

H. KNAPP.
ACETYLENE GAS GENERATOR.
APPLICATION FILED MAY 23, 1910.

993,078.

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Fig. 1.

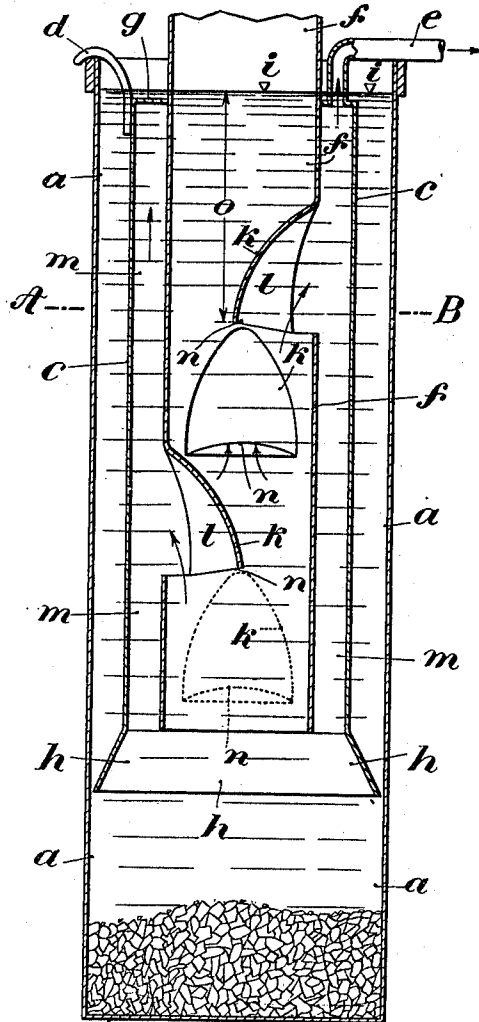
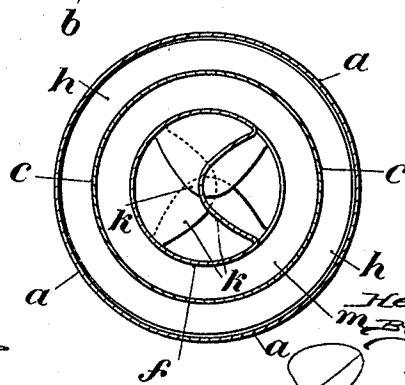


Fig. 2.



Witnesses

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HEINRICH KNAPP, OF WEIMAR, GERMANY.

ACETYLENE-GAS GENERATOR.

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To all whom it may concern:

Be it known that I, HEINRICH KNAPP, a subject of the German Emperor, residing at Weimar, Grand Duchy of Saxe-Weimar, Eisenach, Germany, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

The present invention has reference to improvements in acetylene gas generators, and it comprehends generally the production of a generator wherein there is located a double-walled tubular body, the inner wall of which constitutes a charger and is provided with specially-formed projections that serve as outlets for the gas generated and direct the same into the gas chamber of said body.

A structural embodiment of the invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a longitudinal vertical sectional view of the improved generator; and Fig. 2 is a horizontal sectional view of the same taken on the line A—B of Fig. 1.

The vessel *a*, shown in said drawings, constitutes the body of the generator, or generator proper, and is provided with a closed bottom *b*. In this vessel, there is suspended, by means of hooks *d* engaged with the upper edge thereof, a double-walled tubular receiver, the hooks *d* just referred to being secured to the outer wall *c*. The inner wall *f* of said receiver is spaced from the outer wall *c*, thereby producing an intermediate annular chamber *m* which constitutes the gas chamber, the top of this chamber being closed by the annular wall *g* from which the gas outlet pipe *e* leads. Wall *c* terminates at its lower edge in a flared rim or flange *h* that extends substantially into contact with the side wall of vessel *a*, there being, however, sufficient space between said wall and the free edge of said flange to permit the water in the receiver and the vessel *a* to reach the same level. In practice, this level, which is indicated by the character *i*, is slightly above the top wall *g* of the receiver.

