

Sept. 20, 1966

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3,273,271

ILLUMINATED REVOLVING SIGN

Filed April 22, 1964

2 Sheets-Sheet 1

FIG. 2.

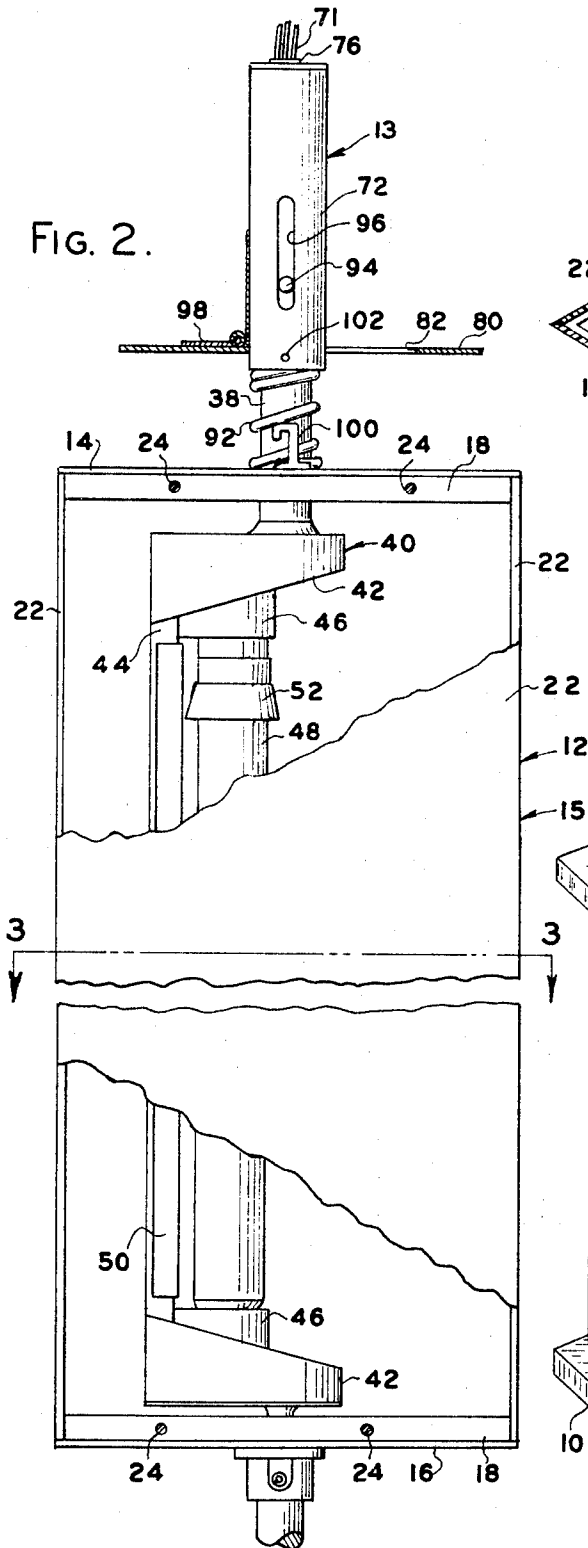


FIG. 3.

