March 30, 1937. L. F. VAN SCHUCK 2,075,245

ROTARY SIGN

Filed July 27, 1936 5 Sheets-Sheet 1

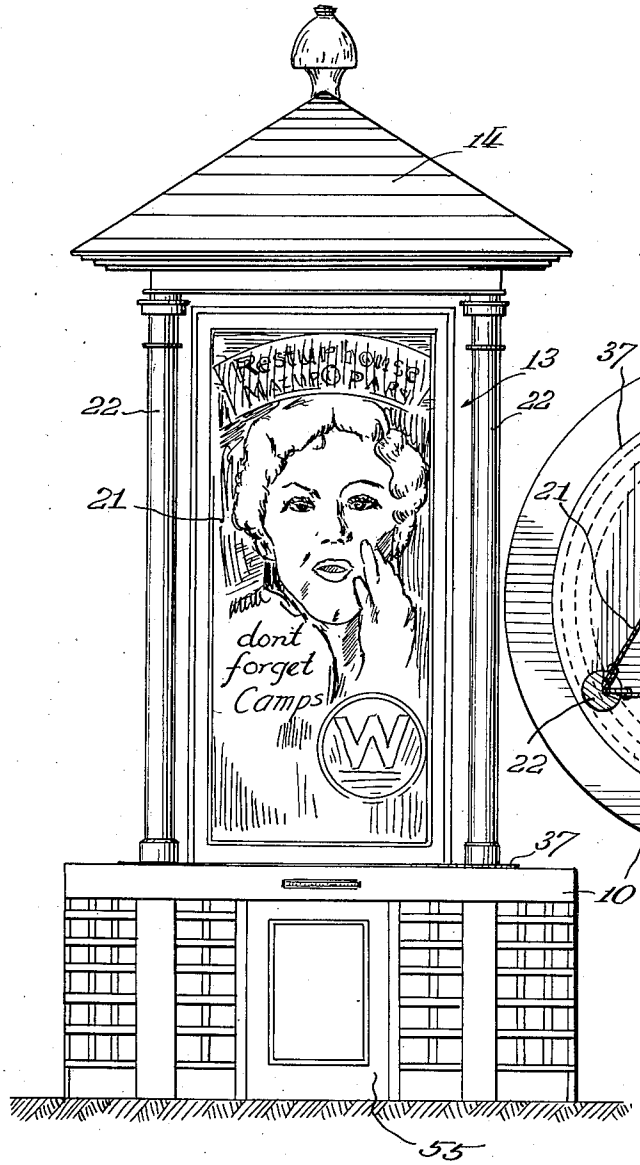


Fig. 1.

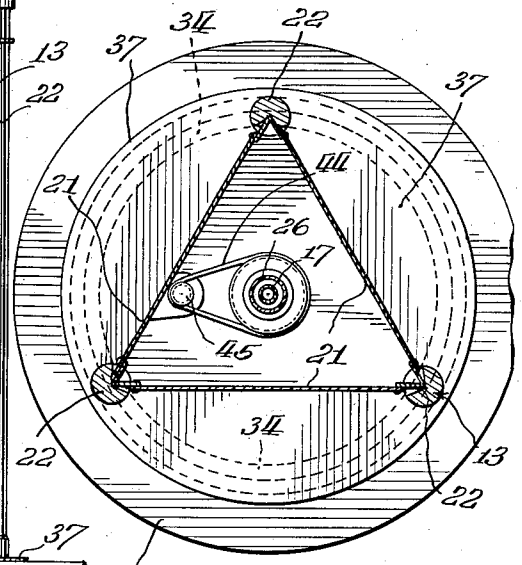


Fig. 3.

