Aug. 26, 1941. J. I. ROBIN 2,253,869

CHANGEABLE EXHIBITOR

Filed Feb. 7, 1939 4 Sheets-Sheet 1

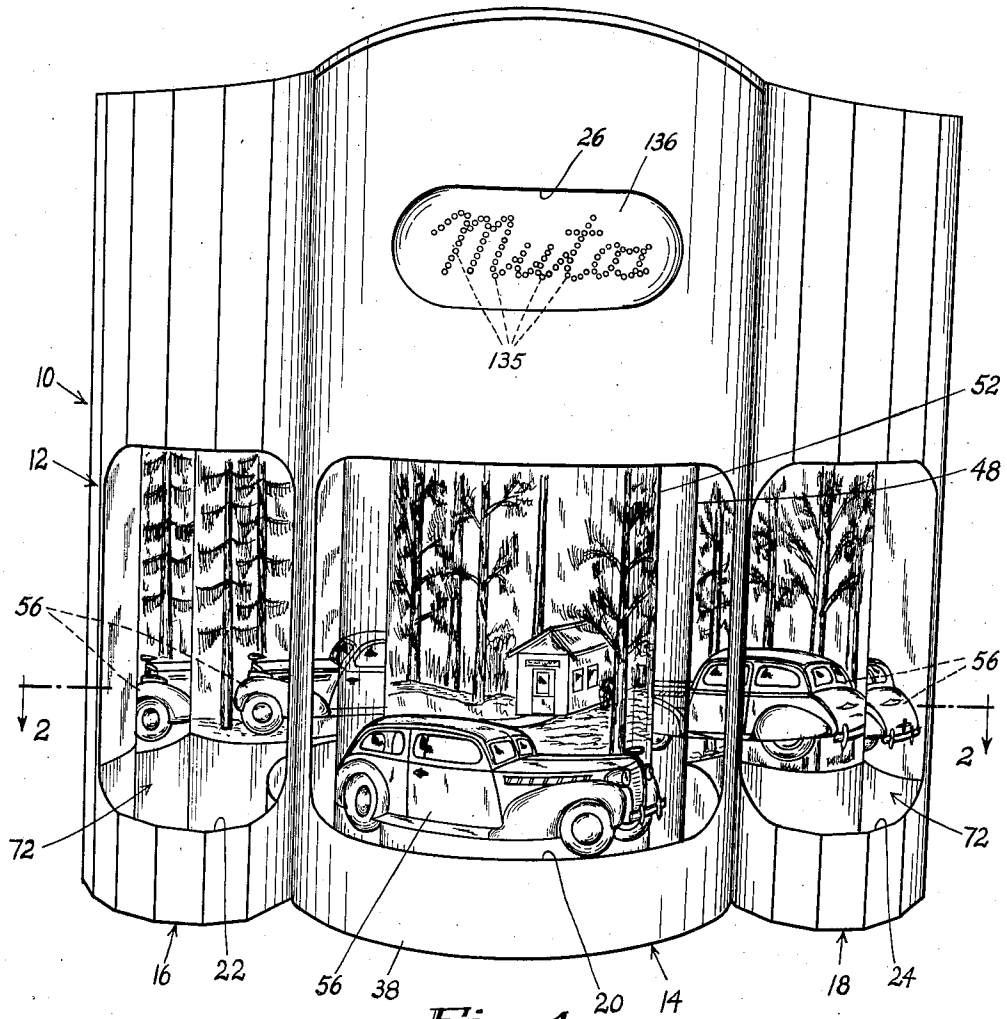


