No. 755,845. PATENTED MAR. 29, 1904.

F. W. CHERRY & H. F. RADKE.

ELECTRIC TIME SWITCH.

APPLICATION FILED JAN. 25, 1902.

NO MODEL.

Fig. 1.

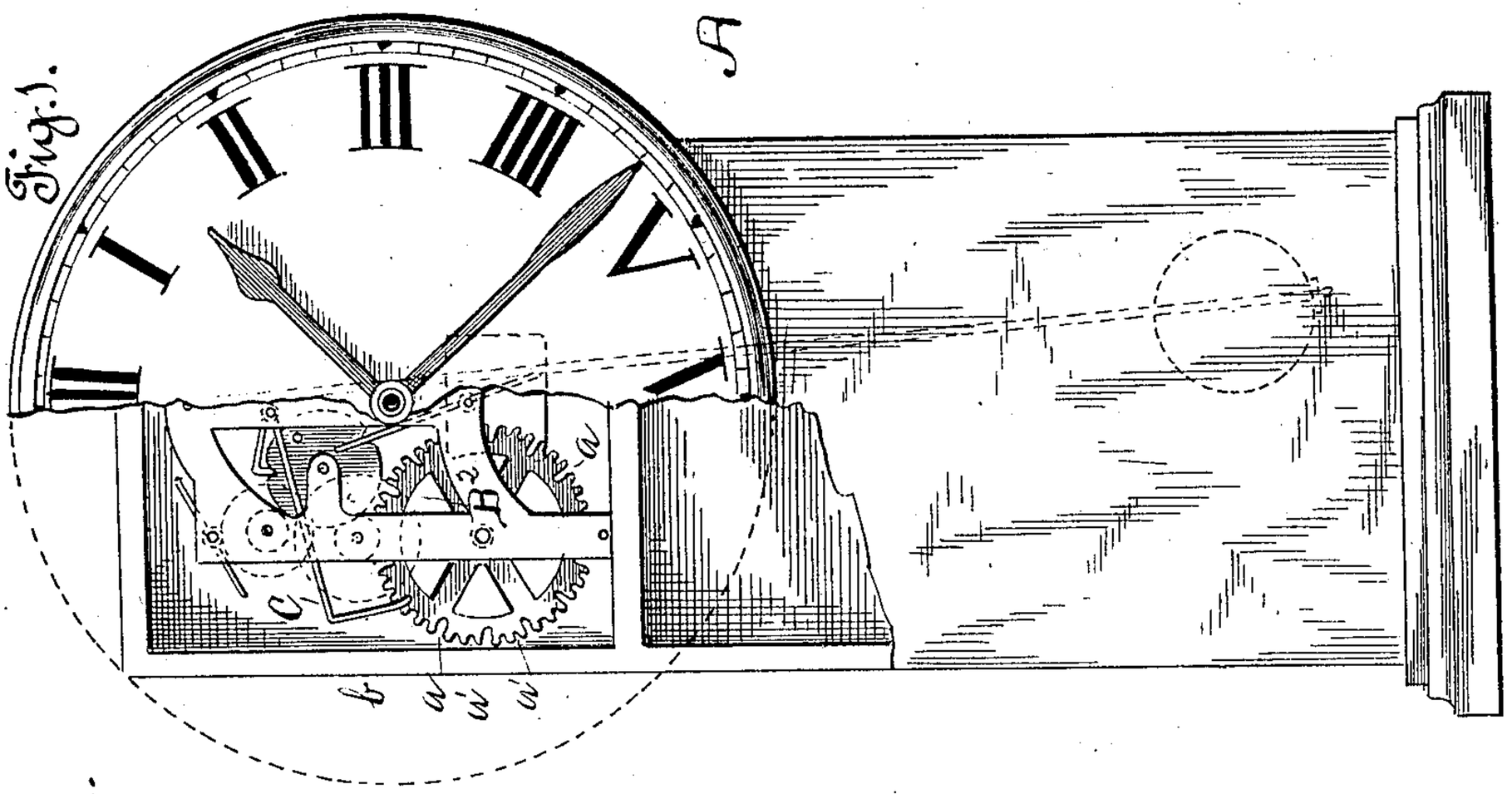
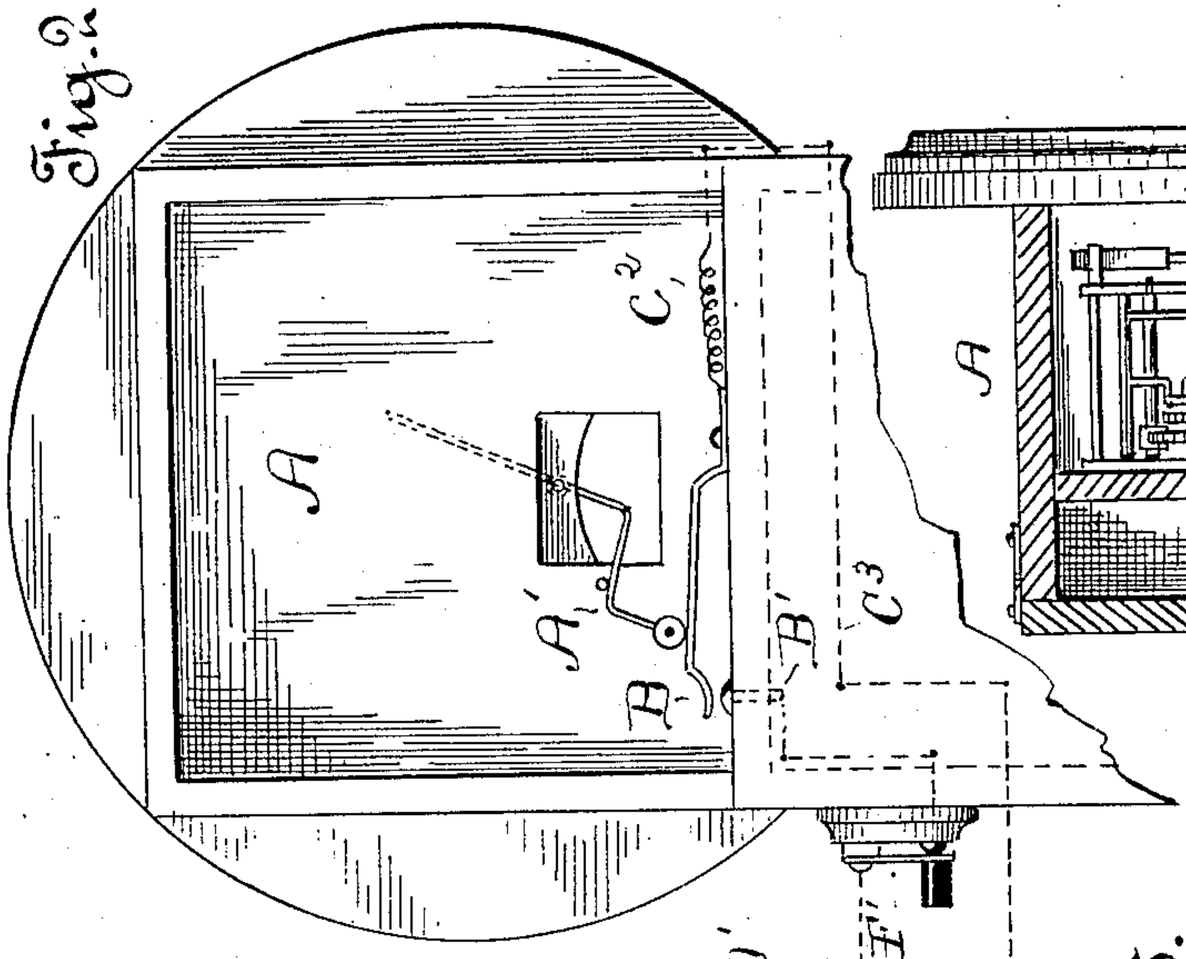