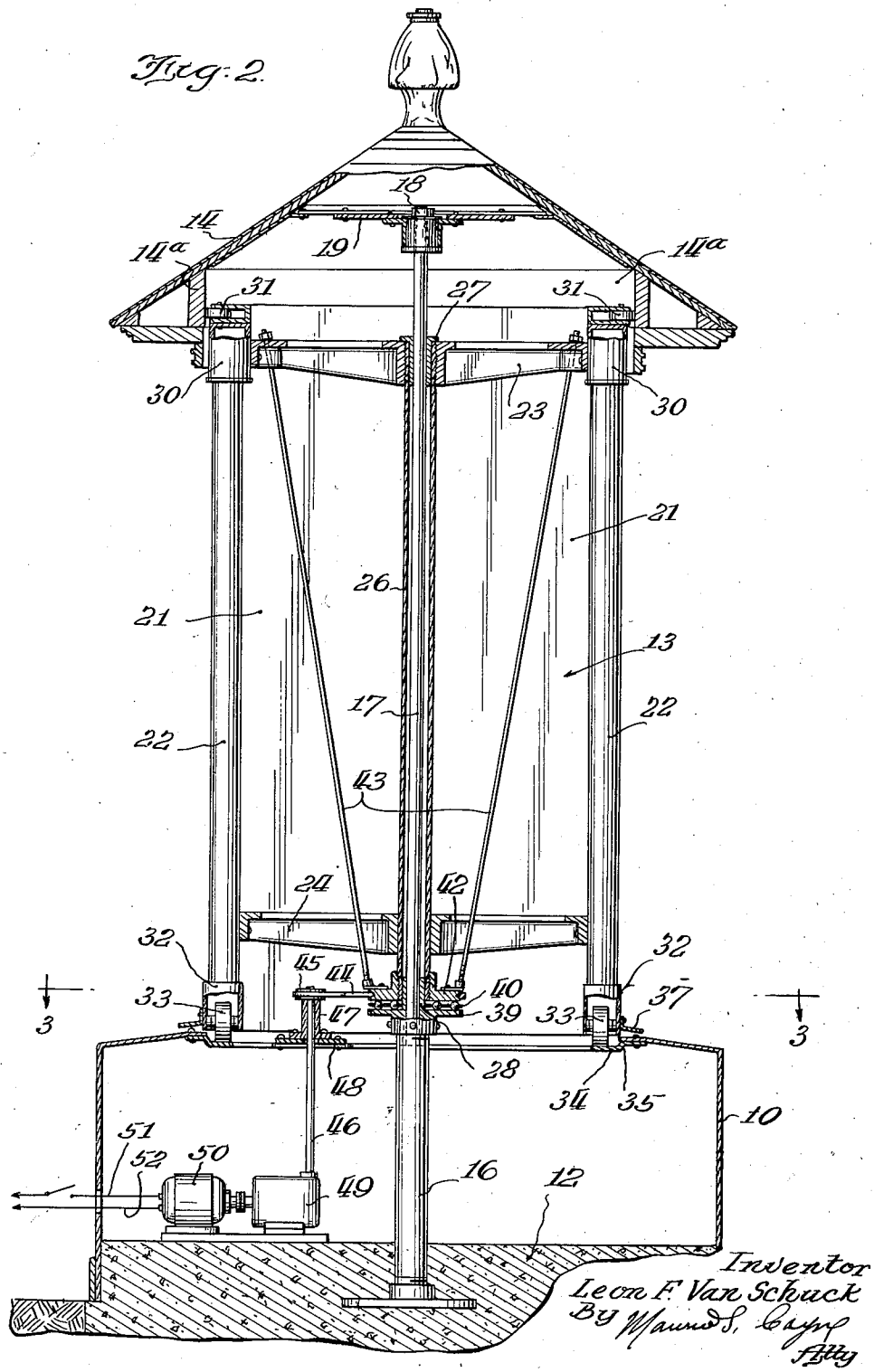
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Fig. 2.



