3, is mounted on the pivot pin **32** with its ends engaging hinge leaves **28** and **34** in such a way as to rotate them away from each other. With this arrangement, when the cover bowl is connected to the housing **12**, the relative movement of the hinge leaf members maintains the pivot and actuating rod **40** in engagement with the arcuately bent portions of the inturned flanges **22** on the cover bowl section **14** and provides thereby a pivotal axis of rotation for it. As seen in Fig. 6, the end of the cylindrical rod **40** is bent to form an actuating handle portion **43** for purposes to be described below.

In operation, cover bowl handle **46** is grasped, and the cover bowl **14** is pulled open. When this happens, the cover bowl will rotate on the pivot and actuating rod **40**, as shown in Fig. 4. While this is happening, the spring engagement between the first and second leaf members **28** and **34** will bias the arcuate portion **38** and pivot and actuating rod **40** of the hinge into continuous supporting engagement with the flange **22** of the cover bowl **14** at **42** so the cover bowl cannot accidentally become separated from the housing section. In this way, the serviceman can devote his full attention to repairs or installations without concerning himself with supporting the cover bowl. When it is necessary to entirely remove the cover bowl for cleaning or replacement, the actuating handle

43 of rod 40 is pulled down as shown in Fig. 5. This overcomes the bias exerted by the coil spring 41 and moves the pivot and actuating rod 40 away from the arcuately bent portion 42 of the cover bowl flanges 22 and separates the cover bowl section from its pivotal connection with the housing section, so it can be quickly and conveniently removed, see Fig. 5.

In the lighting fixture disclosed in Fig. 6, spaced hinges are provided and each hinge has a separate pivot and actuating rod 40 and a separate handle 43. This means that the cover bowl is removed from the housing section one hinge at a time, by sequentially grasping each actuating handle 43 and separating that portion of the cover bowl section from the housing section. This can be done more conveniently as shown in the modification in Fig. 7. There the hinges are identical, but the second leaf member 34 of each hinge is secured to a single common pivot and actuating rod 40'. This rod is provided with a single actuating handle portion 43'. When this actuating handle is moved downwards in the housing section, the bias exerted by all the hinges is simultaneously overcome, and this frees the cover bowl section from its pivotal connection to the housing section by one simple operation. In addition, in this modification the bias exerted by each hinge combines to help retain the pivot and actuating rod in the arcuate portion 42 of the cover bowl flanges, providing thereby a stable axis of rotation for the cover bowl.

The invention may be embodied in other forms without departing from the spirit or essential characteristics thereof as set forth in the claims, and the present embodiment is therefore to be considered as illustrative and not restrictive and it is intended to include all changes which come within the scope and range of the claims.

I claim:

1. A fixture for supporting appliances comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, one of said fixture sections having arcuately bent inturned flanges at its periphery, portions of the edges of said housing section and said cover section adapted to be connected together, a support member, said support member secured to the inner surface of the other of the fixture sections, a hinge mounted inside said fixture, said hinge comprising first and second leaf members rotatably engaging a pivot pin, said first hinge leaf secured to said support member, said second hinge leaf secured to a pivot and actuating rod, bias means acting between said hinge leaves to rotate them with respect to each other, said hinge leaves positioned so said relative rotative movement of said hinge leaves moves said pivot and actuating rod into engagement with the arcuately bent portion of said inturned flanges on said one of said fixture sections providing a pivotal axis of rotation for said section, and means for overcoming the bias means acting between said hinge leaves to move said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free said one fixture section from its pivotal connection to the other fixture section.

2. A fixture for supporting appliances comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, said cover section having arcuately bent inturned flanges at its periphery, portions of the edges of said housing section and said cover section adapted to be connected together, a support member, said support member secured to the inner surface of the housing section, at least one hinge mounted inside said fixture, each hinge comprising first and second leaf members rotatably engaging a pivot pin, said first hinge leaf secured to said support member and said second hinge leaf secured to a pivot and actuating rod, bias means acting between said hinge leaves to rotate them away from each other, said hinge leaves positioned so that said relative rotative movement of said hinge leaves moves said pivot and actuating rod into engagement with the arcuately bent portion of said inturned flanges on said cover section providing a pivotal axis of rotation for it, and means for overcoming the bias means acting between said hinge leaves to move said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free said cover section from its pivotal connection to the housing section.

3. A fixture for supporting appliances comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, a resilient packing member secured to said housing section adjacent the periphery of its opening, said cover section having arcuately bent inturned flanges adjacent its periphery, the inner edges of said inturned flanges bent upwardly to form gripping portions, said gripping portions positioned so that when said cover section is in closed position over said housing section opening they will engage said resilient packing member to frictionally hold said cover section in closed position, a support member, said support member secured to the inner surface of the housing section, at least one hinge mounted inside said fixture, each hinge comprising first and second leaf members rotatably engaging a pivot pin, said first hinge leaf secured to said support member and said second hinge leaf rigidly secured to a pivot and actuating rod, bias means acting between said hinge leaves to rotate them away from each other, said hinge leaves positioned so their relative rotative movement moves said pivot and actuating rod into rotative engagement with the arcuate bent portion of said inturned flanges on said cover section providing a pivotal axis of rotation for it, and means for overcoming the bias means acting between said hinge leaves to move said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free said cover section from its pivotal connection to the housing section.

