

July 21, 1942.

J. J. FAILLA

2,290,278

ILLUMINATED INDICATING DEVICE

Filed Jan. 31, 1941

2 Sheets-Sheet 1

Fig. 1.

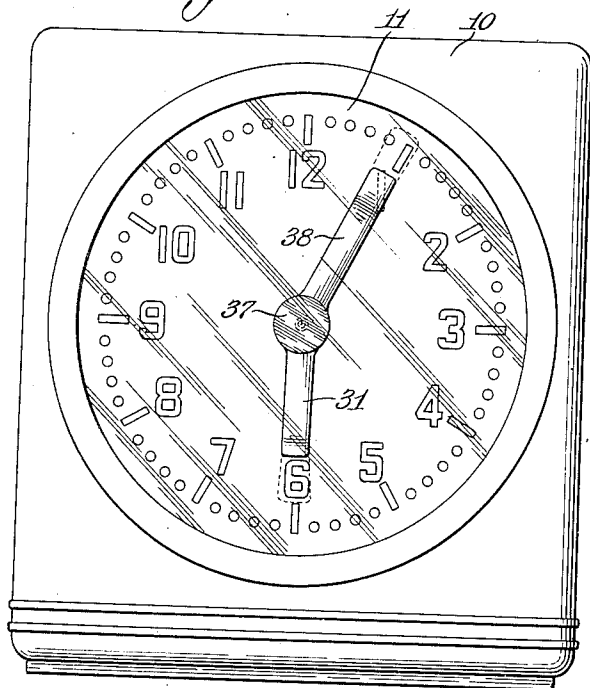


Fig. 3.

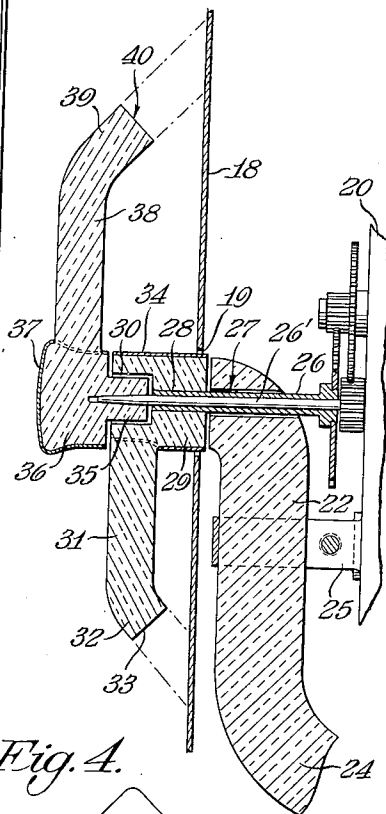


Fig. 2.

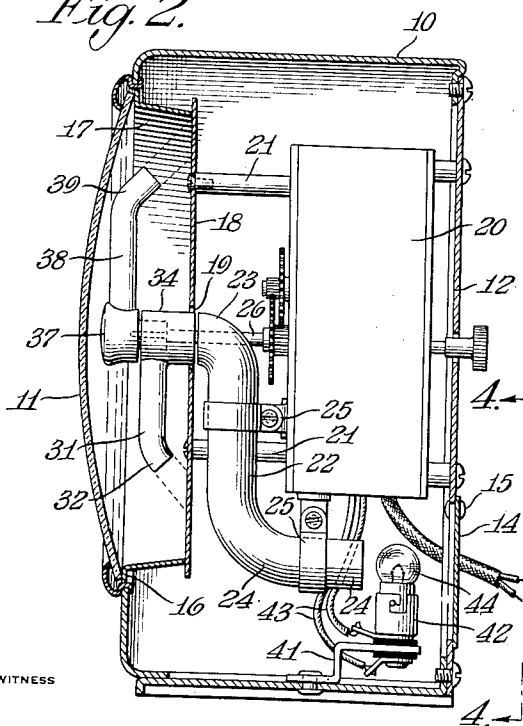
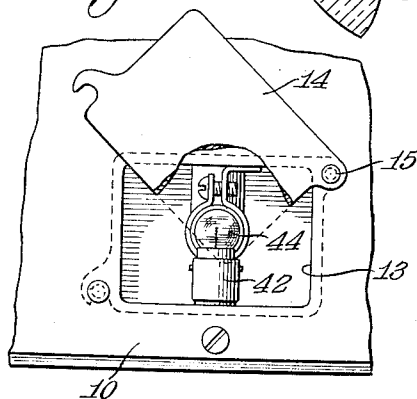


Fig. 4.



