United States Patent [19]

Dietrich

[11] **3,833,819**

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[54] **HOME SIMULATOR**

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[52] **U.S. Cl.** **307/141.8,** 58/33

[51] **Int. Cl.** **H01h 7/00**

[58] **Field of Search** ..... 307/141, 141.4, 141.8, 307/115, 38; 317/141 R; 315/360; 58/33, 23 R, 24 R; 340/309.1

[56] **References Cited**

UNITED STATES PATENTS

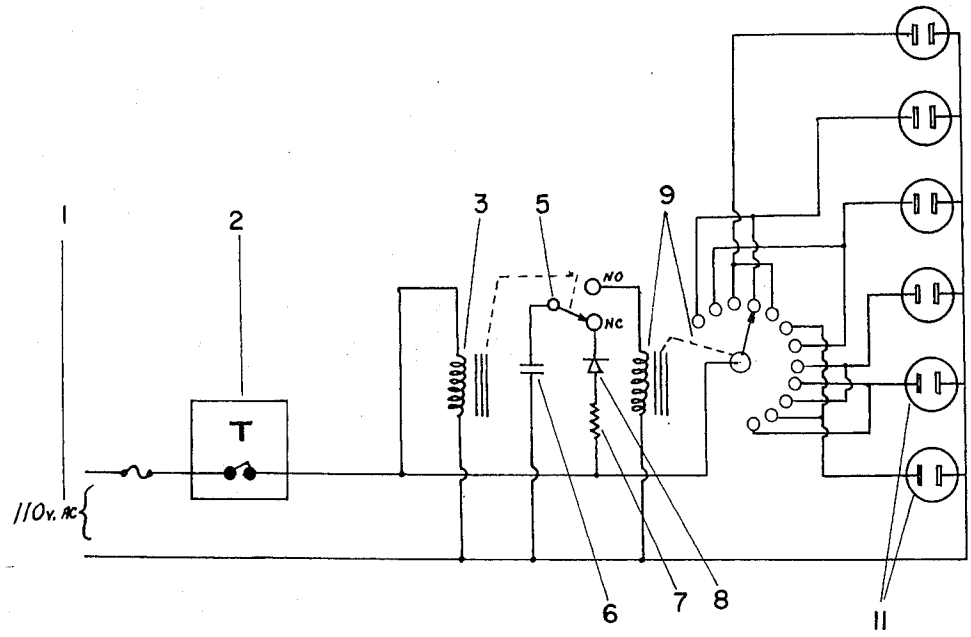
3,491,249	1/1970	Rabinow	58/33
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Primary Examiner—Herman J. Hohauser

[57] **ABSTRACT**

This device is a system for pseudo-random electrical switching of lights and/or small radios in the home or office. Timing of the switching intervals is unpredictable, except by long-time (weekly) observance. A combination of two (2) non-synchronous clocks and a random-cut cam-wheel is used to operate a micro-switch. That switch controls the action of a stepping-switch for electrical distribution to lamps or small radios. The stepping-switch is wired for non-consecutive distribution to increase the appearance of random time intervals.

