J. McGEARY.

Apparatus for Carbureting Air.

No. 58,861. Patented Oct. 16, 1866.

Fig: 1.

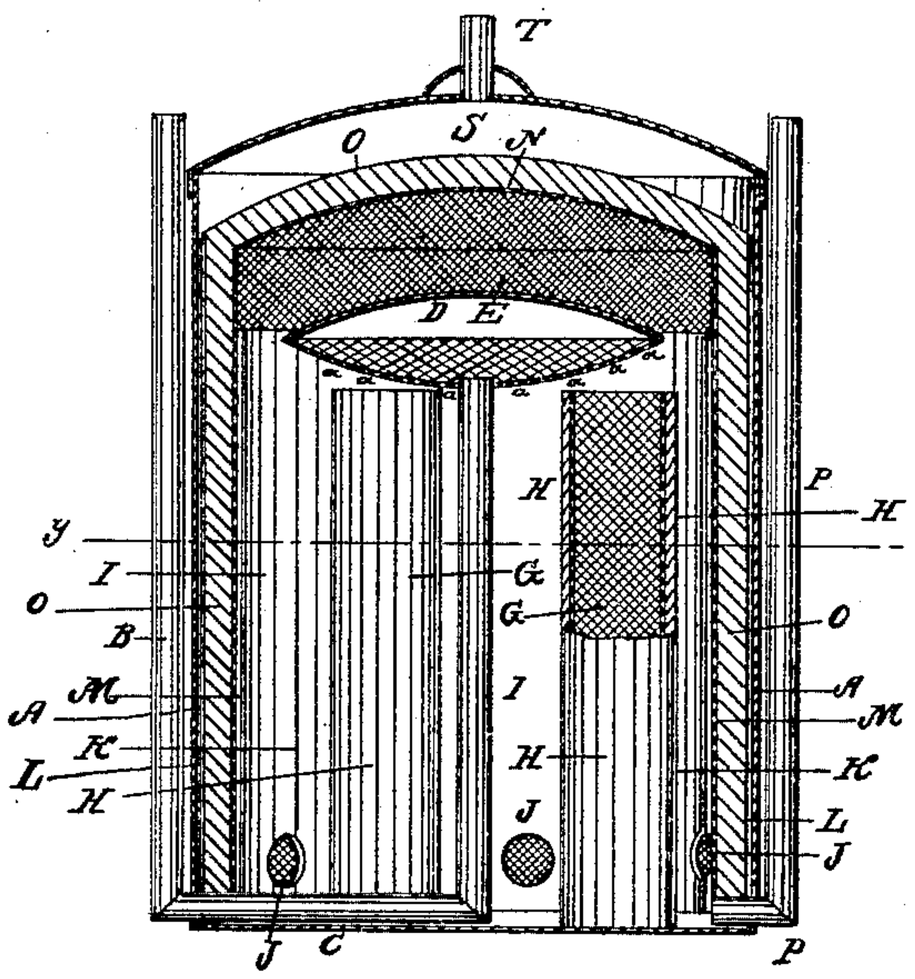
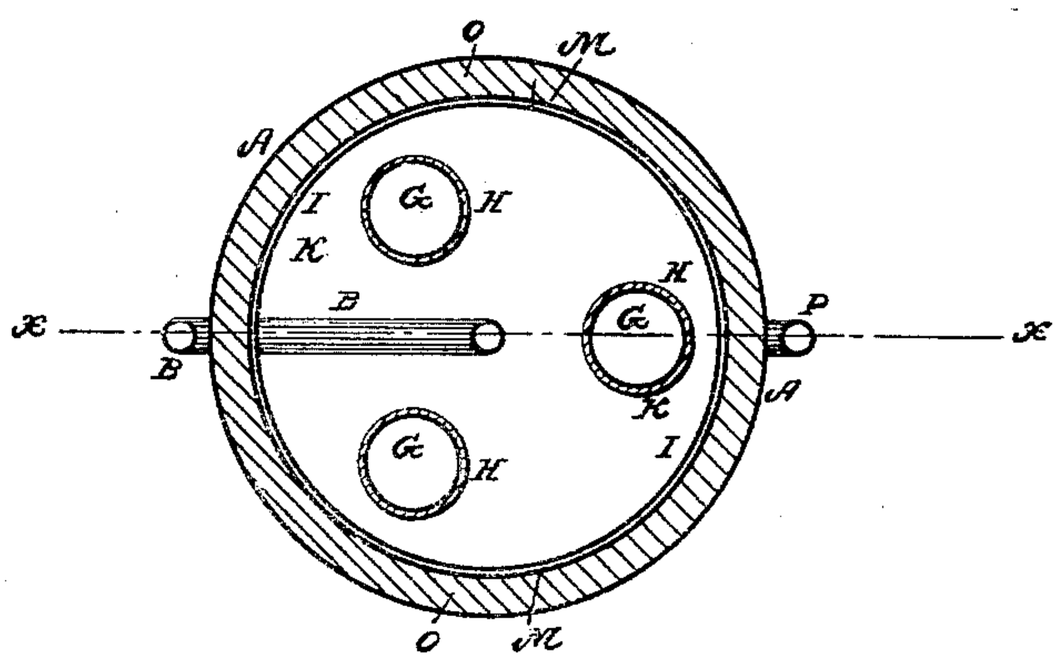


Fig: 2.



