

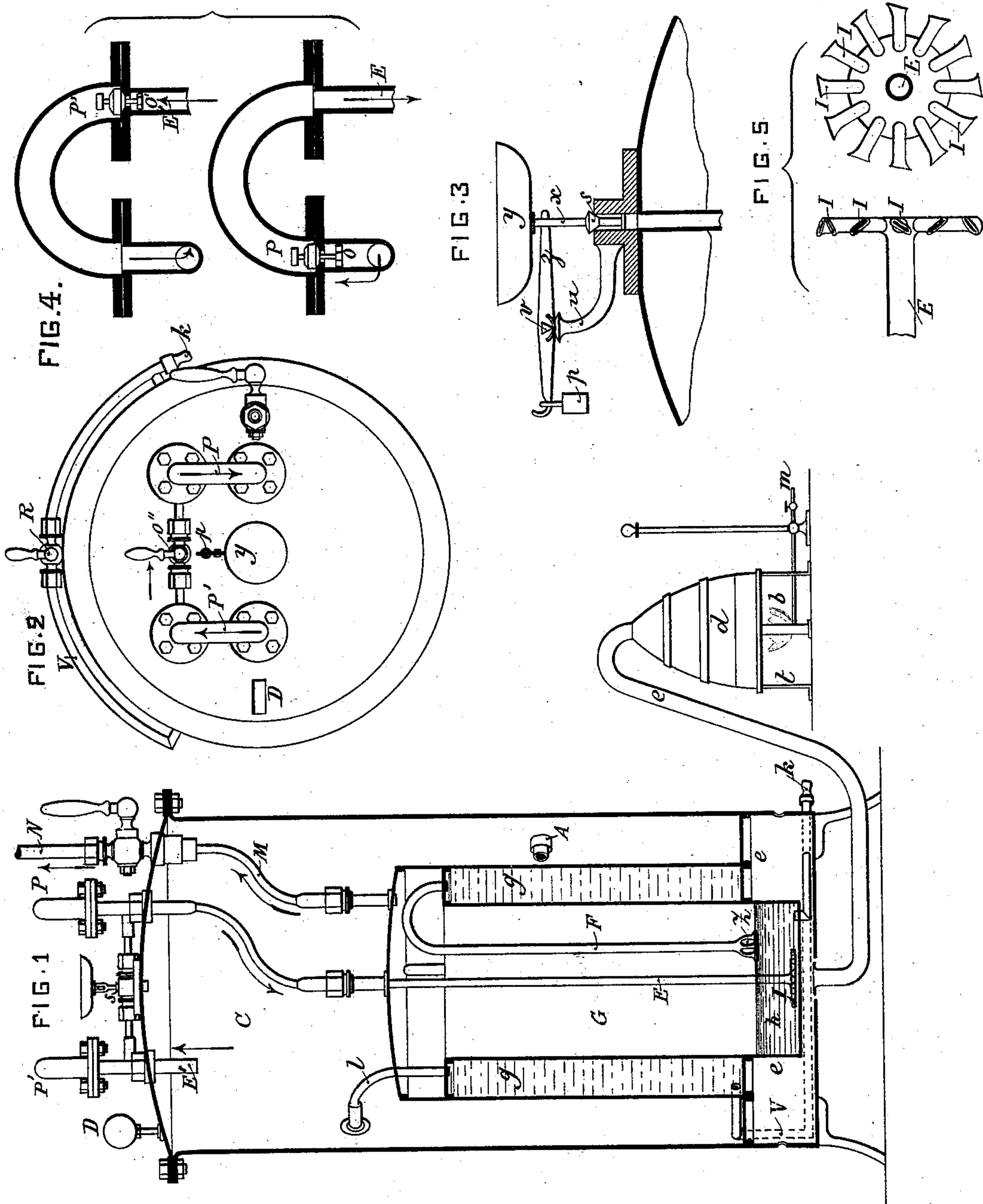
(No Model.)

F. J. LOTHAMMER.

CARBURETOR.

No. 376,248.

Patented Jan. 10, 1888.



WITNESSES

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ATTY'S

UNITED STATES PATENT OFFICE.

