J. A. DEMPSEY.

ILLUMINATING AND SOUNDING SIGN OR INDICATOR.

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1,124,215. Patented Jan. 5, 1915.

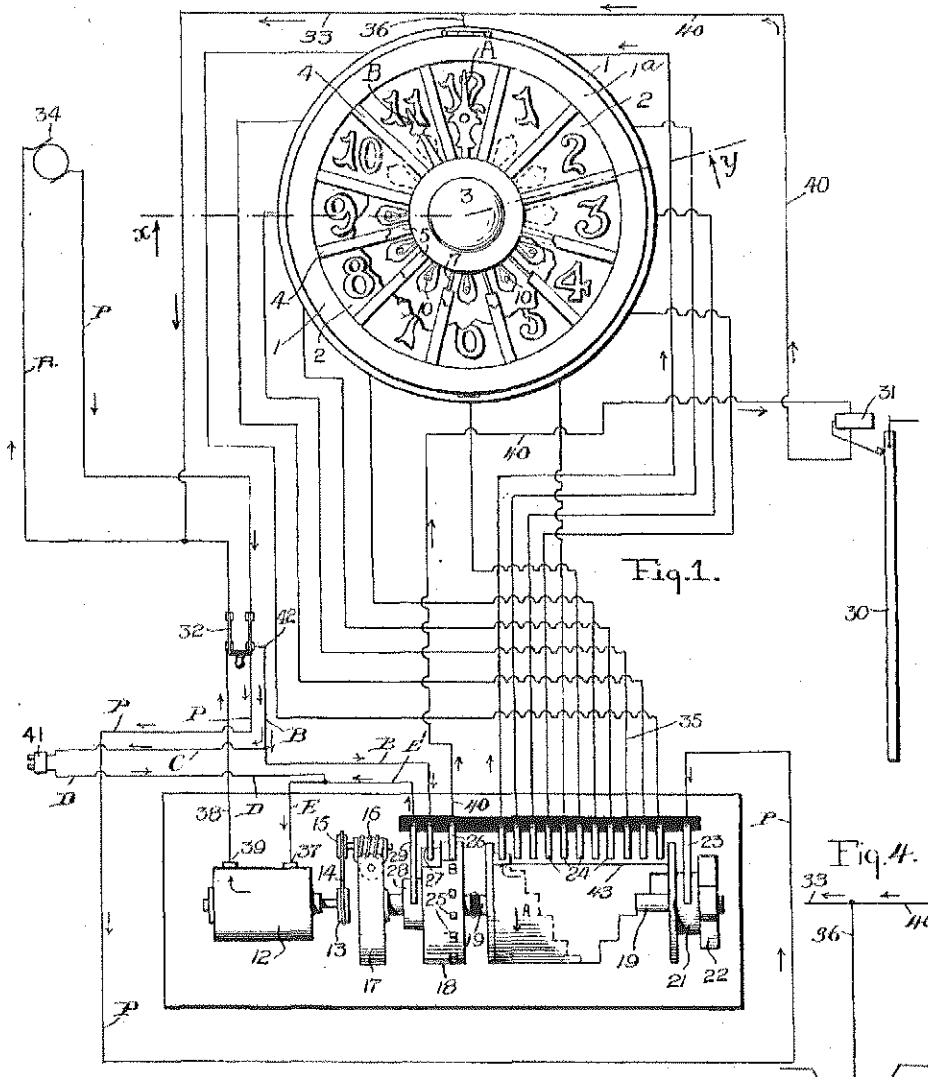


Fig. 1.

Fig. 4.

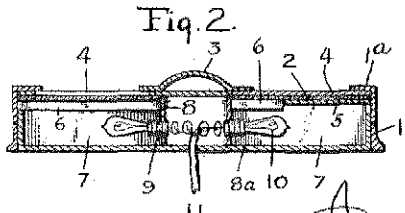
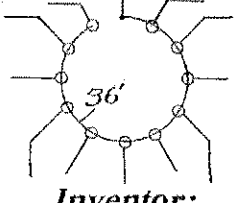


Fig. 2.

Fig. 3.



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ILLUMINATING AND SOUNDING SIGN OR INDICATOR.

