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2,036,831

ILLUMINATING MEANS FOR CLOCK DIALS

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Fig. 1

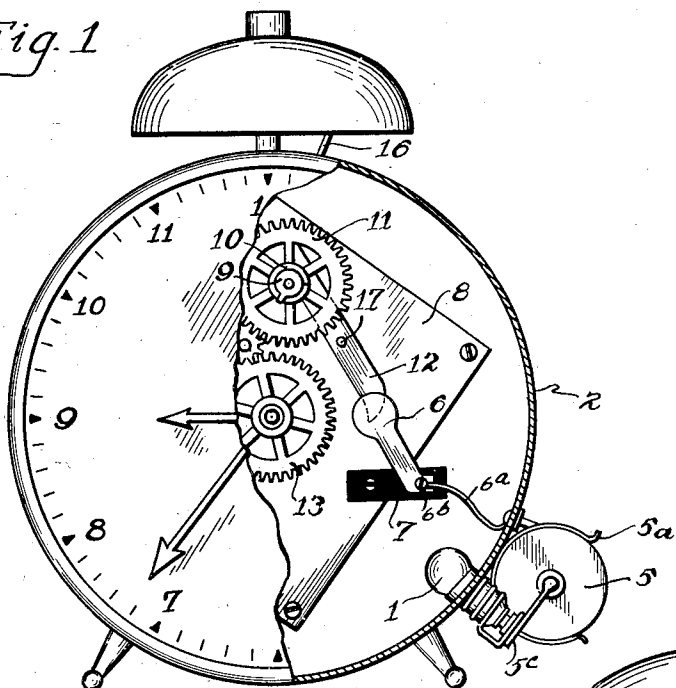


Fig. 2

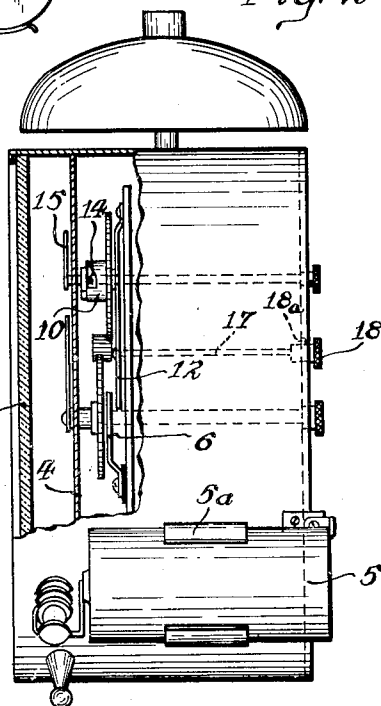


Fig. 4.

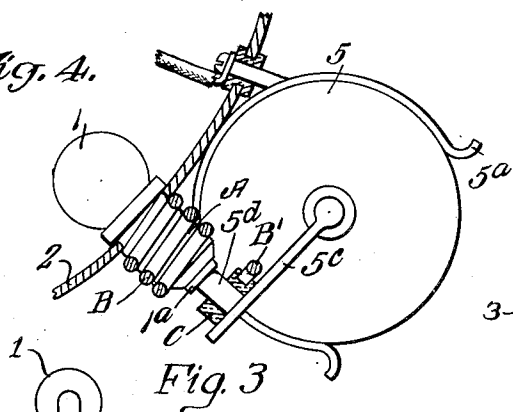


Fig. 3

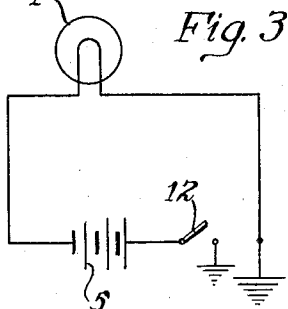
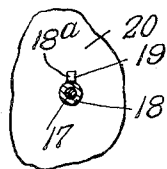


Fig. 5.



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UNITED STATES PATENT OFFICE

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ILLUMINATING MEANS FOR CLOCK DIALS

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2 Claims. (Cl. 58—19)

My invention is an improved illuminating means for clock dials and is particularly adapted for use on either electrical or mechanical alarm clocks; the main objects of my invention are to provide means for illuminating clock dials simultaneously with the release of the alarm at a predetermined moment; to provide means separably operable for shutting off the illuminating means; to provide an improved illuminating means for clock dials which can be easily incorporated in the alarm clock without greatly altering its present construction; to provide an illuminating means which can be installed in alarm clocks at a minimum cost.

An illustrative embodiment of this invention is shown in the accompanying drawing wherein:

Fig. 1 is a front elevational view of the alarm clock with a portion of the face broken away.

Fig. 2 is a side elevational view of the alarm clock with a portion of the housing cut away.