4. The apparatus set forth in claim 3 wherein said bias means acting between said hinge leaves comprises a coil spring rotatably mounted on said pivot pin, one end of said coil spring engaging one of the hinge leaves and the other end engaging the other hinge leaf to rotate the hinge leaves away from each other.

5. A fixture for supporting appliances comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, one of said fixture sections having arcuately bent inturned flanges at its periphery, portions of the edges of said housing section and said cover section adapted to be connected together, a plurality of support members secured in spaced relation to the inner surface of the other of said fixture sections, a plurality of hinges mounted inside said fixture, each hinge comprising first and second leaf members rotatably engaging a pivot pin, each of said first leaf members secured to one of said support members, said second leaf member of each hinge secured to a common pivot and actuating rod, bias means acting between said leaf members on each hinge to rotate them with respect to each other, said leaf members positioned so that their relative movement moves said common pivot and actuating rod into engagement with the arcuately bent portion of said inturned flanges on said one of said fixture sections providing a pivotal axis of rotation for said section, and means for simultaneously overcoming the bias means acting between said leaf members on each hinge to move said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free said one fixture section from its pivotal connection to the other fixture section.

6. A fixture for supporting appliances comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, said cover section having arcuately bent inturned flanges at its periphery, portions of the edges of said housing section and said cover section adapted to be connected together, a plurality of support members secured in spaced relation to the inner surface of the housing sec-

tion, a plurality of hinges mounted inside said fixture, each hinge comprising first and second leaf members rotatably engaging a pivot pin, each of said first leaf members secured to one of said spaced support members, said second leaf member of each hinge secured to a common pivot and actuating rod, bias means acting between the leaf members on each hinge to rotate them away from each other, said leaf members positioned so that their relative movement moves said common pivot and actuating rod into engagement with the arcuately bent portion of said inturned flange on said cover section, providing a pivotal axis of rotation for it, and means for simultaneously overcoming the bias means acting between said leaf members on each hinge to move said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free said cover section from its pivotal connection to the housing section.

7. A fixture for supporting appliances comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, a resilient packing member secured to the housing section adjacent the periphery of its opening, said cover section having arcuately bent inturned flanges at its periphery, the inner edges of said inturned flanges bent upwardly to form gripping portions, said gripping portions positioned so that when said cover section is in closed position over said housing section opening, they will engage said resilient packing member to frictionally hold said cover section in closed position, a plurality of support members secured in spaced relation to the inner surface of the housing section, a plurality of hinges mounted inside said fixture, each hinge comprising first and second leaf members rotatably engaging a pivot pin, each of said first leaf members secured to one of said spaced support members, said second leaf member of each hinge secured to a common pivot and actuating rod, bias means acting between the leaf members on each hinge to rotate them away from each other, said leaf members positioned so that their relative movement moves said common pivot and actuating rod into engagement with arcuately bent portions of said inturned flanges on said cover section providing a pivotal axis of rotation for it, and means for simultaneously overcoming the bias means acting between said leaf members on each hinge to move said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free the cover section from its pivotal connection to the housing section.

8. An outdoor lighting fixture comprising a housing section, said housing section having an opening, a cover section for closing said housing section opening, a resilient packing member secured to the housing section adjacent the periphery of its opening, said cover section having arcuately bent inturned flanges at its periphery, the inner edges of said inturned flanges bent upwardly to form gripping portions, said gripping portions positioned so that when said cover section is in closed position over said housing section opening, they will engage said resilient packing member to frictionally hold said cover section in closed position, a plurality of hinges mounted inside the lighting fixture, each hinge including an integrally attached depending support member, each support member secured at one end to the inner surface of the top portion of the housing section, the opposite end of each support member bent substantially horizontally to form a first hinge leaf member, each of said first hinge leaf members terminating in a first cylindrical bushing, a second hinge leaf member, said second hinge leaf member terminating at one end in a second cylindrical bushing, a pivot pin for each hinge, each pivot pin rotatably mounted in said first and second bushings, a pivot and actuating rod, the opposite end of said second hinge leaf member of each hinge secured to said pivot and actuating rod, a coil spring rotatably mounted on each pivot pin, one end of each coil spring engaging said first leaf member and the opposite end engaging the second leaf member to rotate the hinge leaves of each hinge away from each other, said leaf members positioned so that their relative movement moves said pivot and actuating rod into engagement with arcuately bent portions of said inturned flanges on said cover section providing a pivotal axis of rotation for it, said common pivot and actuating rod terminating in a handle portion so that moving said handle portion in one direction overcomes the biasing force exerted by the coil springs on each hinge and moves said pivot and actuating rod away from the arcuately bent portion of the inturned flanges to free the cover section from its pivotal connection to the housing section.

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