April 22, 1930. R. N. CHUBB 1,755,315

CHANGEABLE SIGN

Filed Oct. 22. 1927

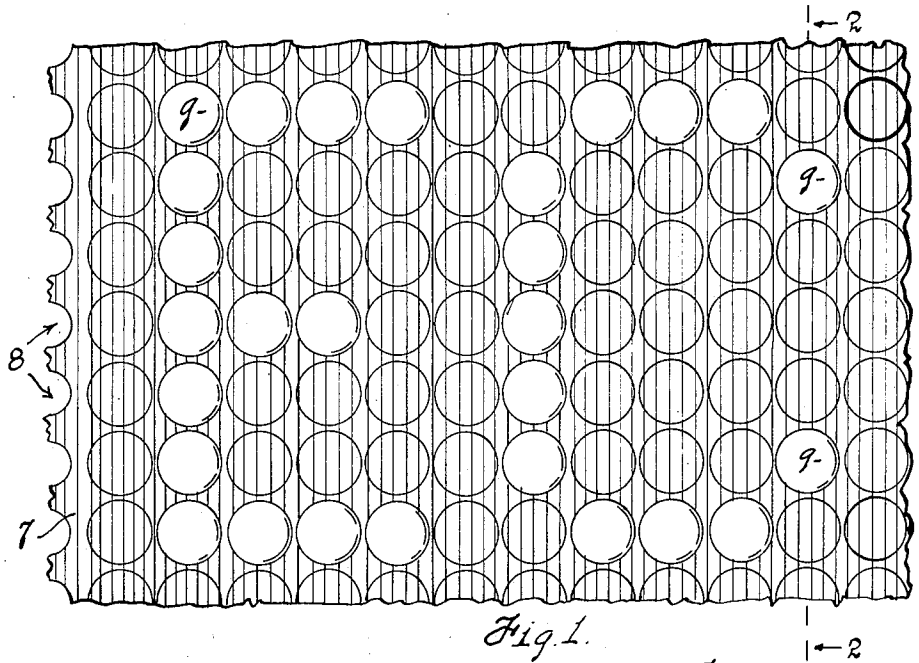

Fig. 1.

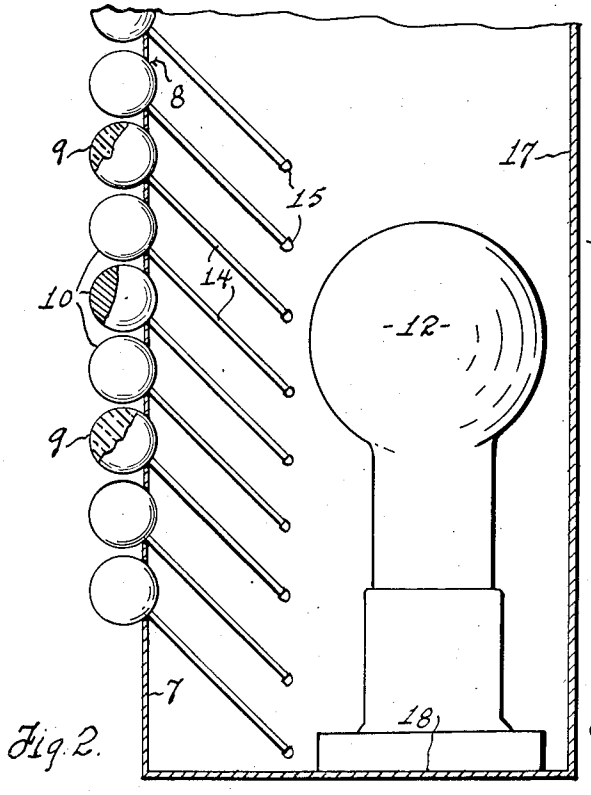

Fig. 2.

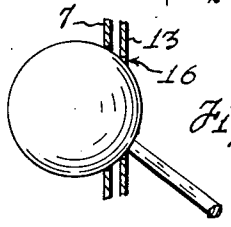

Fig. 3.

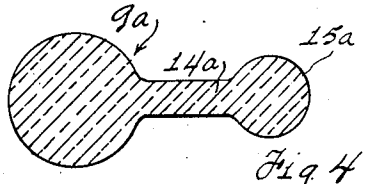

Fig. 4

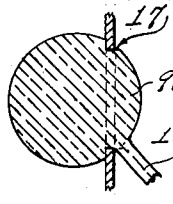

Fig. 5.

INVENTOR:

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UNITED STATES PATENT OFFICE

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CHANGEABLE SIGN

Application filed October 22, 1927. Serial No. 227,999.

The present invention relates to methods and means for making changeable signs and for changing such signs as desired.

