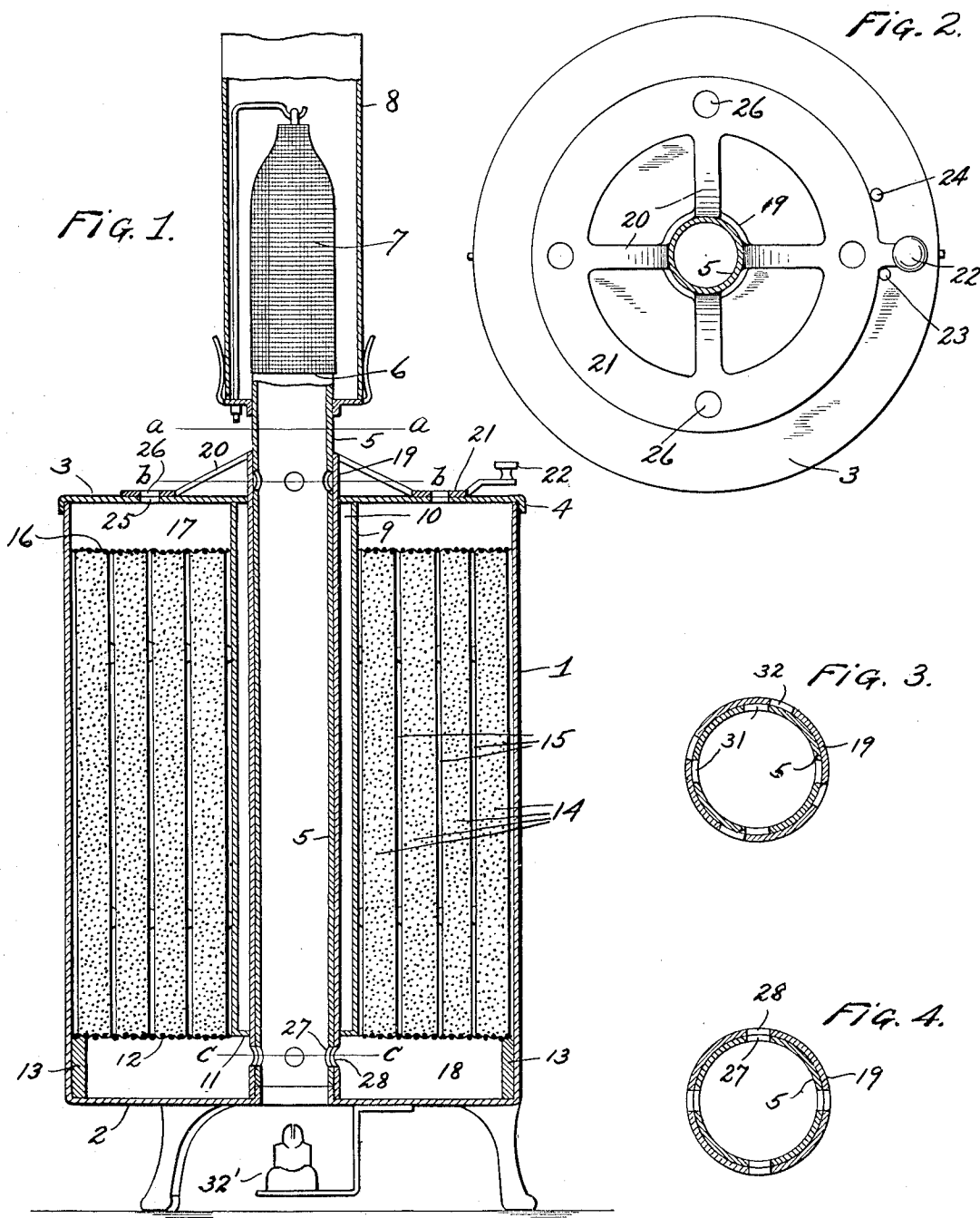


No. 857,064.

PATENTED JUNE 18, 1907.

