Dupas & Barbarin.

Carburetor.

No. 104,716 Patented June 28, 1870.

Fig. 1.

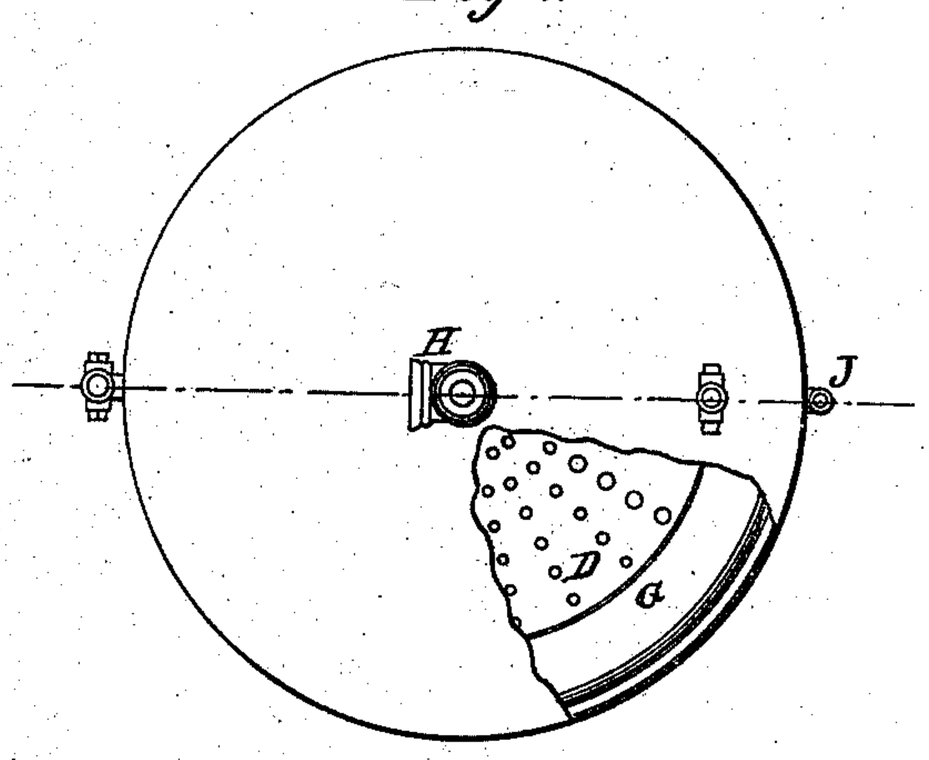


Fig. 2.

