

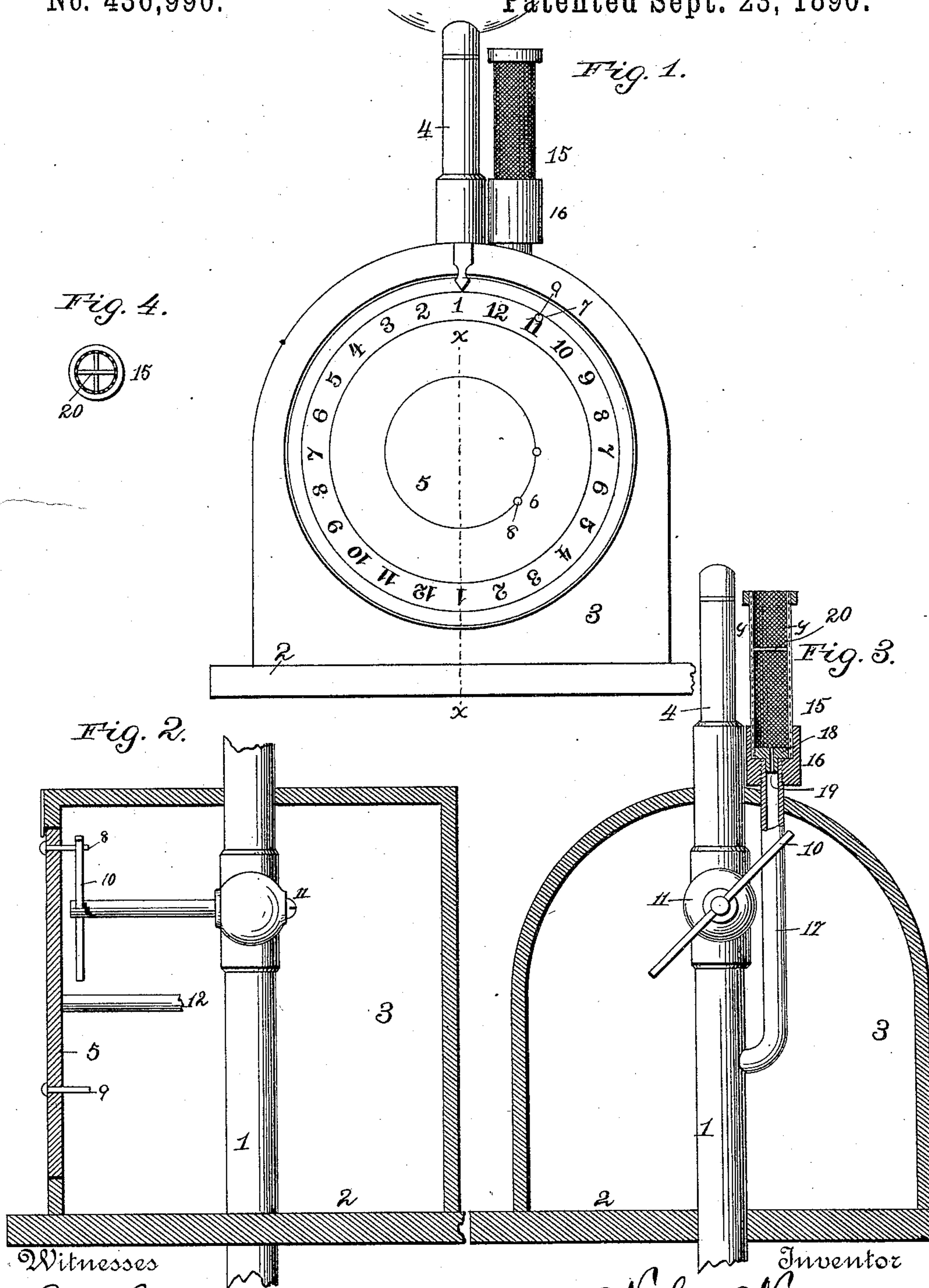
(No Model.)

N. NEWMAN.

AUTOMATIC GAS LIGHTER AND EXTINGUISHER.

No. 436,990.

Patented Sept. 23, 1890.



Witnesses

*J. W. Garner*  
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# UNITED STATES PATENT OFFICE.

NELSON NEWMAN, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO  
GEORGE A. SANDERS AND SAMUEL J. WILLETT, BOTH OF SAME PLACE.

## AUTOMATIC GAS LIGHTER AND EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 436,990, dated September 23, 1890.

Application filed February 5, 1890. Serial No. 339,325. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON NEWMAN, of Springfield, in the county of Sangamon, State of Illinois, have invented new and useful Improvements in Automatic Gas Lighters and Extinguishers; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to an automatic device for igniting and extinguishing gas-jets; and the objects of my invention are, first, to automatically ignite and extinguish a gas-jet at predetermined intervals; second, to provide means to prevent the accidental extinguishment of the gas, and, finally, to provide an auxiliary burner which will remain constantly ignited and is independent of the main burner and the controlling-cock of the latter.