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WITNESS

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Fig. 5.

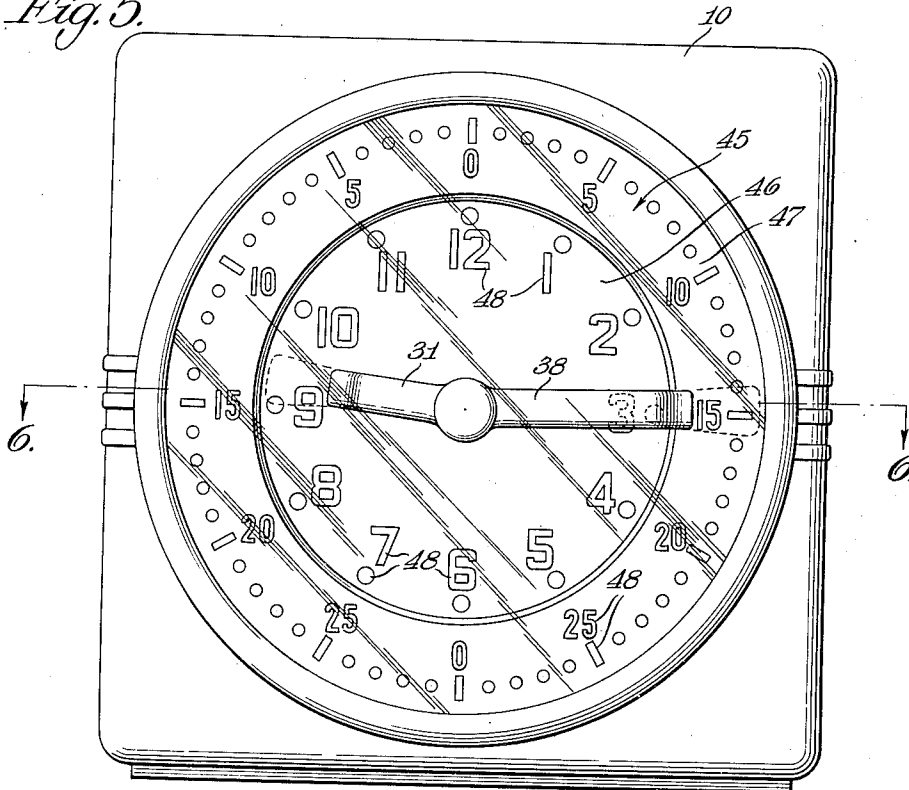


Fig. 6.

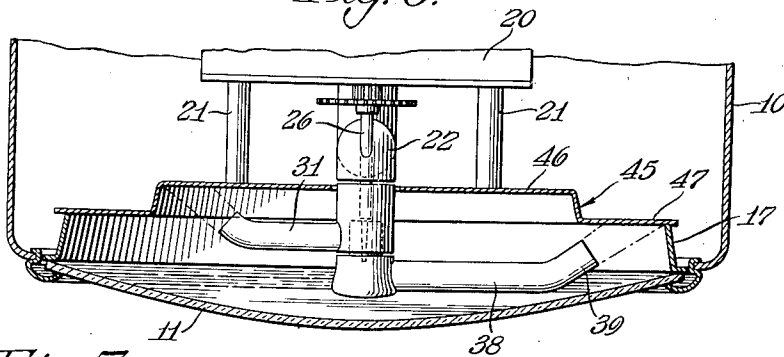
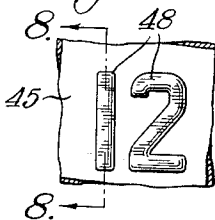
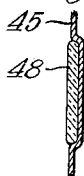


Fig. 7.