1 Claim, 3 Drawing Figures



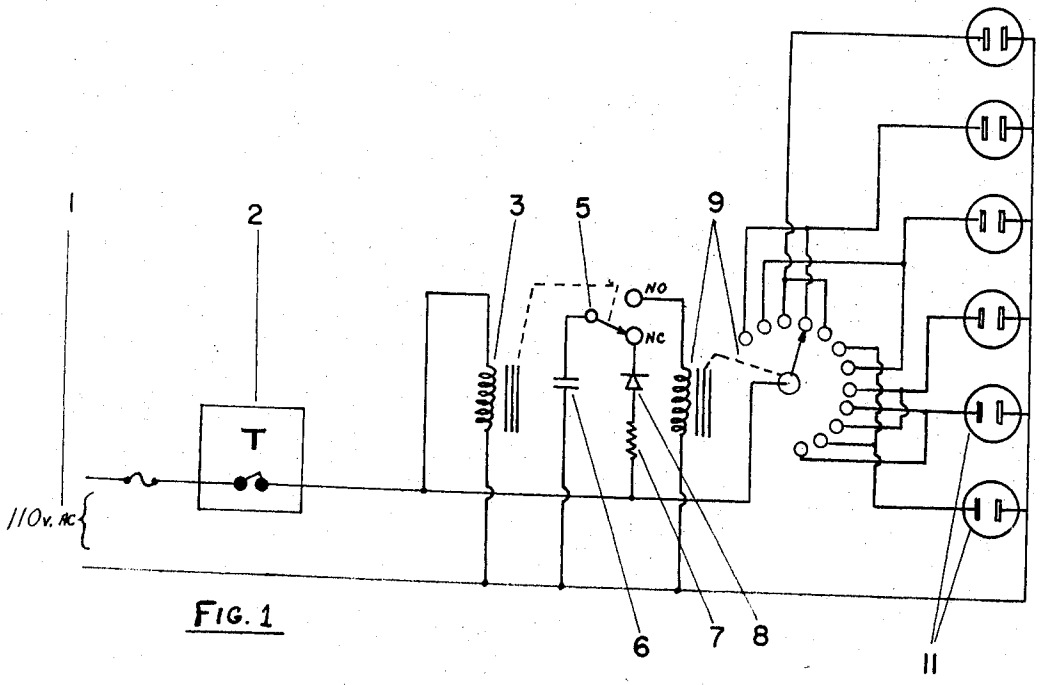


FIG. 1

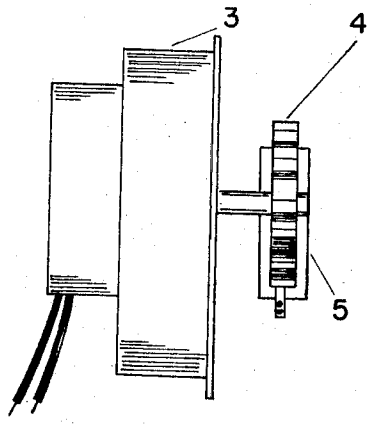


FIG. 3

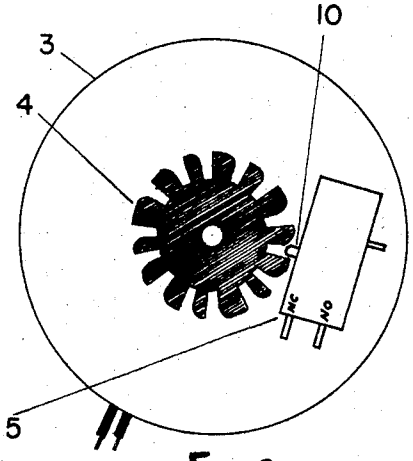


FIG. 2

HOME SIMULATOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the field of home and/or office protection. It can control turn-on and turn-off of lighting or small radios during the absence of occupants over a period of time. Apparent random timing of lights and sound simulates that of human occupants, in that they are switched from room-to-room at varying time intervals. Repeat of the switching cycle may be a week or more from the start, but no less than one cycle of the slowest clock movement of the pair used.

2. Prior Art

Prior to this invention, electrical switching timers have used adjustable timing which is predetermined and repetitive. None produce random timing intervals. When used for protective lighting, a repetitive switch is predictable, even when controlled by photo cells or other light sensing. If predictable, it can be detected as an automatic device by an observer. Such non-human behavior reveals rather than protects an unoccupied area. The Timer Switch of Rabinow, U.S. Pat. No. 3,491,249, and the Timer Clock of Miller, U.S. Pat. No. 3,348,008, are examples of predictable timers in prior art. The Variable Time Delay Sequencing of Podell et al., U.S. Pat. No. 3,119,021, has electrical distribution which is variable, but it is an accurate timing device intended for highly predictable switching. Invention U.S. Pat. No. 2,579,914, by Ensign, Hoppe, and Soper, provides only fixed and very short switching intervals, and it is completely mechanical movement. In other word, all prior art in this field has been designed for accuracy and predictability, and none for unpredictability.

