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N. C. HALL

2,280,700

POINTER FOR DIALS

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Fig. 1

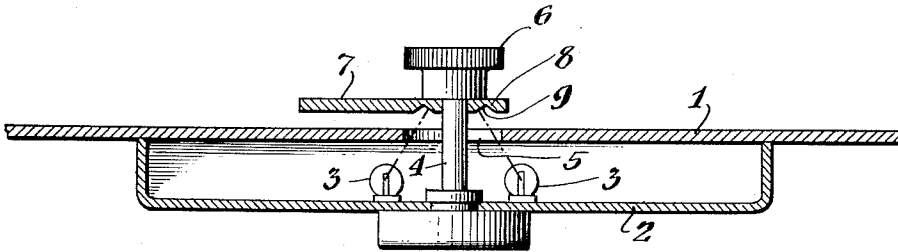


Fig. 2

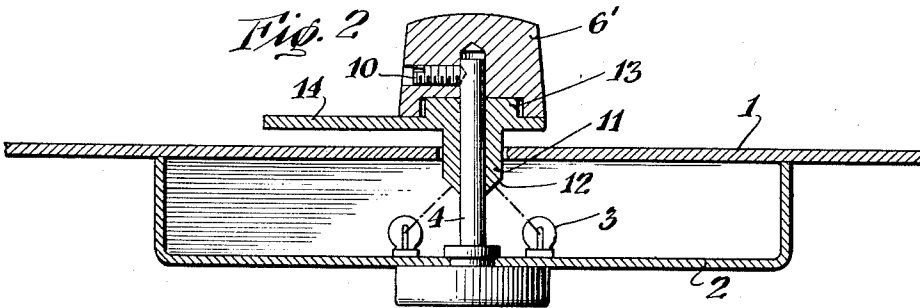


Fig. 3

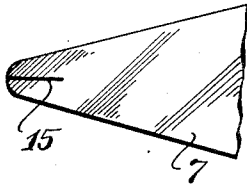


Fig. 4

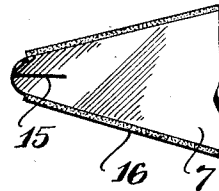
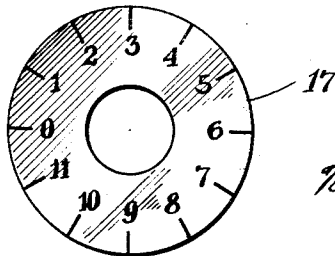


Fig. 5



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UNITED STATES PATENT OFFICE

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POINTER FOR DIALS

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2 Claims. (Cl. 116—124.4)

This invention relates to the illumination of objects or selected portions of objects so that they can be rendered visible in darkness or semi-darkness. It is particularly useful for illuminating pivoted hands or pointers or selected portions thereof which turn about a central or fixed point about which graduations or the like are located. For instance, the invention is well adapted for dials and the hands movable thereover although it is not restricted to this particular use.

Many objects, such as the dials for radio and television sets, for example, are located in dark or semi-dark places or the places where they are located are often dark. By this invention the portions of such objects that one needs to see are rendered visible in such a way that the adjustments for tuning or other purposes can be made without difficulty or groping in the dark.

In carrying out this invention a product or material is used which is capable of receiving light at some particular surface area from a source of light and conducting the same interiorly to the area or surface where it is desired that the light should escape, thus rendering visible such area or surface. Also, the light which escapes serves to illuminate objects which it strikes, sufficiently to render the same visible, while no light escapes from the remainder of the surface. Certain synthetic resins possess this property. Polymerized vinyl compounds, such as vinyl chloride or monochlorethylene known as "Lucite", are illustrative of such a product.

The invention will be more particularly described in connection with the accompanying drawing, in which:

Fig. 1 is a section through an illustrative embodiment of the invention;

Fig. 2 is a similar section through a modification;

Figs. 3 and 4 are plan views on an enlarged scale of some of the details; and

Fig. 5 is a plan view of a dial.

In the drawing, reference character 1 indicates a panel upon which dials and the like may be placed by engraving or any other suitable manner. This panel may be made of any suitable material such as Bakelite, for example. A box 2 is mounted on the back side of the panel 1, and one or more electric lights 3 may be installed in this box.