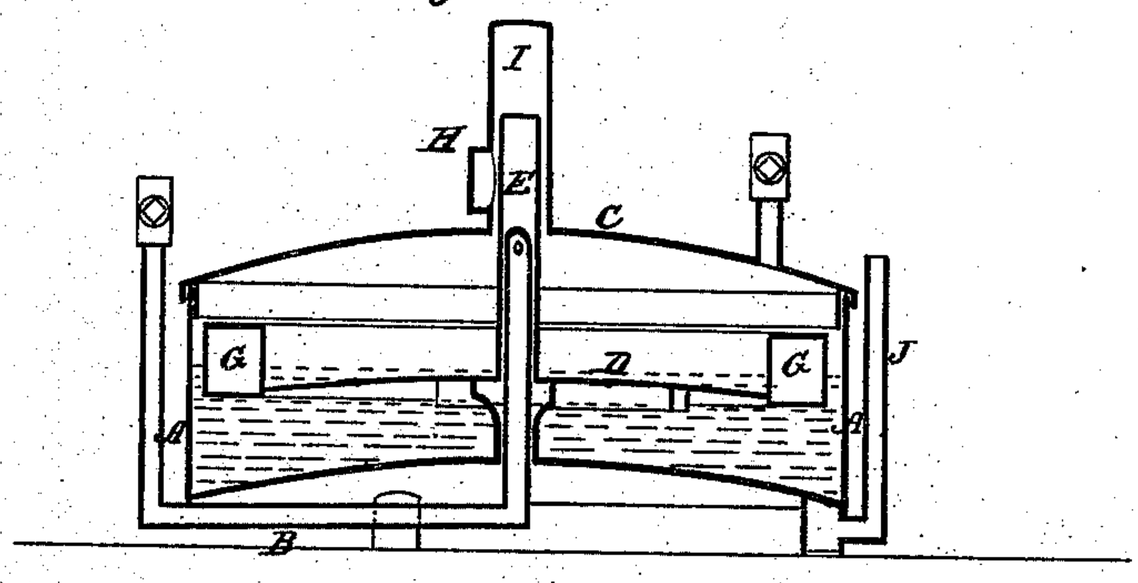
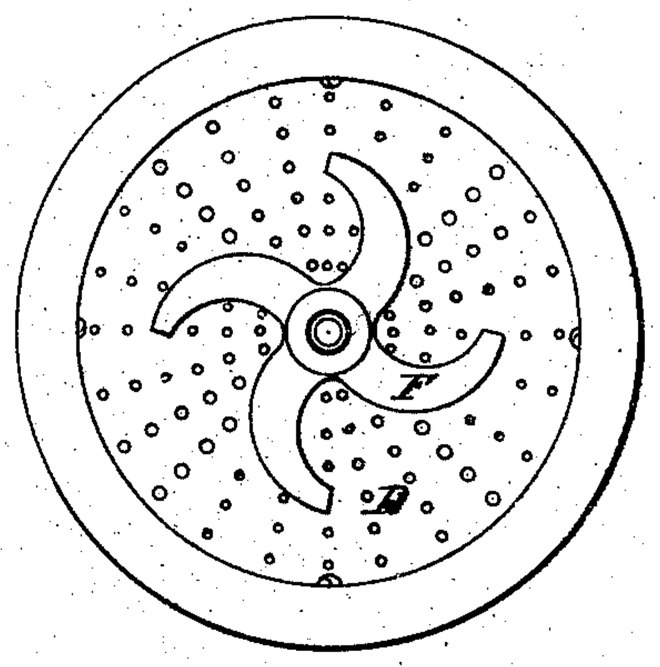


Fig. 3.



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UNITED STATES PATENT OFFICE.

ANTOINE ERNEST DUPAS, OF PARIS, FRANCE, AND ARTHUR BARBARIN,
OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN APPARATUS FOR CARBURETING AIR.

Specification forming part of Letters Patent No. **104,716,** dated June 28, 1870.

We, ANTOINE ERNEST DUPAS and ARTHUR BARBARIN, the first of Paris, France, and the second of the city of New Orleans, State of Louisiana, have jointly invented a certain Improvement in Machines for Carbureting Atmospheric Air, of which the following is a specification:

Our invention has for its chief object a thorough diffusion of the air to be carbureted throughout the hydrocarbon; but it subserves other important objects, which we will indicate when we describe those parts of our improvement, through the agency of which these objects are accomplished.

Our invention consists of an improved means for diffusing the air in the hydrocarbon—to wit, a peculiarly-constructed rotating and perforated float—and of an improved mode of indicating the quantity of hydrocarbon that is in the carbureter, with the view to the regulation of the same, by means of a stem attachment to the diffusing-float, in connection with a vertical casing uprising from the cover of the carbureter, which is provided with a glass disk; but our invention will be better understood by referring to the drawing, whereupon it is shown, at—

Figure 1, by a top view, a part of the cover being broken away, so as to show a portion of the upper surface of the perforated revolving diffusing-float; at Fig. 2, by a vertical section, the bisection being through the center of the carbureter, and at Fig. 3 by a bottom view of the float, which shows the radiating curved hollow arms, through which the air passes into the hydrocarbon, and, by the development of a centrifugal force, revolves the said float and causes it so to diffuse the air as to make it permeate every portion of the superincumbent hydrocarbon.

On the drawing, A represents the circular wall or shell of the carbureter, and B the pipe for the passage of air thereinto. This pipe is connected with the air-pump of whatever kind it may be, and thence leads underneath the carbureter to the center of the latter, where, entering the same, it uprises vertically very nearly to the top thereof, and terminates there by a closed extremity, very near to which side holes, as shown at Fig. 2, are made through its shell for the escape of the air out of it. The top of the carbureter being convex, these holes are higher than the sides of the carbureter, and hence at all times they are out of the reach of the hydrocaabon, because above the highest level to which it is ever carried. Over this vertical section of the pipe B the diffusing-float D is placed by means of a hollow stem, E, which, closed at its top, passes through the float an inch and a half or more below the same, according to the size of the carbureter, in order, by being filled with the hydrocarbon below the disk portion of the float, to prevent thereby an escape of air at the lower extremity thereof, which of necessity must be open. The vertical section of pipe B, being enveloped by this hollow stem E, becomes thereby the axis of the diffusing-float D in the revolution of the latter during the operation of the machine.

