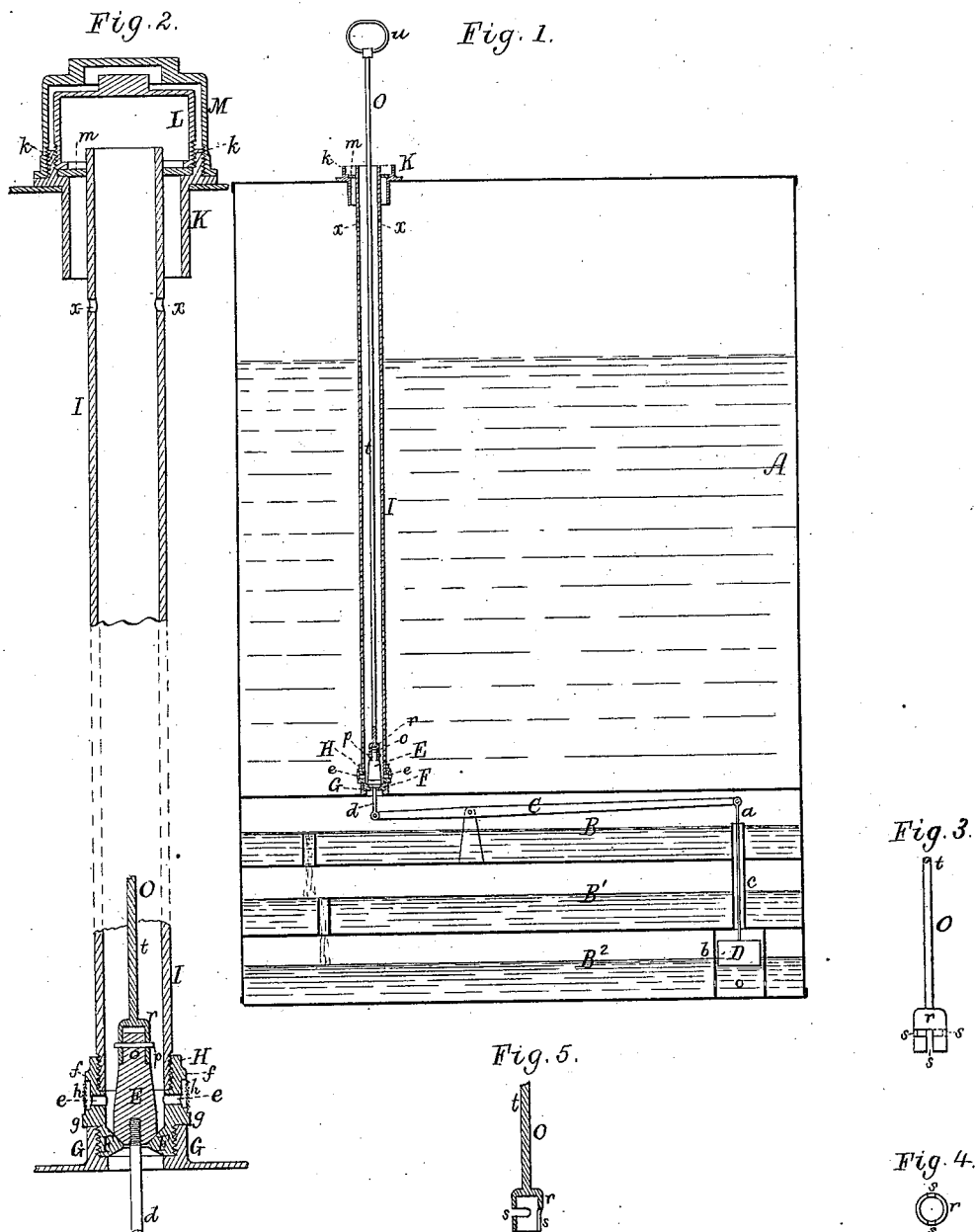


(No Model.)

J. M. PALMER.
AIR OR GAS CARBURETOR.

No. 312,289.

Patented Feb. 17, 1885.



Witnesses.

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AIR OR GAS CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 312,289, dated February 17, 1885

Application filed March 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES MONROE PALMER, of Cambridge, in the county of Middlesex, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Air or Gas Carburetors; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a vertical and transverse section of a carburetor provided with my invention, the nature of which is defined in the claims hereinafter presented. Fig. 2 is a longitudinal section of its valve and its tube and the caps thereof. Fig. 3 is a side view of the lower part of the valve-key. Fig. 4 is a view of the lower end, and Fig. 5 is a vertical section of the catch part of such key.

My improvement is to enable the valve of the tank-educt of the carburetor to be readily applied to its seat and stem, or removed therefrom, as occasion may require. It is also to enable the valve-seat to be withdrawn from the tank or replaced therein as from time to time may be required, without any necessity of mutilating the carburetor, or separating from it any portion of it except the ring and two hoods, hereinafter described.

In Fig. 1 the carburetor-supply cistern or tank is represented at A as having below it in the carburetor a series of carbureting-chambers, B B' B², in the upper of which there is fulcrumed a lever, C. From the longer arm of the said lever a rod, a, extends to a float, D, arranged in the lowest of the said chambers, or in a small compartment or case, b, arranged therein, and serving to guide the float in its movements, such compartment at its lower part opening into the said lowest chamber.

