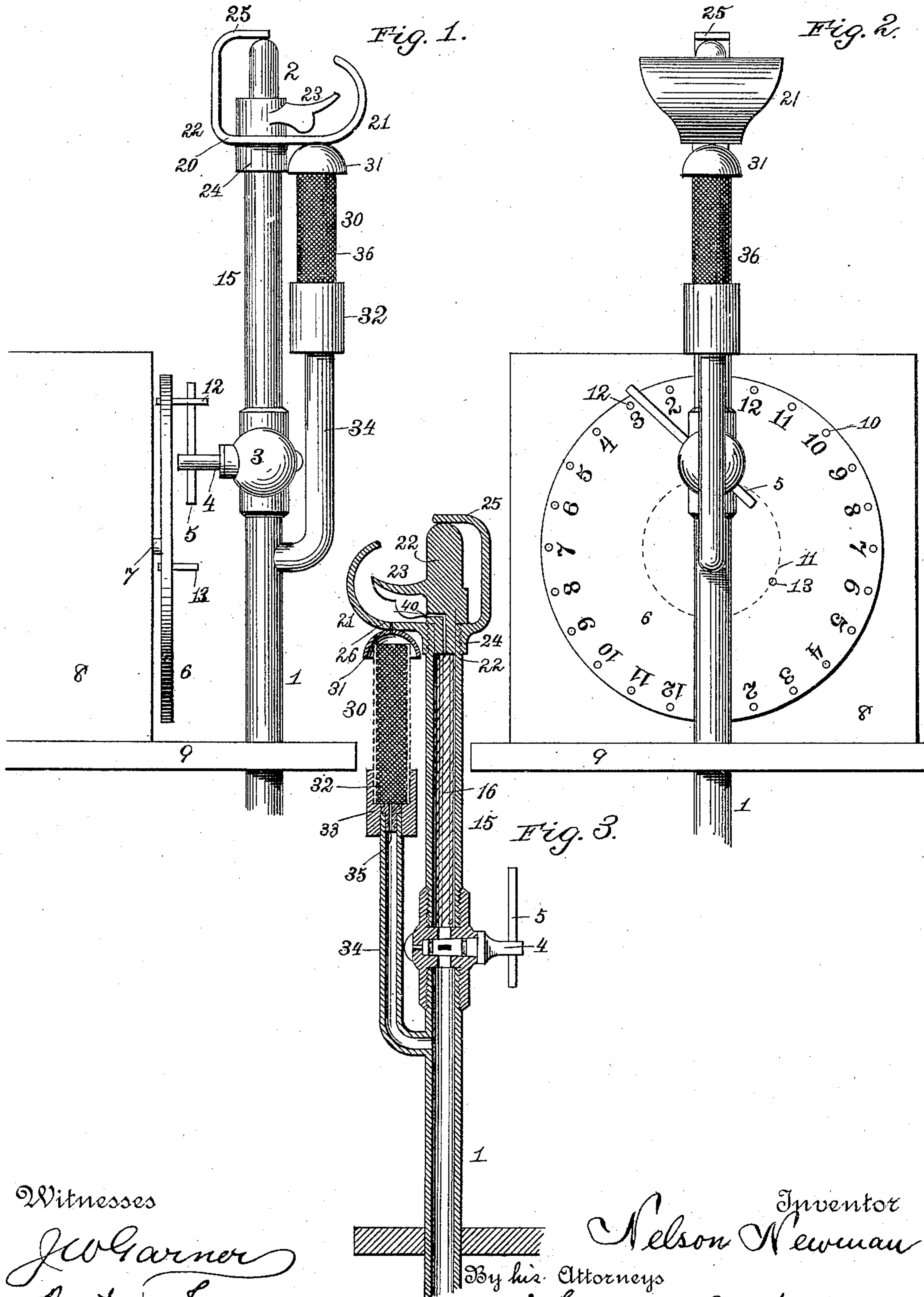


(No Model.)

N. NEWMAN.  
AUTOMATIC GASOLINE BURNER.

No. 445,572.

Patented Feb. 3, 1891.



Witnesses

*John 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 GASOLINE-BURNER.

SPECIFICATION forming part of Letters Patent No. 445,572, dated February 3, 1891.

Application filed February 5, 1890. Serial No. 339,326. (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 Gasoline-Burners; 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 it, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement in automatic gasoline-burners; and the objects of my invention are, first, to provide a burner which is adapted for consuming gasoline for illuminating purposes, either indoors or out of doors, and, secondly, to provide means for automatically igniting and extinguishing the burner at predetermined intervals of time.

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 side elevation of a gasoline-burner embodying my improvements. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical sectional view.

1 designates the supply-pipe, through which the gasoline or other hydrocarbon fluid is supplied to the burner 2. To the upper end of this supply-pipe is secured the shell of a regulating-valve 3, which has an axially-turning plug 4, to which is secured a lever 5, and this lever is arranged in the paths of projections on a revoluble dial 6. The dial is carried by an axially-turning shaft 7, which is adapted to be rotated once in twenty-four hours by any suitable motor or clock-work mechanism arranged in the case 8 on a base 9. This clock-work mechanism is not shown, as it may be of any preferred well-known construction. The dial is inscribed with numerals corresponding to the hours of the day and provided with two concentric series of apertures 10 11, in which pins 12 13 are adapted to be inserted, respectively. The pin 12 is adapted to strike the long arm of

the lever to turn on the flow of gasoline, and the pin 13 is adapted to strike the short arm of the lever to shut off the flow of the gasoline by partly turning the valve, as will be readily understood. By adjusting the pins in the appropriate openings they may be caused to turn on and shut off the gasoline at any hours desired. Rising from the valve is a pipe 15, which carries the burner 2 at its upper end, and in this pipe or tube is placed a fibrous filling of cotton wick or other suitable material 16 to conduct the gasoline to the burner.

