

UNITED STATES PATENT OFFICE

2,363,763

CLOCK

Howard D. Werts, La Salle, Ill.

Application September 27, 1943, Serial No. 503,989

1 Claim. (Cl. 58—50)

This invention relates to clocks of the electrically operated type, and has for the primary object the provision of means for illuminating and to render the time reading of the clock easier and more attractive and novel.

Another object of this invention is the provision of a continuously illuminated minute hand so that it will stand out from the clock dial or face and the provision of illuminated type of numerals, with means for illuminating each numeral for approximately fifty-nine minutes in accordance with the time of day or night.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists of such novel features and construction, combination and arrangement of parts as will be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference should be had to the following description and accompanying drawing, in which

Figure 1 is a front elevation, partly broken away, illustrating a clock constructed in accordance with my invention.

Figure 2 is a fragmentary horizontal sectional view showing the device.

Figure 3 is a fragmentary plan view illustrating electric circuits arranged on the dial of the clock for the illuminated numerals.

Figure 4 is a side elevation illustrating one of the electrically illuminated numerals.

Figure 5 is a diagrammatical view illustrating the wiring diagram of the device.

Referring in detail to the drawing, the numeral 5 indicates a fragmentary portion of an electrically operated clock and 6 the dial or face thereof. As the mechanism for electrically operating the clock is of conventional construction, only a fragmentary portion thereof is set forth in Figure 2, principally the minute arbor 7, an hour arbor 7', and a plurality or train of gears 8 for operating the arbors. The arbor 7 extends through the dial or face 6 by way of opening 9 and has integral therewith a suitable fitting or coupling 10 for the support of a minute hand 11 in the form of a neon tube, the terminals of which are indicated by the characters 12 and 13. The terminal 12 is electrically connected to the arbor 7 by a conductor 14. The terminal 13 is in the form of a wiper having wiping contact with a contact ring 15 suitably supported on the dial or face 6 of the clock.

Mounted on and insulated from the clock mechanism 5 are spaced contacts 16 arranged in an annular path and numbering twelve in number 55

and corresponding to the numerals 1 to 12 on the dial or clock face 6. Each numeral on the face or dial of the clock is in the form of a neon tube and each is provided with terminals 17 to plug in the sockets 18 provided on the face of the clock. The hour numerals on the dial or face of the clock are electrically connected all to a conductor 20 and the conductor 20 is connected to a transformer 21 by a conductor 22. A conductor 23 connects the transformer 21 to the arbor 7. The transformer 21 is connected to electric leads 24 and 25. The electric leads 24 and 25 are adapted to be plugged into an ordinary electrical outlet of alternating current. The conductors 24 and 25 are connected to the electrical mechanism of the clock for its operation by conductors 26 and 27 respectively. The purpose of the transformer 21 is to permit electric current to pass to the hour characters and minute hand at a lower voltage than the current furnished for the operation of the electric clock mechanism. A conductor 20' connects the contact ring 15 to the conductor 20.

In operation, the minute hand travels one complete revolution over the dial each hour and if desired, the dial or face of the clock may be graduated and numbered from one to sixty in accordance with the minutes of an hour.

A movable contact 28 is secured to the hour arbor 7' and moves with wiping contact with relation to the contacts 16 and it takes approximately fifty-nine minutes after engaging with a contact to become disengaged therefrom so that the hour numerals in accordance with the hour of the day or night designated thereby will remain illuminated for a period of approximately fifty-nine minutes. Therefore, when it is two o'clock, the character two will be illuminated and remain illuminated until fifty-nine minutes thereafter and the position of the illuminated hand 11 will indicate the minutes past two o'clock, as for instance as shown in Figure 1, the reading would be approximately 2:13.

Thus it will be seen that a very efficient illumination of an electrically operated clock has been provided, one that will be easy to read and requiring the use of only one hand for telling the time of the day or night.

While I have shown and described a preferred embodiment of my invention, it is to be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed herein.

Having thus described my invention, what I claim is:

In an electric clock, an electric operated clock mechanism including minute and hour arbors and a dial face, electrically illuminated elements in the form of hour numerals carried by the dial and each denoting an hour, a minute hand in the form of an elongated electric light unit secured adjacent one end to the minute arbor to provide long and shorts ends projecting from the arbor and movable thereby one complete revolution each hour, an electric circuit connected to the clock mechanism for the operation thereof, a conductor ring on the dial face connected with said circuit, a contact on the short end of the minute hand in wip-

ing contact with said ring and connecting the hand to the electric circuit for the continuous illumination thereof the long end of the light unit being grounded through the arbor, contacts one for each hour numeral arranged in a circular path on the clock mechanism behind the dial face and electrically connected to the circuit, and a movable contact carried by the hour arbor and having wiping contact with the contacts connected to the numerals and remaining in engagement with each for a period of approximately fifty-nine minutes.

HOWARD D. WERTS.