

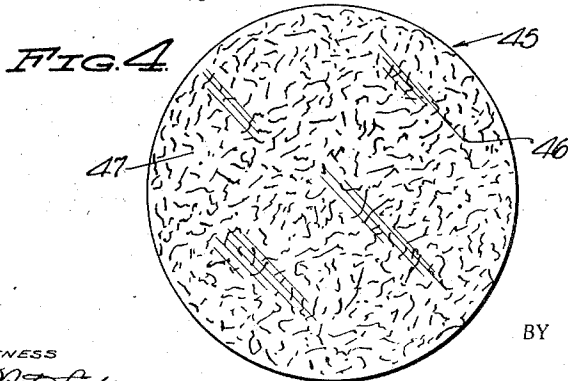
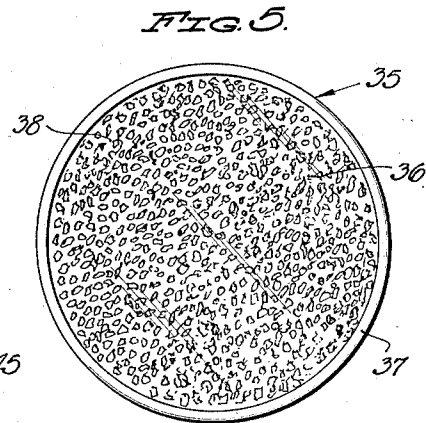
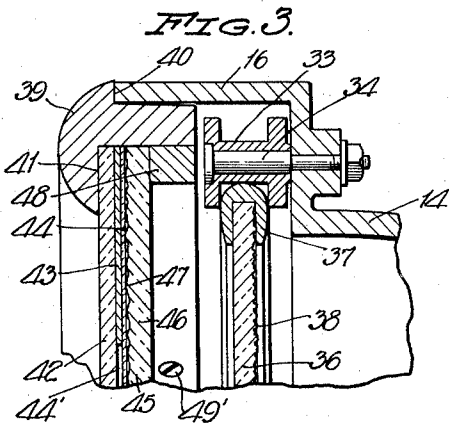
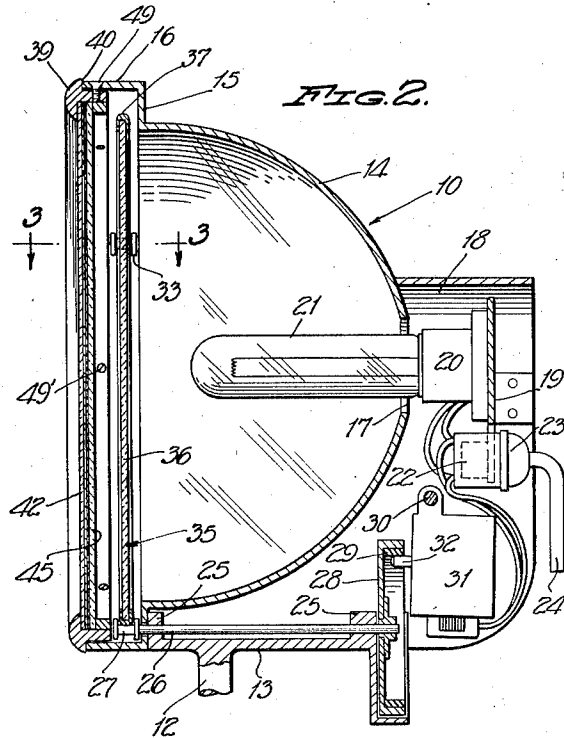
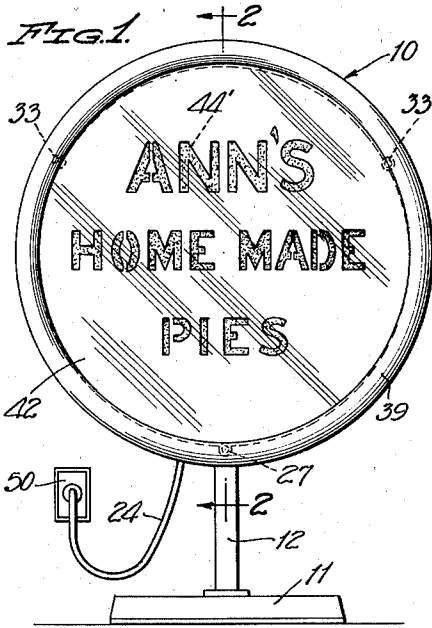
Oct. 1, 1940.

J. A. BERGMAN

2,216,261

ILLUMINATED SIGN

Filed Sept. 13, 1939



WITNESS
E. J. Patterson
9/15/40

JOHN A. BERGMAN,
INVENTOR.

BY

Ely & Pattison

ATTORNEYS.

UNITED STATES PATENT OFFICE

2,216,261

ILLUMINATED SIGN

John A. Bergman, North Bergen, N. J.; Alfred Herrman, administrator of said John A. Bergman, deceased

Application September 13, 1939, Serial No. 294,609

4 Claims. (Cl. 40—133)

This invention relates to illuminated signs and more specifically to an animated sign.

