

H. A. SMITH.
GAS PURIFIER.
APPLICATION FILED SEPT. 25, 1911.

1,015,353.

Patented Jan. 23, 1912.

Fig. 1.

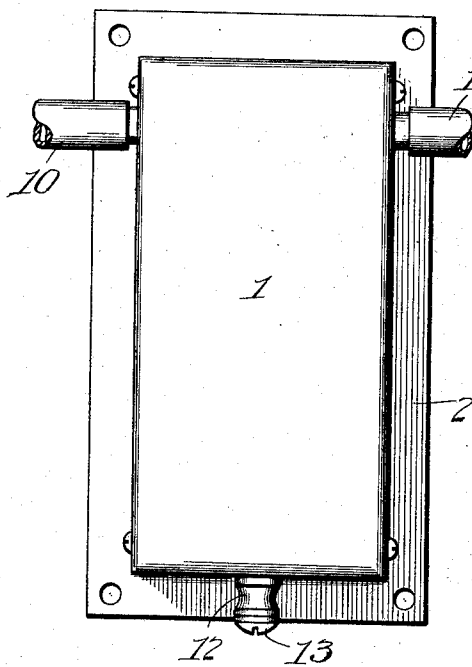


Fig. 2.

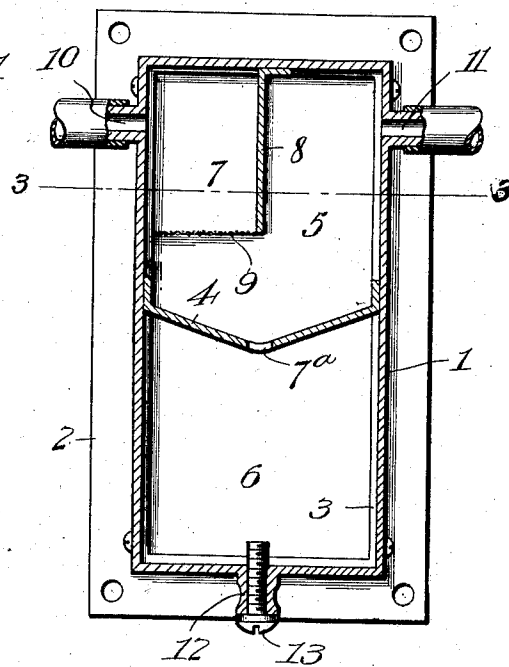


Fig. 3.

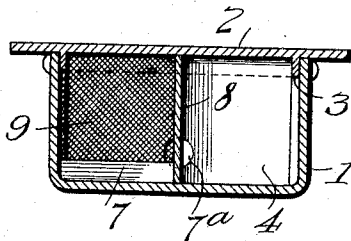
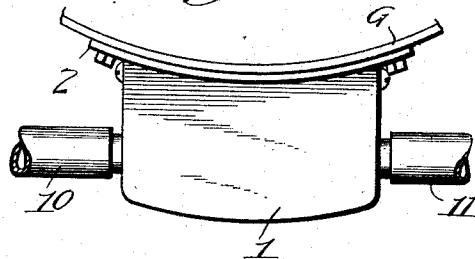


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

HORACE ANDREW SMITH, OF ISABEL, ILLINOIS.

GAS-PURIFIER.

1,015,353.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed September 25, 1911. Serial No. 651,218.

To all whom it may concern:

Be it known that I, HORACE A. SMITH, citizen of the United States, residing at Isabel, in the county of Edgar and State of Illinois, have invented certain new and useful Improvements in Gas-Purifiers, of which the following is a specification.

This invention relates to the subject of drying and purifying illuminating gas, and has particular reference to a simple and practical form of gas purifier that possesses special utility in its application to the acetylene gas generating systems that are commonly employed in connection with automobiles and motor boats.

