Dupas & Barbarin.

Carburetor.

No. 113,147. Patented Mar. 28, 1871.

Fig. 1.

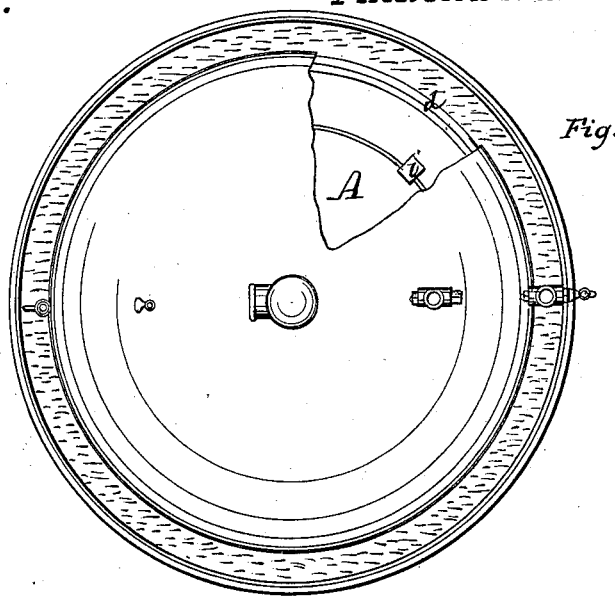


Fig. 2.

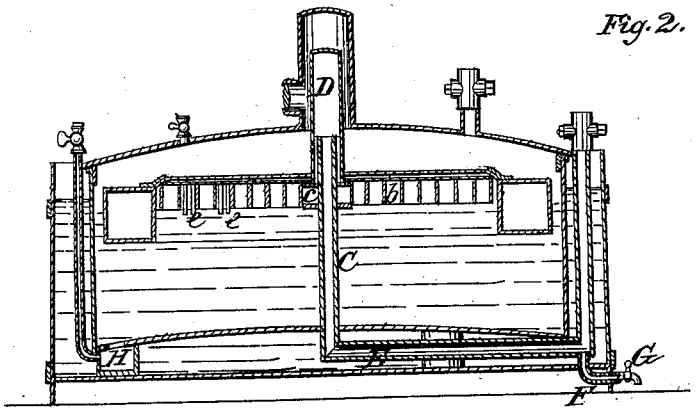
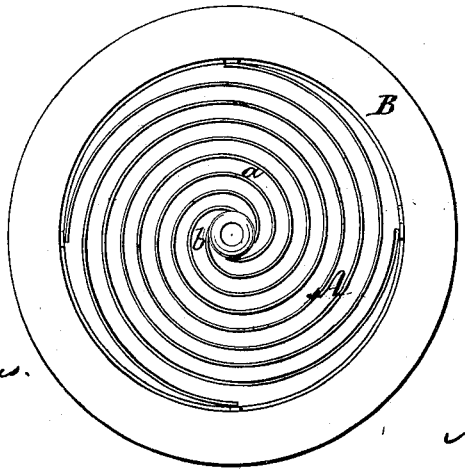


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

ANTOINE ERNEST DUPAS AND ARTHUR BARBARIN, OF NEW ORLEANS, LA.

IMPROVEMENT IN CARBURETING-MACHINES.

Specification forming part of Letters Patent No. **113,147**, dated March 28, 1871.

We, ANTOINE ERNEST DUPAS, of Paris, France, now residing in New Orleans, Louisiana, and ARTHUR BARBARIN, of New Orleans, Louisiana, have jointly invented certain Improvements in Carbureting-Machines, of which the following is a specification:

Our invention is an improvement on our apparatus for carbureting air, for which Letters Patent of the United States No. 104,716, dated June 28, 1870, were granted to us.

It refers particularly to details of construction, whereby our said apparatus, as patented, is very greatly improved in its operation.

In fact, our improvements completely remedy the defects of our said apparatus, and make a perfect machine in every respect whatsoever.

Since the schedule annexed to the Letters Patent for it does this in a full, clear, and exact manner, it will not be necessary to describe our apparatus as patented, except as far as may be necessary to indicate the precise character of our present improvements or to demonstrate the superior comparative merit of the latter.

One important improvement consists of a new method of constructing our float, by which we gain a greatly-increased surface of hydrocarbon for the air which is to be carbureted to act on, there being several points of novelty in this improvement of greater or lesser value.

Another improvement consists in a means for drawing off, as often as necessary, the water which may, from condensation or other cause, get into the air-supply pipe and obstruct the action of the pump.