1,124,215. Specification of Letters Patent. Patented Jan. 5, 1915.

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To all whom it may concern:

Be it known that I, JAMES ARTHUR DEMPSEY, a citizen of the United States, residing in the city of New York, the county of New York, and the State of New York, have invented a new and useful Illuminating and Sounding Sign or Indicator, of which the following is a specification.

My invention relates to improvements in signs or indicators, especially those adapted to be illuminated by electricity and in connection with which a bell, or other audible signal is sounded.

My invention has particular reference to, and utility in connection with a ceremony performed in the lodges of the order of "Elks," and while not necessarily a clock in the ordinary acceptation of the word, it is adapted to perform the function of indicating a particular hour as hereinafter described, though it will be understood that I do not limit myself to this purpose.

The objects of my invention are, among other things, to provide a device and system which will be artistic and effective, economical and convenient, and positive in action and control. I attain these objects by the means and arrangements set forth in the accompanying description, claims and drawings, in which like symbols of reference refer to like parts throughout the respective views.

Figure 1 is an elevation of the operating parts and dial, portions of the latter being broken away to show the interior, the wiring being shown diagrammatically. Fig. 2 is a section on the line X—Y Fig. 1. Fig. 3 is a cross section of a detail of construction of the dial. Fig. 4 is a diagrammatic representation of the lamps and part of the wiring of the lighting circuit showing the return wire 36 of that circuit and its connection to the return wires 40—33. See Fig. 1.

Referring to the figures,—1 is the outside case or cover; 1^a is the lid which may be hinged or otherwise secured to the case; 2 is the glass or other translucent face, which may be provided with suitable indicia,—in the case of a clock dial, with numbers representing the hours; A is the minute hand,—in the case of my invention as adapted for an "Elks" clock,—fixed at twelve to show the exact hour; B the hour hand fixed at eleven in the same instance and for the same purpose; 3 a central plate or dome usually of metal or other opaque substance, from which the opaque dividing strips 4 radiate between the hour numerals or other sections of the face; 5 a rib or bar behind the translucent face 2 and the strips 4, preferably an inverted U, between the sides 6 of which (see Fig. 3) the partitions 7 are placed to provide a completely light tight space behind each numeral or section.

8 is a central well or box behind the plate or dome 3, in the walls of which the electric light sockets 9 holding the lamps 10 are secured,—and providing a convenient space for the wires leading from the lamps; 8^a is an inner case or receptacle containing the lamps, partitions, etc.; 11 is the cable made up of the various wires which leads to the proper place of connection with the parts of the flasher, bell and other parts of the operating device.

12 is a motor adapted to drive, by means of the pulleys 13—15 and belt 14, the worm 16, the latter in turn actuating intermediate gearing (not shown) in the case 17, and thereby the shaft 19 on which are secured the bell or other sound break wheel 18, (which may be insulated from the shaft 19,) and the flasher cylinder 20.

While I have indicated a specific form of break wheel and flasher cylinder,—I do not, except where specifically claimed, limit myself to such forms, as any device which will accomplish the purpose is within my invention.

21 is a drum switch on the shaft 19; 22 one of the bearings supporting the shaft 19, the other being in the gear box 17.

23 is a feed brush bearing on the drum switch 21,—connected to the source of current, as 34, through switch 32; 24 are brushes or break springs adapted to bear upon the flasher cylinder 20. The flasher 20 is preferably a portion of a cylinder properly mounted on the shaft 19 and cut away in steps so arranged that each break spring 24,—which is connected with a wire leading to a lamp in a given partition of the dial casing,—shall successively come into contact with the surface of the cylinder 20, remaining in contact until all the lamps have been illuminated, in the instance I have illustrated; though of course when applied to other purposes this arrangement may be varied.

25 are studs or projections,—or other de-

vices forming a feature of the break wheel 18, adapted to make and break contact with the spring 26.

The brush 26 is electrically connected with a sounding device 31 such as a bell or the like; in this instance I have shown diagrammatically such a sounding device adapted to strike a tubular bell or bar 30, though it is to be understood that I am not limited to the use of any particular instrument as a bell; 27 is a brush bearing upon the plain surface of the break wheel 18, 27 is electrically connected to the source of current 34 through the switch 32 at 42.

