

May 21, 1968

W. T. WERNER

3,383,785

LOUVERED SIGN

Filed Oct. 4, 1965

2 Sheets-Sheet 1

FIG. 4

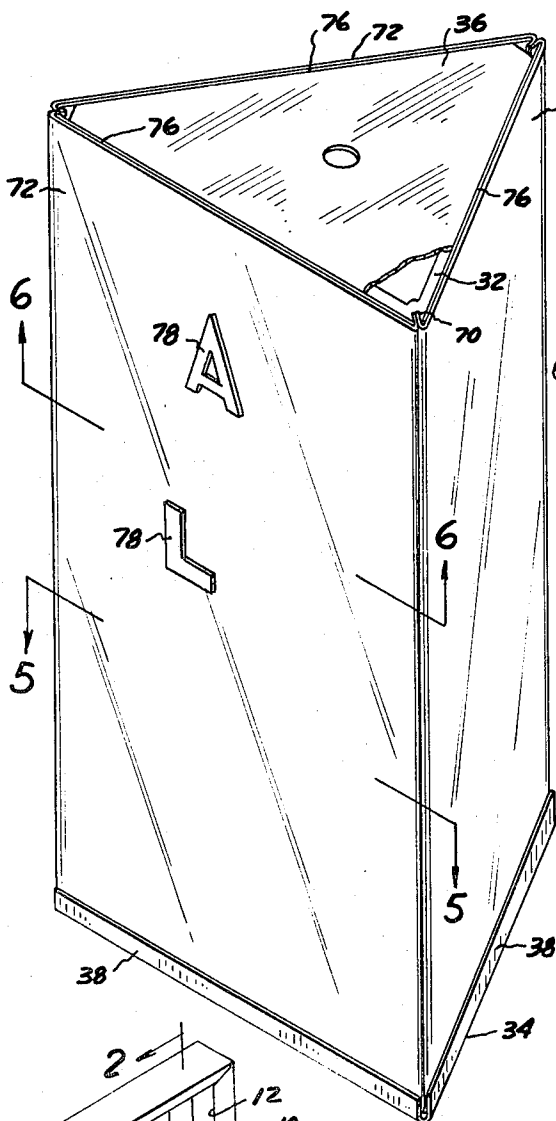


FIG. 5

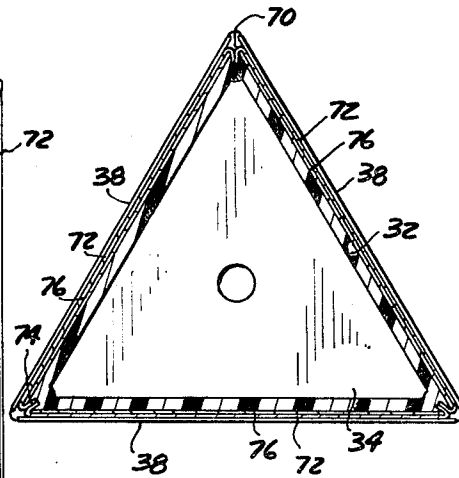
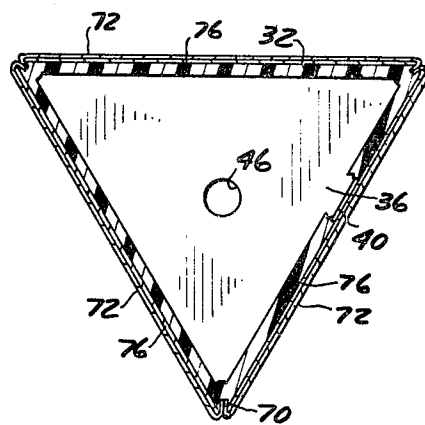
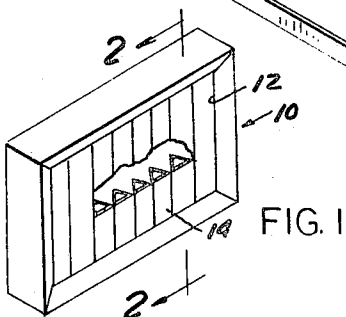


