P. J. STUPARICH.

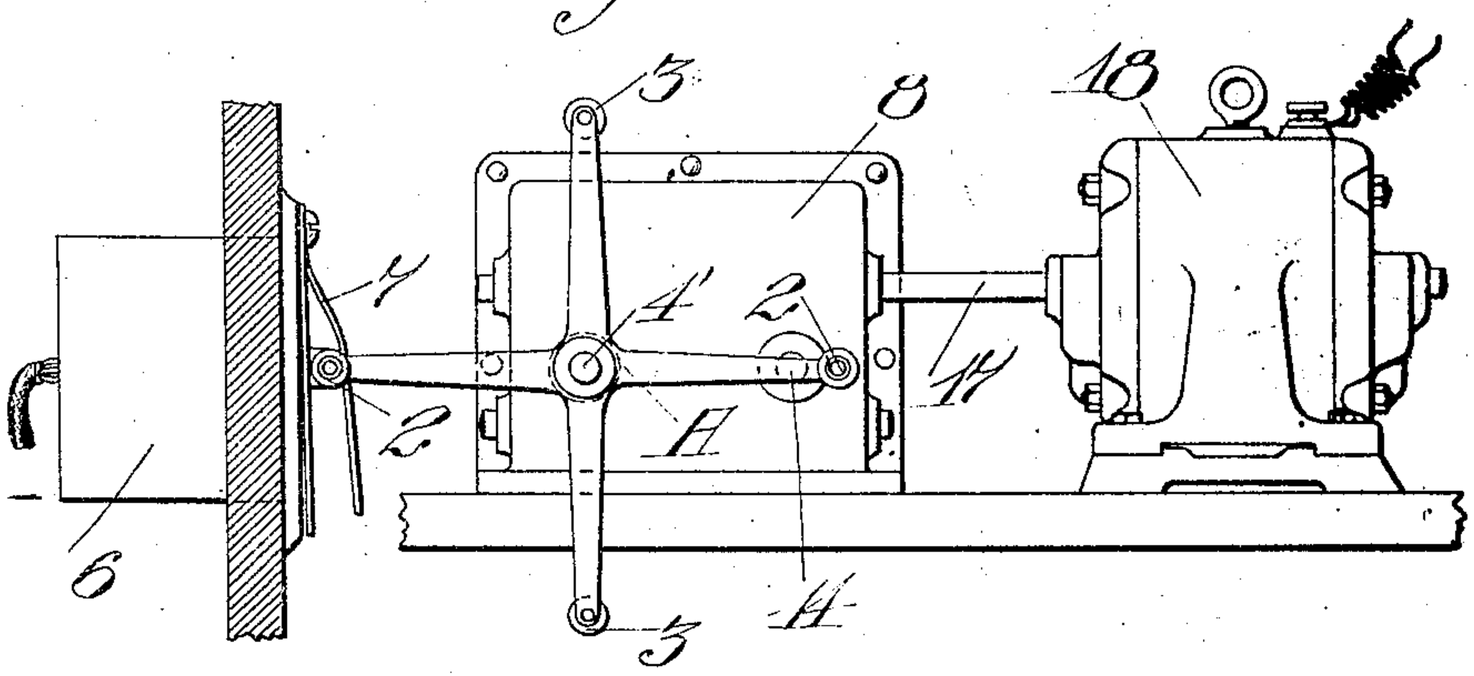
AUTOMATIC TIME SWITCH.

APPLICATION FILED MAR. 16, 1909.

951,750.

Patented Mar. 8, 1910.

Fig. 1.