Fig. 1

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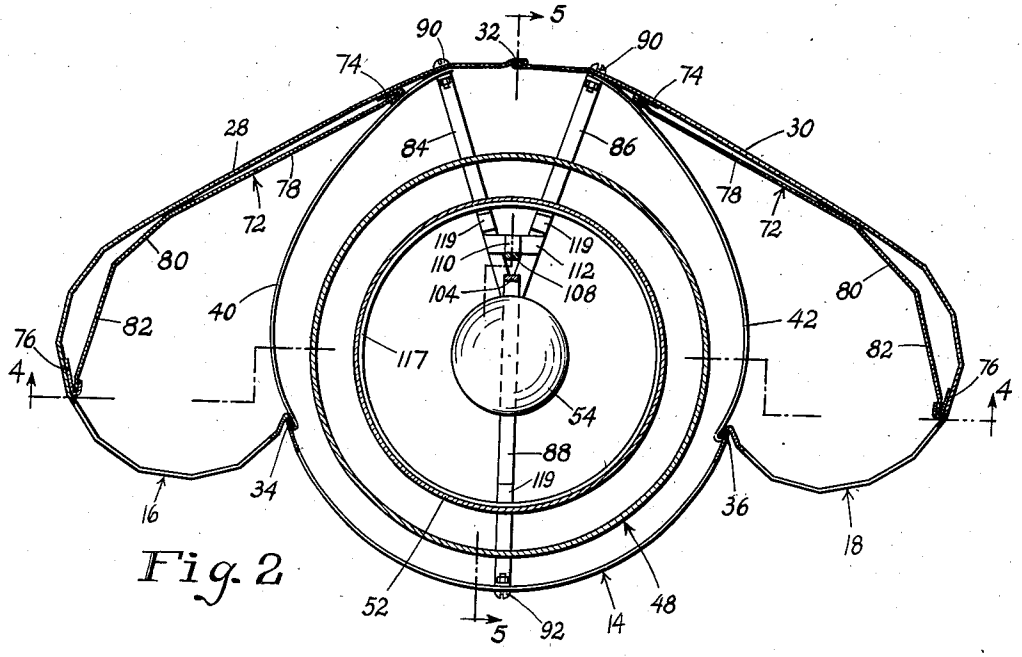