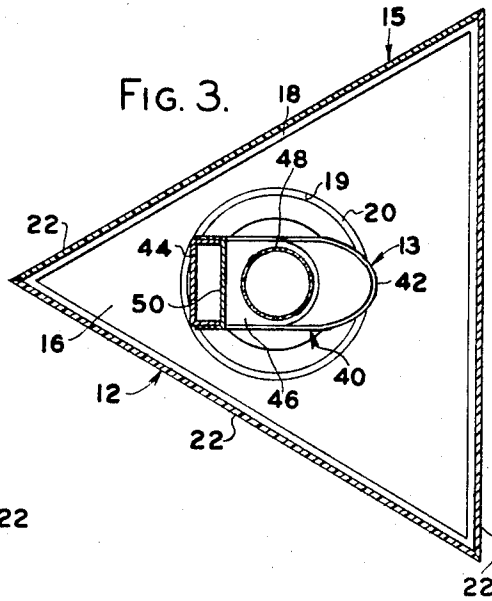
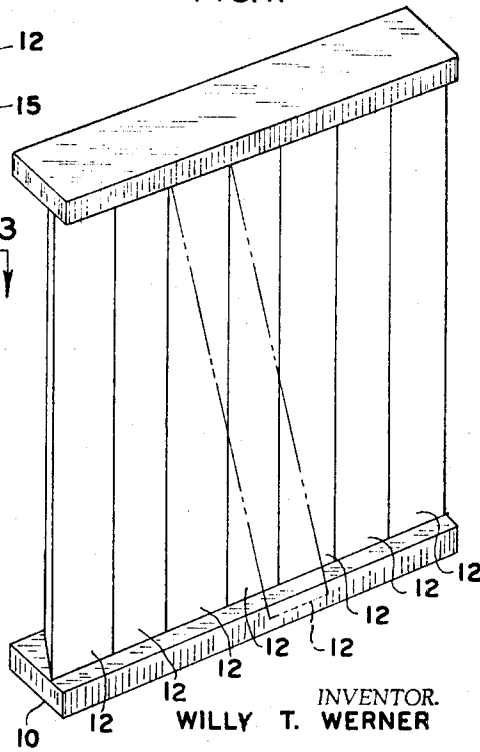


FIG. 1.



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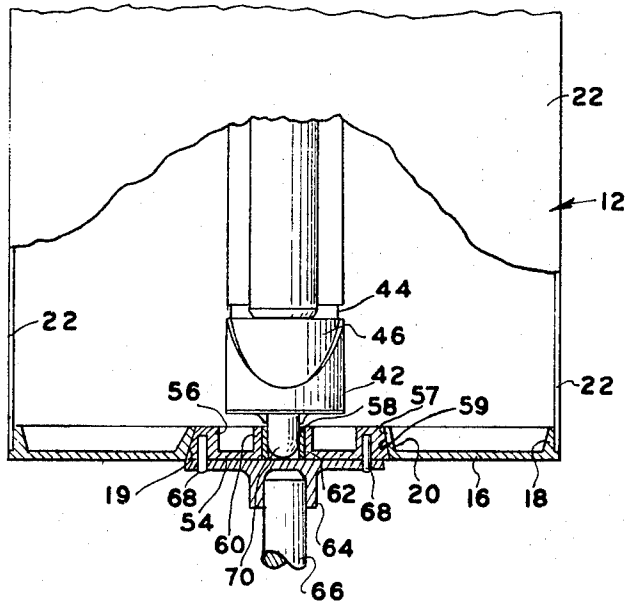
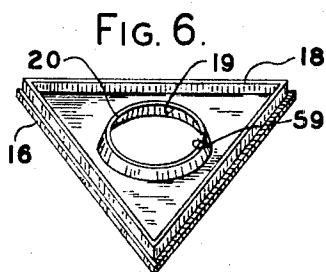
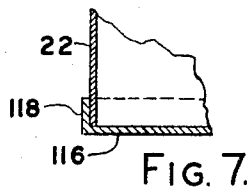
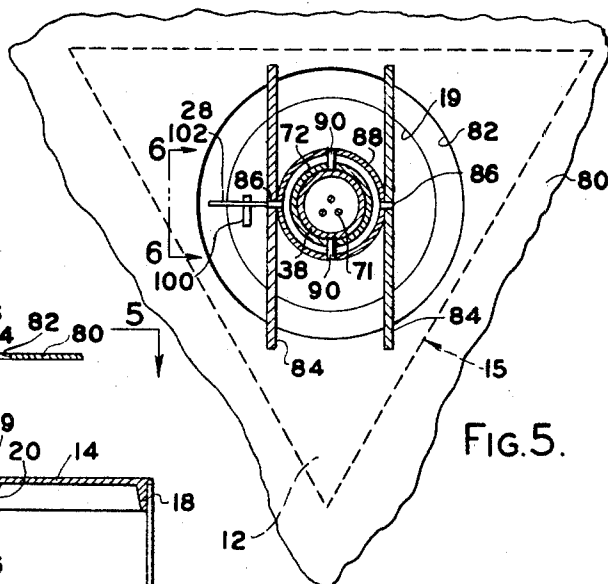
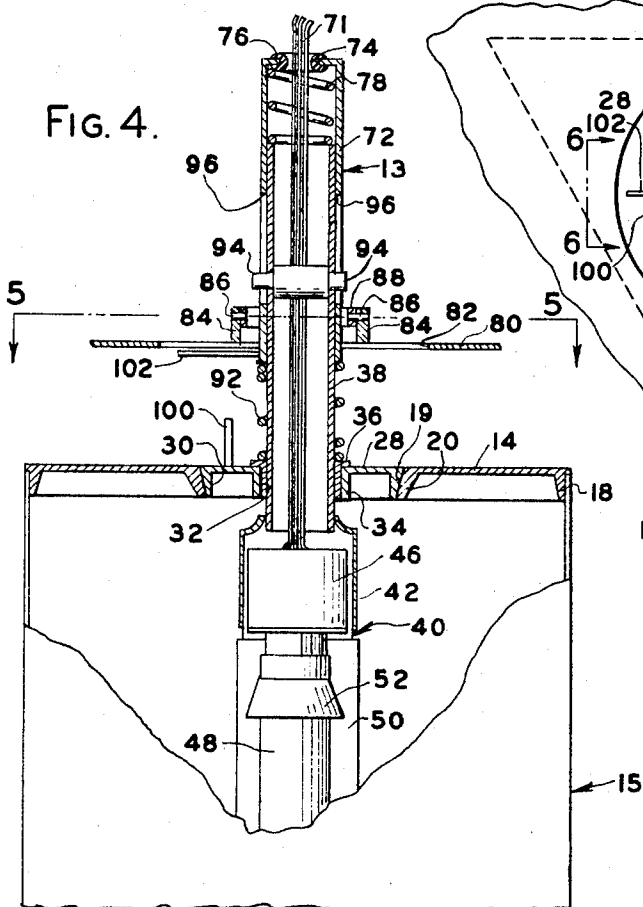
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2 Sheets-Sheet 2



