

(No Model.)

J. F. McCORMIC.
AUTOMATIC LIGHT EXTINGUISHER.

No. 458,660.

Patented Sept. 1, 1891.

Fig. 1.

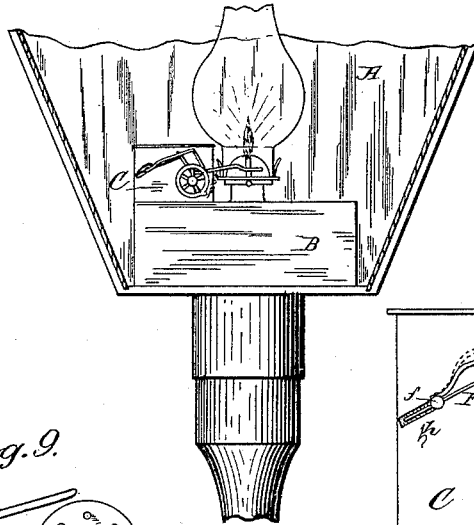


Fig. 2.

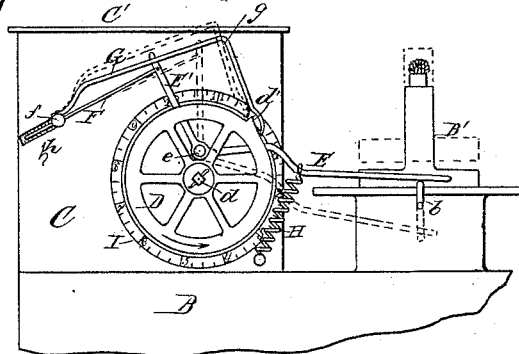


Fig. 3.

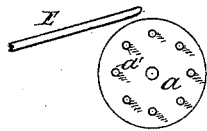


Fig. 4.

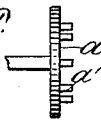


Fig. 5.

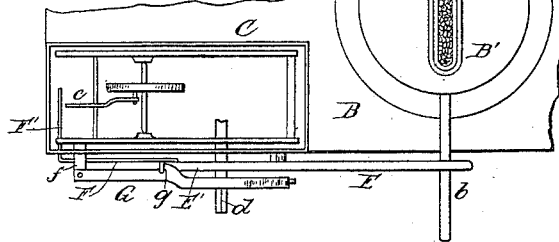


Fig. 6.

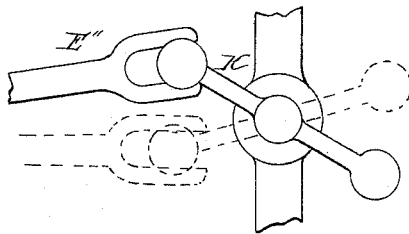


Fig. 7.

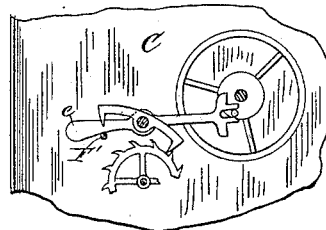
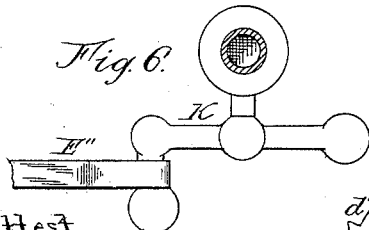
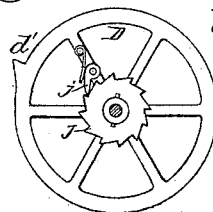


Fig. 9.

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UNITED STATES PATENT OFFICE.

JAMES F. McCORMIC, OF MARION, IOWA, ASSIGNOR OF ONE-HALF TO R. A. MAGEE, OF SAME PLACE.

AUTOMATIC LIGHT-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 458,660, dated September 1, 1891.

Application filed December 19, 1890. Serial No. 375,178. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McCORMIC, a citizen of the United States, residing at Marion, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Chronometric Light-Extinguishers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide street and other lamps or burners with a device whereby they may be extinguished automatically at any predetermined time.

The invention consists, essentially, in the application of a power-actuated lever to the extinguisher, wick-raiser, gas-cock, or other flame-supply device, and to the said lever a let-off actuated by clock-work.

The invention further consists in the arrangement of a dial in connection with the let-off in a device for throwing the clock-escapement off the center and in other details, as will hereinafter be fully set forth and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a device embodying my invention as applied to a street-lamp. Fig. 2 is an enlarged view of the same detached from the post. Fig. 3 is a fragmentary plan view of the same. Fig. 4 is a side elevation of a clock-escapement, showing the device for throwing the same off the center. Fig. 5 is an elevation of the tappet-wheel as seen from the inner side. Fig. 6 is a plan view showing the application of the extinguisher-lever to a common gas-cock. Fig. 7 is a side elevation of the same; and Figs. 8 and 9 are side and end views, respectively, of wick-raisers, showing the application of the lever thereto.

Similar letters of reference indicate corresponding parts.