SUMMARY OF THE INVENTION

This invention relates generally to an improved timed electrical switching system. More particularly, this invention introduces a means for pseudo-random timed switching. Random timing simulates human behavior by switching electrical energy to six standard electrical outlets, one at a time, at various time intervals. Electrical cords may be plugged into these outlets to light lamps or to power small radios in several rooms.

Two electrical clock movements are used; one is a common 24-hour clock which can be set to start and stop lighting. Setting should agree with user normal lighting habits. The second clock has a gear-train for a very long RPH (Revolutions per Hour) cycle time, non-synchronous with the 24-hour clock. The slow RPH shaft of the second clock turns a cam-wheel which is slotted by random length cuts. The cam-wheel operates a microswitch to power a stepping-switch. The stepping-switch distributes electrical energy to the six standard electrical outlets in non-sequential order.

The coil of the stepping switch is powered by a direct-current pulse through the microswitch. The pulse is derived from a capacitor charge from the AC power line through a solid-state diode and a high value resistance. The long, slow charge of the capacitor avoids erratic stepping-switch action and limits switching to a single action for each cam-wheel slot.

The microswitch is a single-pole, double-throw device. It is wired to connect the capacitor to the diode-resistor charging circuit when against a cam-wheel slot.

It switches the charged capacitor to energize the stepping-switch during contact with a cam-wheel lobe. Leading edges of the cam-wheel are rounded smooth to avoid jamming and/or breaking the microswitch button.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic wiring diagram of the invention, including a common 24-hour electrical time-switch.

FIG. **2** is a front view of the random-cut cam-wheel mounted on the synchronous clock shaft, and in position to operate the microswitch.

FIG. **3** is a side view of the items shown in FIG. **2.**

FIG. **1** shows a schematic wiring diagram of the invention. The power line **1** supplies 110 volts AC to a box **2** containing a common 24-hour Time-Switch. When the Time-Switch **2** closes, power is supplied to the non-synchronous timer **3** which rotates the cam-wheel **4** of FIGS. **2** and **3.**

The microswitch **5** of FIGS. **2** and **3** is shown schematically in FIG. **1.** Wiring is such that large capacitor **6** of FIG. **1** charges from the power line through a large resistor **7** and diode **8** when the microswitch **5** is in the Normally Closed (NC) position.

FIG. **2** shows the microswitch button **10** in a slot of the cam-wheel **4.** In this position the microswitch **5** is in the Normally Closed (NC) position and capacitor **6** of FIG. **1** charges very slowly. When the cam-wheel rotates and depresses button **10,** the microswitch closes the Normally Open (NO) contact and the capacitor discharges through the coil of Stepping-Switch **9** of FIG. **1,** and the Stepping-Switch operates. Note that 110 volt AC is supplied through Time-Switch **2** in FIG. **1** and power is applied to any outlet **11** selected by the Stepping-Switch **9.** Note also the wiring of contacts of the Stepping-Switch. Wiring order is scrambled to avoid consecutive operation of the outlets. Continuous rotation of the Stepping-Switch repeats the switching cycle. However, the cycle occurs at a constantly changing time due to the relationship of the non-synchronous clock to the 24-hour time-Switch.

In the preferred arrangement of the invention, small components are selected so that the entire invention may be built into a common electrical switch box such as that which contains the 24-hour electrical time-switch.

Although a rotary stepping-switch is illustrated, any suitable form of multi-position switching may be used. This may be a relay chain or it may be entirely electronic. Other modifications may occur to those skilled in the art without altering the spirit and scope of this invention. Accordingly it is intended that this invention be limited only as set forth in the following claims:

I claim:

1. A pseudo-random timing system including a first 24 hour timer, a second timer non-synchronous with, but turned on and off by, the first 24 hour timer, a random-cut cam wheel connected to the output shaft of the second timer, a microswitch, turned on and off in a pseudo-random timed operation by the rotation of said cam wheel, and a stepping-switch activated by a pulse of DC electric power caused by the turning on of said microswitch, said stepping-switch causing the distribution of AC electric power through said first 24 hour timer to a number of non-consecutively wired outlets.

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