G. H. HOLGATE.
CARBURETING LAMP.
APPLICATION FILED JULY 20, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

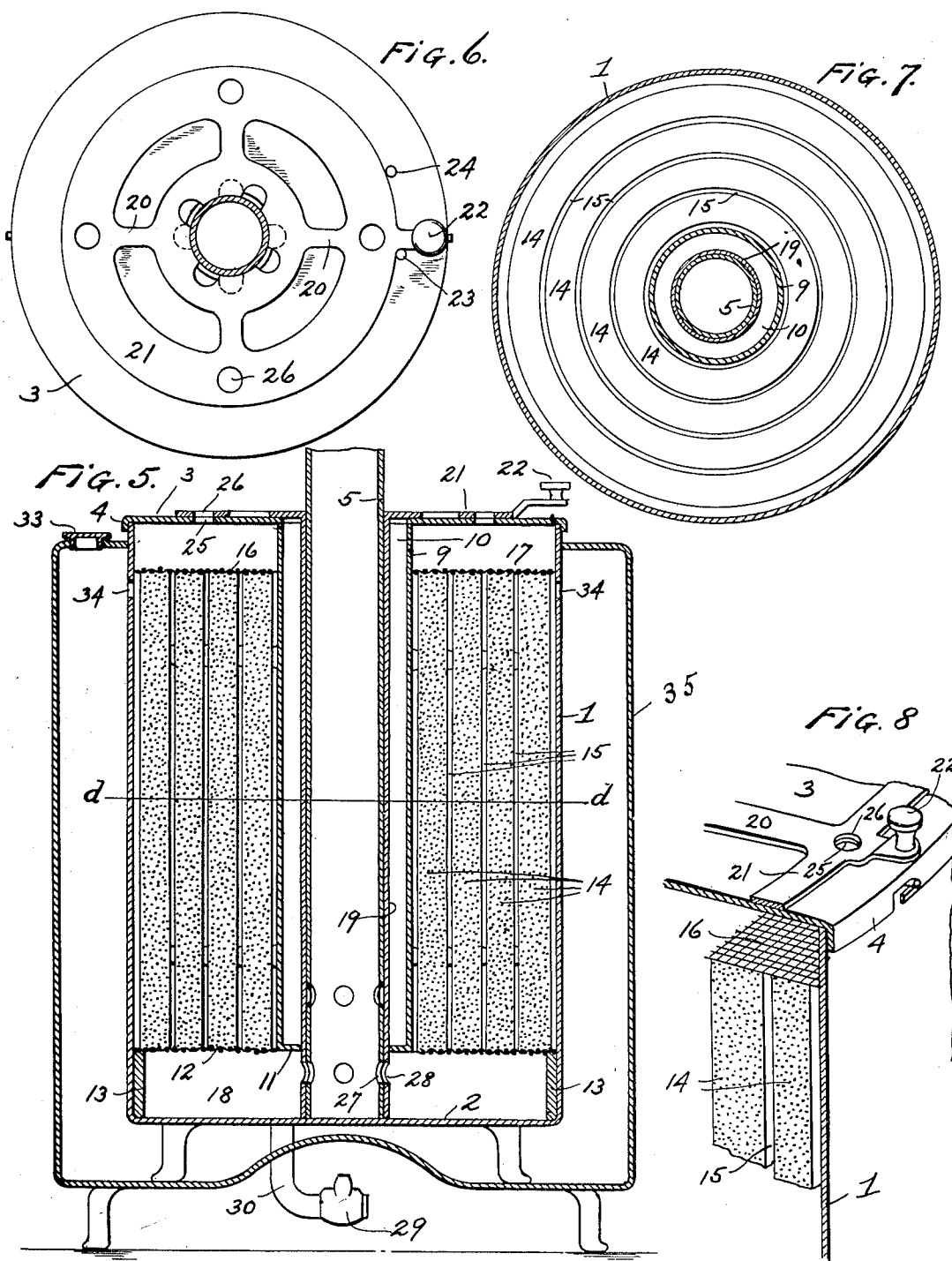
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INVENTOR

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UNITED STATES PATENT OFFICE.

GEORGE H. HOLGATE, OF PHILADELPHIA, PENNSYLVANIA.

CARBURETING-LAMP.

No. 857,064.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed July 20, 1906. Serial No. 326,987.

To all whom it may concern:

Be it known that I, GEORGE H. HOLGATE, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in a Carbureting-Lamp, of which the following is a specification.