My previous inventions in changeable signs have contemplated the use of movable members of various construction for creating changeable signs and it is an object of this invention to provide a distinctly different changeable sign which does not come within the scope of any of my previous inventions and claims.

This invention has for its principal object the provision of a very simple economical and highly useful changeable sign.

Another object of the invention is to provide a sign in which the construction of the body of the sign is extremely simple and durable and in which the movable elements which are employed to make up the legend of the sign are simple, interchangeable and all substantially similar and not originally forming a part of or otherwise complicating the construction of the sign body.

Still another object of the invention is to provide a sign having a simple and even single source of light, although the completed sign will have the appearance of being made up of a great number of separate incandescent lamps.

Still another object of my invention is to provide a sign which may be employed either for daylight use or for illumination by artificial light.

In connection with artificially illumined signs it is a further object of my invention to provide a brilliantly illumined sign for carrying out the foregoing objects, which sign so controls the light that no light rays will escape or be visible except at the desired points.

Numerous other objects and advantages of my invention will appear hereinafter.

In carrying out this new invention I provide a face plate, preferably of an opaque material provided throughout its surface area with a multiplicity of apertures arranged in close parallel lineal formations so that the perforations are arranged in parallel lines transversely, longitudinally and obliquely, respectively. The remaining surface or background of the face plate may be light or dark as desired. In using a light face plate I employ dark members to make up the legend of the sign. In employing a dark or black face plate I employ light colored members to make up the sign legend. Either the light or dark members may be translucent, as will appear hereinafter. Assuming that a dark face plate is employed, I employ a plurality of translucent or light colored members, each adapted to occupy a corresponding aperture. Certain selected apertures, which by virtue of their disposition follow the path of the desired letter, number, or commercial figure, are selected and filled with the translucent members. All other apertures are filled with the dark or opaque members, or, the letters may be formed of an arrangement of members of one color while the main background may be made up with members of a contrasting color; the last named members being either opaque or translucent.

The sign is visible and the letters and characters so formed are rendered perfectly distinct at a distance either by reason of the contrasting colors of the said members or by reason of the fact that certain of the members transmit light while the other members are opaque and comparatively imperceptible.

I have illustrated one of the many practical embodiments of my invention by the accompanying drawings, in which:

Figure 1 is a face view of a fragment of a sign constructed in conformity with my invention.

Figure 2 is a view in vertical section thereof.

Figure 3 is a view in vertical section of a slight modification of the construction shown in Figure 2.

Figure 4 is a view in elevation of a modified construction for the movable members.

Figure 5 is a view in section of a fragment of the sign shown in Figure 2, but in which the movable member employed is a modification of the members shown in Figures 2 and 4 respectively.

In carrying out my invention in the embodiment shown in Figures 1 and 2, I employ

a simple opaque sheet 7 of suitable material such as metal, wood, paper or the like.

This sheet or face plate is provided throughout its area with closely arranged apertures 8 arranged in vertical, horizontal and oblique lines, respectively.

For each aperture there is provided the movable member such as 9 or 10; in this case comprising a sphere or ball of a translucent material such as glass. This ball is appreciably larger than the aperture so that when placed in front of an aperture it will entirely exclude the passage of light through the said aperture, and the major bulk of the ball will stand forwardly of the aperture to be clearly visible both from points directly forward of the face plate as well as from points to either side thereof. In fact this ball or sphere is more visible from angular points of vision than are the illumined elements of any of the common convex signs now in use. The particular advantage of this sign is that the spheres are disposed forwardly of the plate rather than rearwardly thereof.

In the embodiment being described, spheres 9 are translucent while spheres 10, which may be composed of glass or any other suitable substance, are opaque so that they do not transmit light and are of the same dark tone as the surface of the face plate.

In the fragment shown in Figure 1, translucent spheres 9 are employed and arranged to form the letter E. The remaining apertures are closed or occupied by the opaque members 10. The result is a particularly striking and brilliant sign. A lamp 12 suitably disposed behind the sign supplies the illumination. As the rays of light from the lamp strike the various translucent members said members, being spherical, each act somewhat as a condensing lens and convey the light rays through the structure of the sphere and emit these rays in the character of a brilliant and suitably diffused glow. The opaque spheres do not show any appreciable leakage of light because of the fact that each sphere is substantially larger than the corresponding aperture.

In the sign shown in Figure 2, each member 9 and 10, is provided with a stem 14 having one end attached to, or embedded in, the sphere and the other end 15 free. The stem protrudes directly from the corresponding sphere. To install a sphere in place in front of an aperture the stem is introduced through the aperture. The sphere is then released and the weight of the stem, acting as a counterbalance for the sphere, holds the sphere in the position shown merely through the aid of gravity and without any frictional or other connection between the sphere and the face plate. Practically speaking, each sphere is "hooked" to the margin of the corresponding aperture in such manner that the sphere is contiguous to the margin of the aperture, to the practical exclusion of light rays; except of course for the rays which pass through the translucent spheres.