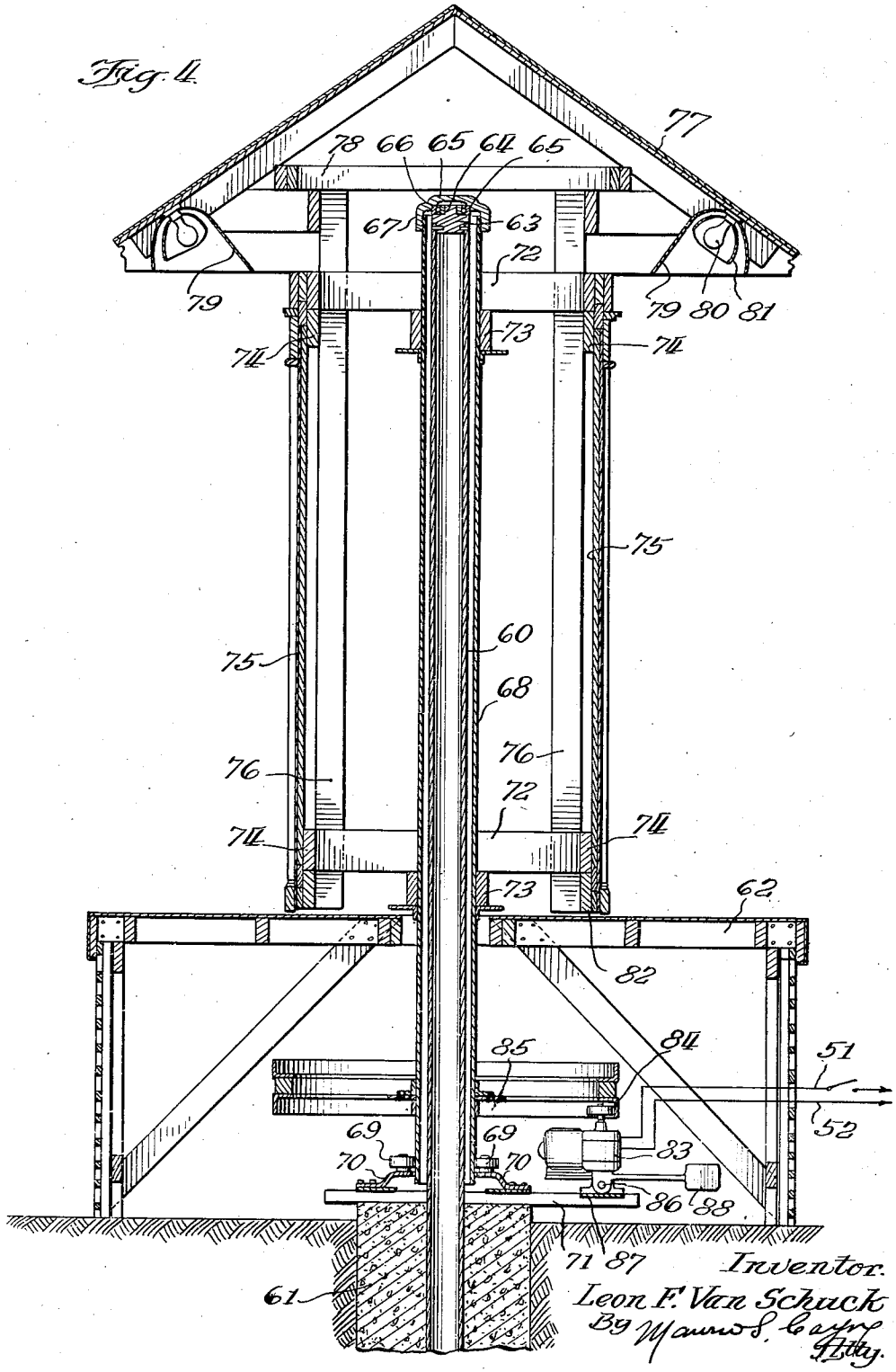
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Fig. 4.



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Fig. 5.