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ILLUMINATED REVOLVING SIGN
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Filed Apr. 22, 1964, Ser. No. 361,789
19 Claims. (Cl. 40—77)

The present invention relates to advertising devices and more particularly to an improved construction for an illuminated revolving sign.

The present invention has particular application to those types of revolving signs which are made up of a plurality of individually revolvable members and which when revolved, combine to produce several different messages. In attempting to provide such a sign in which each of the individual members is illuminated by an illuminating means carried within the member, a number of difficulties will be apparent. The problem of revolving the individual sign members while maintaining electrical contact with an exterior electrical power source has been heretofore largely overcome by providing a slip ring or similar connection between the illuminating means and the power source. While this has generally proven satisfactory, it adds expense to the manufacture and maintenance of such signs. Further, and of great importance, heretofore no construction for such individual revolving members has been provided which readily permits the replacement of the illuminating means and outside louvers, and/or repair of parts.

In a number of suggested constructions it is necessary to disassemble a major portion of the sign just to change the lamp or tube.

The construction of the individual revolving sign members of the present invention provides an effective solution for these problems. A bracket is provided to carry each lamp member and is mounted to remain stationary as a panel structure carrying the sales message which revolves about a hollow shaft connected with the bracket and carrying electrical leads for the lamp member. In this way it is not necessary to connect the power source and the lamp through a slip ring construction or the like. Each individual sign member is pivotally mounted at one end to the frame structure of the display device and at the opposite end is drivingly mounted on a rotating means.

The driving connection between the sign members and the rotating means is constructed so that each individual member is readily movable out of engagement with the driving means and is pivotable upwardly about the connection with the frame structure to provide ready access through the bottom of the member to the lamp carried by the bracket to facilitate insertion of a new lamp.

It is an object then of the present invention to provide an improved construction for revolving illuminated signs and the like by providing an outer member having a plurality of faces and being rotatably mounted on a hollow shaft member, a lamp carrying bracket member secured to the hollow shaft interiorly of the panel member to remain in a fixed position with the shaft member as the outer member rotates and electrical leads connecting the lamp to an electrical power source through the hollow shaft.