Fig. 2

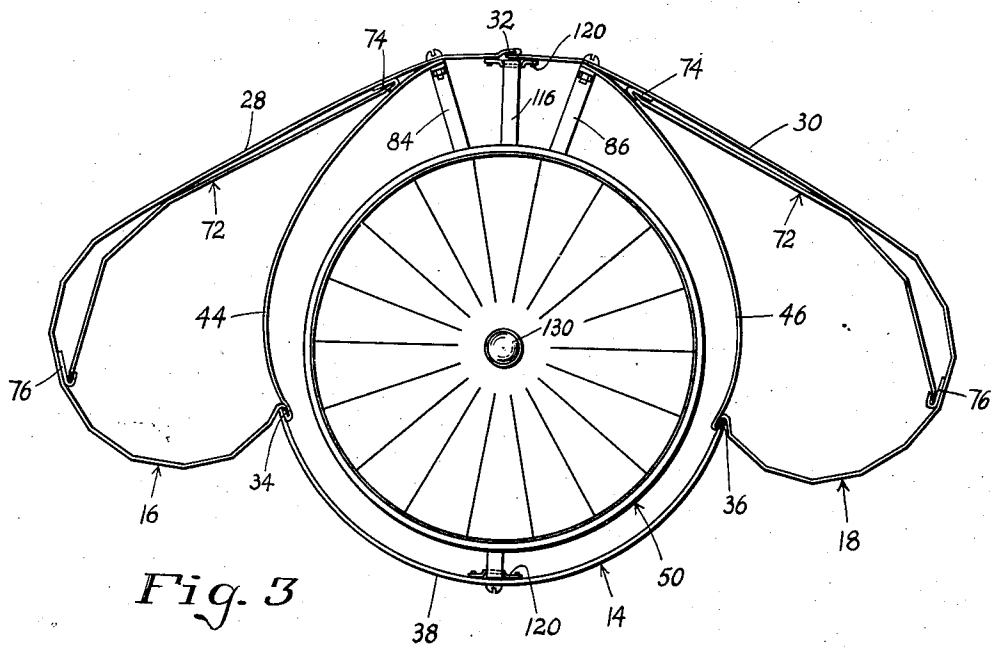


Fig. 3

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CHANGEABLE EXHIBITOR

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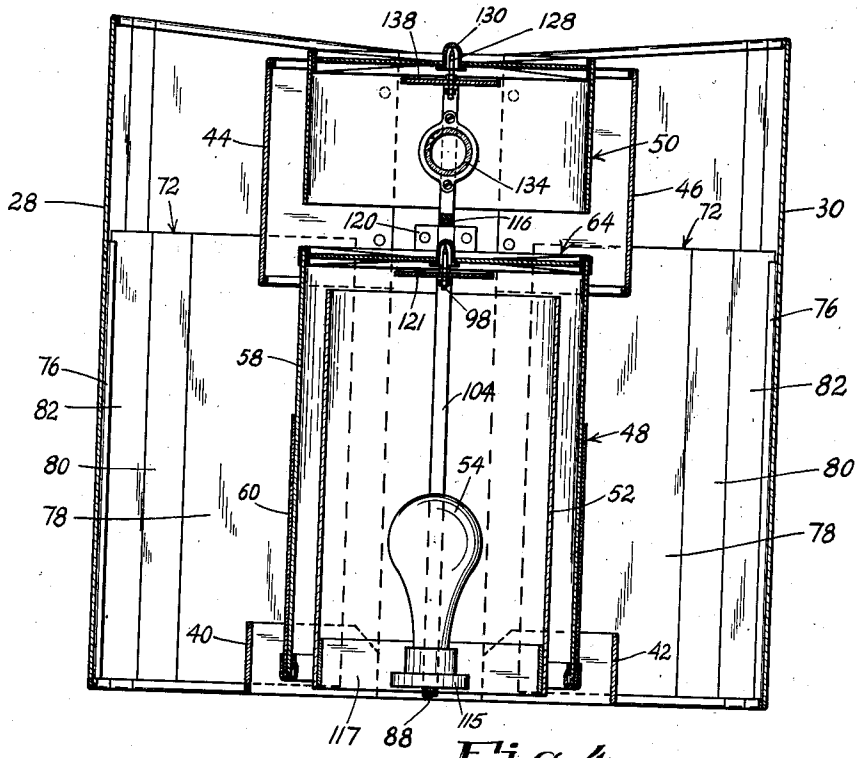


