

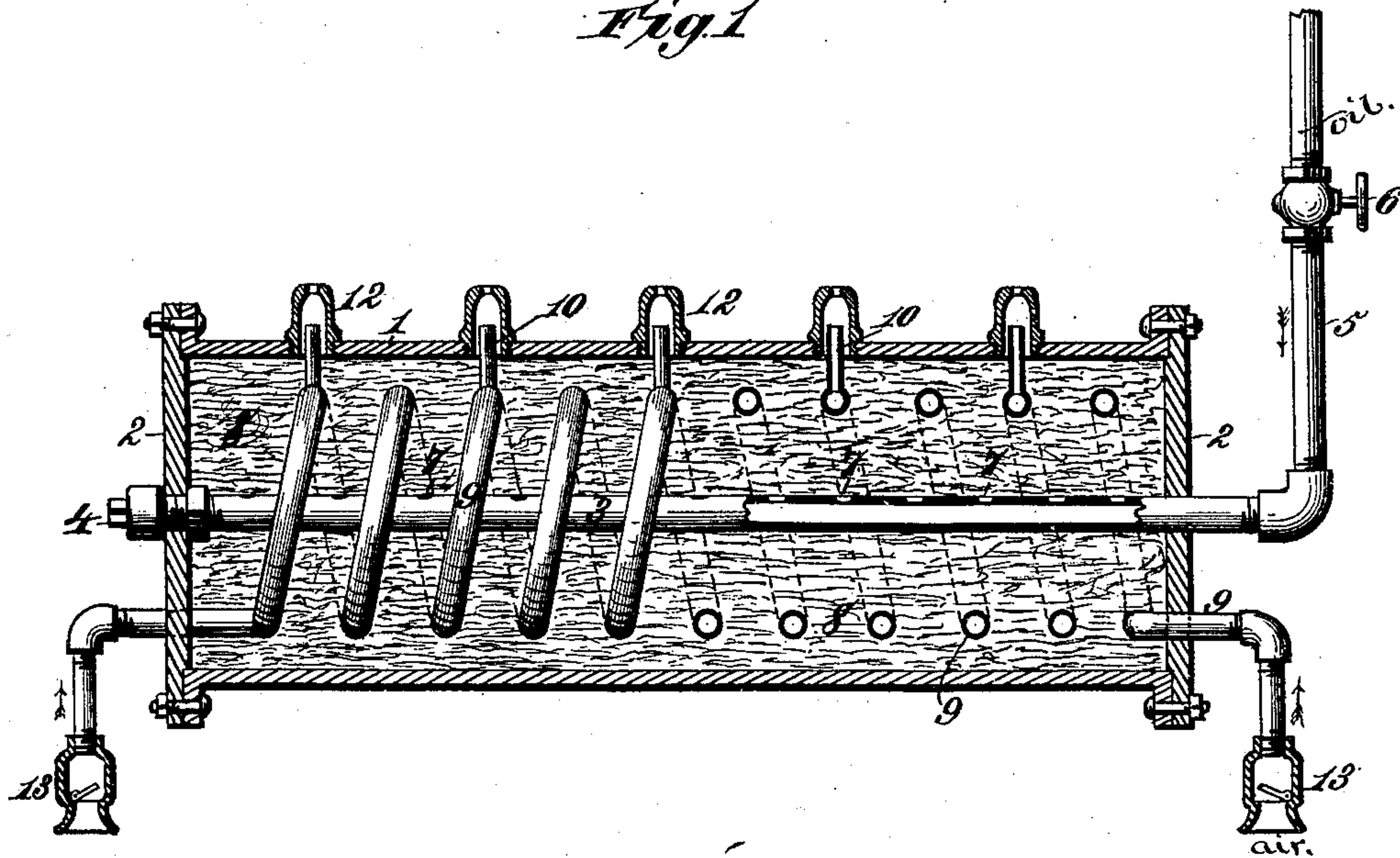
(No Model.)

