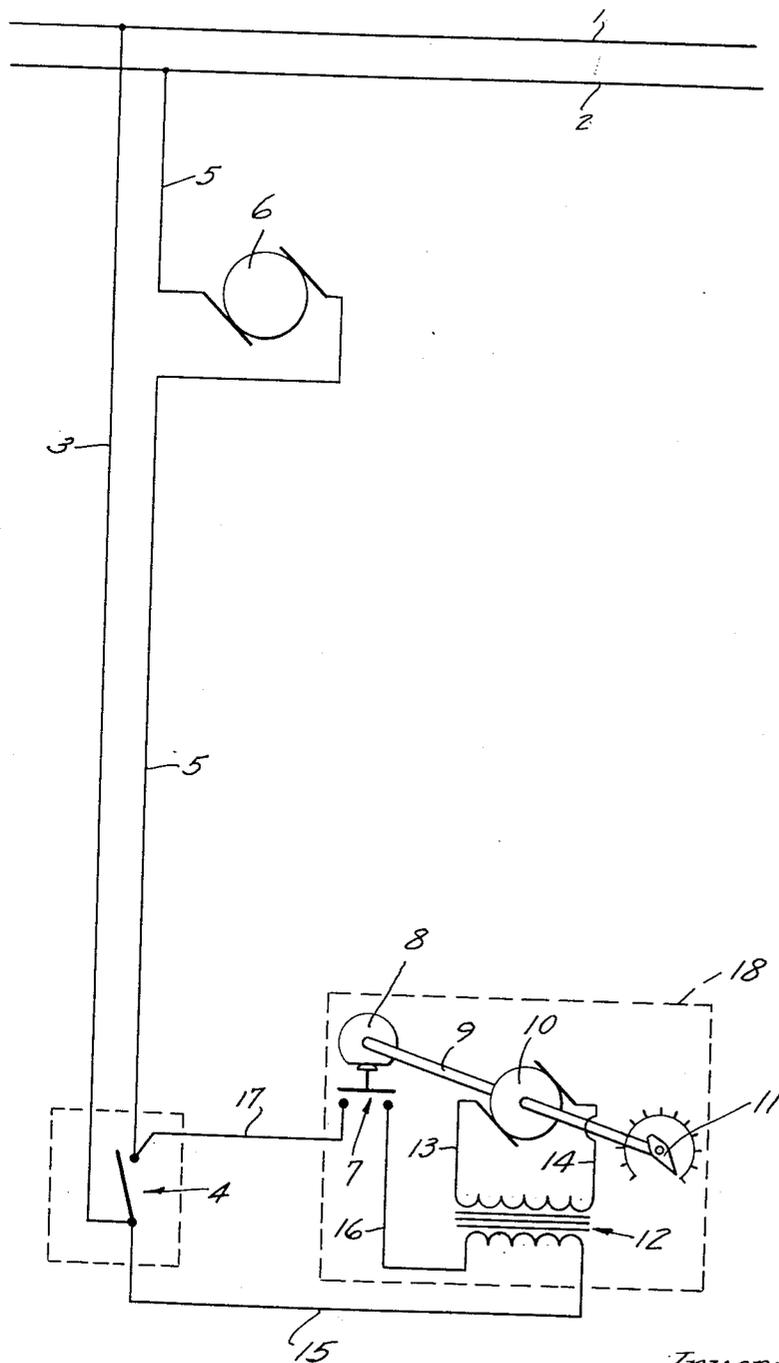


April 10, 1951

W. C. KLAMMER
CIRCUIT FOR TIMING DEVICES

2,548,028

Filed Sept. 24, 1949



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UNITED STATES PATENT OFFICE

2,548,028

CIRCUIT FOR TIMING DEVICES

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Application September 24, 1949, Serial No. 117,705

2 Claims. (Cl. 171-97)

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My invention relates generally to circuits for timing devices and, more specifically, to a circuit for a timing device located remote from a power-operated mechanism controlled thereby.

Heretofore, it has been common practice to extend a separate lead from the power source to the timer mechanism and a return wire to one side of the existing manually-operated control switch, whereby the power-operated mechanism and the timing mechanism are in parallel arrangement. When applying a timer switch to an old installation, it is sometimes very difficult and expensive to properly install the above mentioned lead. The primary object of my invention is, therefore, the provision of a circuit for timing devices remotely situated from the device to be controlled, wherein a minimum of wiring is necessary.