To this end the invention contemplates a gas purifying device adapted to be interposed in the line of piping between the generator and the burners and comprising means for thoroughly and completely eliminating mineral impurities carried over by the gas, and particularly providing for effectually separating the water and moisture from the gas so that it will pass to the burners in a dry and pure condition, thus preventing clogging of the pipes and burner orifices and insuring a steady flame under the most economical conditions.

With these and other objects in view which will more readily appear as the nature of the invention is clearly understood, the same consists in the novel construction, combination and arrangement of the parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a front elevation of a gas purifier embodying the present invention. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a cross sectional view on the line 3-3 of Fig. 2. Fig. 4 is a top plan view illustrating a modification in the attaching plate to adapt it for attachment to the curved side of a generating body.

Like references designate corresponding parts in the several figures of the drawings.

In the embodiment shown, the improved gas purifier includes in its organization a casing body 1 made of metal or other material impervious to gas, but preferably of metal, the same being essentially a metal box of rectangular form or other suitable shape.

The casing body 1 is intended to be en-

tirely inclosed, so as to be perfectly water and gas tight while in use, but for convenience in cleaning, and assembling, the same may be constructed with an open rear side adapted to be covered by an attaching back-plate 2 having a flanged or equivalent detachable connection 3 with the body, as plainly shown in Figs. 2 and 3 of the drawings. Thus, the back-plate 2 serves as a detachable back cover for the casing body, and at the same time acts as an attaching member for being fastened to a suitable support between the generator and burners, or, by curving said back-plate, as shown in Fig. 4, the same can be fastened directly to the curved body of a generator G.

Internally, the casing body 1 is divided into two compartments and a third chamber. That is to say, the said casing body 1 has fitted therein at a point intermediate the top and bottom thereof an inside cover partition 4 that is approximately V-shaped in cross section and serves to divide the interior of the casing into an upper main separating compartment 5 and a lower water compartment 6. At its lowest point or apex, the said partition 4 is provided with a drip hole 7^a, and within one upper corner of the compartment 5 of the casing body has formed therein an outlet chamber 7 which is closed at one side by an upright condensing wall 8 depending centrally within the casing from the top thereof, and the open bottom of the said chamber 7 is covered by a separating screen 9 of suitable mesh.

The outlet chamber 7 is in communication with the outlet opening 10 for the casing, while at a diametrically opposite point, at the other side of the wall 8, the casing body is provided with the inlet opening 11, said openings 11 and 10 being included in the line of gas supply from the generator to the burner. At the bottom, the casing body 1 is provided with a drain nipple 12 adapted to be closed by detachable screw plug or equivalent closure 13.

In operation, the impure and water-laden gas enters the casing at the inlet 11 and first striking the obstructing and condensing wall 8 undergoes a primary separating action by the condensation of the moisture on the wall 8, the water dripping from the said wall onto the partition 4 and running through the hole into the compartment 5, from which latter compartment the accumulation of water is drained through the nipple 12. The

gas is deflected downwardly from the wall 8 and passing upwardly through the screen 9 receives a final separation from any remaining impurities and the water, and then passes
5 out from the chamber 7 through the outlet 10 and the piping to the burner.

The inside partition 4 not only acts as a draining shelf for the water, but also as a condensing surface, and an inside cover for
10 the compartment 6 that prevents the water splashing into the compartment 5.

From the foregoing, it is thought that the construction, operations and advantages of the improved gas purifier will be apparent
15 without further description.

I claim:

A gas purifier comprising a casing having upper oppositely located inlet and outlet

connections, a V-shaped inside partition having a single central drip hole and arranged to divide the interior of the casing into an upper separating compartment and a lower water compartment, and an outlet chamber in communication with the outlet connection and said separating compartment, said outlet chamber including a screened bottom opening and an upright condensing wall lying opposite the inlet connection.
25

In testimony whereof I hereunto affix my signature in the presence of two witnesses.
30

HORACE ANDREW SMITH.

Witnesses:

T. A. BUCKLER,
ABE BUKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