FIG. 6



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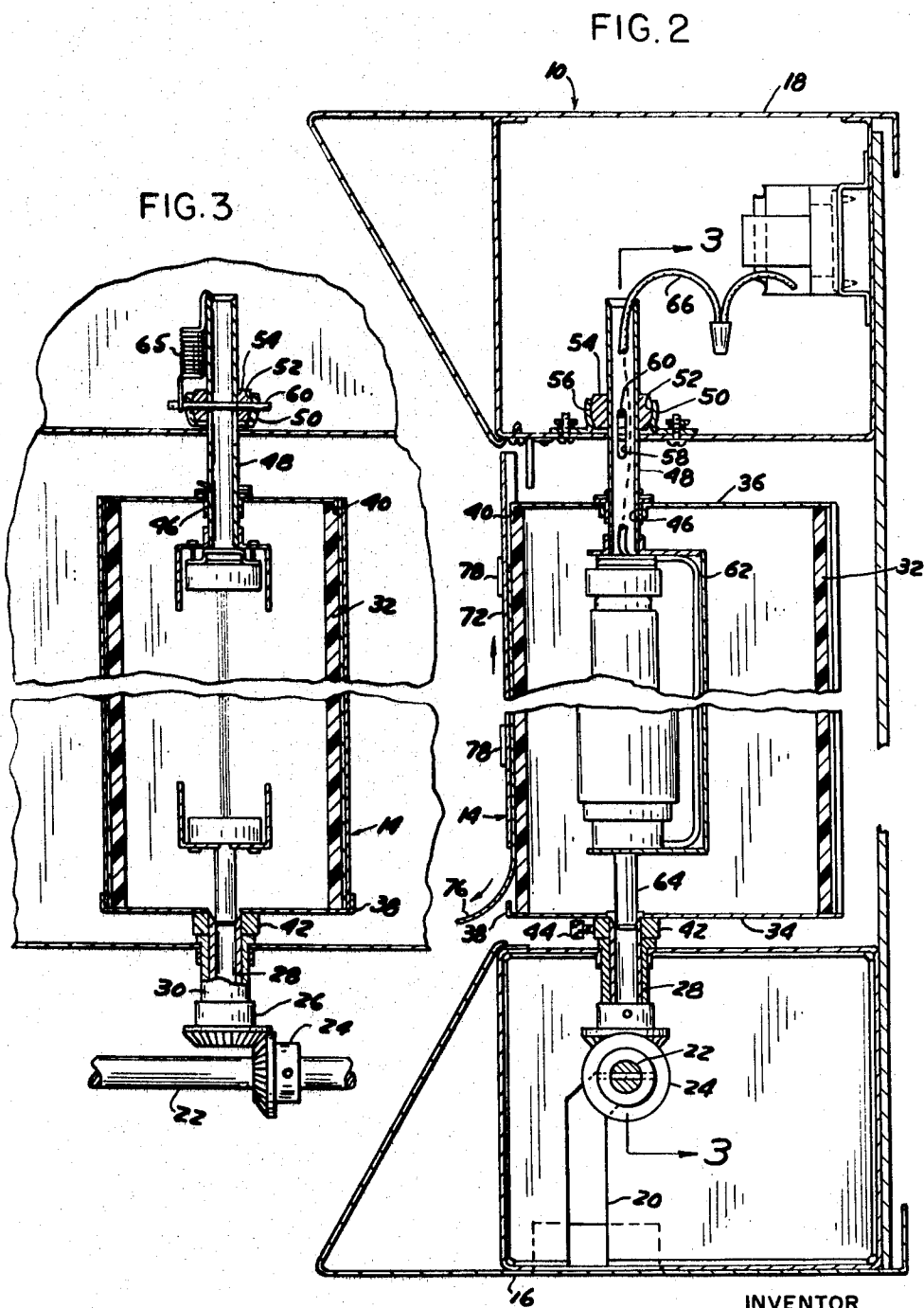
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9 Claims. (Cl. 40—76)

ABSTRACT OF THE DISCLOSURE

A sign having a plurality of illuminated prismatic louvers to be rotated to present a plurality of different messages each mounted in a manner to permit them to be raised axially to disengage the lower end from the driving mechanism and then pivoted outwardly on their upper end to repair to replace the illuminating means and including a complementarily formed spheroidal collar and bracket for pivotally supporting the upper end of each louver, a cover overlying each of the faces of the louver, and a sheet of copy carrying material slidably insertable and removable from between the louver and the cover.