28 is a drum switch on the break wheel 18, on which the brush 29 bears; 29 is electrically connected to the motor at 37; the return wire 38 connected to the motor 12 at 39 leads to the other arm or connection of the switch 32, completing the circuit.

41 is a pendant controlling switch the method of operating which will be hereafter explained; it constitutes a means of shunting the current directly through the motor for the purpose of starting and controlling the movement of the whole apparatus, and as will be explained, enables the whole device to come to a pause at a predetermined time and automatically.

The operation of my device and system as applied to an "Elks" clock or indicator, is as follows: When the device is at rest the brushes 24 are normally out of contact with the cylinder 19 because of the break in the surface of the latter shown at 43; and the brush 27 is out of contact with the break wheel 18 because of a similar break in the surface of the latter. On closing the switch 41, (it is understood that switch 32 is closed,) as at eleven o'clock,—the current from the generator flows directly through the wire P to the switch 32 thence through the wire B, to the connection with C, thence through C and the switch 41, through the wire D to the connection with E —E'— and thence to the motor 12, which is actuated; the circuit is completed back through the wire 38, switch 32, wire R to generator 34, this operates as the starting circuit for the motor. When the motor has revolved sufficiently to bring the plain surface of the break wheel 18 in contact with the brush 27, a circuit in parallel to the switch 41 is closed and the switch 41 may be opened and the motor then continues to be energized by the current passing through B to 27 (not through line C—D and switch 41) thence through 18, drum 28, brush 29 wire E' —E²— to motor, and back to generator through 38—32 and R as before. The current continues to flow thus, (and the motor is consequently constantly energized) until the brush 27 drops off the cut away part of the surface of the break wheel 18 as shown in the figure; the circuit being thus and then broken (it will be remembered that the switch 41 is now open) the motor will of course stop. Thus it will be seen that the switch 41 is employed to start the motor until the circuit is complete through the break wheel 18 and brush 27 after which,—if the switch 41 be opened,—the motor and the apparatus comes to a stop automatically, when 18 and 27 break contact. Following now the operation of the illuminating device and the lamp circuits;—when the motor operates, it rotates the shaft 19 bearing the flasher cylinder 20 in the direction of the arrow A; as soon as the edge of the first step on the flasher cylinder 20 has come in contact with the corresponding brush 24, the current passes from the generator through P—to 23 thence by the drum 21 and cylinder 20 to that one of the brushes 24 which is connected electrically with the lamp in the clock casing behind the numeral one,—illuminating that section; thence through the return wire 36 (to which all lamps are connected,) to 33, to R, to generator. As the motor continues to turn, the succeeding steps on the flasher cylinder 20 are successively brought in contact with the respective brushes 24 connected with and corresponding to the successive lights in the sections of the casing behind the numerals up to eleven, each being illuminated in order, and remaining so until all are illuminated; when now the cylinder 20 has revolved sufficiently beyond this point,—the brushes 24 all drop off the edge 43 of the cylinder 20 thus breaking circuit, and the lights are all simultaneously extinguished.

Referring now to the sounding apparatus and its circuits;—when the break wheel 18 has revolved to such a position that the brush 27 is in contact therewith, and when one of the studs 25 is in contact with brush 26, the current passes from the generator through P—B—27—18 and 26, thence through wire 40 to sounding device 31 which is operated at each successive contact of brush 26 with studs 25,—the return is then through 33 —R— to generator.

It is to be understood that the relative arrangement of steps on cylinder 20 and studs 25 on break wheel 18 is preferably such that contact is made simultaneously by brushes 24 and 26 so that the sounding device is actuated synchronously with the illumination of each section though this need not be absolutely simultaneous, so long as the sound and illuminations are approximately concurrent.

It will be also understood that the brush 27 drops off the edge of the cut away portion of the break wheel 18 at the same time that the brushes 24 drop off the edge of the cut away portion of the cylinder 20 so that the device comes to rest with all the brushes 24 and the brushes 26 and 27 out of contact

and consequently all the circuits broken,—so that the closure of switch 41 and the re-energizing of the motor 12 through the shunt or starting circuit C—D—E as previously explained, is necessary to repeat the operation.