From the case b a tube, c, encompassing the rod a, projects upward into the uppermost chamber, B, and extends a suitable distance above the float thereof to prevent the carbureting fluid contained at any time in such chamber from passing into the said tube.

To the lesser arm of the lever C the stem d of a valve, E, is jointed, such stem at its upper part being screw-threaded to screw upward into the valve, and such valve being counter screw-threaded to receive the stem. This

valve rests on a seat, F, screwed into a tubular neck, G, projecting upward from the bottom of the tank. The valve-seat has a tubular extension, H, having one or more holes, e, leading laterally through it, between two flanges f g of it, such flanges serving to support an annular strainer, h, encompassing the said extension. A tube, I, screwed at its lower part into the extension, leads therefrom up to and through a tubular mouth-piece, K, fixed in the top of the tank. This mouth-piece, whose bore has a diameter larger than the diameter of the seat F, is provided with a tubular extension, k, which is screw-threaded on its outer as well as on its inner periphery, such being for the reception of two hoods or caps, L and M, that are screwed to such extension and arranged one within and concentric with the other, as represented, the inner cap being screwed down upon a flat ring, m, encompassing the tube I and resting on the top of the mouth-piece K. The valve has projecting upward from it a cylindrical tenon, o, through which there is disposed diametrically a pin, p, that extends a short distance in opposite directions from the tenon. A key, O, whose foot r is not only socketed to receive the tenon o, but is provided with two right-angular slots, s s, to receive the extensions of the pin p, and constitute therewith a duplex "bayonet connection," is used in adapting the valve to its seat and stem or removing it therefrom. This key is a long rod, t, terminating at top in a ring or handle, u, and at bottom in the socketed part v, as described.

To use the key for separating the valve from its seat and stem the hoods are first to be removed from the mouth-piece of the tube, after which the key is to be introduced within the tube and engaged with the valve. This having been accomplished the valve, by means of the key, is to be revolved so as to unscrew it from the stem. On the valve becoming thus separated from the stem such valve, by means of the key, can be raised off its seat and out of the tube. After the valve may have been repaired, cleansed, or otherwise treated, as occasion may require, it, by means of the key, may be replaced—that is, be screwed to its stem and properly adapted to the seat. On

the liquid in the lower carbureting-chamber falling sufficiently to cause the float to descend so that the valve shall be forced upward off its seat, liquid from the tank will flow into the upper carbureting-chamber, and thence through the other chamber or chambers to the lowest one.

The tube I serves as a guide for the valve to or off its seat and stem, when the key may be in use with the valve. In the upper part of said tube is one or more vent-holes, *x*, such being to enable any gas that may pass off within the tube to escape into the tank. The tube I also answers to effect the removal of the valve-seat F from or its fixation in the neck G, as the tube and valve seat upon being screwed together are, prevented from separating while in the tank.

From the above it will be seen that we not only have means of removing the valve from its seat and stem, but for withdrawing the valve-seat from or applying it to the neck G, as occasion may require, whether for cleaning or repairing either part or guiding the valve to its seat, all of which can be done without disturbing the tank or removal of its top, either in whole or in part.

The carbureting-chambers may be made in any proper manner and supplied with suitable means of exposing the carbureting liquid in them to gas or air while being driven through such chambers.

I claim, in an air or gas carburetor—

1. The combination of the key, substantially as described, consisting of the rod *t* and its socketed foot *r*, provided with the two slots, arranged as explained, with the valve-stem *d* and valve E, screw-threaded to engage with each other, and the valve having the tenon *o* and pin *p*, or means of connecting it with a key separable from it, and for revolving it in either of two opposite directions, or raising it out of the carburetor, all being substantially as set forth.

2. The combination of the carburetor A with the tube I, screwed into the valve-seat F, and extending therefrom to the top of the carbu-

retor-tank, and with the said valve-seat F screw-threaded to engage with the neck G of the upper carbureting-chamber, all being substantially as represented.

3. The combination of the ring *m*, hoods L and M, and mouth-piece K, substantially as described, with the carburetor, and with the tube I, adapted to its valve-seat and extended through the tank and the ring, and into the inner of said hoods, essentially as set forth.

4. The valve-seat F, screw-threaded to engage it with the neck G of the upper carbureting-chamber, B, and provided with the perforated tubular extension H, and the strainer *h*, adapted thereto, in combination with the tank A, and the carbureting-chambers thereof, and with the tube I, extending upward from the said part H to the top of the said tank, all being substantially as represented.

5. The valve-seat F, screw-threaded to engage it with the neck G of the upper carbureting-chamber, B, and provided with the tubular extension H, and with the tube I and strainer *h*, arranged with and applied to such extension, as set forth.

6. The combination of the valve and its stem screw-threaded to engage with each other, the key having with the valve a "bayonet-connection," as described, the tube extending from the valve-seat to the top of the tank of the carburetor, and the valve-seat screw-threaded to engage with the neck of the upper carbureting-chamber, all being substantially and for the purpose as set forth.

7. The combination of the tank A, and the series of carbureting-chambers arranged beneath it, as set forth, with the tube I, provided with one or more vent-holes, *x*, in its upper part, and screwed into the valve-seat projection, and extended up within the tank and the ring, and into the inner hood at the top of the tank, all being as explained.

JAMES M. PALMER.

Witnesses:

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