Fig. 3 is a diagram of the electrical circuit of the illuminating means.

Figure 4 is an enlarged detail view of the lamp connection to the battery.

Figure 5 is a detail view of the pin and slot connection of the manual circuit breaking means.

Inasmuch as my invention is a new illuminating means for the dials of alarm clocks, I have not shown the clock mechanism in detail but solely the pertinent parts which are necessary to clearly reveal the application of my improvement. On the accompanying drawing I have shown my invention applied to a mechanical alarm clock with the battery attached to the outside of the clock, but the battery could be placed inside the clock housing if desired. If my device was applied to electric alarm clocks, the battery would be eliminated and the illuminating means connected directly onto the same electric source operating the electric clock.

The improved illuminating means as shown on the drawing simply comprises an electric light, a battery, and a contacting arm suitably insulated from the frame of the clock; the spring that releases the alarm pawl of standard alarm clocks is utilized as a grounding means whereby the circuit of the illuminating means will be closed when the alarm is released; in order to break the circuit I have provided a rod affixed at one end to the said spring and the other end protruding out the back of the clock with a knob thereon to manually withdraw the said spring from the contact arm, thereby breaking the circuit.

The small electric bulb 1 of the flashlight type

is seated in the side 2 of the alarm clock casing between the glass plate 3 and the dial disc 4, and also affixed on the side 2 is a battery clip or holder 5a to retain a small dry cell battery 5. A metallic contact arm 6 is attached to the end of an insulating member 7 which is rigidly secured to the frame 8 of the clock mechanism. One terminal of the battery 5 is connected to one end of a wire 6a suitably insulated from the side 2. The other end of the wire 6a is connected to the arm 6 by means of a screw 6b. The other terminal of the battery 5 is connected by means of an arm 5c to the center terminal 1a of the lamp 1. The screw thread shell connection A of the lamp 1 has mounted thereon a coil spring B having its outer end B' connected to an insulating ring C. The ring C is mounted on the contact portion 5d of the arm 5c. The screw thread portion of the lamp 1 has electrical contact with the casing 2 through the shell A. The alarm setting mechanism of most standard clocks comprises a small disc member 9 having a finger extending therefrom in a corresponding position to the alarm setting hand 15; the said finger rides on the periphery of a cylindrical hub 10 of the gear wheel 11 and forces the said gear 11 inward against the action of a spring 12, thereby holding the alarm hammer arm 16 in locked position; the gear 11 is similar to and actuated by a second gear 13, which is revolved once every twelve hours by the clock mechanism; the hub 10 of the gear 11 has a notched portion 14, and as the gear 11 rotates the finger of the disc member 9 drops into this recess 14, thereby releasing the inward pressure on the gear 11 and spring 12, which subsequently releases the alarm hammer arm 16 and at the same time the electric bulb 1 is illuminated as the spring 12 makes contact with the contact arm 6 to ground the battery and close the circuit. A means of manually breaking the circuit is provided consisting of a rod 17 affixed to the spring 12, the other end of said rod protruding from the back of the clock and having a knob 18 rotatably secured thereto (Fig. 2); the said knob 18 has a stud 18a thereon which passes through a slot 19 in the back 20 of the clock; and with a slight pull and turn of the knob 18, the stud 18a engages the outer face of the back to hold the spring 12 apart from the contact arm 6, thereby keeping the circuit open until the stud 18a is manually released.

The electrical circuit of this illuminating means is simply the electric light bulb 1 and the dry cell battery 5 in series and grounded, as is clearly shown by Fig. 3.

What I claim is:

1. An alarm clock having an alarm mechanism, a lamp mounted in said clock, a battery mounted at one side of said clock and having one terminal connected with said lamp, an arm connected to the other terminal of said battery, a spring operable by said alarm mechanism and adapted to engage said arm at a predetermined time whereby to close a circuit to said lamp, a rod mounted transversely in said clock and fixed at one end to said spring, and a knob mounted at the other end of said rod adapted to be moved whereby to disengage said spring from said arm to open said circuit.
2. An alarm clock having an alarm mechanism, a lamp mounted in said clock, a battery mounted on said clock and having one terminal connected

to said lamp, an arm mounted in said clock and having one end connected to the other terminal of said battery, a spring operable by said alarm mechanism and adapted to engage said arm at a predetermined time, whereby to close a circuit to said lamp, a rod mounted transversely in said clock and fixed at one end to said spring, said rod being adapted to be moved whereby to open the circuit to said lamp, a back plate having a slot therein, and a knob rotatably mounted on said rod having a pin adapted to normally rest in said slot, said knob being adapted to be moved whereby to engage the outer face of said back plate whereby to hold said spring from engagement with said arm.

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