FRANÇOIS JOSUÉ LOTHAMMER, OF PARIS, FRANCE.

CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 376,248, dated January 10, 1888.

Application filed March 13, 1886. Serial No. 195,091. (No model.) Patented in France March 19, 1885, No. 167,740; in Belgium February 23, 1886, No. 72,118; in England February 25, 1886, No. 2,766; in Germany March 4, 1886, No. 38,069; in Italy March 31, 1886, XXXVIII, 485; in Portugal March 31, 1886, No. 1,032, and in Spain August 10, 1886, No. 9,029.

To all whom it may concern:

Be it known that I, FRANÇOIS JOSUÉ LOTHAMMER, of the city of Paris, France, have invented a system of portable apparatus for the manufacture of carbureted air without the aid of heat, (which has been patented in France, March 19, 1885, No. 167,740; England, February 25, 1886, No. 2,766; Belgium, February 23, 1886, No. 72,118; Italy, March 31, 1886, Vol. XXXVIII, No. 485; Spain, August 10, 1886, No. 9,029; Portugal, March 31, 1886, No. 1,032, and in Germany, March 4, 1886, No. 38,069,) of which the following is a full, clear, and exact description.

The invention consists in a novel construction, combination, and arrangement of parts, as hereinafter clearly described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of my improved apparatus. Fig. 2 is a plan view. Fig. 3 is a detail view of the pressure-regulating valve on the air-reservoir. Fig. 4 shows in section the valved conductors through which the air passes from the reservoir to the carburetor. Fig. 5 illustrates in sectional and plan view the novel form of jet employed for distributing the air through the hydrocarbon.

The apparatus consists of an air-reservoir, C, which is hermetically sealed, and in which the air is introduced at A by a pump or equivalent apparatus operated by any suitable motive power. The air passes up through the conductor E in the top of the reservoir through the bent conductor P', thence by a pipe-connection provided with a cock, o^2 , through the bent conductor p , and down through the top of the air-reservoir to the pipe E, which leads down into the liquid hydrocarbon contained in the bottom of the carburetor G.

Within each bent conductor P P' on the top of the air-reservoir is placed a weighted valve, which is normally held open by the pressure of the entering air, but when such pressure is reduced or removed closes automatically by gravity and the pressure of the hydrocarbon

vapor, to prevent the passage of the hydrocarbon liquid or vapor through the air-pipe E and connections P P' into the air-reservoir.

The carburetor G, through the top of which the air-conducting pipe E is passed, consists of a closed cylinder inclosed within the air-reservoir and supported centrally therein. In the base h of the carburetor is contained a quantity of liquid hydrocarbon, down through which the air-conducting pipe E passes.

For thoroughly distributing the entering air through the liquid hydrocarbon, I provide the lower immersed end of the pipe E with a jet constructed, as shown clearly in Fig. 5, with a series of radially-projecting short tubes, I, flattened at their outer ends to eject fan-like streams of air, and alternately twisted in opposite directions, so that the series of issuing streams form a continuous circle.

The liquid hydrocarbon is automatically supplied to the carburetor from a closed annular receptacle, g , surrounding the middle part of the carburetor, by means of a conductor, V, leading from the lower part of the receptacle out through the air-reservoir C, partially around the same, and then inward to and through the bottom of the carburetor. The outside part of the conductor is provided with a cock, R, and with a stopper, k , for discharging the hydrocarbon when necessary.

Any suitable gage may be applied to the conductor V, if desired, to indicate the height of the hydrocarbon in the receptacle g , and the liquid can be fed to the receptacle by means of a pipe, l , leading from the top of the same out through the reservoir, the outer end being normally closed by a suitable plug or stopper. (Not shown.)

The liquid hydrocarbon in the carburetor is maintained at a constant height by means of a siphon, F, leading from the top of the receptacle g down to the desired level of the hydrocarbon, the rise of the liquid above the lower open head, z , of the siphon checking the flow from the receptacle g .

The air issuing in a spray, as described, from the immersed end of the pipe E is thoroughly impregnated with the hydrocarbon vapor, forming a combustible gas, which passes

through the pipe M out through the top of the air-reservoir, and is drawn off for use, as desired, from the pipe N, provided with a regulating-cock, as shown.