It is another object of the present invention to facilitate the maintenance of illuminated revolving signs and the like by providing a sign member comprising a plurality of individually revolvable members and in which each of the revolvable members is constructed to be readily disconnected from the means rotating the members and to be pivotable away from the rotating means to permit ready access to the interior of the sign members for replacement or repair.

It is still another object of the present invention to facilitate replacement of lamp members in illuminated revolving signs and the like by providing a bracket for such

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signs having means for receiving the lamp member which includes a funnel-like guide member.

Yet another object of the present invention is to facilitate repair and maintenance of illuminated signs by providing means for readily tilting the sign assembly away from supporting structure so that lamps and other parts may be more easily removed.

Still further objects and advantages of the present invention will be readily apparent to one skilled in the art to which the invention pertains upon reference to the following drawings in which like reference characters refer to like parts throughout the several views and in which

FIG. 1 is a fragmentary perspective view of a sign device comprising a plurality of individual revolvable illuminated members of the present invention.

FIG. 2 is an elevational view of one of the individual members illustrated in FIG. 1 and with portions shown in section for purposes of clarity.

FIG. 3 is a lateral cross-sectional view taken substantially on line 3—3 of FIG. 2.

FIG. 4 is an elevational view as seen substantially from the right hand side of FIG. 3 but in which portions have been broken away and other portions are shown in section for purposes of clarity and in which a modified pivoting mounting is illustrated.

FIG. 5 is a cross sectional view as seen substantially from line 5—5 of FIG. 4.

FIG. 6 is a perspective view of the lower cap member of the present invention, and

FIG. 7 is a fragmentary cross-sectional view showing a modified panel support structure.

Description

Now referring to the drawings for a more detailed description of the present invention, FIG. 1 illustrates a completed sign structure incorporating a frame structure 10 and a plurality of adjacent individually mounted sign members 12. Each of the members 12 forms an equilateral triangle in lateral cross section as will be clear as the description proceeds. Each of the members 12 is individually rotatable about its longitudinal axis as is conventional in structures of this nature and means (not shown) are provided for indexing the members 12 so that when the members are rotated into position the members combine to produce a complete sales message. In this way three different sales messages can be provided and presented in sequence.

FIGS. 2 through 6 illustrate preferred members 12 as comprising an illuminating assembly indicated generally at 13 and a display assembly indicated generally at 15. The display assembly 15 comprises substantially similar upper and lower cap members 14 and 16 respectively. Each of the members 14 and 16 is constructed substantially in the form of an equilateral triangle and is provided adjacent its peripheral edge with a flanged portion 18 extending substantially normal to the surface of the members 14 and 16.

A substantially circular central opening 19 is provided in each of the cap members 14 and 16 and a flange 20 is formed about the opening 19 on the same surface of cap members 14 and 16 from which the flanged portions 18 extend. The flange 20 is substantially in the form of a conical section generated about the axis of the opening 19.

Rectangular panel members 22 constructed of a translucent material are carried by and extend between the flanged portions 18 of the cap members 14 and 16. Although any means may be provided for securing the individual panel members 22 to the cap members 14 and 16, it is preferred to provide projections 24 on the panel members 22 as shown in section in FIG. 2 which are received by suitable openings provided in the flanged

portions 18 of the upper and lower cap members 14 and 16.

As can best be seen in FIG. 4, a circular closure member 28 is received by the opening 19 of the upper cap member 14 and is provided with a peripheral flange 30 which wedges against the flange 20 of the cap member 14 to be retained within the opening 19. A central opening 32 is provided in the closure member 28 and is defined by an axially extending flange 34. A bushing 36 is carried in the opening 32 and an inner sleeve 38 of the illuminating assembly 13 extends through the bushing 36 to the space defined interiorly of the panel members 22.

The illuminating assembly 13 further comprises bracket 40 secured to the inner end of the sleeve 38 and comprises transverse members 42 spaced by an elongated support member 44 which as can best be seen in FIG. 3, is substantially C-shaped in cross section. The members 42 carry retaining sockets 46 for an elongated lamp 48. A reflector 50 is secured to the member 44 and the upper retaining socket 46 is provided with a frusto conical locating guide member 52.