But a reference to the drawing will at once and very clearly indicate the nature of our improvements.

Figure 1 is a top view of the recipient for the hydrocarbon; Fig. 2, a vertical section of the whole machine, and Fig. 3 a bottom view of the float.

Instead of diffusing the air through the hydrocarbon by means of a perforated top in the float and from radiating hollow arms underneath, the same as in our said patented apparatus, we accomplish this important end far more effectually by having a closed top, A, as shown at Figs. 1 and 3, underneath which we provide four thin metallic curtains, *a*, of volute or spiral scroll form, as seen at Fig. 3. These curtains are wide enough and occupy such a relation to the top A of the float that they extend a little below the surface of the hydrocarbon. In doing this they establish four volute and very extended channels or openings, *b*, (see Figs. 2 and 3,) for the conduit of the air from the points at which it is forced into them at *c*, near the center of the float, out to the annular opening *d* around the top of the float, and between that and the hollow rim B.

To extend the surface of the hydrocarbon to be brought in contact with the air still farther, we suspend two curtains of fibrous material (a variety of cotton fabrics will answer the purpose) in each end of the channels *b*, as shown at *e*, Fig. 2.

The curtains that are suspended in each channel are formed of one piece of cloth, that is folded in the middle, and secured to the top by metallic hold-fasts *g*, the same being substantially similar to those employed for clamping a number of sheets of paper together.

Our object in employing this kind of fastening is to establish an open space between the fibrous curtains, and thus to expose both sides of each to the air to be carbureted; and, furthermore, to have it in our power to solder the same to the top A, as shown at *i*, Fig. 1, and in this way to close the holes through which the two points of each fastening have penetrated said top, in order to fulfill the office of hanging the curtains and keeping them apart, and so to prevent the escape of any air through the top before it has reached the annular opening *d*.

The fibrous curtains dipping into the hydrocarbon carry a portion of it up to their very tops by their capillary properties, and thus very greatly extend the surface of hydrocarbon for the air to act on as it passes along the channels *b;* and this, as we have stated before, is the reason we employ such curtains and arrange them in the manner described.

The curtains of fibrous material extend longitudinally through the scroll passages, and about parallel with the sides of the same, thus subdividing each into smaller scroll passages, and extending greatly the hydrocarbon-surface without interfering with or offering any resistance to the passage of the air through the float.

In order to prevent the hydrocarbon from

overflowing the point of eduction in the vertical section C of the air-supply pipe, we terminate the enveloping vertical indicating-stem D of the float at a point which will maintain it at all times above the hydrocarbon instead of extending it down to the bottom of the carbureter, as in our patented apparatus, so that the pressure of the carbureted air will be exerted everywhere alike on the hydrocarbon, and hence preserve a level surface in the same. The same effect will be accomplished by making a small hole in the top of the stem D.

Our mode of indicating the height of the hydrocarbon is the same as in our patented machine, and need not, therefore, be described.

In our patented machine there is no provision for drawing off water from the air-supply pipe except by pumping, and we have found from experience that this is a serious drawback in the practical working of the same when continuously used.

In fact, experience has proved that at irregular intervals, depending mainly on the condition of the air, the horizontal section E of the supply-pipe is completely filled with water condensed from the air, which, of course, stops the machine until the same is withdrawn. We remedy this difficulty by connecting with the air-pipe, at its outer knuckle, a withdrawing-pipe, F, provided with a stop-cock, G, as shown at Fig. 2.

In order to increase the curtaining capacity of the pipe F, and thus to prolong the intervals at which it is necessary to draw off the water passing into it from the air-supply pipe beyond what it must needs be under the arrangement as shown on the drawing, we may carry said pipe F through one of the hollow legs H of the carbureter, and thus convert this leg into a reservoir or pocket sufficiently ample to hold all the condensed water which a week's constant operation of the machine would collect.

The upper disk, M, over the top A of the float is not absolutely necessary, and we may or we may not use it, according to circumstances, or as we please.

In all other respects our machine is substantially identical with our apparatus as patented, both as regards its construction and its *modus operandi*.

What we claim as improvements on our said apparatus and in connection therewith is—

The arrangement, within the channels formed by the spiral or volute scroll metallic curtains of a carbureting-float, substantially such as described, of curtains of fibrous material, extending longitudinally through said channels, and dipping at their lower ends into the carbureting liquid, thus subdividing the channels into smaller scroll passages and extending the hydrocarbon-surface over which the air or gas must pass, substantially in the manner set forth.

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Witnesses:
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