Fig. 4

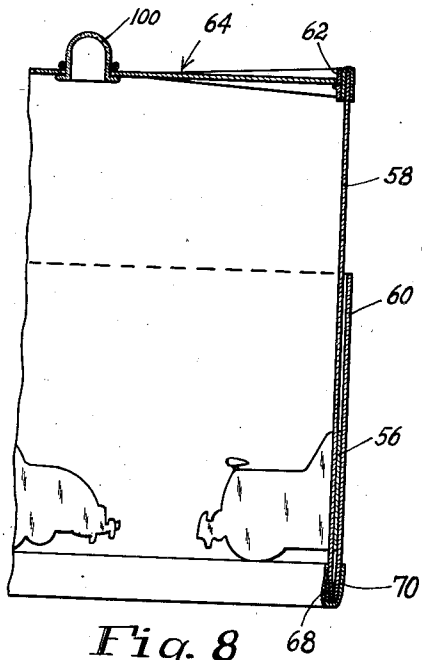


Fig. 8

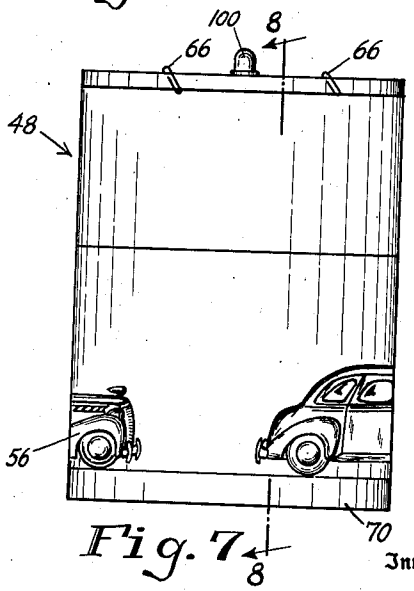


Fig. 7

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CHANGEABLE EXHIBITOR

Filed Feb. 7, 1939 4 Sheets-Sheet 4

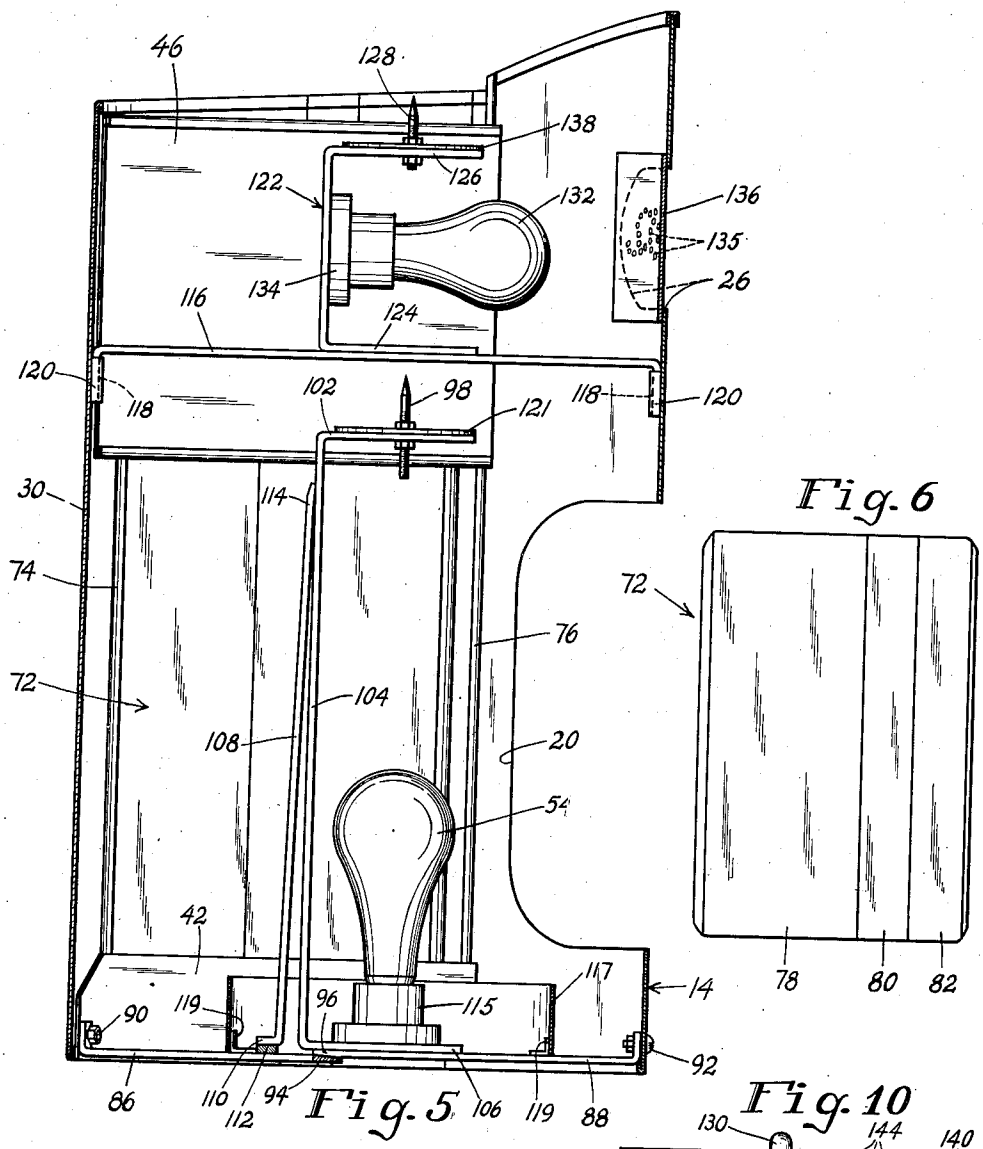


Fig. 5

Fig. 6

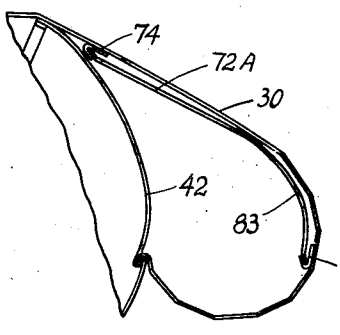


Fig. 9

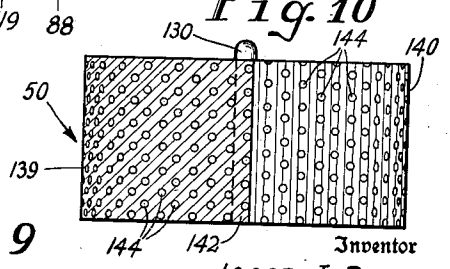


Fig. 10

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UNITED STATES PATENT OFFICE

2,253,869

CHANGEABLE EXHIBITOR

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Application February 7, 1939, Serial No. 255,008

3 Claims. (Cl. 40—40)

This invention relates to changeable exhibitors or display devices. In its more specific aspects the invention is concerned with illuminated rotary exhibitors which are actuated by currents of air induced by heat, usually the heat transmitted from the illuminating lamps.

One object of the invention is to provide an exhibitor of the character described having means constructed and arranged to provide in combination direct views and reflected images of one or more display elements.

Another object of the invention is to provide, in an exhibitor of the type referred to, means for reflecting images of one or more elements carried by a rotary member in such manner that said images appear to travel in a non-circular path.

Another object of the invention is to provide an exhibitor of improved appearance and designed to attract more attention than is ordinarily the case with the usual changeable exhibitor.

A further object of the invention is generally to provide an improved exhibitor of the type which is actuated by heat induced air currents.

The above objects of the invention and other objects which might hereinafter appear will be fully understood from the following description considered with reference to the accompanying drawings, it being understood, however, that the latter are illustrative of the preferred embodiment of the invention and not limitative thereof.

In the drawings:

Fig. 1 is a front view in elevation of an exhibitor embodying the present invention;

Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view;

Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 2;

Fig. 5 is a vertical sectional view on the line 5—5 of Fig. 2 with certain parts omitted;

Fig. 6 is a front view in elevation of one of the reflectors;

Fig. 7 is a view in elevation of a rotary exhibitor element;

Fig. 8 is a sectional view on the line 8—8 of Fig. 7 on a larger scale;

Fig. 9 is a fragmentary horizontal sectional view showing a modification;

Fig. 10 is a side view, in elevation, of the upper rotary exhibitor element.

Referring now to the drawings in detail, the changeable exhibitor 10 made in accordance with the preferred embodiment of the invention comprises a casing or frame 12 having a central section 14 and lateral sections 16 and 18. Said sections are provided with display openings 20, 22 and 24, respectively, through which the displays are exposed to view. Also, as here shown central section 14 is provided with an additional opening 26 located above opening 20 for an auxiliary display. The lateral sections 16 and 18 comprise sheet metal members 28 and 30 which are of suitable configuration and which are joined to each other at the rear of the casing by a central vertically extending lap joint 32. The front edges of members 28 and 30 are joined at the vertical side edges 34 and 36 of the sheet metal member 38 which constitutes the front of central section 14. Central section 14 also includes lower sheet metal members 40 and 42 and upper sheet metal members 44 and 46 secured at their rear edges to members 28 and 30, and at their front edges at the joints between the front edges of said members 28 and 30 with the side edges 34 and 36 of member 38 of central portion 14. Said sets of members 40, 42 and 44, 46 are positioned, respectively, below and above the display openings 20, 22 and 24. It will be noted that said sets of members 40, 42 and 44, 46 extend transversely of the casing from front to rear and reinforce the latter.