The opening 19 of the lower cap member 16 is closed by a closure member 54 similar in construction to closure member 28 and having a flanged portion 56 engaging with and wedging against flanged portion 20 of the lower cap member 16 to be retained therein. A key portion 57 is provided on the closure member 54 and the cap member 16 is provided with a matching groove 59 so that the closure member 54 can be inserted into the opening 19 in only one position. The closure member 54 is provided with an opening 58 defined by an axially extending flange 60. A bushing 62 is carried within the opening 58. A rectangular member 64 is secured to a shaft 66 to be rotatable therewith and is removably secured to closure member 54 by pins 68. The lower support member 42 is provided with a pin 70 which projects downwardly into the bushing 62 so that relative rotation is permitted between the lower cap member 16 and bracket 40. The bushing 36 permits the display assembly 15 to be rotated about the illuminating assembly 13.

As can best be seen in FIG. 4, the necessary electrical conduit 71 for the lamp 48 extends upwardly through the sleeve 38. The illuminating assembly 13 further comprises an outer sleeve 72 encompassing an end portion of the inner sleeve 38 and being provided at its free end with an opening 74 in which a grommet 76 is carried and through which conduit 71 extends. A spring 78 seats against the free end of the inner sleeve 38 and the free end of outer sleeve 72 to urge the sleeves 38 and 72 toward a separated position and to urge the pin 70 into engagement with the bushing 62.

In the embodiment illustrated in FIGS. 4 and 5, a support plate 80 is provided for carrying each of the individual members 12. The support plate 80 is provided with a plurality of substantially circular openings 82 one for each member 12 to be carried.

As can best be seen in FIG. 5, a pair of arms 84 straddle the opening 82 and are secured to the support plate 80 in a substantially parallel relationship. Other suitable support structures may be used as desired. Arms 84 carry a pair of axially aligned pins 86 and a ring 88 mounted to the pins 86 to be pivotable about the common axis of the pins 86. The ring 88 in turn carries a pair of axially aligned pins 90 which extend into outer sleeve 72 to pivotally support the sleeve 72 about a common axis with the pins 90.

In this way a substantial universal type mount is provided between the support plate 80 and the illuminating assembly 13 of each of the members 12.

A spring 92 urges the outer sleeve 72 and the closure member 28 toward a separated position and thus urges the closure member 28 to seat in the opening 19 of the upper cap member 14. The inner sleeve 38 is provided with a pair of spring plungers 94 which register in elon-

gated slots 96 provided in the outer sleeve 72 to releasably secure the members 38 and 72 one to the other.

The embodiment illustrated in FIG. 2 is substantially similar to the embodiment described with respect to FIGS. 4 and 5 except that the outer sleeve 72 is not centrally positioned within the openings 82 but is instead positioned adjacent one edge of an opening 82 to permit a hinge member 98 to be secured to the support plate 80 and the outer sleeve 72.

As can be seen in FIGS. 2, 4 and 5, an upwardly extending substantially J-shaped latch member 100 is provided on the closure member 28. An elongated pin 102 extends transversely from the outer sleeve 72 so that the latch member 100 can be snapped over the pin 102 to keep the spring 92 compressed and retain the closure member 28 in an axially shifted position with respect to the illuminating assembly 13. When in this position the assembly 15 can be removed when desired, or can rest on the top of the bracket 40 while the lamp 48 is being installed or removed.

It is apparent that the spring 92 urges the display assembly 15 downwardly to seat on the closure member 54. The bushings 36 and 62 permit the display assembly 15 to be rotated by the shaft 66 and the closure member 54 about the illuminating assembly 13.

When it is desired to have access to the interior of the display assembly 15, the closure member 15 is pushed upwardly against the force of the springs 78 and 92 to move the closure member 54 away from the pins 68 and to disengage the assembly from the shaft 66 and member 64.

With the assembly disengaged from the rotating means, the end of the illuminating assembly 13 can be pushed upwardly against the springs 78 and 92 to bring the latch member 100 into engagement with the pin 102. In this latched position the display assembly 15 is relieved of the force exerted by spring 92 and can be moved axially with respect to the illuminating assembly 13.

The particular mountings described securing the illuminating assembly 13 to the support plate 80 permits the members 12 to be pivoted outwardly from the frame structure 10 as shown by dotted lines in FIG. 1. With the member 12 in the pivotted position, ready access to the interior of the display assembly 15 is provided through the opening 19 in the lower cap member 16, and if desired, the display assembly 15 can be moved axially away from the illuminating assembly for repair or replacement.