The inner tubular portion *f* of the receiver serves as the charger for the carbid. Below the water level, the charger is formed with a series of inwardly-projecting shoulders *k* of special construction. The major, or vertical walls *l* of these shoulders are of concavo-convex formation and curve inwardly to such an extent that their lower edges *n* are

disposed at a point beyond the longitudinal axis of the charger. The bottoms of said shoulders are cut away or open, so as to permit the rising gas to pass therethrough and to be deflected by the walls *l* into the gas chamber *m*. The disposition of the shoulders is such that they form an ascending spiral, each shoulder being arranged above and to the right of the preceding shoulder. By reason of this arrangement, and of the projection of the edges *n* beyond the longitudinal axis of the charger, the gas generated by the lumps of carbid will be prevented from passing directly upward through the charger, but will be forced out into the gas chamber, as above stated.

The height of the column of water *o* between the water level *i* and the edge *n* of the uppermost shoulder *k* is so determined, pursuant to practical experience, that its normal pressure is sufficient to expel all of the air from the lumps of carbid prior to the generation of the gas. Consequently, as the lumps gradually settle down in the charger, the gas generated will pass out free from air through the open bottoms of the shoulders *k* into the gas chamber. The residue is finally collected in the bottom of the vessel *a*, and may be removed therefrom after the tubular receiver has been withdrawn. The receiver itself can be readily cleaned on being withdrawn, as will be apparent.

I claim as my invention:

1. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising inner and outer tubular walls spaced from each other to produce an intermediate gas chamber, said chamber being provided with a closed top and an outlet pipe leading from the same, and said inner wall with gas deflecting outlets leading to said chamber.

2. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member, and a tubular charger arranged within said member and having its wall spaced from that of said member to produce an intermediate gas chamber, said charger being provided with gas deflecting outlets leading to said chamber.

3. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member, and a tubular charger arranged within said member and having its

5 wall spaced from that of said member to produce an intermediate gas chamber, said charger having its wall provided with gas-deflecting outlets leading to said chamber, and its lower edge formed with an outwardly-inclined circumferential flange extending substantially into contact with the wall of said vessel.

10 4. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member, and a tubular charger arranged within said member and in spaced relation to the same, to produce an intermediate gas chamber, said charger being provided with a series of inwardly-projecting gas outlets leading to said chamber and arranged in an ascending spiral.

20 5. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member and a tubular charger arranged within said member and in spaced relation to the same, to produce an intermediate gas chamber, said charger being provided with a series of gas outlets arranged in an ascending spiral and extending inwardly of said charger beyond the longitudinal axis thereof, in overlapping relation, said outlets leading to said chamber.

30 6. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member, and a tubular charger arranged within said member and in spaced relation to the same, to produce an intermediate gas chamber, said charger being provided with a series of shoulders having open bottom walls and concavo-convex vertical

walls constituting deflectors for directing the gas passing through said bottom walls to said chamber. 40

7. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member, and a tubular charger arranged within said member and in spaced relation to the same, to produce an intermediate gas chamber, said charger being provided with a series of shoulders extending inwardly of said charger beyond the longitudinal axis thereof, said shoulders having open bottom walls and concavo-convex vertical walls constituting deflectors for directing the gas passing through said bottom walls to said chamber. 45 50 55

8. In an acetylene gas generator, the combination, with a vessel; of a receiver suspended therein and comprising an outer tubular member, and a tubular charger arranged within said member and in spaced relation to the same, to produce an intermediate gas chamber, said charger being provided with a series of shoulders arranged in an ascending spiral and extending inwardly of said charger beyond the longitudinal axis thereof in overlapping relation, said shoulders having open bottom walls and concavo-convex vertical walls constituting deflectors for directing the gas passing through said bottom walls to said chamber. 60 65 70

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HEINRICH KNAPP.

Witnesses:

ERNST EBERHARDT,
CHAS. BORNGRAEBER.