No. 630,955. Patented Aug. 15, 1899.

M. L. & W. D. WARNER.

GAS GENERATOR.

(Application filed Jan. 13, 1899.)

(No Model.)

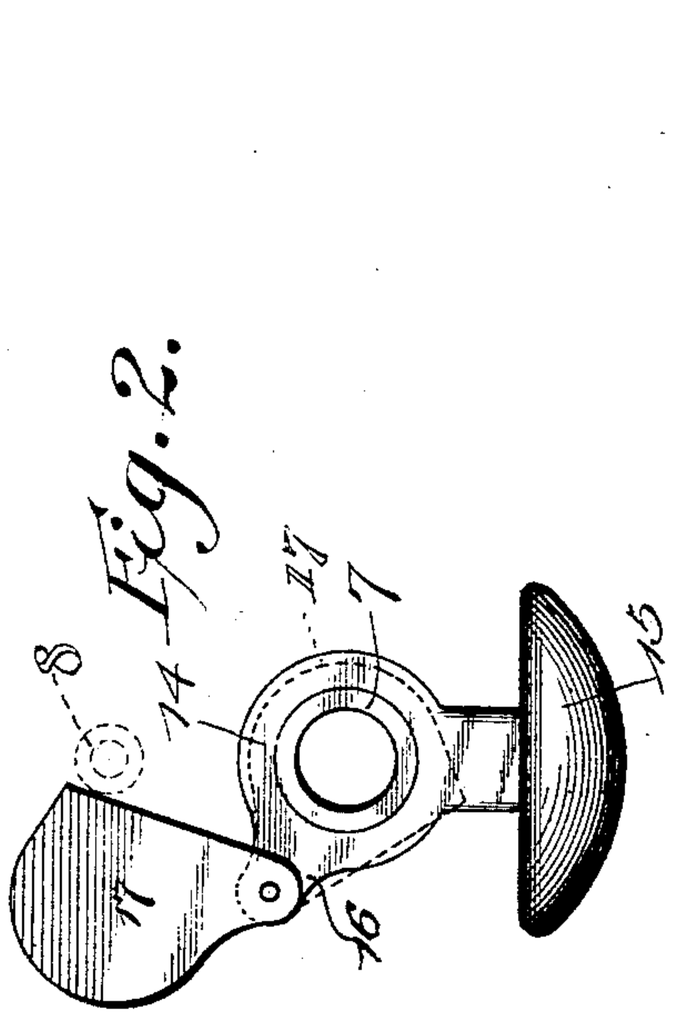

Fig. 2.

Fig. 1.

Witnesses
A. Ruy Applemann
U. B. Hillyard.

Morris L. Warner;
and Willard D. Warner; Inventors.
By their Attorneys.
Church & Co.

UNITED STATES PATENT OFFICE.

MORRIS L. WARNER AND WILLARD D. WARNER, OF HUDSON, MICHIGAN.

GAS-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 630,955, dated August 15, 1899.

Application filed January 13, 1899. Serial No. 702,075. (No model.)

To all whom it may concern:

Be it known that we, MORRIS L. WARNER and WILLARD D. WARNER, citizens of the United States, residing at Hudson, in the county of Lenawee and State of Michigan, have invented a new and useful Gas-Generator, of which the following is a specification.

This invention relates to apparatus for generating gas for illuminating, heating, or other purposes from gasolene, naphtha, or like hydrocarbon fluids, the gaseous mixture being utilized at a point or points remote from the generating apparatus; and it has for its object to equip an apparatus of this character with novel and efficient means to facilitate the starting thereof.

With this object in view the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a detail view of a gas-machine of special construction for attaining the objects of this invention. Fig. 2 is a detail view of the oil-cup, the guard or deflector coöperating therewith and with the burner and showing the relation of said guard when turned to an inoperative position and when occupying an operative position, both positions being shown by the full and the dotted lines.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference characters.