This invention relates to certain new and useful improvements in carbureters, and particularly to that class intended to be used in connection with portable apparatus, adapted to use hydro-carbon gases for heating or lighting purposes, and the objects are:—
First. To provide an apparatus of the aforesaid character, in compact form, readily portable and of low expense to manufacture. Second. To provide such an apparatus adapted to have fresh charges of gas-producing material inserted without difficulty. Third. To provide means for the complete control of the air inlet and gas supply, whereby the proportions of each may be varied to suit. Fourth. To provide means, whereby the ascending jet of combined air and gaseous vapor is caused positively to rise to the point of ignition. These and other minor objects are attained by the novel combination and construction of parts, hereinafter fully described and shown in the accompanying drawings, in which:—

Figure 1, is a vertical sectional view of the apparatus. Fig. 2, is a transverse sectional view, taken on a line indicated by *a— a* of Fig. 1, showing, particularly, the air and vapor controlling means. Fig. 3, is a sectional view taken on a line indicated by *b— b* of Fig. 1, showing the openings for controlling the supply of air to the vapor. Fig. 4, is a similar view taken on a line *c— c* of Fig. 1, showing the port openings for controlling the vapor supply. Fig. 5, is a vertical sectional view of a modification. Fig. 6, is a plan view of the apparatus as shown in Fig. 5. Fig. 7, is a transverse sectional view taken on line *d— d* of Fig. 5, and Fig. 8, is a partial perspective view, showing details of construction.

Like parts are designated by similar characters throughout the several views.

This invention is similar to that disclosed in my former patent #813,796, dated Feb. 27, 1906, but is thought to contain improvement, which I desire to particularize, and claim herein:

The carbureting apparatus may be con-

tained within a font or urn, shaped, proportioned and ornamented to suit the lamp requirements and disposition, or the apparatus casing may be provided with suitable means for disposition directly attached.

In the drawings, the numeral 1, designates the apparatus casing, preferably cylindrical in shape, formed with the bottom closure 2, and provided with the cover 3, having an annular flange 4, fitting over the upper end of the casing 1, and removably connecting thereto.

In the center of the casing is a tube 5, closed at its lower end and secured to the casing bottom 2; its upper end extends through and above the carbureter, terminating in a burner 6, surrounded by a mantle 7 and chimney 8, in the ordinary manner. Also within the casing concentric to the tube 5, is another tube 9, of greater diameter, forming a space 10, between them, for a current of air. The upper end of the tube 9, reaches to the level of the lower side of the cover 3, while the lower end is provided with an inwardly turned flange 11, to which is attached a screen 12, its outer edge resting upon supports 13.

Within the casing and resting on the screen 12, are a series of annular members 14, made of absorbent material, adapted to be saturated with suitable volatile liquid, said members nested together, but having spaces between each other, providing for the free circulation of air. Above the absorbent members 14, is a screen 16, which maintains an air space 17 between the screen 16 and the cover 3. A similar air space 18 is provided between the screen 12 and the bottom of the casing 2. The upper screen 16 also positions the upper end of the tube 9, concentric to the casing. Fitting the tube 5 and adapted to revolve thereon, is the tube 19, having its lower end extending downwardly to the level of the tube 5, and its upper end reaching through and slightly above the top of the cover 3. Carried by tube 19 are radial arms 20, connecting it to a concentric plate 21, closely fitting the tube 5. One of the arms 20, is extended beyond the plate 21, and carries upon its extreme end, the handle 22, by means of which the said plate and the tube may be revolved. Pins 23 and 24 set in the cover 3, limit the revolutions of the plate and tubes. The tube 19 fills the opening in the cover 3, and fits the flanged portion at the lower end of the tube 9, in both

cases forming air-tight joints, preventing the undesired escape of gas.