It will be understood that I do not limit myself to the use of the specific devices illustrated in the drawing or mentioned in the description, since those devices are merely typical and indicate a preferred choice and arrangement. But

What I claim is,—

1. The combination of an illuminatable sign having the semblance of a clock dial and having spaces consecutively numbered to correspond with the hours; mechanism for at will automatically illuminating and maintaining the illumination of the spaces successively and in direct order; a sound producer; means connected with the means for illuminating, for automatically actuating said sound producer concurrently with the particular section illuminated; means for starting the mechanism at will and means for automatically stopping the same after the last section is illuminated.

2. The combination of an illuminatable sign having the semblance of a clock dial; mechanism for at will automatically and successively illuminating each hour exclusively and in direct order for a predetermined period; a sound producer; means for automatically actuating the same as each hour is illuminated; and means for automatically stopping the mechanism and extinguishing the illumination at a predetermined period.

3. The combination of a casing having light tight partitions; lamps between the partitions; a motor; a flasher driven by said motor; contact brushes adapted to contact successively with said flasher; connections between the brushes and the lamps; a break wheel driven by said motor; a sound producer; a brush adapted to contact with the break wheel; a connection between the break wheel brush and the sound producer; the break wheel being so arranged relative to the flasher that the sound producer is operated during the illumination of each lamp.

4. The combination of a sign having a transparent face divided into light tight sections; each section being provided with an opaque symbol; illuminating means in each section; a motor; a flasher driven by said motor; contact brushes adapted to contact successively with said flasher; connections between the brushes and illuminating means; a breakwheel driven by said motor isochronously with the flasher; a sound producer; a brush adapted to contact with the breakwheel; a connection between the breakwheel brush and the sound producer, the breakwheel being so arranged relative to the flasher that the sound producer is actuated concurrently with the illumination of each lamp.

5. The combination of an illuminatable sign divided into light tight sections, each section bearing a distinguishable symbol; illuminating means in each section; a source of electrical current; a motor actuated thereby; means driven by the motor for illuminating each section successively and in direct order; a sound producer; means driven by said motor for actuating said sound producer concurrently with the illumination of each section; a switch for starting the motor and means for shunting the current through the motor and outside of the switch until the last section has been illuminated, and then breaking the circuit, substantially as described.

6. The combination of a sign having the semblance of a clock dial, and being divided into spaces corresponding to certain hours;—mechanism, adapted to be actuated at will, for automatically illuminating each hour space exclusively, successively and in direct order until all are illuminated; a sound producer; mechanism operating concurrently with the illuminating means to automatically actuate said sound producer at each illumination; means for starting the automatic illuminating and sound producing mechanism at will, and means for automatically stopping the same when the last hour space has been illuminated.

7. The combination of a sign having the semblance of a clock dial; a motor; means driven thereby for illuminating portions of the sign successively; a sound producer, separate means driven by said motor for actuating said sound producer concurrently with the illumination of each portion substantially as described; and means for automatically stopping the mechanism and extinguishing the illumination at a predetermined period.

8. The combination of a sign having the semblance of a clock dial and divided into sections corresponding to the hours; an electric motor; means actuated by the motor for controlling the illumination of each section successively and in direct order; a sound producer; means actuated by the motor for operating said sound producer concurrently with the illumination of each section; means for starting the motor at will and for automatically shunting an electric current through the motor for a predetermined period and then automatically breaking the circuit, substantially as described.

9. The combination of an illuminatable sign having the semblance of a clock dial and being divided into sections corresponding to the hours; means for at will causing the illumination of the individual sections automatically, successively and in direct order; a sound producer; means for au-

tomatically actuating the sound producer concurrently with each illumination; and means for automatically terminating the whole operation after the last section is illuminated.

10. The combination of an illuminatable sign having the semblance of a clock dial and being divided into light tight sections, each section having an illuminating means; means for automatically illuminating the sections successively and in a pre-determined order; a sound producer; means for automatically operating the sound producer concurrently with the illumination of each section; means for starting the illuminating and sound producing mechanism at will; and means for automatically continuing the operation of said illuminating and sound producing means for a predetermined period and then automatically terminating the operation of the same, substantially as described.

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Witnesses:
C. J. KULBERG,
J. THOMSON.