One of the important features of the invention resides in an illuminated sign in which the letters, numbers, symbols or other sign characters are electrically illuminated in a novel manner to impart an illusion to the eye of an observer that running water appears behind the illuminated area defining the sign characters.

Another feature of the invention is to provide an electrically illuminated sign in which the illuminated sign characters are made to sparkle to attract the eye thereto, thus making the sign exceptionally attractive for advertising display purposes.

A further feature of the invention is the provision of an illuminated sign in which the running water illusion or sparkle is accomplished by a breaking up or deflection of light rays by the movement of one roughened glass plate relative to another roughened glass plate, the glass plates being interposed between a source of light and the stencil on which the sign characters are formed.

A still further feature of the invention is to provide an illuminated sparkling sign in which the illuminated sign characters forming a single sign may be of multi-color, by the use of a single source of electric light.

A still further feature of the invention is to provide an illuminated sign embodying the aforementioned features, which is simple and inexpensive of construction, easy to assemble, inexpensive to operate, and which is attractive and appealing to the eye of an observer.

Other novel features of the invention will become apparent as the following specification is read in conjunction with the accompanying drawing in which:

Figure 1 is a front elevational view of my illuminated sign.

Figure 2 is an enlarged vertical transverse sectional view on the line 2—2 of Figure 1.

Figure 3 is an enlarged detail horizontal sectional view on the line 3—3 of Figure 1.

Figure 4 is a face view of the stationary light reflecting plate looking at the rough side thereof.

Figure 5 is a face view of the movable light reflecting plate looking at the roughened side thereof.

Referring to the drawing by reference characters, the numeral 10 designates my improved illuminated sign in its entirety which includes a base 11 having a post or standard 12 rising therefrom, the top of the post supporting a platform 13. The platform 13 rigidly supports a housing

or parabolic reflector 14, the front open end of the reflector being provided with an annular outwardly extending flange 15 from which an annular forwardly extending flange 16 extends. The rear of the reflector 14 is provided with a centrally disposed lamp opening 17. Fixedly secured to the platform 13 and disposed rearwardly of the reflector and fitting thereagainst, is an inverted U-shaped housing 18 to which a bracket 19 is fixedly secured and on which a forwardly extending electric lamp socket 20 is mounted, the said socket receiving a tubular electric lamp 21, which lamp extends through the opening 17 into the reflector 14. The socket 20 is electrically connected by wires to a plug socket 22 with which an attachment plug 23 is connected, the plug 23 being attached to one end of an electric conductor cord 24.

Journalled in upstanding bearings 25 carried by the platform 13 is a drive shaft 26, the forward end of the shaft extending through the flange 15 and having a drive spool roller 27 fixed thereto. The other end of the shaft 26 has a rearwardly flanged drive wheel 28 fixed thereto, the flange of the wheel on the inner side thereof being provided with a rubber ring 29. A rod 30 bridges the walls of the inverted U-shaped housing 18 and pivotally supports an electric motor 31, the pivot being off center so as to throw the motor forwardly to cause the armature shaft 32 of the motor to frictionally engage the friction ring 29. The electric motor 31 receives its energy through wires which lead therefrom and connect with the terminals of the plug socket 22. Two equi-distantly spaced idler spool rollers 33 are mounted on stub shafts 34 which are fixedly connected to the flange 15. The idler rollers 33 and the drive roller 27 are radially arranged with respect to the axis of the reflector 14 and are disposed on the same circumferential plane for rotatably supporting a translucent element 35. The translucent element 35 comprises a circular glass plate 36, the periphery of which is provided with a friction material such as lead 37, and it is the lead ring 37 which engages the idler rollers 33 and the drive roller 27 so that upon rotation of the drive roller 27, a slow rotation will be imparted to the translucent element 35. The flat side of the glass plate 36 facing toward the rear of the reflector is roughened as at 38, and which roughened surface defines a myriad of light reflecting surfaces, for the roughened surface is provided with many depressions.

Fitting against the free peripheral edge of the annular flange 16 is a rim 39 which is substan-

tially T-shaped in cross section to provide a rearwardly facing shoulder 40 which abuts the free peripheral edge of the flange 16, and an inwardly facing shoulder 41 with which a clear glass plate 42 abuts. The rim 39 is fixedly secured to the flange 16 by screws 49'. Fitting against the inner side of the glass plate 42 is a stencil disk 43, the said stencil disk having stencil openings 44' cut therein, the stencil openings defining the sign characters, which in this instance read "Ann's home made pies." Positioned rearwardly of the stencil sheet 43 is a colored translucent sheet 44, which may be of "Cellophane" or other equivalent material. The color sheet may be made up of one or more different colored sections, depending upon the color of the sign characters desired when the sign is illuminated. Fitting against the color sheet 44 is a translucent element 45, which comprises a glass body 46 having one of its flat sides roughened as at 47 to define a myriad of light reflecting surfaces. The translucent element 45 is of a similar construction to the translucent element 35, with the exception that the roughened surface 47 is coarser or less roughened than the surface 38 of the element 35. The roughened surface 47 faces toward the front of the sign, that is, against the color sheet 44, and is held in fixed spaced relation with respect to the element 35, by a clamping ring 48 which encircles the rim 39 and is secured thereto by screws 49.