In the cover 3 are the openings 25, and in the plate 21, are openings 26, positioned so as to coincide when the handle 22 is operated, so that the arm 20 contacts with the pin 23, the said openings then allowing the maximum supply of air to enter the space 17, thus circulating through and becoming impregnated by the volatile hydro-carbon and passing into the chamber 18, in the form of a hydro-carbon vapor or gas. The lower ends of the tube 5 and 19, disposed within the space 18 are provided with port openings 27 and 28 respectively, and are adapted to register when the handle 22 is moved in the proper direction to open the aforesaid ports, at which time a hydro-carbon vapor from the chamber 18, has free delivery into the tube 5, where it may be raised direct to the burner 6, by the heat of combustion there taking place, thus inducing a continuous circulation of air through the openings 26 and 25 into the space 17, passing through the saturated absorbent member 14, taking up a portion of the volatile hydro-carbon and entering the chamber 18, in the form of combustible vapor, through the openings 28 and 27 into the tube 5, and to the burner 6. Consequently, after the burner is ignited the combustion of the gas will usually induce the necessary current of air to form sufficient vapor to support continuous combustion. If, however, this draft should prove insufficient, the auxiliary burner 29, located at the lower end of and immediately below the center tube 5, may be used in addition. Sufficient gas to keep this burner in operation, may be obtained from chamber 18, by the independent tube 30, extending from the bottom 2 of the casing to the burner.

In order to regulate the flame of the main burner, it is necessary to obtain a supply of oxygen with the vapor, and this is accomplished by providing openings 31 and 32 in the tubes 5 and 19, which are so positioned as to be entirely out of coincidence, when the handle 22 is moved, into the position indicated in Fig. 2, and a full supply of vapor without mixture with air may be obtained.

Pins 23 and 24 are positioned with reference to the several openings, so that when the handle 22 is moved toward the pin 24, from the position as shown in Fig. 2, openings 25 and 26 and openings 27 and 28 gradually close, while openings 31 and 32 gradually open, thus changing the proportions of vapor and air, when the arm 20 contacts with the pins 24, the openings 25 and 26 and also the openings 27 and 28 are closed, openings 31 and 32 coincide and the supply of all vapor is cut off, causing combustion to cease.

In place of the burner 29 as shown in Fig. 5, for inducing a draft, use may be made of an entirely independent heater 32', posi-

tioned practically as shown in Fig. 1 and readily removable from the apparatus.

I may make use of an outer font or water jacket 35, having a filling nozzle 33, and openings 34 into the carbureter for the entrance of any steam or vapor that may be generated by the auxiliary burner 32. By this means I am able to supply a more uniform degree of heat to the carbureter.

In recharging the apparatus, it is necessary only to remove the burner 6, and its attached parts, lift out the tube 19, and remove the cover 3, whereupon the absorbent members 14 may be saturated with any approved hydro-carbon fluids or combination thereof.

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

1. A portable carbureter comprising a case, porous material contained within the case, a tube arranged within the case concentric thereto and stationary therewith, a revoluble member upon said stationary tube, means for imparting a partial revolution thereto, a stationary member concentric to the revoluble tube and having an air space between, openings in the case cover, a revoluble plate adapted to control said openings, and openings in the inner tube and surrounding member adapted to be operated by the revolution of the revolving member, and a heating means located below the central tube, all substantially as shown and described.

2. A portable carbureter consisting of a receptacle, absorbent material disposed in annular layers within, having spaces between each layer, and at the bottom of the receptacle, a stationary tube member open at its upper end, extending through the center of the receptacle, a movable tubular member adapted to rotate about the stationary member, and in close contact therewith; a second stationary tubular member surrounding the movable member, having a space between and closed at both ends; ports opening in the upper end of the outer stationary tubular member, ports formed through the top of the receptacle, port closures connecting with the movable tubular member, ports formed through the walls of the stationary tubular member and movable member within the space below the absorbent material; ports formed through the inner stationary tubular member and movable member at a point between the ends of the outside stationary tubular member, both of the latter sets of ports adapted to be opened and closed by revolving said movable tubular member, a burner arranged to deliver its heat below the central tubular member, and means for conveying a fuel supply thereto.

3. A portable carbureter comprising a case, a cover therefor, absorbent material contained within said case, a tube arranged

within the case concentric thereto and stationary therewith, a tube closely fitting said stationary tube and means for imparting a partial revolution thereto, a stationary tube
5 concentric to said movable tube of a larger diameter forming an air space between the two openings, ports in the cover and in the inner stationary tube regulated by the revolution of the movable tube, a burner positioned
10 below and centrally with the said inner sta-

tionary tube, and a gas carrying connection thereto and leading from the lower portion of the casing.

In testimony whereof, I have hereunto signed my name to this specification, in the 15 presence of two subscribing witnesses.

GEORGE H. HOLGATE.

Witnesses:

LOTTIE NUSBAUM,
WARREN E. WILLIS.