

Apparatus for Carbureting Air.

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Inventor:
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UNITED STATES PATENT OFFICE.

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IMPROVED APPARATUS FOR CARBURETING AIR.

Specification forming part of Letters Patent No. 50,251, dated October 3, 1865.

To all whom it may concern:

Be it known that I, JOHN H. IRWIN, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Apparatus for Carbureting Air; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters and figures marked thereon, which form part of this specification.

The nature of my said invention consists in surrounding and inclosing the pans or vessels containing the hydrocarbon liquid with a case or inclosure, and admitting into said inclosure and around the said carbureting-vessels heated air, so that the heavier hydrocarbons, having their tendency to vaporization thereby increased, may be used as advantageously as the lighter and more volatile hydrocarbons now ordinarily used.

Another advantage resulting from my invention is, that the vaporization of those hydrocarbons which are sufficiently volatile for the purposes contemplated in the warmer portions of the year may be made as facile and thorough in cold weather as in warm weather.

To enable those skilled in the art to understand how to construct and make use of my invention, I will now describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 represents a plan or top view of my invention; Fig. 2, a vertical central section of the same at *x* in Fig. 1; and Fig. 3 is a top view of one of the carbureting-pans.

Similar letters of reference in the different figures denote the same parts of my invention.

A represents a close cylindrical case, which, however, may be of any other shape, inclosing the carbureting-pans, (marked B.) These pans are of similar construction and arranged in a vertical series, as shown, and may be in contact with each other, or may have an intervening space between them, as preferred, said pans being connected with each other by the tubes or pipes (marked *c*) which project up a short distance through the bottom of each pan, as shown. Each of said pans is provided with a vertical scroll-partition or one of similar form,

forming a passage in each leading from the inlet-tube of each pan to its corresponding outlet-tube, said tubes being arranged respectively at the center and one side alternately, as shown. Beneath the lower pan of the series there is arranged a chamber, C, into which the gas or carbureted air passes, as hereinafter mentioned, said chamber being provided with an outlet-pipe, E, controlled by a stop-cock, as shown.

D represents a pipe for conducting the gas from the reservoir of chamber C and distributing it to the various burners.

G represents a chamber, in which air may be heated, and whence it may pass through the pipe H into the case A and around the pans B, as indicated by the black arrows.

The operation of my invention is as follows: Inasmuch as the carbureted air produced by this invention is heavier than common air, it follows that the requisite pressure can be produced at the burners by simply placing the carbureting apparatus in the upper part of the house, above the burners, and I therefore so arrange my apparatus. The naphtha or other hydrocarbon liquid is introduced through the tube *a* in the top of the machine, and when the first pan is filled up to the top of the outlet tube *c* the fluid flows down into the next pan, and so on until all of the pans are filled to the requisite depth, when the fluid flows down into the chamber C and escapes through the pipe E, after which the stop-cock therein is closed. The cap being removed from the tube *a*, so as to admit the air, the gas or carbureted air passes down the tube or pipe D to the burners represented at I I, and also the burner at F, which heats the air in the chamber G, which passes into the case A, surrounding and inclosing the carburetor.

The air may be heated by any other kind of fuel, if preferred.

Instead of introducing heated air into the inclosing-case in the manner hereinbefore described, the air may be heated within the case and beneath the carburetor by inserting therein a heated block of metal; or heat may be applied to the outside of the casing, thus warming the air within, the main point being to have warm air within the casing and around the carburetor.

The case surrounding or inclosing the carburetor may be constructed of some non-conductor of heat, and thus materially diminish the effect of cold weather upon the vaporization of the hydrocarbon fluid.

If desired, the air within the case may be admitted into the carbureting-pans.

It is obvious that the heating or warming of the hydrocarbon fluid within the carburetor, which is the real object sought in my present invention, may also and with equal facility in many cases to be accomplished by the introduction within the case of steam, or by filling the

case surrounding the carburetor with water or other fluid and heating the same.

Having described my invention, I will now specify what I claim and desire to secure by Letters Patent.

I claim—

The application of heated air to a carbureting apparatus when arranged within an inclosing-case, substantially as and for the purposes specified and shown.

Witnesses:

JOHN H. IRWIN.

W. E. MARRS,

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