In practice, assume that the electric conductor cord 24 is plugged into an electric outlet socket 50 as illustrated in Figure 1, thus current will flow to the socket 22 and be fed therefrom to the lamp socket 20 to illuminate the lamp 21, and also to the motor 31 to impart rotation to the armature shaft 32. Rotation of the armature shaft 32 imparts a slow rotation to the wheel 28, causing rotation of the shaft 26 and drive spool roller 27 which forms a friction drive between the periphery of the rotatable translucent element 35 and the driving shaft 26. Light from the lamp 21 is reflected forwardly onto the roughened side 38 of the rotating translucent element 35 and the reflecting surfaces formed by this roughened surface breaks up the direct rays of the light, and these broken rays pass on to the translucent element 45, where they are further broken up by reason of the roughened surface 47 and thence reflected forwardly through the stencil openings of the stencil sheet 43. This rotation of the translucent element 35 relative to the fixed translucent element 45 imparts a sparkling appearance to the light visible through the stencil openings when the sign is viewed from the front. In addition to the sparkling effect, the result produces an illusion of running water. The breaking up of the light rays imparts an animated appearance to the sign which for advertising display purposes will attract the eye of persons within eye distance of the sign.

For the best results, it has been found that the roughened surface 38 should be finer than that of the roughened surface 47, and that the glass plates on which these surfaces are formed must be predeterminedly spaced apart, the spacing distance being dependent upon the characteristics of the two roughened surfaces which define a myriad of light reflecting surfaces.

Through actual experiments, I have found that glass known as "Zionite glass" produces the result desired, but it is understood that other types of glass may be resorted to if desired.

In view of the fact that the sparkling effect

which is obtained is caused by the movement of one of the glass translucent elements with respect to the other, it will be understood that signs might be constructed in which a sliding or reciprocating movement may be imparted to the element 36 rather than a rotary movement.

While I have shown and described what I consider to be the most practical embodiment of my invention, I wish it to be understood that such changes and alterations as come within the scope of the appended claims may be resorted to if desired.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. An illuminated sign including a source of light, a translucent sign member disposed forwardly of said source of light, a pair of spaced translucent elements interposed between said source of light and said translucent sign member, each of said translucent elements having a roughened surface on one side and a smooth surface on the opposite side, each roughened surface defining a myriad of light reflecting surfaces, the roughened surfaces on the translucent element nearest the light source being rougher than the roughened surface of the other translucent element, the smooth surfaces of the translucent elements being disposed in confronting relation, and means for moving one of said translucent elements relative to the other, whereby light rays from said source of light are broken up and reflected forwardly onto the rear of said translucent sign member to impart a sparkling appearance to the illuminated sign when viewed from the front thereof.

2. An illuminated sign including a source of light, a translucent sign forward of said source of light comprising a transparent plate, a stencil having cut-out sign characters therein fitting against the rear of said plate, a colored translucent sheet fitting against said stencil, a translucent plate having a rough surface on one side thereof defining a myriad of light reflecting surfaces, the rough surface fitting against said translucent sheet; a movable translucent element interposed between and disposed in spaced relation to said source of light and said translucent plate and having a rough surface on one side thereof defining a myriad of light reflecting surfaces, the roughened side of said translucent element facing the source of light and being rougher than the roughened surface on the translucent plate, and driven actuating means for moving the movable translucent element, whereby the light rays from the source of light are broken up and reflected in a disorderly manner through the translucent sign to impart the illusion of running water to the eye of an observer when looking at the front thereof.

3. An illuminated sign comprising a parabolic reflector, a sign fixedly mounted in the open end of the reflector and having translucent sign characters therein, a source of light within said reflector, a translucent element fixedly mounted in said reflector adjacent said sign, a second translucent element rotatably mounted in said reflector and disposed in spaced relation to the first mentioned reflector and forward of said source of light, each of the translucent elements having one side roughened to define a myriad of light reflecting surfaces, the roughened side of the rotatable translucent element being rougher than the roughened side of the fixed translucent element, the roughened sides of the translucent

elements facing away from each other, and driven means for imparting rotation to the rotatable translucent element to impart an animated action to the light reflected through the transparent sign characters.

5 4. An illuminated sign comprising a parabolic reflector, a sign fixedly mounted in the open end of said reflector and having translucent sign characters therein, a source of light within said
10 reflector, a translucent glass plate fixedly mounted in said reflector rearward of said sign, radially arranged bearing rollers mounted in said reflector and disposed on the same circumferential plane relative to the axis of said reflec-

tor, an annular translucent glass plate having its periphery engaging said bearing rollers for rotatably mounting said annular glass plate relative to the fixed translucent glass plate, each glass plate having one side roughened to define
5 a myriad of light reflecting surfaces, the roughened surface of the rotatable annular translucent glass plate being more closely roughened than the roughened surface of the fixed translucent glass plate, the roughened surfaces of the
10 two glass plates facing away from each other, and driving means connected to one of said bearing rollers for imparting rotation thereto.

JOHN A. BERGMAN.