Fig. 2.



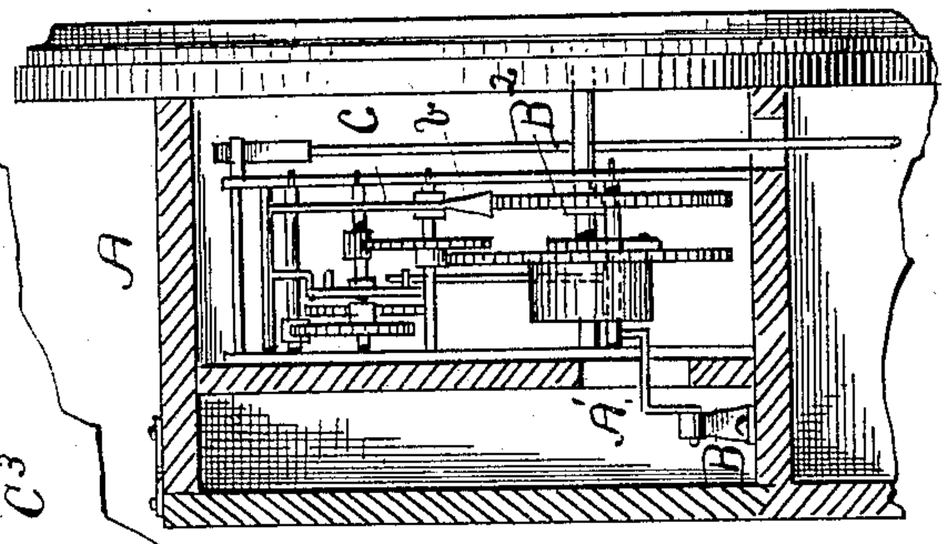


Fig. 3.