The invention is more particularly applicable to street-lamps, though it is adaptable to many other kinds of burners. Taking the street-lamp as an illustration of the application of the device, however, it may be stated that it is common to have them extinguished soon after the rising of the moon on moon-

light nights and in the morning at other times by the lamp-lighter. This involves as much labor as is required to light the lamps, with a corresponding expense, and as the operation is necessarily slow it also involves a greater consumption of gas, or whatever the light-producer may be, than would be the case if all were extinguished at once. This invention is designed to dispense with the services of a lamp-lighter and the incident expense for extinguishing the lamps and provide for the same being done automatically.

Referring now to the drawings, A represents a common lamp-post provided with a simple oil-burning lamp B. In connection with this lamp I have shown a lifting-extinguisher of a common and well-known construction having a stem *b*, by the depression of which the extinguisher is raised above the wick of the lamp, as shown in Fig. 2. These parts are in general use and need not be particularly described.

At some suitable place on or near the lamp is mounted a simple clock-movement C, inclosed in a case of tin or the like. A neat-fitting cap C' gives access to the works, and when in place protects the mechanism from dust and the elements. On the main-wheel arbor *d* is mounted a tappet-wheel D, having a single tooth *d'*, adapted to engage with the end of a let-off spring G, secured at one end to a suitable pillar or stud *f*. On the inner side of this spring is a shoulder *g*, adapted to catch the arm E' of the lever E, pivoted at *e* to the side of the clock-case. A spring H, connecting with the other arm of the lever and with the clock-case, tends to draw the outer end of the lever downwardly and the other end of the lever against the shoulder *g*. To the upper arm of the lever E' is connected a rod F, passing through a hole in the stud *f*. The free end of the rod turns at right angles to the body thereof and passes through a slot *h* in the side of the clock-case. Normally—that is to say, when the clock is running and the apparatus is in position for the burner to operate—this stem F' lies back of the tail of the escapement-lever *c*, as shown in Fig. 3; but when the lever E is thrown down to extinguish the light this stem passes under or over the tail of the escape-

ment-lever, as shown in Fig. 4, and throws it off the center, so that the clock is ready to start instantly when the position of the parts is again changed. Back of the tappet-wheel is placed a dial I, corresponding to the ordinary clock-dial, with the 12-mark coincident with the tooth d' when in position for disengaging the spring G from the upper arm of the lever E' . The wheel D should be mounted loosely on the arbor d , which is provided with a suitable click-wheel J, adapted to move the tappet-wheel in one direction through the medium of a pawl j .

From the foregoing the operation of the device will be readily seen. The operator at the time of lighting the lamp winds up the clock and sets the mechanism in the position shown in Fig. 2 by lifting the outer end of the lever E until the other end springs in behind the shoulder g of the spring G. He then turns the tappet-wheel forward as many hours as it is desired to have the light burn, the tooth d' serving as the index therefor. The lifting of the lever E has liberated the escapement-lever from the stem F' , and the clock automatically commences to run. As it runs the tappet-wheel turns in the direction indicated by the arrow until the tooth strikes the lower end of the spring G, and the said spring is carried high enough to disengage the upper end of the lever E' , when the lever instantly flies to its original position through the operation of the spring H, throwing up the extinguisher B' , as indicated by the dotted lines in Fig. 2. The same operation throws the stem F' under or over the tail of the escapement-lever and stops the clock, so that there is practically no waste of light or time.

Suitably modified the same principle is applicable to the extinguishment of flame in other burners than those shown in Figs. 1, 2, and 3. In Figs. 6 and 7 the bifurcated or slotted lever E'' , corresponding to the lever E, engages with a suitable wrist of a gas-cock K, and is adapted to turn the same, as shown in Fig. 7. In Figs. 8 and 9 the lever E is applied to a common wick-raiser a . This is provided with a number of projecting studs a' , one of

which the lever strikes in its descent and turns the wick down, as is commonly done by the thumb and finger. It will be understood that the object in stopping the clock at the same time that the light is extinguished is to avoid the necessity of winding the same so frequently as would be required if the clock were to run continuously.

For the sake of simplicity the tappet-wheel is shown on the main-wheel arbor. In many clock-movements this arbor revolves once in six, instead of twelve hours. In the case of the movement herein shown the arbor is, of course, supposed to revolve once in twelve hours. In the case of main-wheel arbors revolving more rapidly the dial should correspond with it, or else the tappet-wheel should be mounted on another arbor geared to run more slowly—that is, to revolve at the same speed as the hour-hand of an ordinary clock.

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

1. The combination, with a burner and its extinguishing apparatus, substantially as described, of a power-actuated lever, a catch adapted to hold the same in a state of tension and disengaged from the extinguisher, a tappet actuated by clock-work adapted to disengage said catch, an escapement-lever having a tail or extension thereon, and a rod connecting with the first-named lever, with a stem adapted to pass under or over the tail of the escapement when the said lever is disengaged to stop the clock and throw the escapement-lever off the center.

2. In an automatic extinguisher, the combination of the pivoted lever E E' , spring H, catch G, having shoulder g , arbor d , actuated by clock-work and having the click-wheel J secured thereto, and the tappet-wheel D, having tooth d' and pawl j , mounted loosely on said arbor.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES F. McCORMIC.

Witnesses:

R. A. MAGEE,
S. W. BRAINERD.