My invention relates to signs of the type having a plurality of prismatic louvers arranged for selective rotation to present a plurality of messages from a single sign location, and more particularly to an improved sign of this type in which the louvers may be interiorly illuminated and have simplified means permitting replacement of lighting fixtures, removal and assembly of louvers, and changing of copy displayed on the faces of the louvers.

The chief difficulties encountered in the use of the prismatic louvered sign idea is the time and inconvenience of maintenance. Illuminated signs fail in their purpose when lights get broken or burn, out, and replacement of bulbs is a constant problem. When louvers get damaged they may fail to rotate, causing motor burnout or jamming in half-turned positions, the valve of the message presentation being destroyed, and maintenance or repair of signs heretofore has been very difficult. Also, signs which never change lose impact, yet changing of messages heretofore has been difficult, and the time needed to make the change means time lost to the intended use.

An object of the present invention is to facilitate maintenance of prismatic louvered signs by providing ready access to lighting fixtures and simplified means for removal, replacement and repair of louvers.

Another object of the invention is to increase the utility of louvered signs by providing unique structure in which copy is readily and rapidly replaceable.

These and other objects of the invention will be apparent from the following description and the accompanying drawings in which like reference characters refer to like parts throughout the several views and in which

FIG. 1 is a diagrammatic perspective view of a louvered sign construction in accordance with the invention.

FIG. 2 is a vertical cross sectional view of the sign of FIG. 1, taken substantially along the line 2—2 of FIG. 1.

FIG. 3 is a fragmentary sectional view taken substantially on the line 3—3 of FIG. 2.

FIG. 4 is a perspective view of a preferred louver construction embodying the invention.

FIG. 5 is a cross sectional view taken substantially along the line 5—5 of FIG. 4, and

FIG. 6 is a cross sectional view taken substantially on the line 6—6 of FIG. 4.

As shown in FIG. 1, the basic components of the present sign structure comprise a substantially rectangular frame assembly 10 constructed to provide a rectangular

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frame opening 12 adapted to enclose a plurality of adjacent parallel elongated prismatic louvers 14.

FIGS. 2 and 3 illustrate the frame assembly 10 as including a lower base assembly 16 and a header assembly 18 vertically spaced apart and disposed in parallel relationship. The base assembly 16 carries, by any means such as a bracket 20, a longitudinal shaft 22 carrying a driving gear 24 for each of the louver assemblies 14, engaging with a gear 26 mounted on a driven shaft 28 carried by a sleeve 30 supportably mounted on the inner portion of the base assembly 16, as shown.

The louver 14 comprises a hollow core structure 32, which may be assembled from three similarly shaped flat panels, or as is shown in FIGS. 4-6, may be formed of an extruded unitary member. If the louver is to be illuminated as in the present disclosure, the core structure 32 would be made of a transparent or translucent material, or of screen or other perforated material. The core structure 32 is retained intermediate a lower triangular cap member 34 and an upper triangular cap member 36. The lower cap member 34 has flanges 38 along each edge, for purposes to be explained, extending slightly outwardly of the faces of the core structure 32, and bent upwardly over the end of the core structure, as illustrated in FIGS. 2-5.

The upper cap member 36 has flanges 40 along each edge, extending over the upper edges of the core structure 32 and bent downwardly to engage with the upper end of the faces of the core structure 32. The lower cap member 34 has a boss 42 secured thereto and adapted to be retained around the shaft 28 by any means such as a set screw 44.