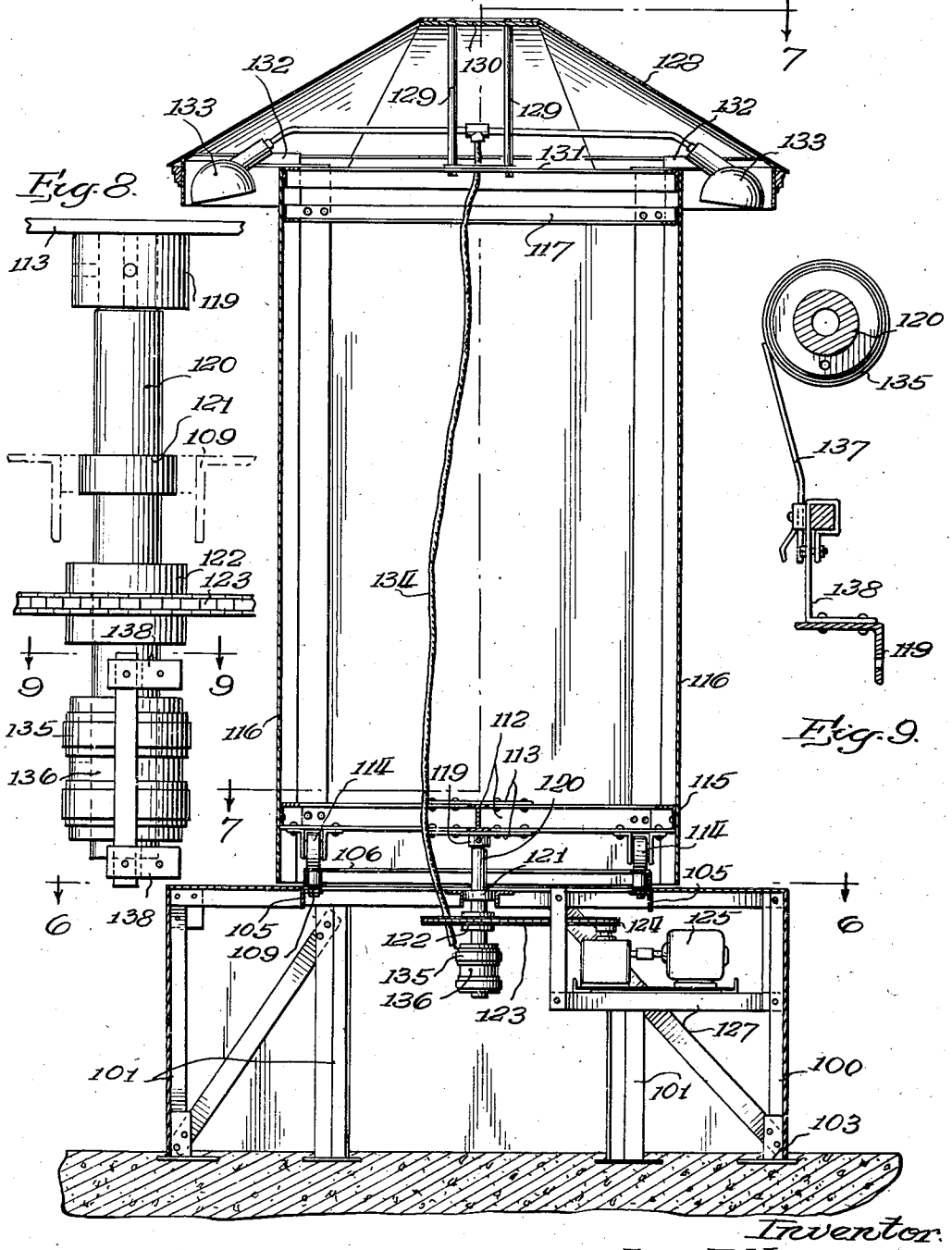


Fig. 8.

Fig. 9.

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Fig. 6.

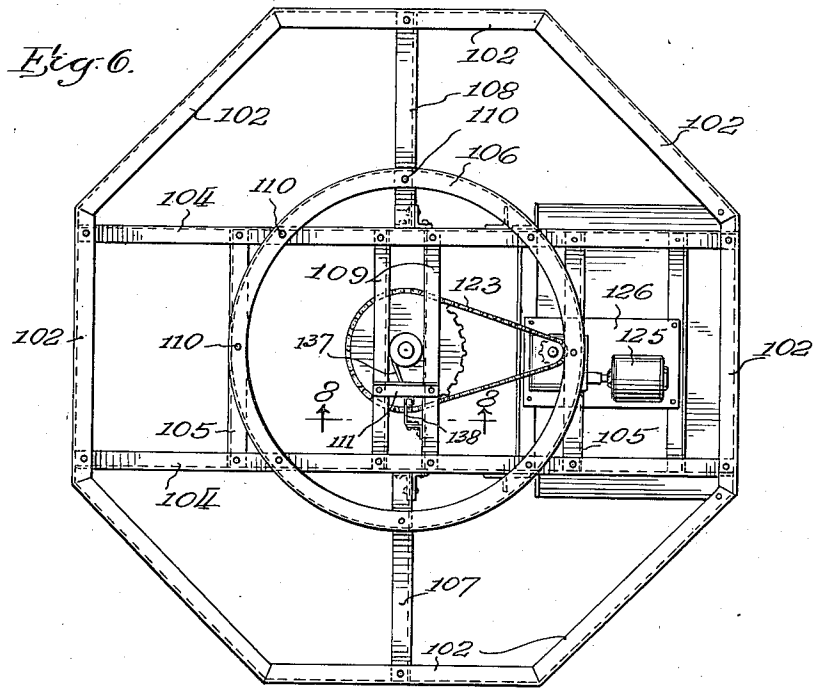
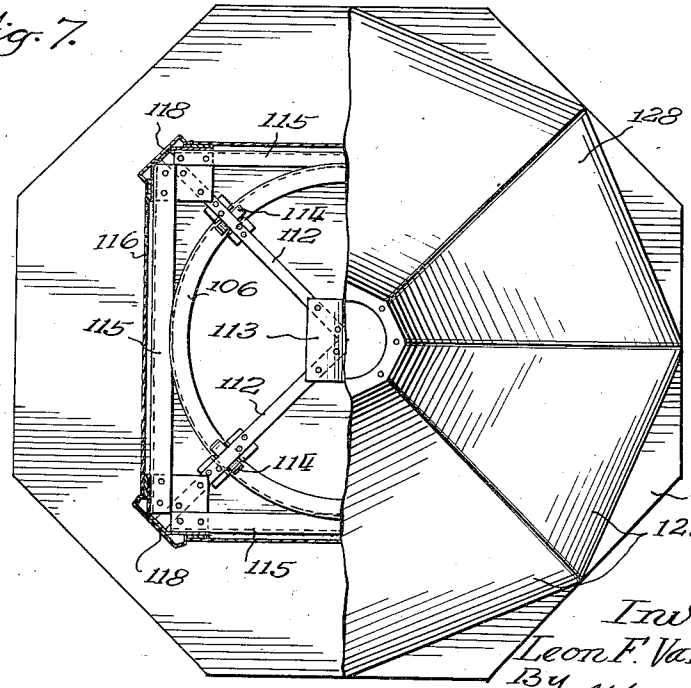


Fig. 7.



