United States Patent [19]

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[54] **COIN-OPERATED CLOCK ALARM**

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[52] **U.S. Cl.** ..... **194/9 T,** 58/16 R

[51] **Int. Cl.** **G07f 5/10**

[58] **Field of Search** ..... 194/1 R, 9 R, 9 T, 8, 11, 194/16; 58/16 R, 19 R, 152 B

[56] **References Cited**

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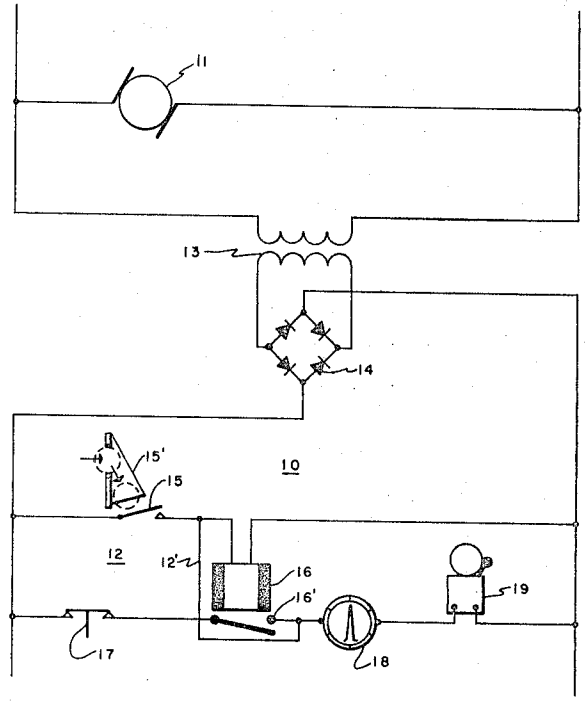
[57] **ABSTRACT**

The coin-operated clock comprises a synchronous electric motor connected to a single source of power and a control subcircuit connected in parallelll to such source of power to the synchronous motor. The control subcircuit is powered from a transformer and a full-wave rectifier, the control subcircuit having connected in parallel a first series of a coin-operated switch and a relay and a second series including an alarm shut-off switch being a reverse-push-button, a timer switch functionally associated with the clock motor, and an alarm, the contact of the relay being connected between said alarm shut-off switch and the timer switch and having a connection between the contact terminal connected between the coin-operated switch and the coil connection of the relay.

1 Claim, 1 Drawing Figure



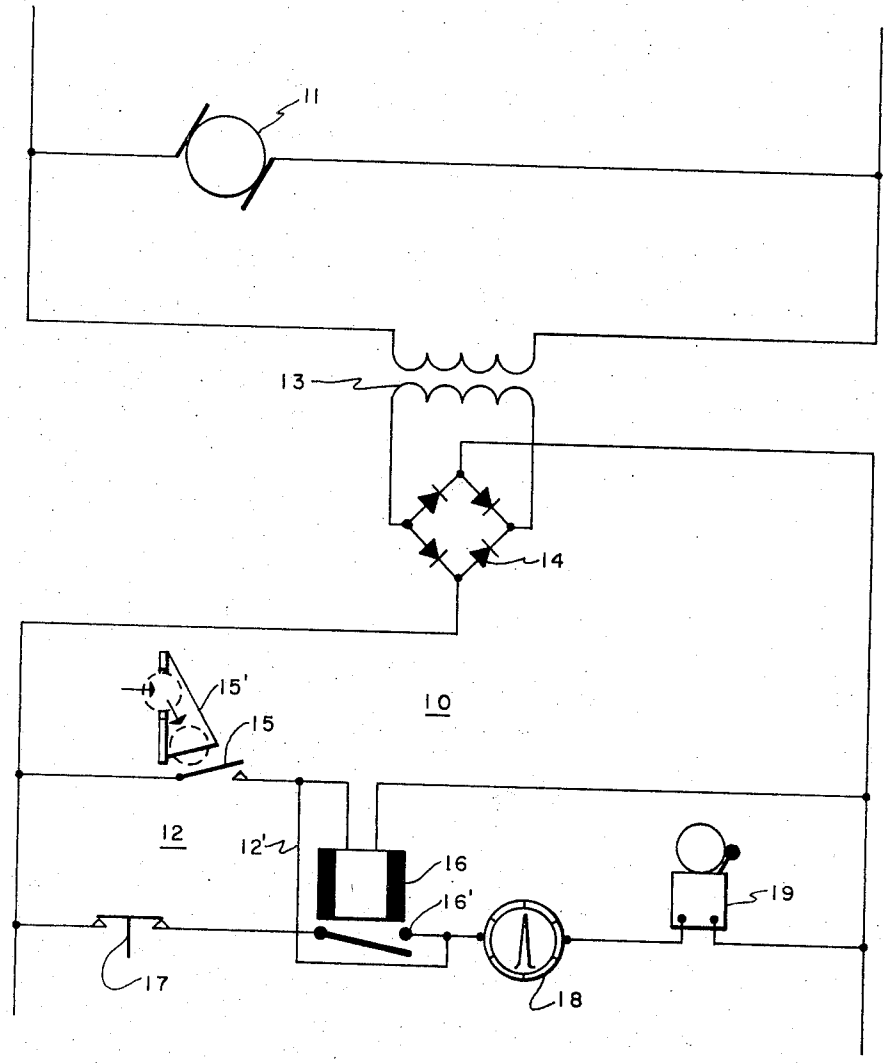


FIG. 1

COIN-OPERATED CLOCK ALARM

FIELD OF INVENTION:

The present invention relates to clocks and more particularly to coin-operated clock alarms.