The upper cap member 36 has a hole 46 therein through which extends a support tube 48. The support tube 48, when in the normal position shown in FIGS. 2 and 3, is disposed upon an axis coextensive with the axis of the shaft 28 below. It will be seen that this structure is arranged so that the louvers 14 may be rotated on their longitudinal vertical axes, being driven through the gears 24 and 26, but the support tube 48 is permitted to be stationary.

A bearing member 54 having external spheroidal surfaces is carried in an embracing bracket 50 having internal spheroidal surfaces, the bracket 50 being mounted on the header assembly 18, such that the bearing member 54 is retained by but can pivot in any direction relative to the bracket 50. The support tube 48 has a longitudinal slot 58 through which extends a pin 60 carried by the bearing member 54 in such a way that the support tube 48 can pivot on the axis of the pin 60 which is disposed normal to the longitudinal axes of the shaft 28, louver 14, and tube 48. The axes of the pins 60 which are similarly provided for each of the louvers 14, are disposed along a common line parallel with the plane of the frame assembly 10. The support tube 48 carries, within the hollow space of the core structure 32 of the louver 14, a fluorescent lighting fixture 62 or the like which has a shaft 64 at its lower end that fits into the driven shaft 28 but will not rotate with it. Thus, as the louvers rotate, each face which is presented toward the forward part of the frame assembly 10 will be illuminated by the light which remains fixed. A spring 65 connected to the top of the tube 48 and an extension of the pin 60 urges the assembly downward.

When it is desired to change the light fixture, or to remove any part of the assembly, the core 32 of the louver 14 may be raised upwardly relative to the support tube 48, then the shaft 64 is disengaged from the shaft 28. The core 32 and the lighting fixture 62 carried by the tube 48 can then be swung outwardly on the axis of the pin 60, the spheroidal bearing member 54 still being retained by the bracket 50. It is then an easy matter to either re-

place the light or remove the louver altogether for repair, maintenance or replacement.

The electrical wiring 66 for the lighting fixture 62, as indicated in FIG. 2, can pass through the support tube 48.

In FIGS. 4, 5 and 6, it will be noted that the core structure 32 has longitudinal slots 70 at its edge apexes, angled inwardly towards the center of the core structure such that it will retain a cover member 72 adapted to overlie each face of the core structure 32, the cover members 72 having inturned edges 74 which slidably engage in the slots 70. The cover members 72 can be individually raised or lowered, the inturned edges 74 sliding in the slots 70, but the flanges 38 on the lower cap member 34 prevent the covers from dropping down below the faces of the core structures 32. If the cover members 72 are made of a flexible material, the inturned edges 74 can be readily snapped into the slots 70 on assembly.

Between the covers 72 and the faces of the core structures 32 are disposed sheets of copy carrying material 76. These sheets 76 can slide upwardly and downwardly relative to the core structure 32, and in order to remove and replace them, the respective cover member 72 will be raised so that its bottom edge clears the bottom cap flange 38, and the sheet of copy material may then be removed downwardly and outwardly from between the cover member 72 and the face of the core structure 32. FIG. 2 illustrates the way in which the material is removed. The corners of the top cap 36 are truncated so that the inturned edges of the covers 72 will clear the cap 36.

The copy material 76 may merely be a sheet of paper on which an advertising message or the like is printed, or may be a thin stenciled sheet. However another embodiment of the invention would have the sheet of copy-carrying material 76 made of a magnet attracting material such as thin ferrous metal, and copy material such as letters 78 or the like with magnet backing would adhere on the surface of the cover member 72. In order to remove the copy material, rather than individually trying to pick off each of the magnetic elements forming the copy, the cover member 72 is raised as shown in FIG. 2, the magnet attracting sheet of material is then removed from between the cover 72 and the core structure face, causing all of the magnetic letters 78 and the like to drop off. It will be apparent that the cover member 72 and the core structure 32 are non magnetic materials, and when the louver is illuminated, or if the copy-carrying material 76 has the advertising copy printed on it, the cover member 72 would naturally be transparent. If the louver is not illuminated, or if the magnetic system is used for copy, the cover member could be either translucent or opaque. It will be noted that the cover member 72 will only have to be raised a small amount as provided by the space between the upper cap member 36 and the lowest surface of the header assembly 18.