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Patented Mar. 30, 1937 2,075,245

UNITED STATES PATENT OFFICE

2,075,245

ROTARY SIGN

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Application July 27, 1936, Serial No. 92,850

16 Claims. (Cl. 40—33)

This invention relates to advertising or display sign structures of the type adapted for out-door use, and more particularly to sign structures of the movable type wherein one or more panel elements is continuously or intermittently moved. It has long been recognized in the sign art that some form of action or movement, either of the sign panel proper, or elements comprising the same, is highly desirable for attracting and creating interest of observers. Sign structures of this type, therefore, are generally preferred to stationary panel sign structures.

One object of the present invention is to provide an improved sign structure of the above-mentioned type, which is of simple and attractive construction, durable and practical for withstanding out-door weather conditions, and which may be economically manufactured and operated.

Another object is to provide an improved sign structure of the above character, including a novel construction and arrangement of means for guiding and supporting a rotary sign panel structure.

A further object resides in the provision of a novel driving arrangement for rotating a vertically disposed sign panel structure.

A further object of my invention is to provide an improved sign construction of the above mentioned type, which is characterized by the provision of a vertically disposed rotatable sign panel structure, and a top therefor disposed in fixed relation thereto.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings, a preferred embodiment thereof, from an inspection of which when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings;

Figure 1 is an elevational view of a sign construction embodying one form of the present invention;

Fig. 2 is a vertical section through the sign structure showing details of construction;

Fig. 3 is a transverse horizontal section taken as indicated at line 3—3 on Fig. 2;

Fig. 4 is a vertical section through a modified form of the sign structure showing details of construction;

Fig. 5 is a longitudinal sectional view through a still further modified form;

Fig. 6 is a transverse sectional view taken substantially on line 6—6 of Fig. 5;

Fig. 7 is a sectional view taken substantially on line 7—7 of Fig. 5;

Fig. 8 is a sectional view taken substantially on line 8—8 of Fig. 6; and

Fig. 9 is a sectional view taken on line 9—9 of Fig. 8.

Signs constructed and designed for out-door use are generally of substantial size and may be mounted directly on the ground, or upon buildings, or upon a specially constructed supporting structure. The sign structure embodying this invention is, for purposes of illustration, herein shown mounted directly upon the ground upon a suitable foundation, and includes a hollow base 10, permanently and rigidly secured to a concrete foundation indicated at 12.

Mounted on said base for either continuous or intermittent rotation about a vertical axis is a sign panel structure, indicated generally at 13, and mounted in fixed relation to the base, and extending over said sign panel structure is a top 14 of any suitable shape, herein shown as of generally pyramid form. Permanently anchored in the concrete foundation 12 is a standard 16 to which is rigidly connected an upwardly extending member 17 located substantially centrally with respect to the base and top and about which the sign panel structure rotates. Said member 17 is rigidly connected at its upper end by a nut 18 to a brace structure 19 which is rigidly connected to the inner surfaces of the top 14, and by virtue of which said top is rigidly supported in fixed vertically spaced apart relation to the base.

The sign panel structure may be of any suitable form and may contain any suitable type of illustration, descriptive or display matter, and is herein shown of tubular cross section, and composed of three relatively flat vertically disposed sign panel elements 21 rigidly connected together at their vertical marginal edges, as may

be seen in Fig. 3 of the drawings. Said tri-panel sign structure is carried on three upright supports 22 which are rigidly connected to said panels at their respective connections to each other. The sign panels 21 and their supports 22 are rigidly braced and reinforced and are connected together at their upper and lower ends by spider elements 23 and 24, respectively. Said spider elements are in turn rigidly connected to opposite ends of a vertically disposed sleeve 26 mounted for rotation about the upright top supporting member 17. Suitable bushings 27 and 28 are mounted on the member 17 in opposite ends of the sleeve 26 to provide bearings for said sleeve.

The upper ends of each of the upright supports 22 of the sign panel structure is provided with a fitting 30 in which an axial thrust roller 31 is pivotally mounted on a vertical axis for engaging a circular track 14a secured to the interior of the hollow pyramid top 14. These rollers provide accurate anti-friction guidance for the upper end of the sign panel structure 13 and tend to maintain it in axial alignment during rotation thereof. The lower end of each of the supports 22 is also provided with a fitting 32 in which an anti-friction roller 33 is pivotally mounted on a horizontal axis, as seen in Fig. 2 of the drawings.