If it is desired to remove the entire sign member 12 from the support 10, the pins 94 are depressed to permit the inner sleeve 38 to be separated from the outer sleeve 72.

If the lamp 48 needs replacing, the funnel-shaped guide member 52 helps to direct the new lamp 48 into the receptacle 46.

The key portion 57 of the lower cap member 54 insures proper radial positioning of the display assembly 15 with respect to the shaft 66 upon reassembly so that the members 12 will be rotated in unison and into the proper position with the other members 12 comprising the complete sign structure.

It is to be noted that as can best be seen in FIGS. 2 and 3, the lamp 48 is preferably located off center with respect to the display assembly 15 and is position to be well across the center line from the particular panel member 22 being presented to form the sales message. In FIG. 3 the panel member 22 which would be exposed to view in the position illustrated, would be the one on the right hand side of the drawing. It has been found that with the lamp 48 so located, a better light diffusion is produced and the tendency of the lamp to produce a central band of intense light is eliminated. The particular positioning of the lamp 48 and the reflector 50 distribute the light substantially evenly across the entire surface of the exposed panel member 22.

FIG. 7 illustrates another preferred means for securing the panel members 22 in position. The particular construction illustrated in FIGS. 1-6 has been found to be satisfactory for relatively short panel members 22. In such a construction the edges of the panel members are beveled and adjacent edges are secured one to the other by a suitable adhesive. In larger constructions the additional weights and relative contractions and expansions between the panel members 22 makes this means of connection unsatisfactory. Thus in larger assemblies, it is preferred to use a lower cap member 116 and an upper cap member (not shown) having a peripheral axially extending flange 118 which engages an end portion of the panel member 22 to retain them in position.

Although I have described but several embodiments of the present invention, it is apparent that many changes and modifications can be made with respect to the disclosed embodiments without departing from the spirit of the invention as expressed by the appended claims.

I claim:

1. An illuminated display device comprising,
 - (a) a support structure,
 - (b) an illuminating assembly having one end pivotably suspended from said support structure,
 - (c) a display assembly enclosing and rotatable with respect to said illuminating assembly,
 - (d) said display assembly being rotatably carried by said support structure and said illuminating assembly.
2. An illuminated display device comprising,
 - (a) a support structure,
 - (b) an elongated illuminating assembly having one end pivotably suspended from said support structure,
 - (c) a display assembly enclosing and supported in part by said illuminating assembly and selectively removable from the other end thereof,
 - (d) said display assembly being releasably supportingly carried in part by said support structure.
3. An illuminated display device comprising,
 - (a) a support structure,
 - (b) an elongated illuminating assembly and means pivotably securing one end of said assembly to said support structure,
 - (c) a display assembly enclosing said illuminating assembly and means releasably securing said display assembly to said illuminating assembly,
 - (d) said display assembly being rotatably and axially movable with respect to said illuminating assembly, and
 - (e) means urging said illuminating assembly and said display assembly axially away from the pivotably securing means.
4. A display device as defined in claim 3 and including,
 - (a) a rotating means carried by said support structure, and
 - (b) means drivingly connecting said rotating means and said display assembly only at said extended position of said display assembly.
5. An illuminated display device comprising,
 - (a) a support structure,
 - (b) an illuminating assembly and means pivotably securing one end of said assembly to said support structure,
 - (c) a display assembly enclosing and rotatable with respect to said illuminating assembly,
 - (d) means carried by said support structure and being selectively operable to rotate said display assembly,
 - (e) said display assembly being supported in part by said illuminating assembly.
6. The display device as defined in claim 5 and in which said pivotably securing means comprises a hinge member having one portion secured to said support structure and another portion secured to said illuminating assembly.