My invention consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of an automatic gas lighter and extingisher embodying my improvements. Fig. 2 is a vertical sectional view of the same, taken on the line *xx* of Fig. 1. Fig. 3 is a transverse sectional view through the case, showing the main burner and supply-pipe in elevation and the auxiliary burner in section. Fig. 4 is a horizontal sectional view taken on the line *yy* of Fig. 3.

1 represents the gas-supply pipe, which passes vertically through the base 2 and a case 3, which is located on the base, the upper end of the supply-pipe being provided with a main burner 4 of any suitable construction.

The inclosing case 3 is provided on its front side with an opening, and in this opening is fitted a vertical revoluble dial 5, which lies flush with the front side of the case and is protected thereby. The dial is inscribed on its front face with numerals which correspond with the hours of the day and night, and has two concentric series of apertures 6

7 or two or more apertures, which are at different distances from the center of the dial. In two of these apertures are fitted pins 8 9 for actuating a tappet-lever 10, which lever is attached to the shaft of the turning plug or cock 11, that controls the supply of gas to the burner. The ends of the lever 10 are of different lengths, and they are arranged in the paths of the pins 8 9, and when the disk rotates the pin 8, when it reaches the long arm of the lever, opens the cock to turn on the gas, and when the pin 9 reaches the short arm of the lever it closes the cock and turns off the gas, as will be readily understood. The pins may be adjusted to cause the gas to be turned on and off at any time desired. The disk or dial is carried by a shaft 12, which is rotated by a suitable clock-work or time mechanism (not shown) at the rate of one revolution in twenty-four hours.

An auxiliary burner 15 is arranged in close proximity to the main burner, and is adapted to ignite the latter as soon as gas is supplied thereto by opening the regulating-cock 11. This auxiliary burner consists of a shell or jacket, which is made, preferably, of two or more concentric cylinders of wire fabric, sheet metal, or other material which will admit of the passage of air to the interior of the jacket and at the same time exclude drafts or currents of air, which might extinguish the flame that burns constantly in said auxiliary burner. These cylinders of the auxiliary burner are suitably secured together at their upper ends, say, by a band, and at their lower ends the cylinders are fitted and secured in a base 16, which is applied or secured in any suitable manner to the upper extremity of a pipe 17. This pipe extends downward from the auxiliary burner to a point below the regulating valve or cock of the gas-supply pipe, and it taps or communicates with the pipe 1 at a point below the valve 11, whereby gas is constantly supplied to the auxiliary burner and in quantities which are not variable with the supply of gas to the main burner.

Within the lower end of the auxiliary burner is arranged a fixed plug 18, which fits over the upper end of the pipe 17, and through



said plug is formed a minute gas-passage 19, (shown in Fig. 3,) through which passage a limited volume of gas is allowed to flow constantly to the auxiliary burner. This auxiliary burner is provided with an incandescent or refractory filling, which is arranged within the space or chamber provided by the metallic foraminous jacket, and which material is subjected to the flame of the auxiliary burner, so that the material is maintained in a state of incandescence or at a red glow, which is sufficient to instantly ignite the gas issuing from the main burner and to relight the auxiliary burner should its flame become accidentally extinguished.

I prefer to employ crossed wires of platinum within the auxiliary burner; but I do not restrict myself to the use of this particular substance, as I am aware that other substances can be employed for the same purpose.

Having thus described my invention, I claim—

1. In an automatic gas lighter and extinguisher, the combination, with a main burner, its supply-pipe, and a regulating-valve, of a revoluble dial provided with means for auto-

matically opening and closing said regulating-valve, and an auxiliary burner which receives its supply of gas from the supply-pipe below the regulating-valve therein, substantially as described.

2. In an automatic gas lighter and extinguisher, the combination, with a main burner and its supply-pipe, of a regulating-valve carrying a lever, a revoluble dial provided with projections which are adapted to engage and operate the lever at suitable intervals of time, and an auxiliary burner, for the purpose set forth, substantially as described.

3. In an automatic gas lighter and extinguisher, the combination, with a main burner and the supply-pipe, of a revoluble dial having the pins, the valve, the shaft or stem fixed to the valve and having the lever adapted to be engaged and operated by the pins, and an auxiliary burner, substantially as described.

In testimony that I claim the foregoing I hereunto append my signature.

NELSON NEWMAN.

Witnesses:

WM. R. BOWERS,  
E. S. DAY.