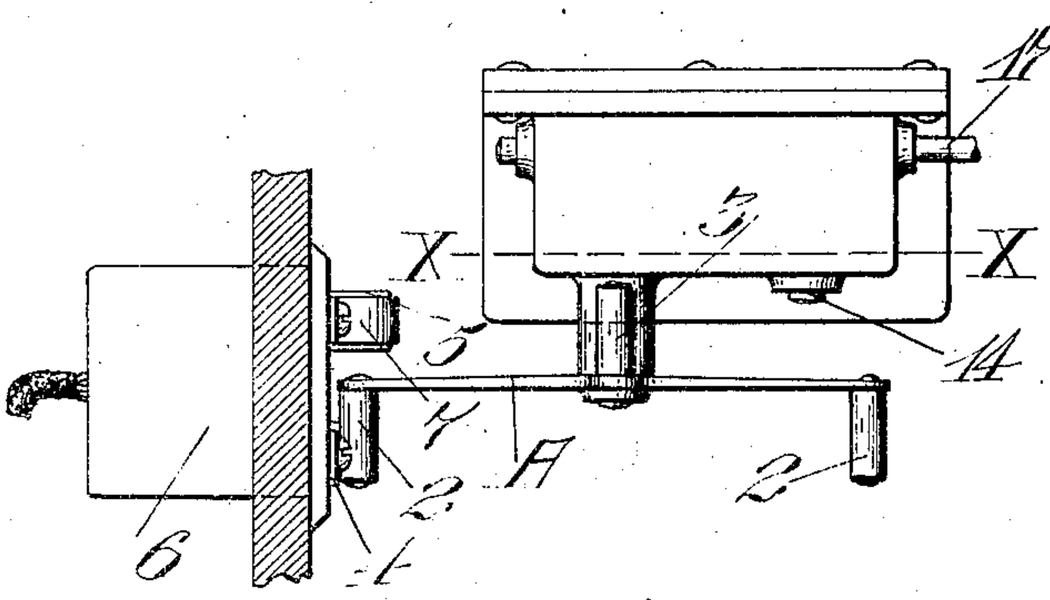


Fig. 2.

Fig. 3.

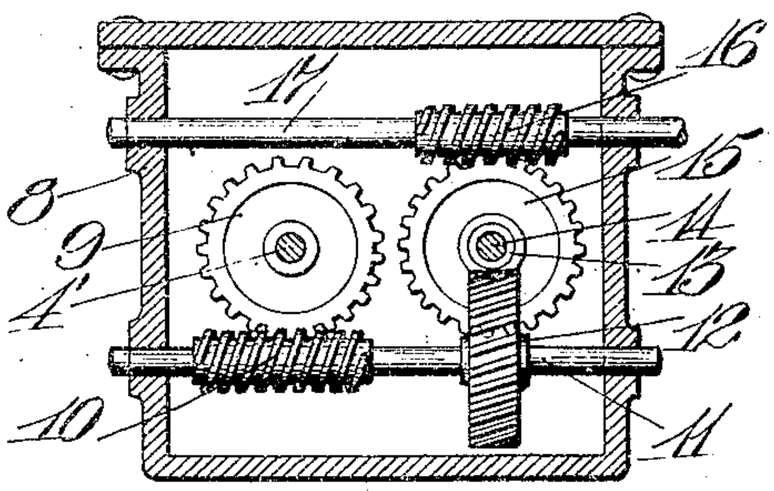
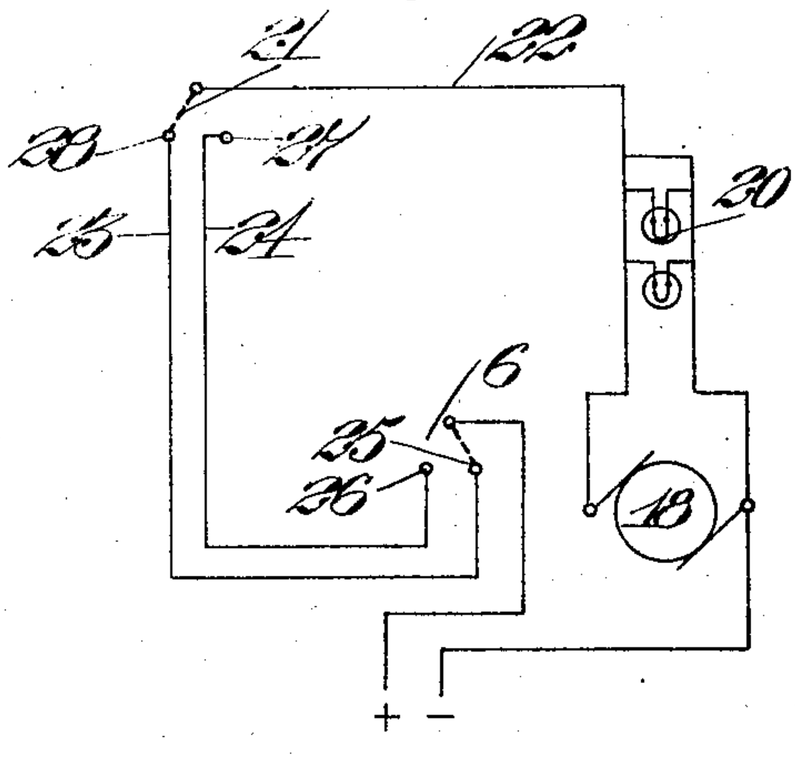


Fig. 4.



Witnesses.

D. Eastberg

Lawrence Penfield

Inventor.

Paul J. Stuparich.

by Geo H. Strong

Atty

UNITED STATES PATENT OFFICE.

PAUL J. STUPARICH, OF SAN FRANCISCO, CALIFORNIA.

AUTOMATIC TIME-SWITCH.

951,750. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed March 16, 1909. Serial No. 483,768.