BACKGROUND OF THE INVENTION:

It is the primary object of this invention to provide a coin-operated-clock alarm for hotel rooms and other places where a coin-operated-timing device may be useful.

It is a further object of this invention that the coin-operated clock alarm be adaptable to a plurality of housings and other electrical packaging for respective uses of this device.

These and other objects shall become apparent from the description following, it being understood that modifications may be made without affecting the teachings of the invention here set out.

DESCRIPTION OF THE DRAWINGS:

FIG. **1** is an electrical schematic of the present coin-operated clock alarm of this invention shown with a coin chut with coin positions, shown in broken lines superimposed over a typical switch for illustrative purposes.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT:

Referring to the drawing, the coin operated clock alarm of this invention is shown to advantage and generally identified by the numeral **10.** The alarm **10,** described herein, may be disclosed in of a variety of housings and electrical packaging while maintaing its essential character. The present clock alarm **10** may be enclosed in another conventional electric clock case which may include clock faces, control boxes, or other electrical mechanical devices as the circumstances warrant.

The clock alarm **10** comprises a motor **11** and a control subcircuit **12.** The motor **11** is a synchronous electric motor of the type associated with clocks and timing devices. The control subcircuit **12** is powered by a transformer **13** and a full-wave rectifier **14.** From the outputs of the rectifier **14,** there are provided a pair of parallelly connected series of components. The first series of the subcircuit **12** includes a coin-operated switch **15** and a relay **16.** The coin-operated switch **15** is of the type associated with coin-operated vending apparatus, such as electric powered rides and the like. The switch **15** is essentially a momentary contact switch actuated by force applied by a coin chute **15'.** The relay **16** is operable as a retain closure of the subcircuit **12** after insertion of a coin momentarily contacting the switch **15.** The second series includes an alarm shut-off switch **17,** a timer switch **18,** and an alarm-sounder **19.** The alarm shut-off switch **17** is a reverse push-button switch which is normally closed. The shut-off switch **17** is used to deactivate the alarm **10** after the alarm has sounded. The contact **16'** of the

relay **16** is connected between the switches **17** and **18,** and is closed by a bypass **12',** of the subcircuit **12,** connected distally between the switch **15** and the timer switch **18.** In this manner, activation of the switch **15,** in response to a coin, activates the relay **16** to maintain the subcircuit closed. The timer switch **18** is of the type associated with the electric timing devices with a dial electric control face for selecting the time interval between time start and the alarm, and is operable to break the subcircuit **12** and operation of the mechanism on the motor **11.** Such a mechanism may be selected from any of a variety of electric timer switches of the prior art. The alarm **19** may be selected from a variety of sounders including a bell or indicator lights. It is to be understood that the alarm sounder **19** may also be used to control other apparatus not withstanding the central primary purpose of the clock alarm **10** as a timing device.

In operation the timer switch **18** may be set to a preselected time and a coin may be inserted into the coin operated switch **15** as set out above to momentarily close the circuit **10** and to activate the relay **16.** The relay **16** activates the synchronous motor **11** which will actuate the timer switch **18,** and maintains a closed circuit. When the time has expired the timer switch **18** is then operable to sound the alarm sounder **19.** The alarm sounder **19** is silenced by depressing the shut-off switch **17** to break the control subcircuit **12** and to deactivate the relay **16** and hence the subcircuit **12.**

Having thus described in detail a preferred apparatus which embodies the concepts and principles of the invention and which accomplishes the various objects, purposes and aims thereof, it is to be appreciated and will be apparent to those skilled in the art that many physical changes could be made in the apparatus without altering the inventive concepts and principles embodied therein. Hence, it is intended that the scope of the invention be limited only to the extent indicated in the appended claims.

I claim:

1. A coin-operated clock comprising:

a synchronous electric motor connected to a remote source of power; and

a control subcircuit being connected to said remote source of power through a transformer and a full-wave rectifier, said control subcircuit having connected in parallel a first series circuit including a coin-operated switch and a relay which has an electrically actuated contactor, a second series circuit including a reverse push button alarm shut-off switch, a timer switch in communication with said clock motor, and an alarm, the contactor of said relay being connected between said alarm shut-off and said timer switch and being inter-connected between the contactor terminal and said coin-operated switch and the coil connection of said relay to be operable, when a coin is present to activate said relay, to connect said timer, said alarm shut-off switch, and said alarm to allow setting.

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