The stem E may be expanded from its lower extremity up to the lower surface of the perforated disk D, as shown at Fig. 2, if deemed desirable; but there is no especial need that this shall be done.

The diameter of the incasing-stem E must be sufficiently greater than the diameter of the pipe B to provide ample space between the inner surface of the former and the outer surface of the latter for the free passage of all the air that can be driven by the greatest allowable pressure through the lateral holes at the top of the vertical section within the carbureter of the pipe B.

Underneath, and in contact with the under surface of the disk D of the float, four or more curved hollow arms, F, are provided, as shown at Fig. 3. These arms communicate with the open space around pipe B, and afford the only outlet for the air which is forced into the pipe B, and from their formation cause the same to impinge against the hydrocarbon in the best possible manner to produce the greatest possible development of centrifugal force to revolve the float.

To prevent the air from passing too rapidly through the perforations in the disk portions of the float, and thus to make its diffusion as complete or widespread as possible, we make the perforations through said disk, near the points of the escape of the air from the arms F, very small, and gradually increase

their size as the distance becomes greater from said points of escape, as is clearly shown at Figs. 1 and 3.

We encircle the perforated disk D with a hollow rectangular rim, G, in such manner that there is a small open space left around the edge of the disk between said edge and said rim, as shown on the drawing. This rim G subserves the purpose of floating the disk while yet keeping it beneath the surface of the hydrocarbon, and at the same time of preventing any considerable escape of the air upward, except through the perforations of the disk and the narrow annular open space between it and the circumferential edge of the disk. It also tends to give steadiness to the disk when in motion.

The stem E is inscribed with lines that completely encircle it, which are properly marked with numerals to indicate the height of the hydrocarbon, the said marks being visible through a glass disk inserted in an elbow, K, that projects, as shown, from the vertical stem or casing I uprising from the center of the cover of the carbureter.

The machine is supplied with and emptied of hydrocarbon through the same pipe, J. It is supplied through said pipe by simply pouring it in the ordinary way, and emptied by forcing air through the pipe B, all the outlets from the carbureter being closed at the time except the pipe J until the pressure expels the hydrocarbon through the same. To facilitate this operation and guard against the loss of the hydrocarbon, we provide an elbow or turn down the end of said pipe instead, so as to form the same into any proper receiver therefor. By withdrawing the hydrocarbon in this way we dispense with the use of stop-cocks, and thus avoid the danger which is always incident to their use, especially when gasoline is the hydrocarbon employed, in consequence of the extreme liability of such cocks to leak. We are, moreover, enabled to discharge the hydrocarbon in this way without removing the carbureter from the earth or water, should it be surrounded by either.

Whenever the machine is not in operation after having been once used there will always be more or less of condensation of the carbureted air, so that if the supply-pipe is not cut off from the space in which such condensation takes place it is gradually filled with the condensed oil until it is completely obstructed thereby.

In our arrangement it will be observed that the hydrocarbon itself occupies a position which interposes an effectual bar against this evil and compels the condensed hydrocarbon to fall back into the same body from which it was absorbed or taken up by the air, as will be plainly seen by reference to Fig. 2.

The downward extension of the stem E below the float, into which the hydrocarbon of course enters, compels the air, the moment its pressure forces the liquid below the openings in the arms F, to pass through said openings, and hence secures the rotation of said float under all conditions and circumstances.

What we claim is—

1. The revolving float composed of a disk, D, perforated in the manner herein described, a rectangular hollow or tube-like rim, G, and a stem, E, when in other respects constructed and operated as herein described, for the purpose set forth.

2. The perforated disk D, provided with the rim G and graduated stem E, in combination with the casing I, when the latter is provided with a glass disk, as herein described, and for the purpose set forth.

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