5 In order to counteract the cooling of the carburetor produced by the volatilization of the hydrocarbon, I form the lower part of the outer reservoir, C, into a heating-chamber, *e*, surrounding and extending below the base *h* of
10 the carburetor, and lead into the bottom of the heating-chamber directly below the bottom of the carburetor, by means of the conductor *e'*, a suitable heating agent, as steam or hot air. The steam or hot air circulates below and
15 around the base of the carburetor, heating the hydrocarbon therein, and then escapes into the outer air through a series of apertures, *f*, formed in the wall of the outer reservoir. If hot air is used as the heating agent, it may be pro-
20 duced by a gas-jet, *b*, in the dome *d*, supported on legs *t*, the pipe *e'* leading from the top of the dome, as shown in Fig. 1.

Any usual form of thermal-governing apparatus may be employed, if desired, to regulate
25 the gas-jet *b* by means of the cock *m* in accordance with the temperature of the heating agent conveyed by the pipe *e'*.

To indicate and regulate the pressure in the reservoir C, I provide a manometer-indicator,
30 D, and a novel form of self acting governing-valve in the top of the same. This valve *s* is provided with a stem, *x*, terminating in a tray or platform, *y*, which rests on the end of the lever *z*. The lever *z* oscillates, by its knife-
35 edges *v*, on the support *u*, and is provided at its other end with a counterpoise, *p*, which balances the valve, its stem, and the tray or platform.

The escape-valve *s* regulates the pressure of
40 the air entering the carburetor, the tray *y* being weighted according to the number of burners to be supplied. When the pressure in the air-reservoir becomes excessive, the valve *s* is raised and the surplus air escapes. This air
45 is odorless, as the passage of the hydrocarbon vapor from the carburetor into the air-reservoir is entirely obviated, as before stated.

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

1. The combination, with the compressed-air reservoir C and its supply-pipe, of the carbureting-chamber G, within the reservoir, a valved
55 pipe leading from the reservoir into the chamber G, near its bottom, the hydrocarbon-recep-

tacle *g*, surrounding the said chamber and having a pipe leading from its lower end into the bottom of the chamber, and a siphon extending from the top of the said receptacle *g* down into the carbureting-chamber G, and terminating
60 above the lower end of the compressed-air pipe, substantially as set forth.

2. In a carburetor, the combination, with the carbureting-chamber, of the air-supply pipe leading to the bottom of the chamber and pro-
65 vided with straight tubes at right angles thereto, the outer ends of the tubes being flattened and inclined with respect to the axis of the pipe alternately in opposite directions, substantially as set forth. 70

3. The combination of the air-reservoir with the inlet-pipe, the carbureting-vessel within said receiver and connected therewith by means of the pipes P' P, having, respectively, check-
75 valves O' O, the said pipe P terminating within the carbureting-vessel and having an air-spraying attachment at its lower end, a siphon leading from the top of the oil-receptacle down to the carbureting-vessel, and the heating-cham-
80 ber *e*, below and surrounding the base of the carburetor, all the parts operating substantially as set forth.

4. In a carbureting apparatus, the combination, with the air-reservoir and the carburetor supported centrally within the same, of an an-
85 nular heating-chamber, *e*, formed in the lower part of the air-reservoir, surrounding the lower part of the carburetor and extending beneath the same and provided with lateral escape-apertures *f*, and the heat-supply pipe
90 *e'*, leading into the heating chamber, substantially as shown and described.

5. A carbureting apparatus constructed of an air-tight reservoir, C, a gas-tight carburetor, G, held within the same, a closed liquid-hy-
95 drocarbon receptacle, *g*, surrounding the carburetor, an air-conductor leading outward from the reservoir C to receive a cock, O'', and thence returning into the carburetor, a liquid-hydrocarbon-supply pipe, V, leading outward
100 from the receptacle *g*, through the reservoir C, to receive a cock, *k*, and thence returning through the reservoir to the carburetor, and a gas-discharge pipe, M, leading outward from the carburetor, substantially as shown and de-
105 scribed.

FRANÇOIS JOSUÉ LOTHAMMER.

Witnesses:

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