One or more rotary members operated preferably, but not necessarily, by heat induced air currents are positioned within central section 14. In the form of the invention illustrated herein, there is a main rotary member 48 and an auxiliary rotary member 50. Rotary member 48 is mounted for rotation about a stationary cylindrical member 52 within which the lamp 54 is positioned. Stationary member 52 is preferably translucent and on its outer surface is lithographed or otherwise ornamented and provides a background for the elements carried by rotary member 48. The stationary background member 52 may be composed of a sheet of translucent paper, which is relatively stiff and self-sustaining in vertical position. It will be understood that while background member 52 is translucent, it conceals lamp 54 and the other elements positioned within said member. As illustrated herein, rotary member 48 carries a plurality of elements 56, here shown in the form of representations of automobiles. Rotary member 48 is wholly or partially transparent as may be necessary to expose elements 56 to view and for that purpose is composed of Celluloid or other suitable transparent sheet material. It will be understood that said elements 56 may be formed of sheet material or may be painted or otherwise applied to the surface of member 48. In the form of the invention here-

in illustrated, said elements 56 are formed of sheet material such as translucent paper, and are held between the main cylinder 58 of rotary member 48 and the auxiliary cylinder 60 of said member (Figs. 7 and 8). The upper edge of cylinder 58 is secured to the peripheral rim 62 of the heat actuated rotor 64 in any suitable way, preferably removably, by a plurality of clips 66. The lower edges of cylinders 58 and 60 are secured together and are attached to a peripheral metal strip 68 in any suitable way as by adhesive tape 70.

It will be understood that as the rotary member 48 rotates, the display elements 56 are carried successively in front of the stationary background member 52, and that the light from the lamp 54 illuminates both the background and the display elements all of which are exposed to view through the opening 20 in central portion 14, and that on this account an attractive display is provided. However, an important feature of the present invention resides in the provision of means constructed and arranged to display images of the display elements 56 and also preferably of the background provided by stationary cylinder 52. The means provided for this purpose include the reflectors 72 positioned in the lateral sections 16 and 18. Said reflectors may be made of any suitable material, preferably sheet metal having a lustrous mirror surface. Each reflector 72 is removably mounted in position in vertical frame members 74 and 76 secured to casing members 28 and 30. Each reflector 72 preferably comprises a plurality of angularly related flat surfaces 78, 80 and 82, respectively, as clearly shown in Figs. 2, 3 and 6. The construction and arrangement of the reflector 72 in the lateral sections 16 and 18 are such that images of the stationary background member 52 and of the display elements 56 carried by rotary member 48 are exposed to view through the openings 22 and 24, respectively, in said lateral sections, and when member 48 is in motion, the reflected images of the display elements 56 appear as a procession of many more elements than are carried by said rotary member. Thus, for example, when the display elements 56 are constituted by representations of automobiles, and when the exhibitor is in operation, although there are only two or three elements 56 on member 48, there appears to be a continuous procession of automobiles moving from right to left (viewing Fig. 1), that is from lateral section 18 to and past lateral section 16. As rotary member 48 is composed of transparent sheet material, there is no noticeable image of said rotary member, except the display elements 56 carried thereby, in reflectors 72. On the other hand, parts of the ornamental outer surface of background member 52 are reflected by reflectors 72, and the images of display elements 56 appear to pass in front of a background which is the image of said portions of the outer surfaces of background member 52. The reflectors are provided with the above described angularly related flat surfaces for the purpose of preventing the successive images of the display elements 56 from running together or blurring, that is, the angularly related flat surfaces of the reflectors produce distinct images and serve to enhance the effect of the procession of automobiles.

It will be understood that the indication of the display elements 56 as automobiles is merely illustrative and that said elements may assume other forms. Numerous display elements, other than automobiles, may be carried by rotary member 48. Thus, for example, when the exhibitor is utilized for advertising a motion picture, the elements may be constituted by pictorial representations of one or more of the actors or actresses who appear in the advertised motion picture. It will further be understood that the reflectors can be constituted without the angularly related surfaces. This is illustrated in Fig. 9 of the drawings in which the reflector is indicated by the reference numeral 72A and from which it is seen that said reflector has a curved forward portion 83 in lieu of the angularly related flat portions 80 and 82, said reflector 72A conforming as a whole generally to the contour of the companion casing member on which the reflector is mounted.

