No. 716,883. Patented Dec. 30, 1902.

J. D. FORSYTH.

ACETYLENE GAS GENERATOR.

(Application filed Aug. 28, 1901.)

(No Model.)

Fig. 1.

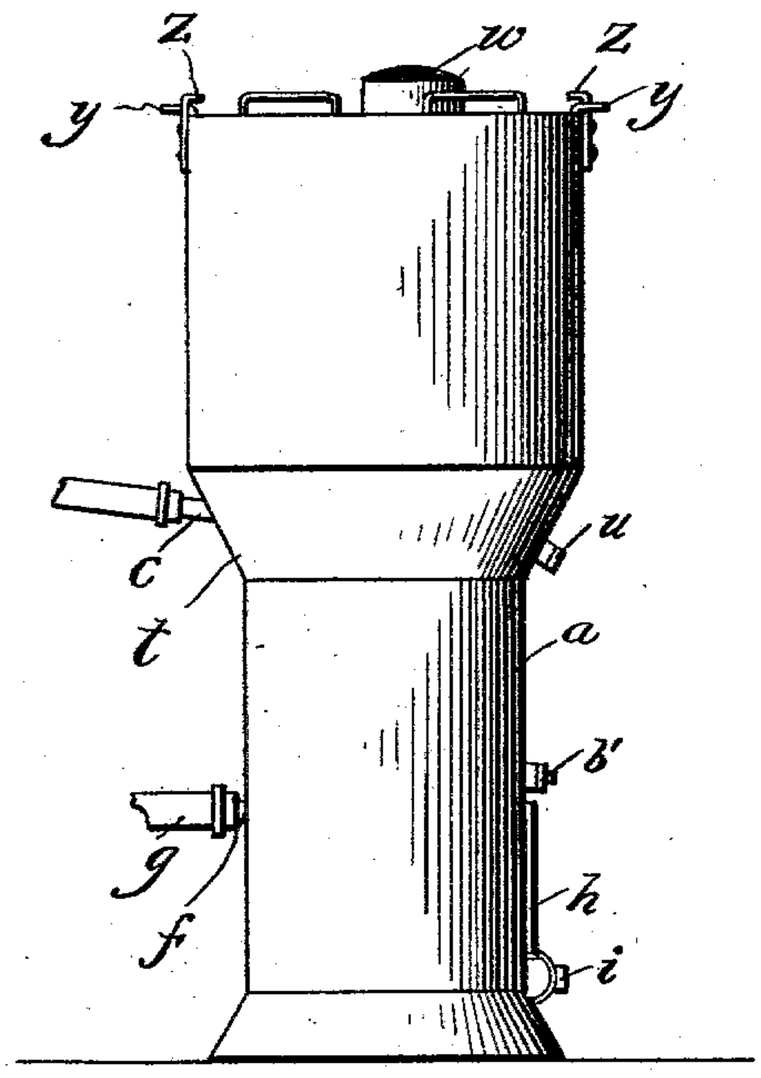


Fig. 2.

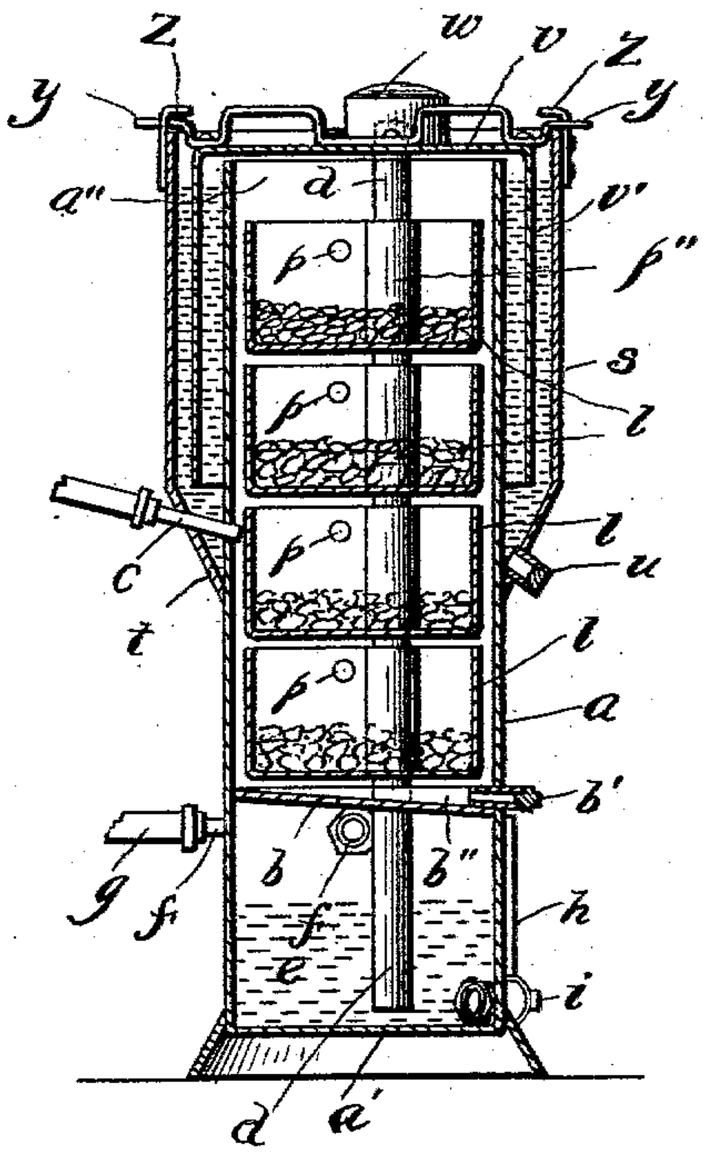
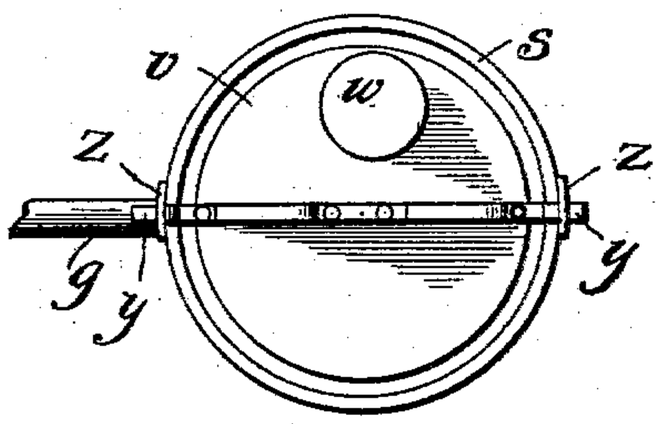