In the form shown in Figure 3 there is provided a rear face plate 15 in addition to the front face plate. This rear face plate is slightly spaced from the other plate and its apertures 16, while corresponding to the apertures in the front plate, are each smaller in diameter. Thus direct passage of light rays around the margin of a front aperture and a corresponding sphere, are interfered with by the rear face plate.

In the form shown in Figure 4, the member 9 is shown as composed of the same material, the sphere and stem being integral and preferably composed of glass or the like.

In the sign shown in Figure 5 only the front plate is used. The spheres, however, are each provided with a groove 17 so arranged that when the sphere is in proper position the margins of the corresponding aperture extend into the groove and exclude the light rays from passing directly between the face plate and the sphere. It is understood, of course, that the face plate is of a comparatively thin material and it is not commercially practical to provide a perfect fit between the surface of the sphere and the margin of a corresponding aperture.

Various arrangements and color effects may be provided. The sign shown in Figure 1 is preferably composed of the black face plate; the members 9 being white or opalescent glass highly visible in day light and the members 10 being black and opaque. The face plate may, however, be white; the spheres making up the letter should then be black, and the spheres occupying all the other apertures should be white.

Another possible arrangement is to have the spheres 9 composed of a material of one striking color, while the members 10 are of a contrasting color. In such case all the members and the face plate may be either opaque or translucent as desired, but in either case, the face plate should be of the same color as either members 9 or 10.

It will be apparent now that I have provided a highly legible and brilliant sign on which the letters, characters, figures and representations may be readily changed, and, while I have shown and described certain constructions and arrangements of parts, I do not limit myself thereto and may employ various constructions, arrangements and color schemes within the scope of the appended claims.

I claim:

1. In a sign a face plate provided with a plurality of apertures, a plurality of members, one removably lodged in each aperture, each member being larger than the corresponding aperture, and having its major bulk disposed forwardly of said plate, certain of

said members being translucent and others being opaque, and a lamp behind said face plate.

2. In a sign a face plate provided with a plurality of apertures, a plurality of members, one removably lodged in each aperture, each member being larger than the corresponding aperture, and having its major bulk disposed forwardly of said plate, and means on each member for removably hooking same to the margin of the corresponding aperture, certain of said members being translucent and others being opaque, and a lamp behind said face plate.

3. In a sign a face plate provided with a plurality of apertures, a plurality of members, one removably lodged in each aperture, each member being larger than the corresponding aperture, and having its major bulk disposed forwardly of said plate, certain of said members being translucent and arranged in lineal formation to form legible characters and the remaining of said members being opaque and of a contrasting degree of visibility and a lamp to the rear of said plate.

4. In a sign a face plate provided with a plurality of apertures, and a plurality of aperture closing members, certain being translucent and others being opaque, each member comprising a sphere of larger diameter than the aperture and a stem to said sphere insertable in a corresponding aperture.

5. In a sign a face plate provided with a plurality of apertures, and a plurality of aperture closing members, each member comprising a sphere of larger diameter than the aperture and a stem to said sphere insertable in a corresponding aperture, said stem disposed to counterweight said sphere and to hold same contiguous to the margin of a corresponding aperture.

6. In a sign a face plate provided with a plurality of equal diametered circular apertures, a plurality of spheres, one in each such aperture, certain of said spheres being translucent and arranged to outline sign characters and the remainder of said spheres being opaque; each of said spheres being larger than the coresponding aperture and having its major bulk projecting forwardly of said face plate and its minor bulk projecting inwardly of the corresponding aperture, and a lamp disposed to the rear of said plate to throw light rays on the minor bulk of said spheres.

7. In a sign a face plate provided with a plurality of apertures, and a plurality of aperture closing opaque members, each member comprising a head of larger diameter than the aperture and a stem to said head inserted in said aperture corresponding, said stem disposed to counterweight said head and to hold same contiguous to the margin of a corresponding aperture.

8. In a sign a face plate provided with a plurality of apertures and a plurality of aperture closing opaque members each comprising a head of larger diameter than the aperture; said head being disposed forwardly of said plate, and means on each member for removably hooking same to the margin of the corresponding aperture, and a lamp behind said face plate.

9. In a sign an opaque plate provided with an aperture, and a translucent solid bodied member inserted in said aperture; said member conforming in shape to the aperture while being larger than the aperture with the major bulk of the member disposed forwardly of the plate and the minor bulk protruding rearwardly thru the aperture, and a lamp behind said plate.

ROWLAND N. CHUBB.