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R. W. E. VICKERY

1,789,057

TIME SWITCH

Filed March 12, 1930

Fig. 1.

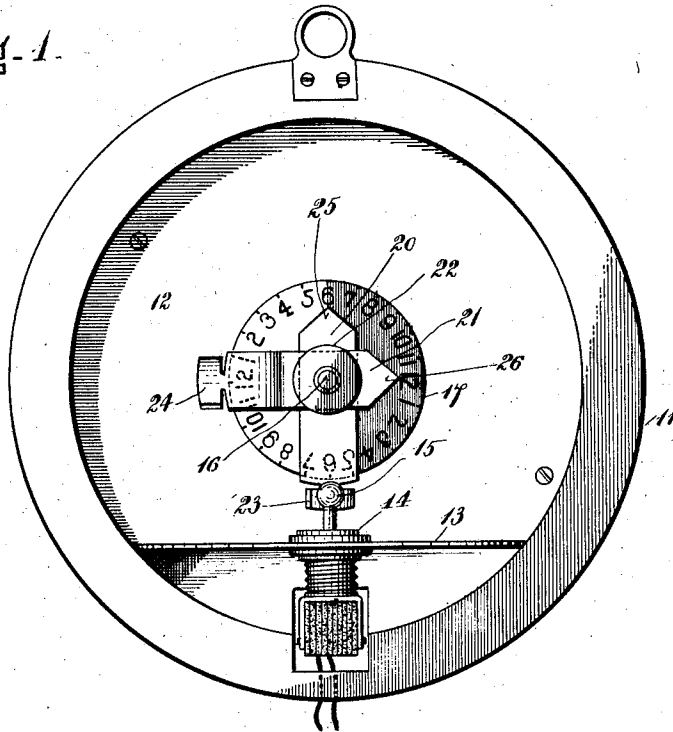


Fig. 2.

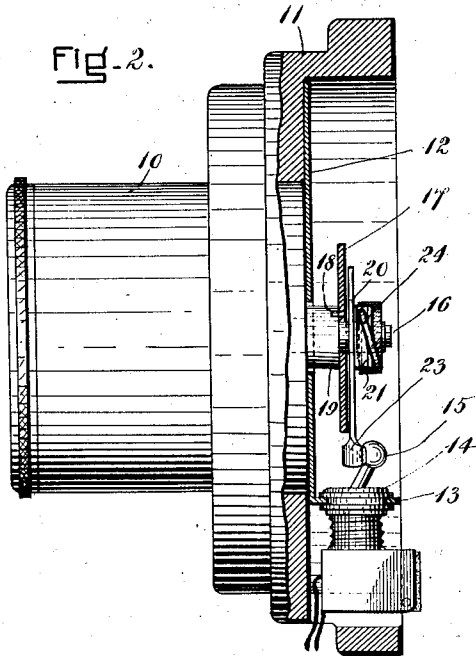
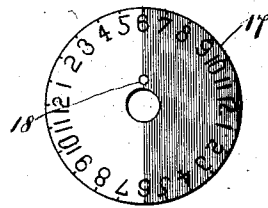


Fig. 3.



INVENTOR=
Ralph W. E. Vickery
By *Geo. K. Woodworth*
ATTORNEY:

UNITED STATES PATENT OFFICE

RALPH W. E. VICKERY, OF MARSHFIELD, MASSACHUSETTS

TIME SWITCH

Application filed March 12, 1930. Serial No. 435,186.

My invention relates to time switches for opening and closing the circuits of illuminating systems such as street lights and store window lights, electric signs, signals, radio-receiving sets, electrical orchestras such as used in hotels, and in fact to control electric circuits which are required to be opened and closed at predetermined times.

My invention contemplates the use of a standard piece of apparatus known as a toggle switch, together with means actuated by a clock-work mechanism having a twenty-four hour arbor for moving the lever of the toggle switch in opposite directions at predetermined times. In one specific embodiment of my invention I provide two arms adjustable about the axis of the arbor of a clock-work mechanism and means for clamping the same in adjusted position, and the ends of said arms are provided respectively with reversely-inclined cam surfaces arranged to co-operate with the projecting lever of the toggle switch, one to shove said lever in one direction to open the circuit and the other after a predetermined lapse of time to push it in the opposite direction for closing the circuit. The other ends of said arms may terminate in pointers disposed adjacent to the figures on a dial secured to and rotating with the arbor to facilitate the desired setting of the arms whereby the circuit may be opened and closed at predetermined times.