These rollers 33 are mounted for rotation on an annular track 34 secured to the top of the base member 10 and serve to support the sign panel structure 13 in upright position. Said track is preferably formed with an annular flange 35 at its outer edge for confining said roller 33, and thus assisting in maintaining the lower end of the sign panel structure 13 in axial alignment. Secured to the sign panel structure adjacent the bottom is a laterally and downwardly extending apron or skirt 37 disposed in close proximity to the top of the base, as may be seen in Fig. 2, for protecting and covering said rollers 33 against dirt, water, etc.

The bushing 28 is provided with a transverse flange 39 which serves as a lower raceway for an end thrust anti-friction bearing 40. Rigidly connected to the lower end of said sleeve 26 is a driven sheave wheel 42, the underface of which rests upon the bearing 40 and provides the upper raceway for said bearing 40, and this bearing together with the anti-friction rollers 33 totally support the entire sign panel structure 13. A plurality of upwardly diverging guy rods 43 are rigidly connected at their lower ends to said driven sheave number 42 and pass through apertures formed in the arms of the lower spider member 24, and have their upper ends connected to the outer ends of the arms of the upper spider member 23, as seen in Fig. 2 of the drawings. Thus, by virtue of these connections the driving torque applied to said sleeve 26 by said sheave member 42 is imparted through the spiders 23 and 24 simultaneously and directly to both top and bottom portions of said sign panel structure 13.

The sheave wheel 42 is driven by a friction belt 44, from a drive sheave 45 which is mounted in the upper end of a vertically disposed drive shaft 46. It is manifest, however, that any other suitable type of drive connections may be employed for imparting rotary movement to the sleeve 26 and the sign panel structure. The shaft 46 is journaled at its upper end in a bearing 47 mounted on a support 48 secured to the underside of the track 34, as seen in the drawings, and the lower end of said shaft is connected to and driven by a speed reducer, indicated at 49, which in turn is driven by an electric motor 50. Electrical conductors 51 and 52 connect the motor to a suitable source of supply of electrical current. For convenience in affording access to the interior of the base 10 for adjusting, cleansing or repairing the drive mechanism, the side wall of the hollow base is provided with a door 55. It is to be understood that the top and base may be formed in various shapes and designs for purpose of appearance, or for purposes of carrying out certain types of illustration, design, etc., represented on the sign panel 21.

In the modified form shown in Fig. 4, the panel sign structure, as well as the roof or top structure, is supported for rotation, these parts being rigidly tied to each other and are arranged so as to rotate as a unit. Thus as illustrated in the modified form, there is provided a center member or column 60, the lower portion of which is rigidly and permanently secured in a concrete foundation 61. This form also includes a hollow base 62 mounted directly upon the ground and being adapted for receiving and housing the driving mechanism for the sign structure to be presently described.

The center member 60 is hollow and has provided at its upper end a plug or cap 63 rigidly secured thereto. The upper portion of the plug 62 is provided with a raceway 64 for receiving a plurality of anti-friction ball bearings 65, which bearings are disposed between said raceways 64 and a co-operating raceway 66 carried by a cap member 67 supported on the plug 64. The cap member 67 is rigidly secured to the upper end of a vertically disposed sleeve 68 which surrounds the center column 60. Said sleeve 68 extends down to a point adjacent the lower portion of the center column at which point the said sleeve is braced against lateral movement by a plurality of oppositely disposed castors or rollers 69 bearing against the upper surface thereof. These rollers 69 are mounted upon suitable brackets 70 rigidly secured to a member 71 carried upon the concrete base 61.

The entire sign structure as well as the roof or top is secured to or supported by said sleeve 68 so as to rotate therewith. Thus as shown in Fig. 4, the sign panel structures are connected to each other and to the sleeve 68 by means of the cross members 72 and 73, which members are provided at the lower and upper portions of said sign panels. Said members 72 and 73 carry and support the frames 74 which constitute the sign panels. To these frames are connected the panel 75 upon which the advertising matter may be disposed.

To the said cross member 72 and 73 are also secured the frames 76 which support the roof structure, generally designated by the reference character 77, there being secured to said frames 76 adjacent their upper portions a frame 78 upon which the top or roof structure 77 is mounted.

In the roof structure 77 may be provided suitable pockets 79 of metal or the like for housing an electric bulb 80 with its associated reflector 81, whereby suitable illumination may be had for the sign panels, there being one of such pockets provided directly above each of said sign panels. By connecting the roof structure directly to the sign structure so that the frame will rotate with the latter, the illumination provided by the light source 80 will be constantly directed upon said sign panels. The lowermost portion of the sign

panel structure extends to a point just above the top of the base 62 to provide a small clearance, as shown at 82.