The frame for the stationary member 52 and for the rotary member 48 as well as for the lamp 54, which illuminates the exhibitor and which heats the air for providing the air currents for actuating rotary member 48, is positioned within the central section of the container. Said frame member comprises rods 84, 86 and 88 arranged as here shown in Y-formation. The outer ends of rods 84 and 86 are secured to the rear portions of casing members 28 and 30, respectively, by screws 90 which also serve to secure the adjacent ends of transverse member 40 and 42 to said casing members. The outer end of rod 88 is secured to wall 38 of central section 14 below opening 20 by a screw 92. The inner ends of rods 84 and 86 may be integral with each other and at their connected portions 94 are joined to the inner end 96 of rod 88, in any suitable way, preferably, by being welded thereto. The bearing spindle 98, on which the cup bearing 100 of rotary member 48 is mounted for rotation, is carried at the upper reflexed end portion 102 of a rod 104. The lower reflexed portion 106 of rod 104 is secured to the inner end portion of rod 88 in any suitable way, preferably being welded thereto. A reinforcing rod 108 is secured at its lower end portion 110 to a cross rod 112 welded to rods 84 and 86. The upper end portion 114 of reinforcing rod 108 is secured to the upper end portion of rod 104 preferably by being welded thereto. A socket 115 for lamp 54 is removably secured in any suitable way to the lower portion 106 of rod 104. The support for the stationary background member 52 is constituted by a cylindrical sheet metal member 117 secured to rods 84, 86 and 88 by L-shaped members 119 welded to the inner surface of cylindrical member 117 and to the upper surfaces of said rods. Background member 52 is removably secured to cylindrical member 117 and projects upwardly therefrom. Said member 52, besides constituting a background as above explained, also provides a passage for the flow of air to the vanes or blades of the rotor 64 of rotary member 48. A metal disk 121 secured to the upper portion 102 of rod 104 serves to direct the heated air toward the outer ends of the rotor blades.

The frame for the auxiliary rotary member 50 and for the lamp for illuminating and for actuating said rotary member is mounted within central section 14 in the upper part thereof. As here shown, said frame comprises a cross rod 116 having down-turned end portions 118 which are removably received within brackets 120, one of which is secured to the adjacent central portions of members 28 and 30 and the other of which is secured to the front wall 38 of central section

14 between the openings 20 and 26. A bracket 122 is supported on cross rod 116. Said bracket is constituted by a U-shaped rod having a lower portion 124 which is secured to rod 116 by welding and which has an upper portion 126 to which is secured the spindle 128 for the cup bearing 130 of the rotor of rotary member 50. It will be understood that the rotor of rotary member 50 is provided with blades or vanes which are acted upon by the air currents induced by heat from lamp 132. The socket 134 for said lamp is secured to the intermediate vertical portion of the rod which constitutes bracket 122.

The opening 26 in the upper part of central section 14 is provided with a cover 136 of translucent or opaque material carrying, as illustrated, any suitable legend which for example may be the name of the automobile being advertised or the name of a motion picture theatre, etc. Said name may be outlined by dot-like openings in said cover or by transparent or translucent portions in the material of said cover. Also, if desired, the peripheral wall of rotary member 50 may comprise a plurality of circumferentially extending sections of suitable transparent or translucent sheet material of different colors whereby the color of the light visible through opening 26 or through the multiplicity of openings or dot-like elements 135 in the letters in cover member 136 varies repeatedly during the operation of the exhibitor. Said sections of different colors are indicated at 139 and 140 in Fig. 10 and are there shown as overlapped and secured together, preferably adhesively, as indicated at 142 at their adjacent edge portions at one side of the rotary member and similarly are secured together in overlapping relation at the other side of the rotary member. A desirable feature of the invention results from the provision of a multiplicity of dot-like elements such as dots or small perforations 144 in sections 139 and 140 whereby to vary the effect of the illumination visible through the openings or transparent portions 135 of the letters in cover member 136. When elements 144 are dots they are preferably of a different degree of transparency than that of the sheet material of said sections and are preferably less transparent. By reason of the provision of said elements 144, whether as dots or perforations, the letters 135 in cover member 136 appear to be in motion during the rotation of member 50 which itself is concealed from view. The illusion of motion of the letters or other symbols provided in member 136 is vividly affected by reason of the repeated movement of elements 144 past said cover member and greatly enhances the attractiveness of the exhibitor. While I have illustrated two sections of different colors, there may be only one section or more than two sections, say four or five sections of different or other contrasting colors or shades of color. A metal disk 138 is carried by the upper portion 126 of bracket 122 for directing the heated air against the outer portions of the vanes of the rotor of auxiliary rotary member 50.