Another object of my invention is the provision of a circuit, as set forth, which will permit location of the timing switch and operating mechanism therefor wherever desired remote from the device to be controlled.

Still another object of my invention is the provision of a circuit, as set forth, which will permit installation of a timing mechanism to an existing circuit without disturbing the existing wiring in said circuit.

Other highly important objects and advantages of my invention will become apparent from the following detail specification, appended claims, and attached drawing.

Referring to the drawing the single view is a wiring diagram of my novel circuit.

With reference in greater detail to the drawing, a source of electrical power is shown as being in the nature of a power line comprising wires 1 and 2. A power lead 3 is connected at one end to the power line wire 1 and at its opposite end to one side of a manually-operated control switch 4. A return lead 5 has one end connected to the opposite side of the control switch 4 and its other end secured to the power line wire 2. An electrically powered device is interposed in the return lead 5 and is shown as comprising a motor 6 which may be assumed to perform any suitable function, such as the driving of a ventilating fan or the like, not shown. In this instance, it may be assumed that the motor 6 is located remote from the switch 4 and at a point where access thereto is gained at considerable inconvenience to the operator. The switch 4, however, is situated at a point where it may be easily reached.

It is frequently desired to operate the motor

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6 for a predetermined length of time, after which the control switch 4 is opened to break the circuit to the motor 6. This arrangement necessitates the presence of the operator at the switch when it is desired to shut off the motor 6. In this case, it is sometimes desirable to couple a motor-driven timing switch to the circuit so that the operator may close the circuit to the motor 6 for a pre-selected period of time, the circuit being automatically reopened when said predetermined time interval has elapsed. A normally open timer switch 7 is closed and permitted to open by a cam 8 secured to a rotary shaft 9. The shaft 9 is coupled to an electric timer motor 10 and is provided with a manually-operated setting knob 11. As shown, the motor 10 is coupled to the secondary winding of a transformer 12, by leads 13 and 14. The primary winding of the transformer 12 has one end connected to one side of the control switch 4 by a lead 15, the other end being connected to one side of the timer switch 7 by a lead 16. The opposite side of the switch 7 is connected to the opposite side of the switch 4 by a lead 17. The timing mechanism including the switch 7, cam 8, motor 10, time-setting knob 11 and the transformer 12 are preferably housed within a casing, shown by broken lines and indicated by 18. The elements contained within the casing 18 are conventional timing apparatus and do not in themselves comprise the invention.

Heretofore, it has been customary to operate the timer motor 10 from an entirely separate circuit from that including the motor 6. This practice involved the running of a separate lead or leads from the power lines 1 and 2 to the timer motor 10. I have overcome this objectionable feature by connecting the timer switch 7 and the timer motor 10 in series with the power-driven motor 6. It should be obvious from the above that in connecting the leads 15 and 17 to the opposite sides or terminals of the switch 4, that installation of the timing device is accomplished and no disturbance of the existing circuit through the motor 6 is necessary. It should be noted that the timer switch 7 and the primary coil of the transformer 12 for operating the motor 10 are in series with the power-operated motor 6, but in parallel with the manually-operated control switch 4. This arrangement provides for independent control of the motor 6 by either the manually-operated switch 4 or the cam-operated timer switch 7. It should be further noted that when the motor 6 is controlled by the timer

switch 7, the manually-operated control switch 4 must be open.

While I have shown a commercial embodiment of the invention, it will be understood that the same is capable of modification without departure from the spirit and scope of the invention as defined in the claims.

What I claim is:

1. A circuit for an electrically powered device, said circuit comprising a power supply lead and a return lead, said leads being adapted to be coupled to a source of electrical energy, said device being interposed in one of said leads, a manually-operated control switch connecting said leads remote from said device, a manually closed power-opened timer switch, and an electric motor for opening said timer switch, said motor and timer switch being connected in series across the contacts of said manually operated control switch.

2. In a circuit for controlling an electrically powered device, means for connecting said device to a source of electrical energy, said means in-

cluding a manually closed power opened timer switch and an electric motor for said timer switch, said switch, motor, and electrically powered device being connected in series, and a manually operated control switch in series with said power operated device and in parallel with said timer switch and said motor, whereby said timer switch and motor may be shunted out of controlling relationship with said device, said timer switch and motor being remote from the electrically powered device.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,224,737	Lockwood	Dec. 10, 1940
2,471,633	Lutz	May 31, 1949