In the drawings accompanying and forming a part of this specification,—

Figure 1 is a rear end elevation of a time switch involving my invention;

Figure 2 is a side elevation partly in section; and

Figure 3 is a plan view of one form of dial that may be used.

In the particular drawings selected for more fully disclosing my invention and which are to be considered only as illustrative of one embodiment thereof, 10 is a clock-work mechanism, preferably an eight-day clock, secured in any suitable manner to the casing 11 to the interior of which the metallic plate 12 is attached, the flange 13 of which affords a convenient means for sup-

porting a switch 14 of the toggle type which is provided with a projecting lever 15.

The clock preferably is provided with a twenty-four hour arbor 16 which carries the dial 17 secured thereto by a pin or screw passing through the hole 18 and entering the collar 19 on the arbor. Two sets of numbers each from 1 to 12, inclusive are printed on the outer face of the dial and spaced equally around the same to represent the twenty-four hours of the day, one-half of the dial between the oppositely-disposed figures 6 being shaded to represent the hours between six o'clock p. m. and six o'clock a. m. The means actuated by the clock-work mechanism for moving the lever 15 in opposite directions at predetermined times are shown in the present instance as the arms 20, 21 loosely mounted on the arbor above the dial and arranged to be clamped in adjusted position by the knurled nut 22. The ends of said arms are provided with reversely-inclined cam surfaces 23, 24, respectively, in the path of which the end of the lever 15 is arranged so that after said arms have been clamped to and are rotated by the arbor, they will respectively push the lever outwardly to open the circuit, for instance, as shown in Fig. 2, and after a predetermined time push it inwardly to close the circuit. Preferably the opposite ends of the arms terminate in the pointers 25, 26 disposed adjacent the figures on the dial for convenience in setting said arms for the purpose of opening and closing the circuit at predetermined hours.

As shown in Fig. 1 the counter-clockwise rotation of the arbor (with respect to the observer viewing the apparatus from the rear) will cause the cam surface 23 to open or close the circuit at six o'clock p. m. and the cam surface 24 to close or open it, as the case may be, at twelve o'clock midnight.

It is to be understood that where the term "switch of the toggle type" appears in the amended claims it is my intention to cover either a single or double-throw switch of this type, that I may use either one switch or a plurality thereof, and that if a plurality are employed, they may be arranged reverse-

ly or otherwise as circumstances may require.

Having thus disclosed an illustrative embodiment of my invention, what I claim and desire to secure by Letters Patent is:

- 5 1. A time switch comprising in combination a clock-work mechanism, a switch of the toggle type mounted on said mechanism, said switch having a projecting lever, and means actuated by said mechanism for moving said lever in opposite directions at pre-
10 determined times, said means comprising reversely-inclined cam surfaces disposed to co-operate with said lever.
- 15 2. A time switch comprising in combination a clock-work mechanism having an arbor, a switch of the toggle type mounted on said mechanism, said switch having a projecting lever directed toward said arbor, a
20 and a pair of arms carried by said arbor, the ends of said arms, respectively, having reversely inclined cam surfaces disposed to co-operate with said lever.
- 25 3. A time switch comprising in combination a clock-work mechanism having an arbor, a switch of the toggle type mounted on said mechanism, said switch having a projecting lever directed toward said arbor, a
30 pair of arms loosely mounted on said arbor, the ends of said arms, respectively, having reversely inclined cam surfaces disposed to co-operate with said lever, and means for clamping said arms to said arbor in adjusted positions.
- 35 4. A time switch comprising in combination a clock-work mechanism having an arbor, a switch of the toggle type secured to said mechanism, said switch having a projecting lever extending toward said arbor,
40 a dial rigidly connected to said arbor, and a pair of arms secured to said arbor, the ends of said arms respectively having reversely inclined cam surfaces disposed to co-operate with said lever and terminating at their op-
45 posite ends in pointers disposed adjacent to the figures on said dial.
- 50 5. A time switch comprising in combination a clock-work mechanism, a switch having a projecting lever, means securing said switch to said mechanism, and means actuated by said mechanism for moving said lever in opposite directions at predetermined times, said means comprising reversely-inclined cam surfaces disposed to co-operate
55 with said lever.

In testimony whereof, I have hereunto subscribed my name this 11th day of March, 1930.

RALPH W. E. VICKERY.