A rotatable shaft 4 is mounted on the box 2 and extends through an enlarged opening 5 in the panel 1. An opaque knob 6, such as Bakelite,

is mounted at the end of the shaft 4 for rotating it. A hand or pointer 7 is mounted on the shaft 4 and may be cemented to the knob 6. This hand or pointer is made of material such as that described above which is adapted to receive light at one portion, transmit it interiorly, and permit it to emit from a particular portion of its surface that is adapted for emitting the light.

A circular groove 8 is provided on the lower side of the hand or pointer 7, concentric with the shaft 4. This groove has one side 9 thereof ground or roughened and disposed with respect to the source of light 3 so that light will enter readily. It is therefore preferably made perpendicular to the source of light 3. The major portion of the surface on the hand 7 is highly polished to prevent light from escaping, but a portion of the surface of it near its end is roughened or ground to cause light to escape. In this way the roughened or ground portion of the pointer itself is rendered visible and objects near it are illuminated.

In the modification shown in Fig. 2, the opaque knob 6' is removably attached to the shaft 4 by means of the set screw 10. A cylinder 11 of the light transmitting material described above is mounted on the shaft 4 and has its lower end surface 12 prepared and disposed so that light from the source enters and is conducted to the desired exit surface where it escapes. The upper end of the cylinder 11 terminates in a flange 13. The hand or pointer 14 is made of the light transmitting material and is integral with the cylinder 11 and flange 13 so that light entering at the surface 12 passes into the hand 14.

In Figs. 3 and 4 the end of the hand or pointer 7 is shown on an enlarged scale, and these figures illustrate some of the ways that the light is permitted to escape from the hands or pointers.

In Fig. 3 the end of the pointer is ground or roughened along its edge along whatever portion it is desired that the light should be permitted to escape, and a roughened line 15 is provided on the upper surface at the end to serve as an indicator. The remainder of the surface is highly polished to prevent the light from escaping.

The modification shown in Fig. 4 differs from that shown in Fig. 3 in that the edges of the pointer 7 are covered with opaque material 16 except near the end, so that the light that escapes from the ground or roughened end will have the effect of a beam of light. The light that escapes from the hands or pointers 7 not only renders them visible, but also illuminates objects such as the graduations of a dial, for example.

Fig. 5 is a plan view of a dial 17 that is made of light transmitting material of the character described above. The entire surface of this dial may be polished or covered with opaque material except the area where it is intended for the light to enter and other areas such as lines and numerals that are roughened or ground to emit light and render such areas visible. This is an illustration of the sort of dials that may be used in connection with knobs and pointers described above. It is obvious that a multiplicity of hands and dials may be illuminated from a single source of light in accordance with this invention.

While electric lights have been illustrated as the source of light that enters the hands or pointers, any other source of light may be used. For example, the panel 1 may be in a place that is in semi-darkness even during the day-time and daylight could be introduced from the outside through a rod of material of the sort of which the hands or pointers 7 and 14 are made, and caused to strike the surfaces 9 or 12, thus illuminating desired portions of the hands 7 or 14.

What is claimed is:

1. In combination, a stationary source of light, a pointer for a dial, and a revoluble shaft upon

which said pointer is mounted, said pointer being constructed of light-transmitting material having the major portion of its surface of such a character as to prevent light from escaping and having surfaces near opposite ends thereof of such character as to permit ingress of light near one end and egress of light near the other end thereof, said surface which permits ingress of light being disposed perpendicularly to a beam of light from said source of light, said pointer having a cylindrical portion extending along said shaft having said ingress surface thereon.

2. In combination, a pointer for a dial, a revoluble shaft upon which said pointer is mounted, said pointer being constructed of light-transmitting material having the major portion of its surface highly polished to prevent light from escaping and having roughened surfaces near opposite ends thereof to permit ingress of light near one end and egress of light near the other end thereof, said pointer having a cylindrical portion extending along said shaft having said ingress surface thereon, and a source of light located to direct a beam of light substantially at right angles to said ingress surface.

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