The distributing-pipe 1 for conveying the gas to the various burners of the system is of larger diameter than the pipe 2, which conveys the gasolene or hydrocarbon from a suitable source of supply, as a reservoir, tank, or fount, to the generator 3. A bracket-coupling 4 is formed with a sleeve 5 and an elbow 6, the vertical branch of the latter receiving the lower end of the oil-pipe 2 and the sleeve 5 supporting the burner 7 and the receiving end of the distributing-pipe 1.

The generator 3 is horizontally disposed and may be of any construction and size corresponding to the capacity of the machine. The oil-pipe 2 has connection with one end of the generator, and a pipe 8 extends horizontally from the opposite end and connects with a vertical pipe 9, having the valve-casing 10 applied to its lower end. A needle-valve 11 operates within the casing 10 in the ordinary manner and regulates the quantity of vapor admitted into the burner 7 in a given time and also serves to cut off the flow of the oil when the machine is not in use. The upper end of the vertical pipe 9 is closed by a plug or cap 12, which admits of access to said pipe for cleaning when required.

The burner 7 is horizontally arranged beneath the generator 3 and may be of any desired construction, and, as shown, it consists of a tube having a series of transversely-arranged slits or saw cuts 13 in its top side, which constitute flame-openings. This burner alines horizontally with the valve-casing 10, the latter being in axial alinement therewith, whereby the jet or vapor will enter the burner at a central point and carry along with it the required amount of air to mix therewith. The receiving end of the burner 7 terminates short of the valve-casing 10 and receives a collar 14, which is fitted thereon, said collar having a cup 15, formed therewith, and an offstanding projection 16, to which a plate 17 is pivotally connected, and which plate is adapted to swing across the open end of the burner to close it and act as a deflector to direct the jet of oil into the cup 15 prior to starting the machine. The plate 17 when turned aside is thrown upward and supported against the pipe 8, as clearly indicated in Fig. 2. The cup 15 comes opposite the space formed between the opposing ends of the burner 7 and valve-casing 10, so as to receive the oil escaping from the valve after the latter has been opened. The flame resulting from igniting the oil received in the cup strikes against the pipe 8 and vaporizes a quantity of the oil contained therein by heating said pipe, and after the pipe has been heated to such a degree as to convert the hydrocarbon into vapor the plate 17 is thrown aside and the valve 11 opened, thereby permitting the vapor to enter the burner 7, which likewise constitutes a mixing-chamber, since the vapor and air commingle therein. A small percentage of the gaseous mixture escapes through the flame-openings 13 and is consumed, the heat from which coming in contact with the generator vaporizes the oil therein and maintains the machine in operative condition when in service. The greater

part of the gaseous mixture passes from the burner 7 into the distributing-pipe 1 and is conveyed to the various burners of the plant or system, where it is consumed.

The apparatus is not designed as an illuminator or heater in the sense of vapor-burners as generally constructed, but is a gas-generating machine for converting gasolene, naphtha, or the like into available form for use at any point or points in the length of a distributing-pipe and situated remotely from the machine.

When starting the apparatus, the plate 17 is turned so as to project across and close the open end of the burner 7, after which the valve 11 is opened to permit the escape of a small quantity of oil, which is directed into the cup 15 by striking against the plate 17. The oil in the cup is ignited and the machine started in the manner herein stated.

Having thus fully described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a device of the class described, the combination with the generating-chamber, the needle-valve casing having a pipe connection with said chamber, and the burner-tube, of a collar fitted on the end of the burner-tube opposite the needle-valve casing, and provided with an oil-cup pendent from its lower side and offset therefrom, and a deflector-plate pivoted directly to the collar at one side of the latter, and adapted to be sustained in its elevated inoperative position by said pipe connection between the needle-valve casing and the generating-chamber, substantially as set forth.

2. The combination with a generator, a pipe having a controlling-valve in communication with the generator and a burner having the end opposite the controlling-valve open, of an oil-cup located opposite the space formed between the controlling-valve and burner, and a pivoted plate for closing the open end of the burner and serving to direct the oil into said cup, and supported when not in operative relation, by the valved pipe, substantially in the manner specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

MORRIS L. WARNER.
WILLARD D. WARNER.

Witnesses:
PERCY WAREHAM,
CHARLES C. WARNER.