No. 738,511. PATENTED SEPT. 8, 1903.

J. J. ATKINS.

VAPOR BURNER.

APPLICATION FILED NOV. 19, 1902.

NO MODEL.

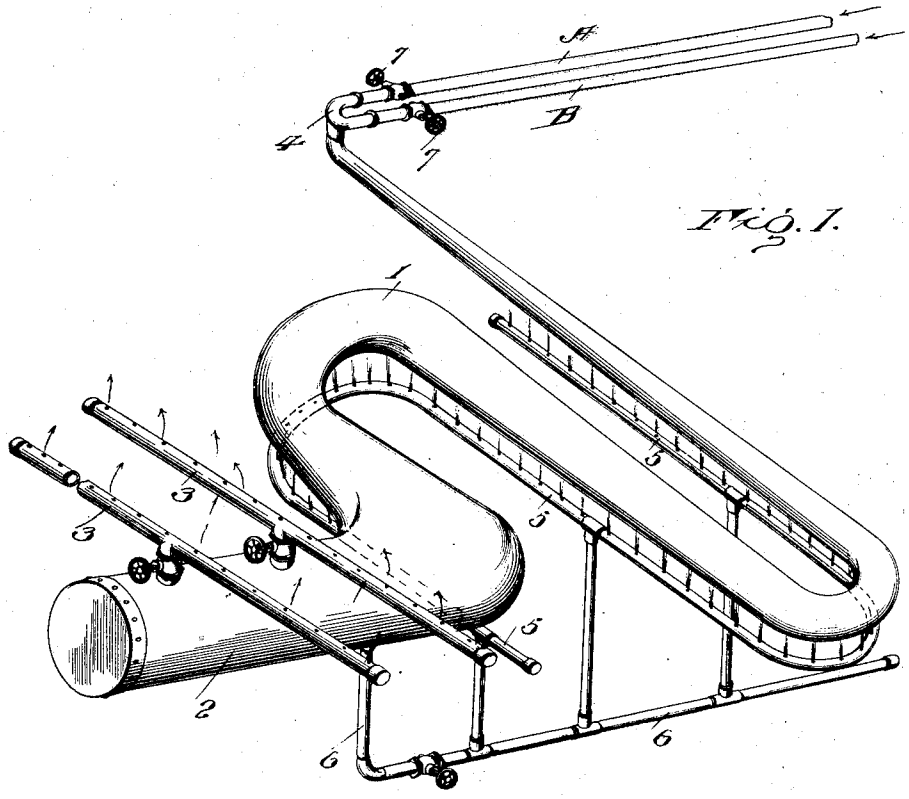


Fig. 1.

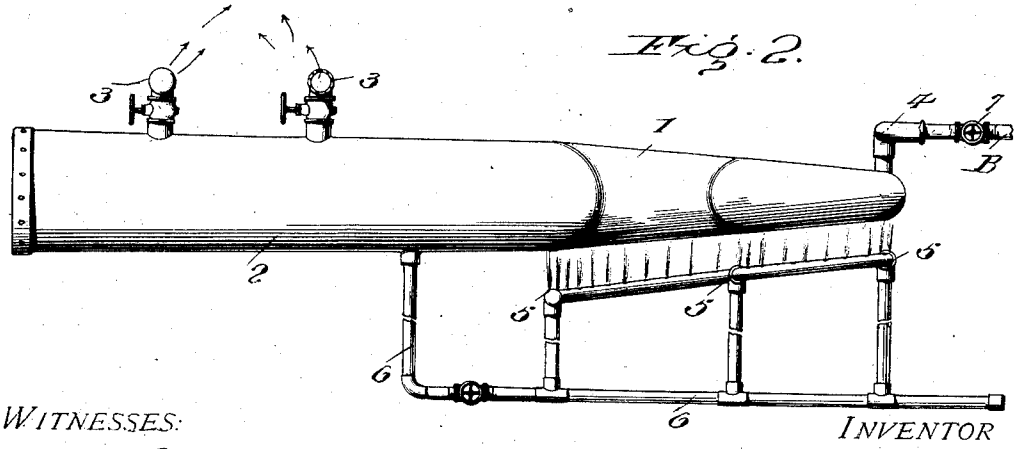


Fig. 2.

WITNESSES:

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No. 738,511. Patented September 8, 1903.

UNITED STATES PATENT OFFICE.

JOHN J. ATKINS, OF LOUISVILLE, KENTUCKY.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 738,511, dated September 8, 1903.

Application filed November 19, 1902. Serial No. 132,014. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. ATKINS, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Vapor-Burners, of which the following is a specification.

The object of this invention is to provide new and useful improvements in vapor-burners of any type embodying the mixture of air with a hydrocarbon in the formation of gas, and especially constructed with reference to the recognized principle that during the gas-forming process the expansive tendencies of the constituents thereof become greater and greater until in a perfect state ready for combustion.

The burner is designed for heating the furnaces of locomotive, stationary, and marine boilers, but of course within the contemplation of the inventor may be applied in any manner and for any purpose for which such devices are employed in the arts, as will be readily comprehended.

In the drawings, Figure 1 is a perspective view. Fig. 2 is a side elevation.

Referring to the drawings and the particular construction illustrated therein, A and B designate, respectively, air and oil pipes, which lead from reservoirs located adjacent in any manner suitable to the user, the air being maintained under pressure by any means found preferable.

The generator 1 is of peculiar form and leads into the gas-chamber 2, from which burners 3 extend, said burners being of such a size and number as is in accordance with the general structure of the other parts of the device. The burners 3 are of ordinary perforated type in common use. The generator 1 is preferably tubular in cross-section and extends from a header 4, in which the oil and the compressed air are united in the passage to the burner, to the gas-chamber 2. The tubular part comprising the said generator is sinuous in its longitudinal extent, being folded upon itself at intervals and tapers outwardly, being largest at the point where it merges into the gas-chamber 2.

To expand and rarefy the air and facilitate the formation of the gas, secondary burners 5 are located beneath the generator and are supplied from the gas-chamber therewith by pipe connections 6. The shape of the burners 5 conforms to that of the generator and extends in a sinuous manner corresponding thereto. The burners 3 are the heating-burners proper and are adapted to heat the boiler or that to which the device is applied.

Regulating-valves 7 govern the oil and air supply, being disposed upon the respective inlet-pipes. The burners 3 have shut-off valves, and one is also located upon the pipe 6 to regulate the supply of gas to the secondary heating-burners 5. When it is desired to light the burners 3, the supply of oil and air is turned on and same mixing in the header 4 is gradually converted into gas in its progress to the chamber 2 in the well-known manner. The secondary burners are used to heat the generator and the vapor as it passes through the latter to the gas chamber or reservoir.

The device is simple in its structure and has obvious advantages over anything attained in the art to which it relates.

The invention reserves the privilege of modifying the structure of the parts according as is consistent with the spirit of the invention involved and the scope of the appended claim.

Having thus fully described the invention, what I claim as new is—

In a device of the class described, a gas-chamber having burners extending upwardly therefrom, a tubular generator-receptacle of crooked or sinuous formation leading to the gas-chamber, said generator-receptacle tapering outwardly toward the point of connection with the gas-chamber, a header connected to the generator and having oil and gas supply pipes leading thereto, and a secondary burner supplied from the gas-chamber and adapted to heat the generator-receptacle extending beneath the latter, the last-mentioned burner being of crooked or sinuous formation to correspond to the structure of the generator-chamber, substantially as and for the purpose set forth.

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

JOHN J. ATKINS. [L. S.]

Witnesses:
JENNIE BRADFORD,
JOHN BECKER.