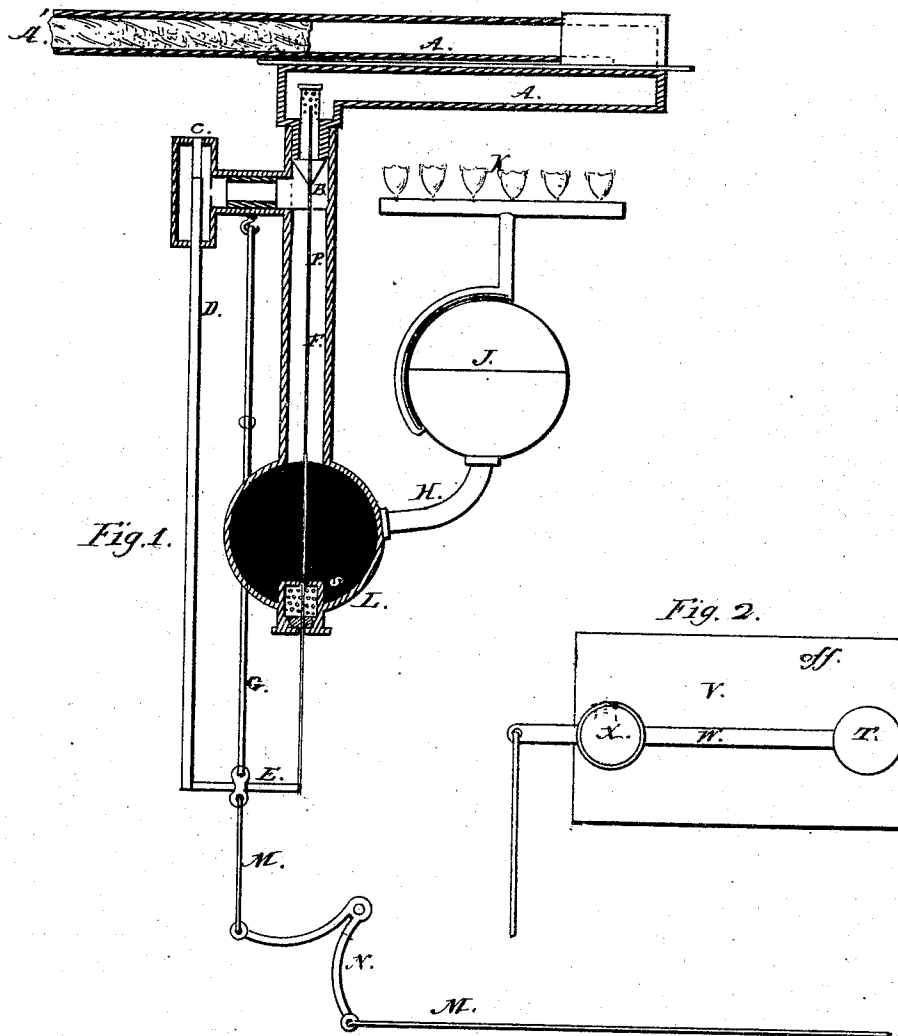


JOSHUA KIDD.

Improvement in Apparatus for Manufacture of Hydro-Carbon Gas.

No. 118,459.

Patented Aug. 29, 1871.



Attest:
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JOSHUA KIDD, OF NEW YORK, N. Y.

IMPROVEMENT IN APPARATUS FOR MANUFACTURE OF HYDROCARBON-GASES.

Specification forming part of Letters Patent No. 118,459, dated August 29, 1871.

To all whom it may concern:

Be it known that I, JOSHUA KIDD, of the city, county, and State of New York, have invented a new and Improved Apparatus for Generating Vapor-Gas; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the drawing attached and making part of this specification.

My present invention for generating vapor-gas is an improvement upon a former invention, for which a patent was granted to me, dated January 10, 1871, No. 110,857.

My invention relates to that class of vapor-gas machines where the air is mixed with the vapor by induction. This machine is not automatic; it simply consists of a retort, into which naphtha or gasoline is injected, and a vapor-jet, so fixed that it will induce a downward current of air, together with a conical needle-valve for opening and closing the outlet of the jet. This valve is connected, by means of a bell-hanging arrangement, to an adjustable indicator, placed in some convenient part of the house, for opening, closing, and controlling the valve. If, say, ten jets are burning and ten additional jets are lighted there will not be sufficient gas for the extra ten jets unless more gas is turned on at the indicator. If a number of lights are turned off the pressure must be reduced, or the lights will flare up with excess of pressure exactly the same as with street-gas. The user has full control of the gas, and can increase, diminish, or shut off the gas, both in the house and in the machine, in a moment.

I make no claim to any particular device for operating the conical needle-valve, as numerous mechanical arrangements may be used; but what I prefer is a lever with a long and short arm, screwed tightly to a metal plate, so that the lever will retain whatever position it is placed in. The wire-operating conical needle-valve is attached to the short end of the lever, and it is moved by a handle placed on the long end.

The air-regulator and conical needle-valve are drawn to their seats by a spring. By this arrangement the proper amount of air is supplied to the vapor-gas, and the vapor escaping down-

ward and carrying with it the proper amount of air makes it very convenient for burning a cluster of lights under the retorts.

My invention will be better understood by reference to drawing attached. Figure 1 shows a front view, partly in section and partly in elevation, of my improvements. Fig. 2 shows adjustable regulator, consisting of metal plate V, spring-lever W, handle T, and binding-screw X.

A A, Fig. 1, shows retort, which may be made of tube, round, square, or any other convenient shape. The entry-tube A' I pack with fibrous material. B is the inducing-jet, fixed so that the vapor escapes downward into the mixing-tube P. F is the conical needle-valve, working through stuffing-box S. C, air-inlet. D, air-regulator, attached to conical needle by cross-bar E. G, India-rubber spring for closing air-regulator D and needle-valve F. This spring may be made of metal, either spiral or flat. H, gas-outlet pipe leading to regulator J. This regulator is of the usual kind, composed of a disk and valve, balanced on the pressure of the gas. K is the heating-jets. L shows end view of gas-receiving pipe, which conveys the gas for consumption. In this pipe is placed a trap or recess for drawing off condensation or any overflow of liquid, and it may be attached to a suitable stand or base. M, wire attached to the lever-regulator, placed at any required distance from machine for operating the same. N, bell-crank.

In starting machine I saturate a little cotton-wick with naphtha and water, and place the same, lighted, under retort. When it is sufficiently heated to generate vapor the oil may be turned on. When this machine is used for making gas for a varying number of lights the gasoline should be supplied to machine under a pressure of about ten pounds to the square inch. If the lights do not vary in number they may be arranged in a cluster under the retort, and then a pressure of a column of liquid from twenty to fifty inches is sufficient for generating the vapor-gas.

I claim—

1. The combination of a downward-inducing jet with a retort, into which gasoline is admitted sparingly.
2. The combination of inducing-jet B with con-

ical needle-valve F, working through stuffing-box S, and method of operating same, as described.

3. Placing the mixing-tube P below the jet B, also the method set forth for regulating the air and vapor.

4. The combination of the spring G or its

equivalent, conical needle-valve F, air-regulator D, and stuffing-box S, also the construction and mode of attaching the inducing-jet B.

JOSHUA KIDD.

Witnesses:

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