J. G. STREET.  
GAS GENERATOR AND BURNER.

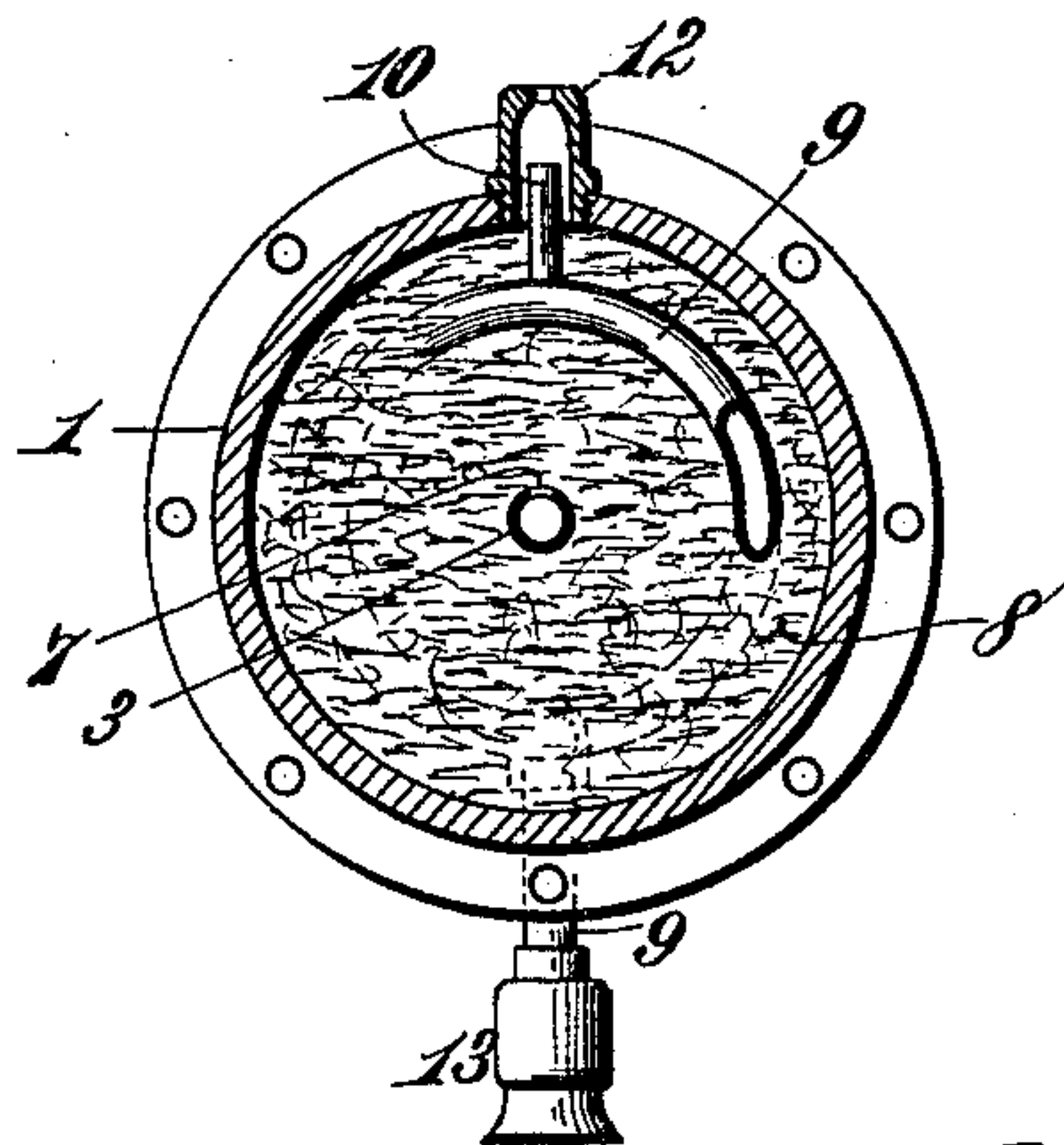
No. 410,944.

Patented Sept. 10, 1889.

*Fig. 1*



*Fig. 2.*



Witnesses,  
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# UNITED STATES PATENT OFFICE.

JOSEPH G. STREET, OF DALLAS, TEXAS.

## GAS GENERATOR AND BURNER.

SPECIFICATION forming part of Letters Patent No. 410,944, dated September 10, 1889.

Application filed April 11, 1889. Serial No. 306,775. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH G. STREET, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Hydrocarbon Vapor Generators and Burners, of which the following is a specification.

This invention has for its object to improve the efficiency of that type of vapor generators and burners wherein oil and air pipes enter a casing having burner-orifices and filled with a porous incombustible substance, which when heated vaporizes the oil.

The object of my invention I accomplish by the combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, illustrating the invention, in which—

Figure 1 is a vertical longitudinal section, and Fig. 2 a vertical transverse section, of my improved vapor generator and burner.