WITNESS

Fig. 8.



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2,290,278

ILLUMINATED INDICATING DEVICE

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Application January 31, 1941, Serial No. 376,931

3 Claims. (Cl. 58—50)

The present invention relates to improvements in illuminated indicating devices, such as clocks and the like.

An object of the invention is the provision of an indicating device constructed so that light is emitted from the end of the index element to illuminate the dial indicia.

Another object of the invention is to provide an indicating device in which light from a concealed light source is conducted through a conducting medium onto the panel graduations thereof.

A further object of the invention is the provision of an indicating device having a novel and improved dial structure.

Still another object of the invention is the provision of an indicating device of the aforesaid character relatively simple in construction and efficient in use.

Other objects and advantages of the invention will become apparent as the description progresses.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate corresponding parts throughout:

Figure 1 is a front elevational view of a preferred form of the device,

Figure 2 is a vertical sectional view through the same,

Figure 3 is a fragmentary sectional view through the light conducting medium,

Figure 4 is a fragmentary rear elevational view of the device,

Figure 5 is a front elevational view of a modified form of the device,

Figure 6 is a transverse sectional view taken approximately on line 6—6 of Figure 5,

Figure 7 is an enlarged fragmentary elevational view of one of the indicating numerals, and

Figure 8 is a section taken on line 8—8 of Figure 7.

Referring to Figures 1 to 4 inclusive, wherein is illustrated a preferred embodiment of the invention, and in which like characters of reference designate corresponding parts, 10 generally designates a rectangular-shaped casing provided at the front with a relatively large circular opening normally closed by a concavo-convex outwardly bulging cover 11 of transparent material such as glass. In the rear wall 12 of the casing is provided a rectangular-shaped opening 13 normally covered by a cover plate 14 connected to the wall by a pivot element 15. To the edge of the front

opening of the casing 10 is fastened the flanged portion 16 of an annular rim 17 directed inwardly of the casing so that its inner edge terminates in contact with a flat circular dial panel 18 arranged vertically in a plane parallel with the front wall of the casing inwardly thereof and provided with a center opening 19.

This panel carries on its front face indicating indicia, in the present example a series of circularly arranged graduations and hour designating numerals.

Within the rear portion of the casing is mounted a housing 20 enclosing the major portion of suitable operating mechanism of conventional mechanically or electrically operated type. The panel 18 may be supported by connection with rods 21 attached to and extended forwardly from the housing 20, as shown to advantage at Figure 2.

Firmly supported in the casing 10 rearwardly of the dial panel 18 is a member 22 of circular cross section embodying a longitudinal body portion disposed vertically in the housing having the upper portion curved to form a relatively short forwardly directed extension 23 terminating in a flat front face rearwardly of the panel and in registration with the opening 19 therein. The bottom portion of this member is also curved and formed with a horizontal rearwardly directed extension 24 which also terminates in a flat face at the end thereof. A pair of brackets 25 secured to the front and bottom of the housing 20 are mounted to clampingly engage the vertical body portion and the horizontal bottom extension of the member 22 to firmly support the same in elevated position.

A tubular shaft 26 extends forwardly from the clockwork mechanism through a horizontal bore 27 in the upper part of the member 22 and enters the bore 28 of a cylindrical hub 29. In its outer portion the hub 29 is provided with a counter-bore 30 for a purpose which will be hereinafter described. Formed integral with and extending radially from the outer portion of the hub 29 is an elongated rod 31 of circular cross section having the outer portion curved inwardly as indicated at 32 so that the outer end face 33 is inclined toward the dial panel 18. This radial rod forms an index or band of the device. The circumferential surface of the hub 29 is covered with a coating or shell 34 of opaque material.

