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O. JUNGHANS.

APPARATUS FOR PRODUCING ILLUMINATING EFFECTS.

APPLICATION FILED FEB. 2, 1903.

NO MODEL.

Fig. 1.

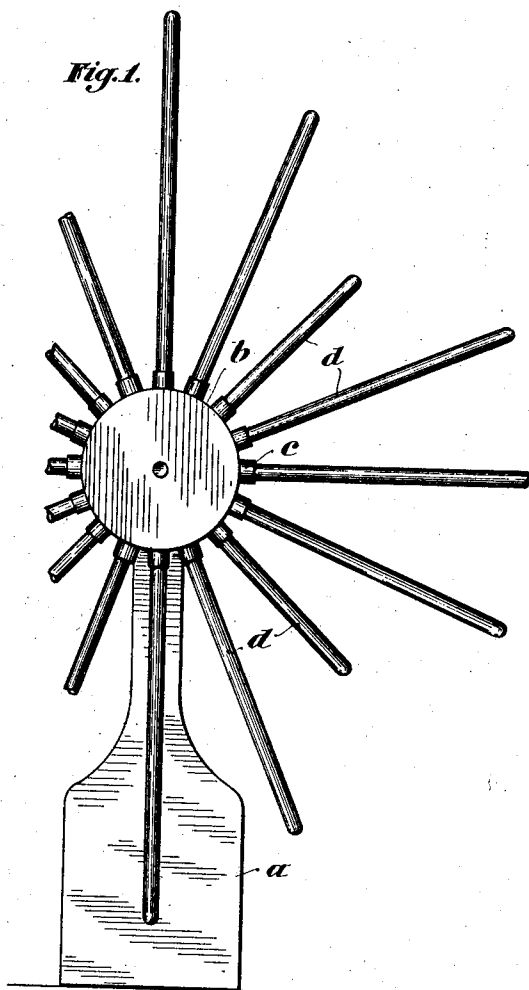


Fig. 2.

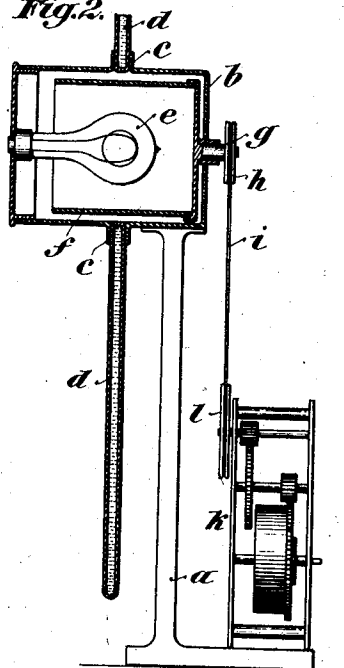
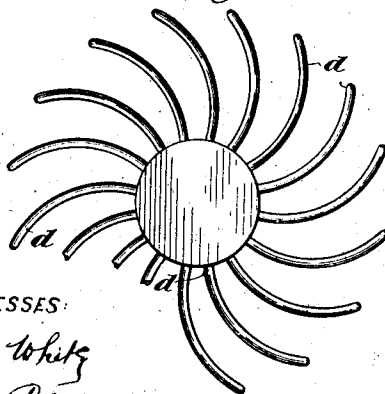


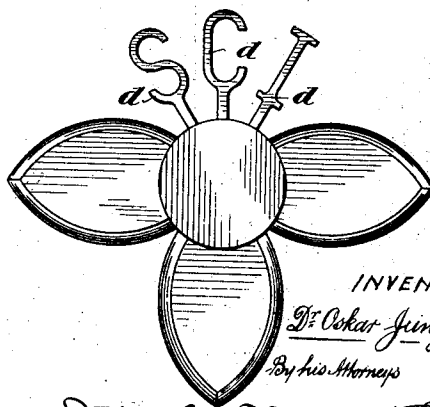
Fig. 3.



WITNESSES:

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Fig. 4.



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APPARATUS FOR PRODUCING ILLUMINATING EFFECTS.

SPECIFICATION forming part of Letters Patent No. 769,348, dated September 6, 1904.

Application filed February 2, 1903. Serial No. 141,448. (No model.)

To all whom it may concern:

Be it known that I, OSKAR JUNGHANS, doctor of philosophy, a subject of the King of Württemberg, residing at Schramberg, Kingdom of Württemberg, German Empire, have invented an Improved Apparatus for Producing Illuminating Effects, of which the following is a specification.

It is known that transparent substances, and especially transparent liquids, transmit light in consequence of refraction and at the same time emit rays at their upper surface, such property being utilized in the known illuminating-fountains for producing the peculiar luminous effects.

The subject-matter of the present invention, which is based on the said principle, relates to an apparatus for utilizing this known phenomenon in a special form for the production of illuminating effects.

The principle of operation consists, generally speaking, in bringing transparent medium, such as solid substances or liquid substances inclosed in transparent vessels, into such connection with an illuminated chamber that the rays of light produced therein are compelled to disperse by refraction in the solid substance or in liquid substances inclosed in a transparent receptacle and to produce luminous effects, which may be increased by providing the upper surface of the solid substance or the casing of the liquid substance with a transparent or phosphorescent film.

The accompanying drawings show different modifications by way of example which are adapted to carry out the improved method.