Thus it is seen that the exhibitor embodying the present invention is well adapted to accomplish the several objects thereof. It will be understood, however, that while I have illustrated and described the preferred embodiment of my invention, the latter may be embodied otherwise than as here shown, and that in the illustrated embodiment certain changes in the construction and arrangement of parts may be made and that certain parts may be used without others without departing from the spirit of the invention. Thus, for example, rotary members 48 and 50, or either of them, may be actuated by means other than by an air flow operated rotor, for example, an electric motor, in which case the lamps need have no function other than for illumination. It will also be understood that any suitable materials may be used in the various parts of the exhibitor, for example the casing or frame may be made wholly or partly of non-metallic material instead of sheet metal. Accordingly, I do not wish to be limited to the specific embodiment of the invention herein shown or described or to the form of the exhibitor disclosed herein except as may be required by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a changeable exhibitor, a frame comprising a central section having a front wall, lateral sections at opposite sides, respectively, of said central section, each lateral section having a front wall portion joined to the adjacent side edge of said front wall of the central section and a side and rear wall portion, said wall portions of said lateral sections defining chambers at opposite sides, respectively of said central section, said front wall of said central section and said front wall portions of said lateral sections each having an opening therein, a reflector mounted in each of said chambers of said lateral sections adjacent the side and rear wall portions thereof, a light permeable member in said central section, a lamp within said member, a rotary member mounted for rotation about said light permeable member and sufficiently transparent to permit the passage of light from said light permeable member, said rotary member being constructed and arranged to carry thereon one or more elements and positioned in relation to said reflecting members for reflection by the latter, and means for actuating said rotary member.

2. In a changeable exhibitor, a frame comprising a central section having a front wall, lateral sections at opposite sides, respectively, of said central section, each lateral section having a front wall portion joined to the adjacent side edge of said front wall of the central section and a side and rear wall portion, the adjacent edges of said rear wall portions being joined to each other, said wall portions of said lateral sections defining chambers at opposite sides, respectively, of said central section, said front wall of said central section and said front wall portions of said lateral sections each having an opening therein, a reflector mounted in each of said chambers of said lateral sections adjacent the side and rear wall portions thereof, a light permeable member in said central section, a lamp within said member, a rotary member mounted for rotation about said light permeable member and sufficiently transparent to permit the passage of light from said light permeable member, said rotary member being constructed and arranged to carry thereon one or more elements and positioned in relation to said reflecting members for reflection by the latter, and means for actuating said rotary member.

3. In a changeable exhibitor, a frame comprising a central section having a front wall, lateral sections at opposite sides, respectively, of said central section, each lateral section having a front wall portion joined to the adjacent side

edge of said front wall of the central section and a side and rear wall portion, the adjacent edges of said rear wall portions being joined to each other, said wall portions of said lateral sections defining chambers at opposite sides, respectively, of said central section, said front wall of said central section and said front wall portions of said lateral sections each having an opening therein, a reflector mounted in each of said chambers of said lateral sections adjacent the side and rear wall portions thereof, a light permeable member in said central section, a lamp within said member, a rotary member mounted for rotation about said light permeable member and sufficiently transparent to permit the passage of light from said light permeable member, said rotary member being constructed and arranged to carry thereon one or more elements and positioned in relation to said reflecting members for reflection by the latter, and means for actuating said rotary member, each of said reflectors comprising a plurality of integral angularly related continuous flat-planar surfaces.

JACOB I. ROBIN.