Any suitable and desired means may be employed in imparting rotary motion to the sleeve 68, and in the embodiment illustrated, I provide a motor 83, to the drive shaft of which is connected a friction wheel 84 which is arranged for frictional engagement with a wheel 85 rigidly secured to the sleeve 68, whereby rotation of the motor will impart a rotary movement to the sleeve 68 and the parts carried thereby and associated therewith. In order to insure constant contact between the friction wheel 84 and wheel 85, the motor is pivotally secured, as shown at 86, on a bracket 87 carried by the member 71 and a counterweight 88 is provided for normally urging said motor driven wheel 84 towards the contacting surface of the wheel 85.

In the modified form shown in Figs. 5 to 9, the panel sign structure is formed as a unit with the roof structure and the same is mounted for rotation on the circular track carried by a base upon which the entire structure is supported.

The base structure is generally designated by the reference character 100 and, as illustrated in the embodiment, is of octagonal shape and is built up from a plurality of supporting members 101 tied together at their upper ends by means of the angle bars 102. The lower ends may have suitable plate members 103 rigidly secured thereto, the latter being embedded in a concrete foundation or the like to form a solid support for the sign structure to be now more fully described.

Extending across the top of the base 100 are a pair of members 104, the free ends of said members being rigidly secured to the base structure. Disposed intermediate the ends of said members 104 are a pair of cross members 105, said cross members being rigidly secured to the members 104, and with said members 104 form a support for a circular track 106. The track is further supported by a pair of members 107 and 108, the former extending from the frame member 104 to the side wall of the base structure and the other extending from the other of said members 104 to the opposite wall of said base structure. The said members 104 are further tied to each other by means of the cross members 109, the free ends of which are rigidly secured to said members 104. The track 106 is rigidly and permanently secured upon the base structure by means of suitable rivets or bolts 110, or in some other suitable and well known manner. A small cross member 111 ties together the members 109.

The sign structure proper is carried by four arms, each designated by the reference character 112, which arms may be in the form of I-beams, said arms being tied to each other by suitable plates 113, and each of said arms being provided adjacent its free end with a roller 114 which is adapted to track 106. The free ends of said arms are connected by members 115 to which members are connected substantially rectangular frames 116 upon which the sign display is mounted. The upper portions of said frame 116 are tied to each other by means of the member 117.

In order to give to the sign structure a more finished appearance, the corner edges are covered with suitable ornamental strips 118, as shown in Fig. 7 of the drawings. At the point of intersection of the arms 112, there is provided a collar 119 within which is rigidly secured one end of a shaft 120, said shaft extending downwardly and through a bearing 121 to a point below the track 106 and within the base structure 100. The shaft 120 is provided with a sprocket wheel 122 around which passes a chain 123, which chain connects the sprocket wheel 122 with a wheel 124, the latter driven by a motor 125, said motor being supported on a platform 126 carried by a frame structure 127 provided within the base structure 100. Upon the operation of the motor 125, it will be readily apparent that rotary movement will be transmitted to the shaft 120 which in turn will rotate the arms 112 and with it the sign structure carried by said arms.

In order to give a more finished appearance to the sign structure, the same is provided with a roof structure 128, the latter being of any suitable configuration, and is supported upon the sign structure to which it is rigidly secured and with which it is adapted to rotate. The roof structure may be of any suitable and desired shape, although in the embodiment illustrated, it is of octagon shape. It is supported on the sign structure by means of the upstanding rods 129, to the upper ends of which is fixed a plate 130, to which plate the panels of the roof structure are rigidly secured. The lower ends of said rods are secured to a frame 131 which connects the upper ends of the sign panels 116 to each other. Suitable extensions 132 are provided adjacent the upper end of the sign structure for supporting the lower ends of the roof panels.

In order to properly illuminate each of the four sign panels, there is provided a suitable lamp 133 which is mounted within the roof structure and is disposed directly above and centrally of the sign panel which it is to illuminate. Electric current for said lamps 133 is provided through a cable 134 which extends through the sign structure, the lower end of said cable being connected to a pair of collector rings 135 which are mounted on a bakelite member 136 rigidly secured to the shaft 120 for rotation therewith. In constant contacting engagement with said rings 135 is a collector brush 137, one end of which is rigidly secured to an insulating bracket 138, which bracket is in turn secured to a fixed portion of the base structure. In this manner, a suitable supply of electricity may be carried to the lamps 133 disposed in the roof structure for illuminating the sign panels.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood and appreciated from the foregoing without further description, and it should also be manifest that while preferred embodiments of the invention have been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, and means for rotating said sign panel structure.