Figure 1 is a partly-broken front elevation of an advertising apparatus in which straight hollow bodies or elements arranged radially and filled with liquid are used as radiators of the luminous effects. Fig. 2 is a broken elevation of a central vertical section of the advertising apparatus according to Fig. 1. Fig. 3 is a modification of the part carrying the radially-arranged light-radiators, which are of a curved shape. Fig. 4 is another modification of the said part.

As shown in Figs. 1 and 2, a hollow cylinder *b*, of opaque material, is secured to a frame *a*, the casing or jacket of such cylinder being provided with a number of short radially-disposed socket-pieces *c*, which establish communication between the interior and exterior of the cylinder. A hollow glass tube *d*, filled with colorless or colored and, if desired, also phosphorescent liquid and closed at both ends, is provided in each of the said socket-pieces in such a manner that one end is disposed toward the interior of the cylinder *b*. The separate glass tubes are arranged radially and in a vertical plane and may be either of varying length, as shown in Fig. 1, or of the same length. In the interior of the cylinder *b* is a light source—for instance, an electric incandescent lamp *e*—which transmits its light into the interior of the glass tubes *d* through the ends of the latter, which are disposed toward the interior of the cylinder *b*, where the light is propagated in the usual manner. The ends of the glass tubes disposed toward the interior of the cylinder conform as much as possible with the shape of the inner wall of the cylinder *b*.

A cylinder or screen *f* is rotatably mounted in the cylinder *b*. The shaft *g* of the cylinder *f* is fixed in one of the front walls of the cylinder *b* and has a wheel *h*, which is rotated by means of a belt *i* or the like passing over a pulley *l* driven by clock mechanism *k*, so that the cylinder *f* is set in rotation. The casing of the latter is located between the light source *e* and the cylinder *b* and is of glass or other transparent material, so that the light passes therethrough into the tubes. The transparent casing or jacket of the cylinder *f* is provided with transparent colored strips, which extend parallel with the producing ends of the cylinder *f*. The colors on the cylinder *f* may be arranged in any suitable order of succession, but are preferably so arranged that the tubes *d* having the same angular distance as the colored strips of the cylinder *f* get the same light, which changes in consequence of the rotation of the casing *f* produced by the clock mechanism *k*. Since the light source *e* heats the tubes *d*, it is necessary

essary not to completely fill the same, so that a small space is left for the purpose of expansion of the liquid.

If the surface of the glass tubes outside the cylinder *b* is transparent or colorless, the illumination will not be very intense. In order to produce an intense effect, the said surface must be made of ground glass and provided with a thin layer of translucent white color. In order to obtain a glittering light, the surface may also be made of splinters of glass or the tubes may also be filled with the latter.

When rotating the glass cylinder *f* by the clock mechanism *k* or another suitable motor, the color of the light radiated by the tubes is rapidly changed.

A polygon composed of colored glass may be used instead of the glass tube *f* provided with colored strips. Curved bodies or elements *d*, as shown in Fig. 3, may be used instead of the straight tubular element *d* according to Figs. 1 and 2. They may also have other shapes, as shown in Fig. 4. For instance, they may be in form of letters, leaves, or other objects or undulatory bent tubes extending in a generally radial direction outward from the source of light. It may be added that for smaller objects solid glass can be used; but this is impracticable for larger objects, because the illuminating power of longer solid tubes is limited to only a very small length.

What I claim is—

1. In an apparatus for producing illuminating effects, the combination with an illuminated chamber of opaque material, of elongated transparent elements extending outside of said chamber in a generally radial direction and in a substantially vertical plane and extending through the opaque wall thereof at one end of said transparent elements, so that the rays of light produced in said opaque chamber are dispersed in said transparent elements to produce luminous effects.

2. In an apparatus for producing illuminating effects, the combination with an illuminated chamber of opaque material, of elongated transparent tubes containing transparent liquid, extending outside of said chamber and extending through the opaque wall thereof at one end of said tubes, so that the

rays of light produced in said opaque chamber are dispersed in said tubes to produce luminous effects.

3. In an apparatus for producing illuminating effects, the combination with an illuminated chamber of opaque material, of elongated transparent elements extending outside of said chamber in a generally radial direction and in a substantially vertical plane and extending through the opaque wall thereof at one end of said transparent elements, so that the rays of light produced in said opaque chamber are dispersed in said transparent elements to produce luminous effects, and colored glasses between the source of light and said transparent elements.

4. In an apparatus for producing illuminating effects, the combination with an opaque vessel *b*, of hollow glass tubes *d* filled with transparent liquid, closed at both ends and extending outside of said vessel in a generally radial direction and in a vertical plane and extending through the opaque wall thereof at one end of said glass tubes *d*, and a source of light inclosed in said opaque vessel and sending its light into said tubes *d*.

5. In an apparatus for producing illuminating effects, the combination with an opaque vessel *b*, of hollow glass tubes *d* filled with transparent liquid, closed at both ends and extending outside of said vessel in a generally radial direction and in a vertical plane and extending through the opaque wall thereof at one end of said glass tubes *d*, a source of light inclosed in said opaque vessel and sending its light into said tubes *d*, and colored glasses inserted between said source of light and said tubes.

6. In an apparatus for producing illuminating effects, the combination with hollow glass bodies filled with transparent liquid, of a lamp, a screen of differently-colored transparent sections between said bodies and said lamp, and means for moving said screen to produce changing colors in said bodies.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

OSKAR JUNGHANS.

Witnesses:

IRWIN JUNGHANS,
ENGELBERT KÖNIG.