It will be noted that the present invention thus provides a louver assembly in which the louvers, the interior lighting fixture, and all other parts are readily accessible. Furthermore, the copy material that is used on the faces of the louvers may be easily removed and replaced, and is adaptable to a variety of advertising copy treatment.

Although I have described but a few preferred embodiments of my invention, it will be apparent to one skilled in the art to which the invention pertains that various changes and modifications may be made therein without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A sign structure comprising:

- (a) a frame defining a rectangular opening,
- (b) a plurality of elongated hollow louvers arranged in parallel relation to fill said frame opening,
- (c) a plurality of spaced drive members carried along one side of said opening and being rotatable on axes extending toward the opposite side of said frame opening,

- (d) support shafts carried along said opposite side of said frame opening and extending on axes extending toward the first mentioned side of said frame opening, said louvers extending between said drive members and support shaft, and being carried by and secured to said drive members to be rotated thereby,
- (e) said louvers being detachable from said drive members and said shafts having collars provided with outer spheroidal surfaces and said frame having support brackets with spheroidal inner surfaces supportably embracing said collars whereby upon detachment of the said louvers from said drive members said louvers can be pivoted outwardly on said inner and outer spheroidal surfaces of said support shafts and support brackets.

2. A sign structure comprising:

- (a) a frame defining a rectangular opening,
- (b) a plurality of elongated hollow louvers arranged in parallel relation to fill said frame opening,
- (c) a plurality of spaced drive members carried along one side of said frame opening and being rotatable on axes extending toward the opposite side of said frame opening,
- (d) support shafts carried along said opposite side of said frame opening and extending on axes extending toward the first mentioned side of said frame opening,
- (e) said louvers extending between said drive members and said support shafts, and being carried by and secured to said drive members to be rotated thereby,
- (f) said louvers being detachable from said drive members and being longitudinally movable with respect to said frame opening on the axes of said drive members,
- (g) said support shafts having collars provided with out spheroidal surfaces, said frame having support brackets with spheroidal inner surfaces supportably embracing said collars whereby upon detachment of said louvers from said drive members and longitudinal movement with respect to said frame opening on the axis of said drive members said louvers can be pivoted outwardly about said collars and said brackets to bring the lower end of said louvers upwardly toward a horizontal position.

3. The sign structure as defined in claim 1 and in which said louvers are rotatable with respect to said support shafts.

4. The sign structure as defined in claim 1 and in which said collars have pins extending therefrom and engaged with said brackets, and aligned on a common axis.

5. The sign structure as defined in claim 4 and in which said support shafts are slidable within said collars and have longitudinal slots through which said pins extend to permit limited longitudinal movement of said shafts with respect to said collars.

6. The sign structure as defined in claim 5 and including means resiliently urging said support shafts toward said drive members.

7. The sign structure as defined in claim 1 and having lighting fixtures disposed within said louvers.

8. The sign structure as defined in claim 7 and in which said support shafts are hollow and said lighting fixtures are supplied with electric power by wiring extending through said support shafts.

9. A sign structure comprising,

- (a) a frame defining a rectangular opening,
- (b) a plurality of elongated hollow louvers arranged in parallel relation to fill said frame opening,
- (c) a plurality of spaced drive members carried along one side of said frame opening and being rotatable on axes extending toward the opposite side of said frame opening,
- (d) an illuminating assembly partially disposed within each of said louvers and including a support shaft

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carried along said opposite side of said frame opening and extending on axes extending toward the first mentioned side of said frame opening,
 (e) each of said louvers being rotatably carried on one end by one of said drive members and on the opposite end by its associated illuminating assembly support shaft, and
 (f) means pivotally suspending each said illuminating assembly comprising a collar carried by said support shaft and provided with an outer spheroidal surface and a bracket carried by said opposite side of said frame opening having a spheroidal inner surface and supportably embracing said collar.

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