In the counterbore 30 is rotatably fitted the inner reduced shank extension 35 of a hub 36 shaped so that the outer end portion is enlarged to form a circular head 37. This hub and head

structure also has an opaque covering corresponding to the coating or shell 34 on the hub 29. Formed integral with one side of the hub 36 is an elongated radial rod 38 having its outer end portion curved to form an inwardly directed oblique extension 39 terminating so that the end face 40 is directed toward the dial panel 18. Through the tubular shaft 26 is extended an inner solid shaft 26', which protrudes forwardly of the former, and is tightly fitted in a socket formed axially in the hub 36 and the hub extension shank 35. This provides an efficient drive structure for rotating the hands and causing the same to travel about the front face of the dial relative to the indicating connections thereon.

The member 22 as well as the hand forming hub and rod elements are designed to constitute light conducting mediums and may be formed of material suitable for this purpose, as for example, a composition known commercially as "Lucite."

On an angular bracket 41 fastened to the bottom of the casing 12 is secured, in upstanding position, an electric lamp socket 42 connected in the usual manner, through conductors 43, with a source of electric current. This socket is designed to engage the plug of an electric lamp 44 designed, in assembly, to assume a position rearwardly of and in registration with the rear end face of the extension 24 of member 22.

The assembly is such that the lead member 22 conducts or transmits the light from the lamp 44 and emits the light beam from its outer end from whence it is conducted through the hubs 29 and 36, and transmitted therefrom through the hands 31 and 38 from the ends of which it is emitted in beams onto the dial to illuminate the graduated circular portions.

A modified form of the device illustrated at Figures 5 to 8 inclusive, differs from the form described above in the particular construction of the dial generally indicated at 45, the dial panel being shaped so that a central circular portion 46 is offset inwardly from and in a plane parallel with an annular marginal portion 47. In this dial the front face of the set-in portion 46 is provided with a series of circularly arranged spaced graduations designated by consecutive hour indicating numerals one of twelve while the front of the marginal portion 47 is provided with a circular series of more closely disposed graduations designated at intervals of five by figures zero to twenty-five to indicate minutes of the hour. As clearly shown at Figures 7 and 8 the graduation and the numeral markings may advantageously constitute matter formed sepa-

5 rately from the dial, preferably translucent amber or other colored plastic 48, set in depressions formed or pressed in the dial and forming effective light reflecting means. This construction will enhance the illumination of the time indicia.

While shown applied to a clock it will be apparent that the invention can advantageously be employed in connection with various indicating devices and dial equipped instrumentalities.

10 It is to be understood that the forms of my invention herewith shown and described are to be taken as preferred and modified examples, of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the sub-
15 joined claims.

Having thus described my invention, I claim:

1. In an indicating device, an opaque dial having indicia on the front face thereof, an indicating hand mounted to rotate over the dial, the said hand being formed so as to conduct light therethrough and emit light rays from its outer end onto the indicia of the dial, a light source mounted at the rear of the dial, and a light conducting member mounted to lead the light from the light source to the inner end of the hand.

2. An indicating device of the character described, an opaque dial having circularly arranged indicia on the front face thereof, a pair of indicating hands mounted to rotate about the dial relative to the said indicia, said hands being formed so that the outer end portions are directed toward the dial and adapted to conduct light therethrough for emission from the outer ends onto the indicia, a lamp mounted at the rear of the dial, and a light conducting member adapted to lead the light from the light source into the inner ends of the hands.

3. In a device of the character described, a dial panel having the center portion offset in a plane parallel to a marginal portion, the said center portion having hour designating indicia arranged circularly thereon and said marginal portion having minute designating indicia thereon, an hour indicating hand rotatable about the center portion of the dial, a relatively long minute indicating hand rotatable about the dial relative to the indicia on the marginal portion thereof, the said indicating hands being formed to conduct light therethrough and emit light rays from the outer indicating ends onto the hour and minute designating indicia, a light source at the rear of the dial, and a light conducting member adapted to lead light from the light source to the inner ends of the hands.

JOSEPH JOHN FAILLA.