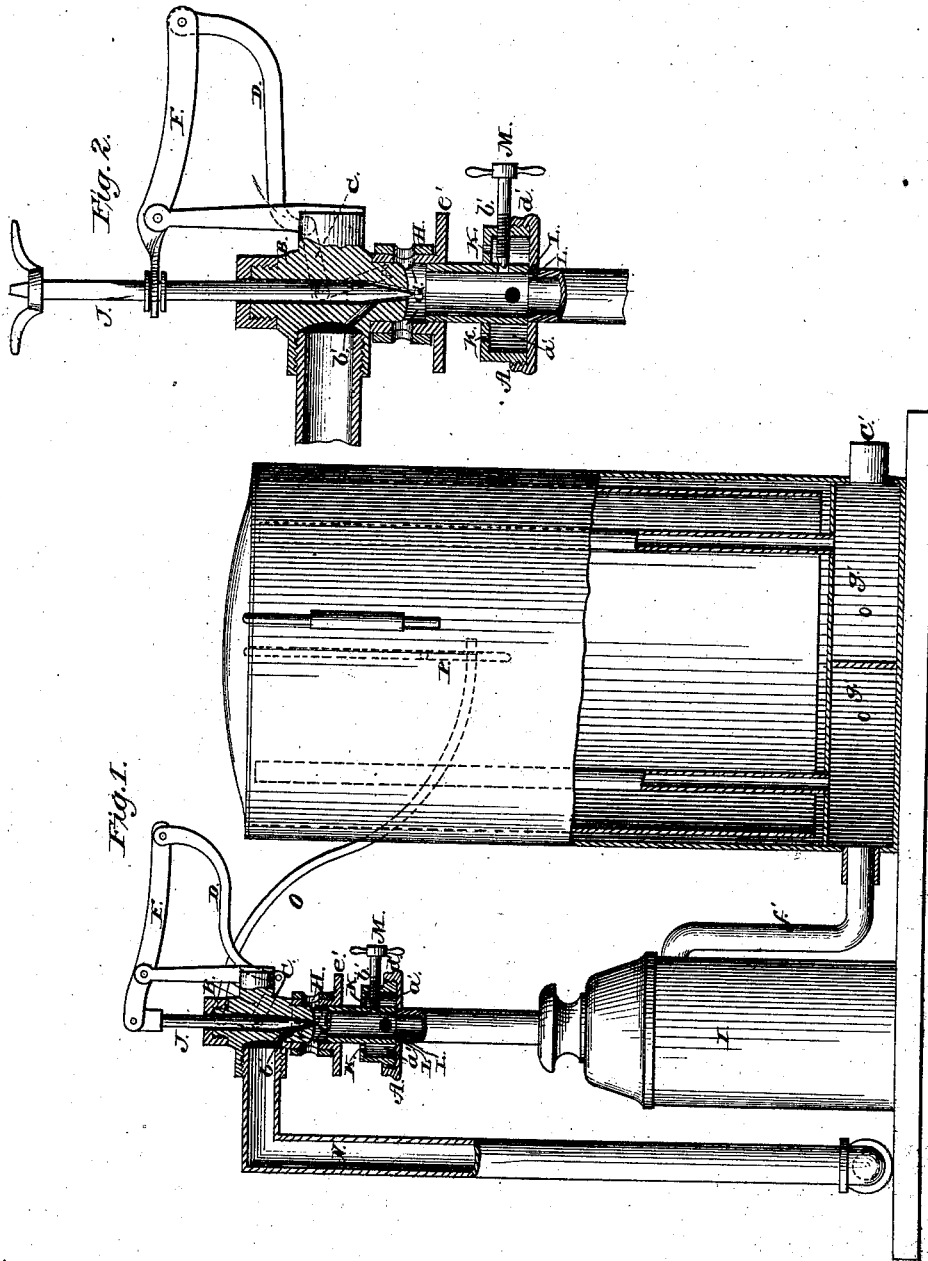


J. S. WOOD.
APPARATUS FOR GENERATING GAS.

No. 194,798.