Fig. 4.

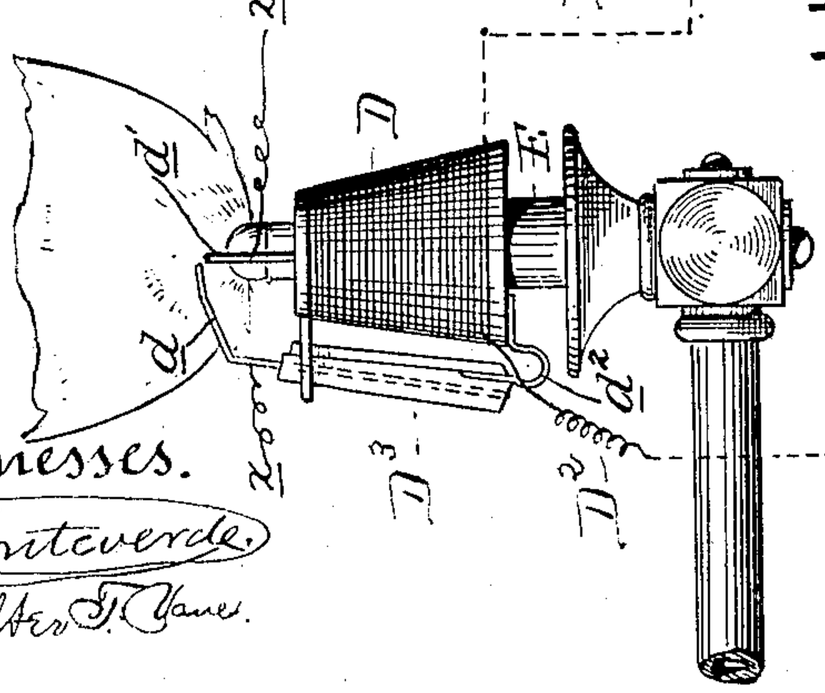


Fig. 5.

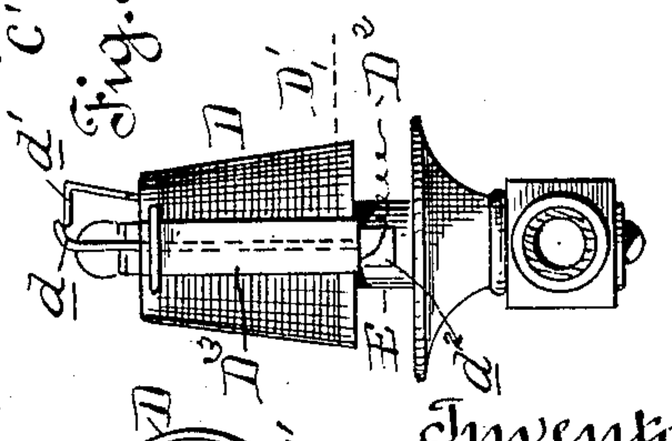
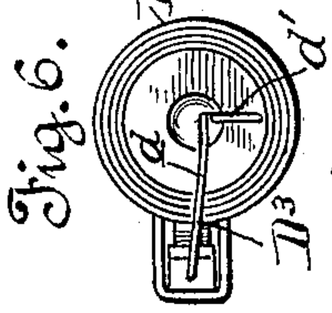


Fig. 6.



Witnesses.

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No. 755,845. Patented March 29, 1904.

UNITED STATES PATENT OFFICE.

FRANK W. CHERRY AND HENRY F. RADKE, OF SAN FRANCISCO, CALIFORNIA.

ELECTRIC TIME-SWITCH.

SPECIFICATION forming part of Letters Patent No. 755,845, dated March 29, 1904.

Application filed January 25, 1902. Serial No. 91,167. (No model.)

To all whom it may concern:

Be it known that we, FRANK W. CHERRY and HENRY F. RADKE, citizens of the United States, and residents of the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Automatic Igniters for Escaping Gas; and we do hereby declare the following to be a full, clear, and exact description of the same.

The present invention is designed more especially for use in connection with hotels and lodging-houses, although it is equally adapted for use in dwelling-houses, offices, or other places employing illuminating-gas.

The object of the invention is to provide an inexpensive attachment whereby the gas escaping from the burner in a bedroom is automatically ignited, thus preventing asphyxiation of the occupant thereof. The arrangement of parts is such that an electric spark is made at the tip of the gas-burner at predetermined intervals throughout the day, which spark in case of escaping gas ignites the gas, and thus prevents same escaping, to the injury of the person sleeping or occupying the room with which the attachment is connected. In case the escaping gas is not ignited it will be due to the fact that apparatus has been tampered with with the view of rendering same useless.