To all whom it may concern:

Be it known that I, PAUL J. STUPARICH, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Automatic Time-Switches, of which the following is a specification.

My invention relates to a device for automatically operating an electrical switch after the lapse of a predetermined interval of time.

In hotels and apartment houses it is a common source of grievance and expense for the landlord to discover in the morning that guests or others coming in late at night have turned on the light in the hallway, and after passing up the stairs have failed to put out the light.

The object of this invention is to provide a simple, practical device in the form of an automatic time switch which will not interfere with the proper lighting of the lamp, but after the lapse of five minutes or so, or such other time as it is desired to have the light burn, the light will be extinguished.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the time switch. Fig. 2 is a plan view of the same. Fig. 3 is a section through the gear casing showing the gears for operating the switch. Fig. 4 is a diagrammatic representation of the system.

A is an actuating wheel of any suitable description, and having any desired number of arms. As here shown, this wheel has four arms each carrying a roller, two of these rollers 2 which are opposed to each other extending to one side of the wheel, and the other rollers 3 extending in the opposite direction. This wheel is mounted on a shaft 4′ which is revolved slowly by any appropriate means, so that when the wheel is set in motion it will take a predetermined interval of time, say one minute, or five minutes, as the case may be, for an arm to revolve through an arc of 90°; the rollers 2—3 acting alternately in the revolution of the wheel on respective push-buttons 4—5 of a three-point switch 6. Each push-button is disposed beneath a spring plate 7, so that as a roller comes down and strikes a plate it will slide over the latter, pushing the plate in and operating the push-button. These push-buttons operate in the manner well-known in the art, so that as one button is pushed in, the other is automatically pushed out. It is also designed that each of these buttons, and either of them, when pushed in will put out the light which is to be controlled, all as will be shortly described.

The wheel is revolved intermittently by any appropriate means. As here shown, the shaft 4′ is journaled in the casing 8, and this shaft carries a gear 9 engaging a worm 10 on a shaft 11. Shaft 11 carries a large worm 12 which engages a small worm pinion 13 on a shaft 14. Shaft 14 carries a large gear 15 meshing a small worm 16 of the motor shaft 17; 18 being the motor. By this arrangement of gears and shafting, the wheel A may be made to revolve as slowly as desired, although the motor may be run at the rate of 1800 to 2000 R. P. M.

Referring to Fig. 4, the lights to be controlled are represented at 20, these lights being arranged in parallel, and connected with the line circuit with the motor 18. 6 is a three-point switch operated from the motor, and 21 is a three-point switch arranged in the hallway, or other place, for controlling the lights 20. One member of the switch 21 is connected with the lights, as shown at 22, while the two opposite points of the switch 21 are independently connected by the wires 23—24 with two corresponding points of the switch 6.

In operation, with the switches 6 and 21 standing in the position shown, the current will pass to the lights and through the motor, and the lights will stay lighted until such time as one of the rollers 2 or 3 comes in contact with its respective spring 7 and pushes in a corresponding button so as to put out the lights. Pushing in one of the buttons 4 or 5 has the same effect as would throwing the switch arm of switch 6, diagrammatically represented in Fig. 4, from the contact 25 to the contact 26, and obviously resulting in the breaking of the circuit. The next time it is desired to light the lights, the diagrammatically represented switch arm 21 of Fig. 4, is thrown to the right to engage the switch point 27, which again places the lights in circuit. Each time that the lights are lighted the motor 18 is set in operation, and the light continues to burn until one or the other of the rollers 2 or 3 presses in on its corresponding

button 4 or 5 and puts out the light, or until the light is otherwise turned off by reversing the switch 21.

Suitable switch connections (not necessary here to be shown) may be employed by which the motor may be cut out at any time; as where it is desired to have the lights continue to burn for any extended period, as in the early part of the evening.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. An automatic time switch comprising a pair of coöperating switch members, a wheel having radially extending arms, alternate of said arms having roller contacts extending in opposite directions and adapted to operate said switch members on the rotation of the wheel, a shaft upon which the wheel is carried, a motor shaft, and a train of gearing between the motor shaft and the shaft of said wheel.

2. An automatic time switch comprising a pair of coöperating switch members, a wheel having radially extending arms, alternate of said arms having roller contacts extending in opposite directions and adapted to operate said switch members on the rotation of the wheel, a shaft upon which the wheel is carried, a motor shaft, a train of gearing between the motor shaft and the shaft of said wheel, said train of gearing including a worm on the motor shaft, a worm gear engaged thereby, a worm pinion, a shaft parallel with the motor shaft and having a worm engaged by said pinion, said second shaft having, also, a worm, and a worm gear on the wheel shaft engaged by the last named worm.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PAUL J. STUPARICH.

Witnesses:

CHARLES A. PENFIELD,

CHARLES EDELMAN.