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Attest:
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JOSEPH S. WOOD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN APPARATUS FOR GENERATING GAS.

Specification forming part of Letters Patent No. 194,798, dated September 4, 1877; application filed January 24, 1877.

To all whom it may concern:

Be it known that I, JOSEPH S. WOOD, of Brooklyn, State of New York, have invented a new and Improved Apparatus for Generating Gas, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved gas apparatus, operated automatically for a large number of lights by the rise and fall of a gas-holder. Fig. 2 is a side view of the apparatus for a small number of lights, to be operated by hand by turning the thumb-screw J, which opens and closes the air-ports G, through the combination of the levers C, D, and F, and revolving sleeve H, which also opens the gas or vapor jet.

The invention consists of a vapor-generator, to which the oil is supplied under certain pressure, the generator being heated up by a burner with exit-holes and regulating screw-valve. The generated vapors are mingled with air and conducted to a gas-holder, the supply of oil and atmospheric air being regulated by a jointly-working plunger-valve and revolving sleeve opening and closing the oil and air openings. The tank or oil-reservoir is placed at any convenient place beneath the ground, and so constructed that it may be partly filled with oil and partly with compressed air from an air-pump, by which the oil is forced to the retort or generator with sufficient pressure to be there heated up, changed into gas or vapor, and mixed with air in proper proportions, so as to form illuminating-gas, which is stored in suitable vessels.

In Fig. 1 of drawing, A represents the generator. B is the oil-cock. J is the plunger valve for opening the oil or gas valve, its operation being automatic; the levers C, D, and F and revolving sleeve H, to open and close the air-ports G, for mixing a proper proportion of air with the vapor as generated to manufacture illuminating-gas and prevent its smoking.

The retort A is made of two parts, secured together, gas-tight, at L L, so that the gas generated will pass through to the gas-heater I. Screw-valve M is opened to let sufficient gas in chamber *a'* to feed the heating-tube *e'* through the gas-holes K.

The cock B, with a plunger, J, (shown in Fig. 1,) or a screw-valve, (shown in Fig. 2,) opens the gas-vent; also opens automatically the air-ports G by the revolving sleeve H, through the combination of the levers C, D, and F.

I is the gas-heater. *f'* is gas-outlet to gas-holder or to the service-pipes in the building. O is the lever that operates the plunger-valve J, in connection with the holder or gas-regulator. P is the gas-holder for regulating the flow of gas for any number of burners. *g' g'* are chambers for inlet and outlet pipes, and to receive the condensation.

The operation of the apparatus is as follows: The tank is filled with oil, and air is forced in. The oil passes up pipe N into cock B and *b'*. The plunger J is opened, which will allow sufficient oil to flow, when it can be lighted and generate gas or vapor. The screw-valve M is regulated so that sufficient gas will flow through holes K K to keep the generator to its proper heat. As fast as the burners are lighted the gas-holder will fall and draw up plunger J, which will open gas-vent and also operate levers C, D, and F to revolve sleeve H and open air-ports G, to dilute the gas or vapor in proper proportion with air to form gas.

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

1. The combination of upper and lower sections *b' d'*, the seats coming together at L L gas-tight, the regulating screw-valve M, vapor-chamber *a'*, levers C, D, and F, to revolve sleeve H, cock B, and valve J, substantially as and for the purpose specified.

2. The combination of the generator A, cock B, sleeve H, levers C, D, F, and O, valve J, heater I, and gas-holder or regulator P, for the purpose substantially as described.

3. In an apparatus for generating gas, the combination, with a vapor-generator heated by a suitable burner, of a jointly-working plunger-valve and revolving sleeve, for regulating the oil and air openings, substantially as and for the purpose set forth.

JOSEPH S. WOOD.

Witnesses:

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JOHN WILLIAMS.