In order to comprehend the invention, reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a broken front view of the actuating mechanism for the igniter; Fig. 2, a rear view thereof. Fig. 3 is a vertical sectional view of the actuating mechanism. Fig. 4 illustrates the wire connection with the igniter. Fig. 5 is a detail view of the magnet and armature for the gas-burner, and Fig. 6 is a plan view of the igniter.

In carrying out our invention we locate in the office of the hotel or in any convenient place an actuating-motor, which in the present case consists of an ordinary striking clock A. The gong or bell is removed therefrom, and the hammer A′ is so arranged as to be immediately above the contact spring-plate B, which spring-plate makes and breaks contact with contact-plate B′. The gear mechanism for actuating the hammer being the same as that of the striking clock, consequently for the purpose of operating the spring contact-plate B an ordinary striking clock is suitable for our purpose and forms a simple and effective means for controlling the sparking mechanism. To convert same to our use, it is only required to arrange the hammer A′ so as to strike against spring contact-plate B instead of a gong or bell and to make certain change in the form of controlling-wheel B^2 for the striking mechanism. Ordinarily the periphery of this wheel or disk is divided into a series of notches or depressions, each ranging from one to twelve and into which the free end of lever C engages as the clock strikes the hour. This wheel or gear we have changed by cutting a series of deep notches *a* in the periphery thereof, located an equidistance apart, one for each hour of the day. Between the notches *a* two shallow seats or sockets *a′* are cut. In these seats or sockets the inturned end *b* of lever C works as the wheel or disk B^2 rotates during the striking operation of the clock mechanism. As the lever is raised and lowered by its inturned end *b* working in and out of the seats or sockets the striking-hammer is likewise raised and lowered, as usual in this class of mechanism, thus imparting three distinct strokes to the hammer each time the striking mechanism is actuated, usually each hour throughout the day.

At any suitable place is arranged the battery C′, which is connected with the contact-plates B and B′ by the wires C^2 C^3. Connection is also made between magnet D, which surrounds in the present case the gas-burner E, and the plate B′ by wire D′. By means of wire D^2 connection is made between battery C′ and magnet D, which completes the main circuit when contact is made between the plates B and B′. The point *d* of the armature D^3 makes and breaks connection with the point *d′* of the magnet, the armature being supported by a spring d^2, when the magnet is energized, so as to cause a spark for the ignition of such gas as may escape from the burner, the armature being, of course, in an ordinary

sparking circuit, one terminal, x, of which is connected thereto, while the other terminal, x', is connected to the point d' of the magnet. As thus connected it is obvious that as the spring-plate B is moved in and out of contact with plate B′ the circuit is closed and opened, which through its connection energizes the magnet D and causes its armature D^3 to make and break therewith. Should any gas escape from the burner E, the spark made by movement of the armature toward and from its magnet will cause the ignition thereof, thus preventing its escape into the room.

The actuating mechanism may be so arranged as to operate the igniter every half-hour, hour, or at other predetermined periods.

By the described arrangement the igniter is actuated or caused to spark automatically and cannot fail to operate unless its connections are deliberately interfered with. In such case it is conclusive that the occupant of the room intentionally permitted the escape of the gas.

There is interposed at any desired point a cut-off switch F′. In the present case the same is illustrated at one side of the clock. By means of this switch the circuit between the operating mechanism and the igniter may be cut out in case it is desired to cut off the igniter.

Connection may be made between the wires D′ and D^2 and the igniter mechanism of any given number of rooms, thereby actuating the igniter in all of the rooms simultaneously at predetermined intervals. The interval between the igniting periods is not such as to permit of the escape of sufficient gas to cause injury to the occupant of the room with which the device is connected.

Having thus described the invention, what we claim as new, and desire to obtain protection in by Letters Patent, is—

A sparker for igniting gas, comprising the sparker-points, a coöperating magnet and armature for contacting said points, electric circuits including the magnet, armature and sparking points, a circuit-closer in the magnetic circuit, including a spring-arm, a rocking hammer arranged above said arm and adapted to depress the same, a clockwork, a controller-wheel in said clockwork, said controller-wheel having on its periphery a plurality of equidistant deep notches and a plurality of equidistant shallow notches disposed intermediate said deep notches, a pivoted lever one end of which is adapted to engage with one of said notches, and connections between said lever and said rocking hammer whereby when the end of the lever is seated in one of the deep notches the hammer will remain stationary and when the end of the lever is lifted out of the deep notch and into one of the shallow notches the lever will be rocked to engage with the spring-arm and close the circuit through the magnet and actuate the sparking mechanism.

In witness whereof we have hereunto set our hands.

FRANK W. CHERRY.
HENRY F. RADKE.

Witnesses:
WALTER F. VANE,
D. B. RICHARDS.