7. The display device as defined in claim 5 and in which said pivotably securing means comprises,

- (a) a pair of elongated arms secured to said support structure,
 - (b) means pivotably securing said illuminating assembly to said arms.
8. An illuminated display device comprising,
 - (a) a support plate,
 - (b) an illuminating assembly comprising an outer sleeve member, an inner sleeve member axially slidably in said outer sleeve member, an elongated bracket carried by said inner sleeve member, and a lamp member carried by said bracket,
 - (c) means pivotably securing said outer sleeve member to said support plate,
 - (d) means releasably securing said inner sleeve member to said outer sleeve member,
 - (e) a display assembly axially slidably mounted to one end of said inner sleeve member and rotatable with respect thereto,
 - (f) said display assembly enclosing said lamp member,
 - (g) means urging said display assembly toward an extended axial position with respect to said inner sleeve member, and
 - (h) rotating means engaging with said display assembly only at said extended position to rotate said display assembly with respect to said illuminating assembly.
 9. The device as defined in claim 8 and in which said pivotably securing means comprises,
 - (a) an opening provided in said support plate and a pair of arms extending across said opening and secured to said support plate,
 - (b) said inner and outer sleeve members being disposed intermediate said arms,
 - (c) a ring member disposed intermediate said arms and said outer sleeve member and a first pair of pin members pivotably securing said arms to said ring member,
 - (d) a second pair of pin members pivotably securing said ring member to said outer sleeve.
 10. The device as defined in claim 8 and in which said pivotably securing means comprises,
 - (a) an opening provided in said support plate,
 - (b) said outer sleeve member being disposed in said opening adjacent one edge thereof,
 - (c) a hinge member having one portion secured to said support plate and another portion secured to said outer sleeve member.
 11. An illuminating device comprising a,
 - (a) a support structure having an opening,
 - (b) an illuminating assembly extending through said opening and means pivotably securing said illuminating assembly to said support structure,
 - (c) a display assembly enclosing a portion of said illuminating assembly and rotatable with respect thereto,
 - (d) said display assembly comprising an upper cap member and a lower cap member and a plurality of panel members carried intermediate and by said cap members,
 - (e) means rotatably and axially slidably mounting said upper cap member with respect to said illuminating means,
 - (f) rotating means engaging said lower cap member at one axial position thereof to rotate said display assembly about said illuminating assembly,
 - (g) said rotating means being disengageable from said lower cap member on axial movement of said display assembly away from said rotating means.
 12. The device as defined in claim 11 and in which said illuminating means comprises,
 - (a) an outer sleeve member,
 - (b) an inner sleeve member received by said outer sleeve member and means selectively securing said

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inner sleeve member to said outer sleeve member,
(c) a bracket member carried by said inner sleeve member and disposed intermediate said cap members of said display assembly,

(d) illuminating means carried by said bracket member. 5

13. The device as defined in claim 12 and in which,
(a) said illuminating means comprises an elongated lamp member carried by said bracket member, and
(b) electrical conduit being connected to said lamp member through said inner and outer sleeve members. 10

14. The device as defined in claim 13 and in which said bracket includes a lamp member guide means.

15. The display device as defined in claim 11 and in which said illuminating assembly comprises, 15

(a) an outer sleeve member extending through said support plate opening, and

(b) an inner sleeve member axially received by said outer sleeve member and means selectively securing said inner sleeve member to said outer sleeve member. 20

16. The device as defined in claim 15 and in which said pivotally securing means comprises a hinge member having a first portion secured to said support plate, a second portion pivotable with respect to said first portion and secured to said outer sleeve member. 25

17. The device as defined in claim 15 and in which said pivotally securing means comprises, 30

(a) a pair of spaced support arms extending across said support plate opening and being secured to said support plate,

(b) a ring member disposed intermediate said support arms and means pivotally securing said ring member to said support arms, and 35

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(c) means pivotally securing said ring member to said outer sleeve member.

18. An illuminated display device comprising,

(a) a support structure,

(b) an elongated illuminating assembly and means pivotally securing one end of said assembly to said support structure,

(c) a display assembly enclosing said illuminating assembly and means releasably securing said display assembly to said illuminating assembly,

(d) said display assembly being rotatable and axially movable with respect to said illuminating assembly, and

(e) the other end of said illuminating assembly having means releasably engaging said display assembly with said support structure.

19. The device as defined in claim 18 and in which said display assembly is freed from interference with said support structure upon pivoting of said illuminating assembly toward a selected position with respect to said support structure.

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