The burner consists, essentially, of a metallic plate 20, having the curved flame-deflector 21, the plug 22, and the concave flame-plate 23, arranged on the plug above the outlet thereof and over the opening in the plate, through which passes the flame-jet from the ignitor or auxiliary burner 30, arranged below the burner 2. The plate 20 is provided with an internally-threaded hollow boss 24 on its lower side, which is screwed on the upper end of the pipe 15, and in this hollow boss of the plate 20 is fitted the lower end of the plug 22, which is held in a fixed position immediately over and in line with the pipe 15 by means of an upwardly-extending curved or bent arm 25, integral with the plate 20, which arm rests on the upper extremity of the plug, as shown, to prevent said plug from being elevated or blown out of the plate 20 and its seat therein by the expansive force of the gas generated by combustion of the gasoline supplied through the pipe 15. The plug 22 is provided with a continuous axial and transverse bore or passage 40, which opens through one end and the lateral face of the plug, and immediately over the transverse opening of said passage is arranged the concave flame-plate 23, which serves to direct the gas or vapor over the vertical aperture 26 in the bottom of the plate 20. The deflecting-plate 21 curves upwardly and inwardly, so that its upper edge overhangs the horizontally-arranged concave flame-plate 23, and the latter plate terminates a short distance from the deflector-plate, so that an intervening space is provided between the



upright deflector-plate 21 and the flame-plate 23 for the passage of the flame, which is spread out by the deflector-plate 21.

Below the deflector 21 of the plate 20 is arranged the vertical ignitor or auxiliary burner 30, the upper end of which is arranged within but out of contact with an integral bell-shaped hood 31, which depends from the lower side of the plate 20, and in the center of this hood is formed the vertical aperture 26, which is in alignment with the ignitor or auxiliary burner. This ignitor 30 consists of a foraminous jacket formed of a series of two or more concentric cylinders 36, of wire-gauze or sheet metal, a seat or base 32, to which the jacket is secured, and a plug 33, fitted in the upper open end of the pipe 34, which conducts the gasoline from the pipe 1 at a point below the regulating-valve to the ignitor. This seat or base 32 is rigidly secured to the pipe 34, and in the plug 33 is formed a very small passage 35, that permits the passage of a small quantity of gasoline through the plug to the interior chamber formed by the foraminous jacket.

The operation of my invention is as follows: The gasoline is constantly supplied or conducted by the pipe 34 from the pipe 1 to the ignitor or auxiliary burner, and the latter is ignited in any suitable way, so as to heat the foraminous jacket and the plate 20. The ignitor burns constantly or as long as may be desired, so as to maintain the plate 20 in a heated state sufficiently to vaporize the gasoline, and when the revoluble dial in its rotation causes the pin 12 to impinge against the lever the regulating-valve is opened. The gasoline is then conducted through the wick 16 to the passage in the plug 22, and the gasoline is vaporized by the heated plate 20 and the plug, so that it issues from the passage of the plug in the form of gas or vapor, and is directed by the horizontal plate 23 across and over the opening 26, at which point the gas is ignited from the jet issuing from the ignitor through the opening 26, and the flame is spread by the curved upright plate 21. The burner continues to vaporize the gasoline and

consume the gas until the dial rotates sufficiently to cause its pin 13 to impinge against the short arm of the lever, which operates to close the valve and cut off the supply of gasoline to the burner; but the ignitor or auxiliary burner continues in operation, because it receives its supply of gasoline from the pipe 1 at a point below the regulating-valve in said pipe, so that the apparatus is in condition for operation when the dial shall have rotated sufficiently to cause its pin 12 to again open the regulating-valve. The foraminous jacket of the ignitor admits of the free passage of air to the interior of the ignitor or auxiliary burner and excludes drafts of air from the flame. The overhanging hood on the plate 20 prevents downward drafts of air in the ignitor.

Having thus described my invention, I claim—

1. The gasoline-burner comprising the supply-pipe having the valve, the wick-tube rising above the latter, the plate 20 on the upper end of the wick-tube and having the curved deflecting-plate 21, with a vertical opening 26 in its base, and the depending hood 31, the plug 22, rising from plate 20 and having the aperture 40 and the flame-plate 23, and the ignitor 30, with its upper end in the hood 31, the ignitor being connected to the supply-pipe at a point below the valve, substantially as described.

2. In a gasoline-burner, the plug 22 in the upper end of the wick-tube and having the opening 40 and the flame-plate 23, and the plate 20, attached to the upper end of the wick-tube, said plate having the curved deflecting-plate 21, for the purpose set forth, and the arm 25, which latter has its upper end bent over the top of the plug, substantially as described.

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

NELSON NEWMAN.

Witnesses:

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