The reference-numeral 1 designates the body or casing of the vapor generator and burner. This casing may be composed of metal or any suitable refractory material. Its form is preferably cylindrical, or approximately so; but it may be made in any desired shape. The ends of the casing 1 are closed by metallic heads 2, secured in place by any suitable means. The casing-heads 2 are perforated at or about the center to receive and support an oil-supply pipe 3, one end of which is closed by a screw-cap 4 on the outer side of the adjacent head. The other end of the oil-pipe 3 connects with a vertical pipe 5, that leads from an oil-reservoir, and is provided with a valve 6, for regulating the supply of oil delivered to the pipe 3, which pipe is provided with a series of perforations 7, through which the oil is permitted to escape into a packing 8, of asbestos or similar incombustible material, with which the casing 1 is filled. Each casing-head 2 is also perforated for passage of a coiled air-supply pipe 9, the coiled portion of which extends through the casing from end to end adjacent to the walls thereof, the upper portions of the coils being provided with a number of jet-tubes 10, arranged in a plane above the oil-supply pipe 3, projecting upward through the filling or packing 8 to a point above the same and registering with a

number of burner tips or nozzles 12 on the periphery of the casing. The outer ends of the air-pipe 9 are preferably turned downward, as shown, and are provided with valves 13, opening inward, so that air can be taken at either end of the coiled pipe.

The asbestos or other fire-proof packing material 8 is in a comminuted or disintegrated condition, so that while it is in sufficient quantity to compactly fill the casing around the oil-pipe 3 and coiled air-pipe 9 it affords numerous capillary passages for the distribution of oil throughout the packing.

The coiled air-supply pipe 9 furnishes an extended heating-surface for the air that is delivered to the burner-nozzles 12, thereby facilitating a rapid movement or feed of the air, and by means of the air-jet tubes 10, registering with said burner nozzles or tips, a blow-pipe action is induced that causes the vapor of the oil to be conveyed with a greatly-increased evolution of heat. The oil that flows through the perforations 7 of the pipe 3 saturates the fire-proof packing material 8, and under the action of heat a vapor is generated from the oil and escapes at the blow-pipe burners 12, where it may be ignited.

This vapor-generator and blow-pipe burner may be employed for various heating purposes, the same as ordinary hydrocarbon-burners, and therefore I do not deem it necessary to exhibit any particular application of the invention. The coiling of the air-pipe facilitates the heating of a comparatively large volume of air, so that such air is in proper heated condition at the critical moment of its union with the vaporized oil. The air-jet tubes being on the upper portions of the coils and extending into the burner-tips on the upper side of the casing, the heated air issuing from such air-jet tubes and burner-tips creates a current which draws the vaporized oil through the porous incombustible filling to the burner-tips, and at the same time produces the blow-pipe action before alluded to.

Any suitable hydrocarbon oil or vapor-generating fuel may be used with the device.

I am aware that a perforated tubular casing packed with asbestos and supplied with oil and air through perforated pipes has heretofore been used in various kinds of fire-



chambers for the purpose of warming buildings, for generating steam, and other purposes; but this I do not broadly claim.

Having thus described my invention, what I claim is—

1. An oil-vapor generator and burner, consisting of a casing containing a filling of porous incombustible substance and provided at its upper portion with a plurality of burner-tips, an oil-supply pipe extending in the filling lengthwise of the casing and having perforations, and an air-supply pipe extending through the filling and provided with a plurality of air-jet tubes arranged in a plane above the oil-supply pipe, projecting upward through the packing to a point above the same and registering with the burner-tips at the upper portion of the casing, for inducing the flow of vaporized oil through the filling to the burner-tips and producing a blow-pipe action, substantially as described.

2. An oil-vapor generator and burner, consisting of a casing containing a filling of porous incombustible substance and provided at its upper portion with a plurality of burner-tips, a perforated oil-supply pipe extending through the filling, and an air-supply pipe extending through the filling and opposite ends of the casing, having at its opposite external ends the valves for the admission of air at either end of the pipe and provided with a plurality of air-jet tubes arranged in a plane above the oil-supply pipe, projecting upward through the packing to a point above the same and registering with the burner-tips at the upper portion of the casing, substantially as and for the purposes described.

3. An oil-vapor generator and burner, consisting of a casing containing a filling of porous incombustible substance and provided at its upper portion with a plurality of burner-tips, a perforated oil-supply pipe extending through the filling, and a coiled air-supply pipe located in and heated by the filling, and having portions of its coils provided with air-jet tubes located in a plane above the oil-supply pipe, extending through the filling to a point above the same, and registering with the burner-tips at the upper portion of the casing, substantially as and for the purposes described.

4. An oil-vapor generator and burner, consisting of a casing containing a filling of porous incombustible substance and provided at its upper portion with a plurality of burner-tips, a perforated oil-supply pipe extending through the filling, and a coiled air-supply pipe located in the filling, extending through opposite ends of the casing, provided with valves at its ends for receiving air at either end, and having portions of its coils provided with air-jet tubes located in a plane above the oil-supply pipe, extending through the filling, and registering with the burner-tips at the upper portion of the casing, substantially as and for the purposes described.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH G. STREET.

Witnesses:

R. S. SMITH,  
W. F. KELLY.