2. A device of the character described comprising a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a sub-

stantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, said sign panel structure being composed of a plurality of upright flat panel elements connected together at their sides enclosing said upright member, and means for rotating said sign panel structure.

3. A device of the character described comprising a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, means for maintaining said sign panel structure in centralized alignment during rotation, and means for rotating said sign panel structure.

4. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, means for maintaining said sign panel structure in centralized alignment during rotation, including a plurality of axial thrust rollers carried on the upper end of said sign panel structure, an internal circular track carried by said top and engageable by said rollers, and means for rotating said sign panel structure.

5. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, anti-friction means for supporting said sign panel structure, and means for rotating said sign panel structure.

6. A device of the character described comprising a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, means for supporting said sign panel structure including a plurality of anti-friction rollers carried on the lower end of said sign panel structure engaging a horizontal track on the top of the base, and means for rotating said sign panel structure.

7. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, anti-friction means for guiding the sign panel structure during rotation, anti-friction means for supporting said sign panel structure on said base, and means for rotating said sign panel structure.

8. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a substantially centrally disposed upright member rigidly connected at its upper end to said top, a sign panel structure disposed between said base and top and rotatable about said upright support, anti-friction rollers carried on the lower end of said sign panel structure engaging a horizontal track on said base for supporting said sign panel structure, a continuous laterally extending apron secured to the lower end of the sign panel structure and disposed in close proximity to the top of the base for protecting said anti-friction rollers, and means for rotating said sign panel structure.

9. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a centrally disposed upright member, an enclosed tubular formed sign panel structure disposed between the base and top and rotatable about said upright member, a sleeve mounted on said upright member for rotation thereabout, means rigidly connecting said sleeve to said sign panel structure adjacent its upper and lower ends, and means for rotating said sleeve and sign panel structure.

10. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a centrally disposed upright member, an enclosed tubular formed sign panel structure disposed between the base and top and rotatable about said upright member, a sleeve mounted on said upright member for rotation thereabout, means rigidly connecting said sleeve to said sign panel structure adjacent its upper and lower ends, an anti-friction thrust bearing positioned for supporting said sleeve and sign panel structure on said upright member, and means for rotating said sleeve and sign panel structure.

11. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a centrally disposed upright member, an enclosed tubular formed sign panel structure disposed between the base and the top and rotatable about said upright member, a sleeve mounted on said upright member for rotation thereabout, means rigidly connecting said sleeve to said sign panel structure adjacent its upper and lower ends, means for supporting said sign panel structure including an anti-friction thrust bearing for supporting said sleeve on the upright member, and anti-friction rollers carried on the lower end of the sign panel structure engaging a horizontal track on top of said base, and means for rotating said sleeve and sign panel structure.

12. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a centrally disposed upright member, an enclosed tubular formed sign panel structure disposed between the base and top and rotatable about said upright member, a sleeve mounted on said upright member for rotation thereabout, means rigidly connecting said sleeve to said sign panel structure adjacent its upper and lower ends, anti-friction means for guiding and supporting said sign panel structure during rotation, and

means for rotating said sleeve and sign panel structure.

13. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a centrally disposed upright member, an enclosed tubular formed sign panel structure disposed between the base and top and rotatable about said upright member, a sleeve mounted on said upright member for rotation thereabout, means rigidly connecting said sleeve to said sign panel structure adjacent its upper and lower ends, anti-friction rollers carried on the lower end of said sign panel structure adapted for engaging a continuous horizontal track on said base member, said track being depressed relative to the top of said base to assist in guiding said rollers during rotation of said sign panel structure, and means for rotating said sleeve and sign panel structure.

14. A device of the character described comprising a base, a top disposed in vertically spaced apart relation to said base, means for supporting the top in fixed relation to the base including a centrally disposed upright member, an enclosed tubular formed sign panel structure disposed between the base and top and rotatable about said upright member, a sleeve mounted on said upright member for rotation thereabout, means rigidly connecting said sleeve to said sign panel structure adjacent its upper and lower ends, and means for rotating said sleeve and sign panel structure, said means including a driven member rigidly connected to the lower end of the sleeve, and guy rods connecting said driven member to the said means connecting said sleeve and the upper portion of said sign panel structure.

15. A device of the character described comprising a base, a substantially centrally disposed upright member rigidly secured within said base, a sign panel structure disposed around said upright member, a sleeve rotatably mounted on said upright member, said sign panel structure being rigidly secured to said sleeve for rotating therewith, and means for rotating said sleeve.

16. A device of the character described comprising a base, a centrally disposed upright member supported on said base, a sleeve mounted on said upright member for rotation thereabout, an enclosed tubular formed sign panel structure rigidly secured to said sleeve adjacent its upper and lower ends, and means for rotating said sleeve and sign panel structure.

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