Witnesses:

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UNITED STATES PATENT OFFICE

JAMES McGEARY, OF SALEM, MASSACHUSETTS.

IMPROVED APPARATUS FOR CARBURETING AIR.

Specification forming part of Letters Patent No. 58,861, dated October 16, 1866.

To all whom it may concern:

Be it known that I, JAMES McGEARY, of Salem, in the county of Essex and State of Massachusetts, have invented a new and Improved Carbureting Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to an apparatus or attachment for pipes used for the conducting of gas for illuminating purposes more particularly, although it can be applied to the carbureting of air, &c., the object of which apparatus is to increase the illuminating power and quality of the gas as it passes through it to be burned or consumed.

In the accompanying plate of drawings my improved carbureting apparatus is illustrated, Figure 1 being a central vertical section, taken in the plane of the line *x x*, Fig. 2; and Fig. 2, a transverse horizontal section, taken in the plane of the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

A in the drawings represents the outer casing or cylinder of the apparatus or attachment embraced in the present invention; B, a pipe entering the cylinder A at or near its bottom plate, C, along which it extends to, or nearly to, the center of the said casing, and thence upward within the same, terminating in a hollow dome, D, closed upon its upper and lower sides by similar convex-shaped plates E and F, the lower one of which is perforated or provided with a series of small apertures, *a*, this dome D being situated below the upper end of the casing A about one-third of its entire length; G, a series of vertical tubes attached to the bottom plate of the casing A upon its inside, which tubes are open at their upper ends, and are of a height sufficient to extend nearly to the under side or bottom plate of the dome D, they being each and all perforated along their sides for their entire length and covered with a suitable web or woven cotton fabric, H, as plainly shown in the drawings.

Within the casing A, surrounding the dome D and vertical tubes G, is a vertical cylinder, I, which rests upon the bottom plate, C, of the casing, at or near which a series of apertures or holes, J, are made in it, to form a communication between the chamber K, or the inside of such cylinder, and the space L, between its outside and the interior of the casing A, this cylinder being open at its upper end, which is on a level, or nearly so, with the center line of the dome D; M, another cylinder surrounding the cylinder I, upon the inside of the casing A, which cylinder M rests upon the bottom plate of the said casing, and is closed at its upper end above the dome D, between it and the top plate, N, of the casing A, and perforated on all sides, and also at its top, as well as covered by a webbing or casing of woven cotton, or any other suitable fabric, O, as plainly shown in the drawings; P, a pipe communicating with the space or chamber K about the dome D and vertical tubes G, which pipe is provided for the purpose of feeding the apparatus with liquid hydrocarbons when so desired or deemed necessary.

Having thus explained the construction and arrangement of the various parts composing my improved apparatus and attachment for carbureting gas, I will now describe its mode of operation and manner of using the same.

The apparatus is first charged with the liquid hydrocarbons that are used through the pipe P, which conducts them to the inner chamber, K, about the dome D and perforated tubes G, from which they pass or circulate through the apertures J and perforated cylinder M and its cotton-web covering O, by which it is absorbed and drawn up, as well as by the web coverings of the tubes G, through the entire extent of the same.

The illuminating-gas enters the apparatus through the pipe B, from which it escapes into the inner chamber, K, at the dome D, passing through the perforation of its under or lower plate, by which it is made to more fully diffuse itself about the said chamber, and is, as it were, showered down upon the perforated tubes G and their web coverings, as well as the upper surface of the hydrocarbon liquids surrounding such tubes, whereby, as is apparent, the action of the gas upon the liquid hydrocarbons is greatly increased and rendered much more effective, when the gas, passing upward, escapes through the surrounding perforated cylinder N and its web covering O to the space S

above the same, where it passes out through the escape or outlet pipe T therefor to the pipe for conducting it to be burned or consumed.

As the communication between the liquid-hydrocarbon chamber K and the surrounding perforated casing M is at the lower end or portion of the said chamber, it is obvious that the heavy hydrocarbons pass or are supplied to the web covering of such cylinder, thus consequently subjecting them to the action of the gas, while as the lighter products or hydrocarbons remain upon the surface of the hydrocarbons contained in the chamber K, they are there acted upon by the gas, whereby a more uniform and perfect consumption of the hydrocarbons is insured, as is apparent.

In the operation of the apparatus, as hereinabove described, it is plainly manifest that by the use of the perforated covered tubes G a greater amount of hydrocarbon-surface, as it were, is exposed to the action of the gas, thus correspondingly increasing the effectiveness and completeness of the operation of the attachment or apparatus.

Although I have particularly described my apparatus in connection with the carbureting of gas, it may be also used in connection with the carbureting of air, as is obvious.

What I claim as new, and desire to secure by Letters Patent, is—

1. The casing A for liquid hydrocarbons, in combination with the pipe for conducting the gas or air into such casing to act upon the hydrocarbons, when such pipe terminates in a perforated dome, D, substantially as and for the purpose described.

2. The vertical tubes G, in combination with the above, substantially as and for the purpose specified.

3. The surrounding cylinders or casings I and M, with the outer one, M, covered with a web, O, in combination with the gas-pipe B, terminating in a dome, D, either with or without the vertical tubes G, substantially as described, and for the purpose specified.

4. Feeding the liquid hydrocarbons to the web covering of the perforated cylinder at a point near the bottom of the cylinder I, substantially as and for the purpose described.

The above specification of my invention signed by me this 15th day of September, 1866.

JAMES McGEARY.

Witnesses:

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