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN D. FORSYTH, OF STOUFFVILLE, CANADA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 716,883, dated December 30, 1902.

Application filed August 28, 1901. Serial No. 73,521. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. FORSYTH, of the village of Stouffville, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Acetylene-Gas Apparatus; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in acetylene-gas apparatus; and it relates more particularly to the peculiar construction of the generating-chamber, as hereinafter more fully set forth, and more particularly pointed out in the claim.

In the drawings, Figure 1 is a side elevation of my complete generator. Fig. 2 is a vertical sectional view thereof, and Fig. 3 is a top plan view thereof.

Like letters of reference refer to like parts throughout the specification and drawings.

The generator consists of a cylinder *a*, the bottom *a'* of which is closed and the top *a''* of which is open. Within the cylinder *a*, at a suitable height above the bottom *a'*, is a partition *b*, having an inclined groove *b''*, and at the lowest level of the groove *b''* is a draw-off opening fitted with a plug *b'*. Entering the cylinder *a* above the partition *b* is a leg *c* of the water-supply pipe. Within the cylinder *a* is a gas-outlet pipe *d*, extending from above the top of the cylinder *a* downwardly through the partition *b* to the purifying-chamber *e*, located between the bottom *a'* and partition *b'*. The purifying-chamber *e* is usually filled, or partly filled, with water or other liquid which will act as a purifier for the gas and is fitted with a gas-outlet pipe *f*, to which is connected the gas-pipe *g*. The lower end of the purifying-chamber *e* is fitted with an inlet-pipe *h*, having at its lower end a removable plug *i*, by means of which respectively the purifying-chamber *e* can be supplied with purifying liquid and the purifying liquid can be drained off and the purifying-chamber cleaned.

Contained within the cylinder *a*, above the partition *b*, are a series of carbid-trays *l*, nested one above the other, the top of each tray being provided with an inlet-opening *p* for the admission of the water to the carbid and the escape of the gas from the tray. The trays rest one upon the other and are provided with the vertical tubes P'', which surround the pipe *d*. Surrounding the upper portion of the cylinder *a* is a water-jacket *s*, the top of which is slightly above the top *a''* of the cylinder *a*. The bottom *t* of the water-jacket is connected to the outer face of the cylinder *a* and is provided with a draw-off cock *u*, by means of which the contents of the water-jacket can be drained off. The cylinder *a* is fitted with a cover *v*, having an annular flange *v'* of substantially the same depth as the water-jacket *s*. When the cover is placed in position, it completely incloses the top of the cylinder *a*, its flange *v'* extending practically to the bottom of the water-jacket *s*, the water within the water-jacket forming a seal to prevent the escape of the gas between the cover and water-jacket. The cover *v* is provided with a dome *w*, in which is contained the top of the gas-outlet pipe *d*. The top of the cover *v* is fitted with a horizontally-disposed bolt *y*, which is adapted to engage clamps *z*, secured to the top of the water-jacket *s*, the purpose of the bolts *y* and clamps *z* being to prevent the accidental displacement of the cover *v* and to enable it to resist the gas-pressure within the cylinder.

The carbid-trays are filled with calcium carbid and are then placed in position in the generator, the trays being nested one above the other. Water is admitted to the cylinder *a* through the water-supply pipe *c* until it has arisen to the level of the opening *p* in the first carbid-tray. The water acting upon the carbid generates the gas, which descends through the gas-outlet pipe *d* to the purifying-chamber *e*, from which it passes through the purifying liquid to the gas-pipe *g* and to a gasometer. (Not shown.)

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In an acetylene-gas apparatus, a generator embracing in its construction a generating-chamber, a series of removable carbid-trays contained in the generating-chamber, an inclined bottom for the generating-chamber having an opening closed by a removable plug, a water-jacket surrounding the upper part of the generating-chamber, a draw-off cock for the water-jacket, a removable cover for the generating-chamber, a downwardly-directed flange for the cover contained in the

water-jacket, a horizontally-disposed locking-bar connected to the top of the cover, clamps connected to the top of the water-jacket, adapted to engage the ends of the locking-bar, a dome for the cover, a purifying-chamber below the inclined bottom of the generating-chamber, and a gas-outlet pipe, the upper end of which is contained in the dome and the lower end of which is discharged into the purifying-chamber.

Toronto, July 19, 1901.

JNO. D. FORSYTH.

In presence of—
C. H. RICHES,
L. F. BROCK.