R. J. MALCOLM.

Gas Generator.

No. 78,600. Patented June 2, 1868.

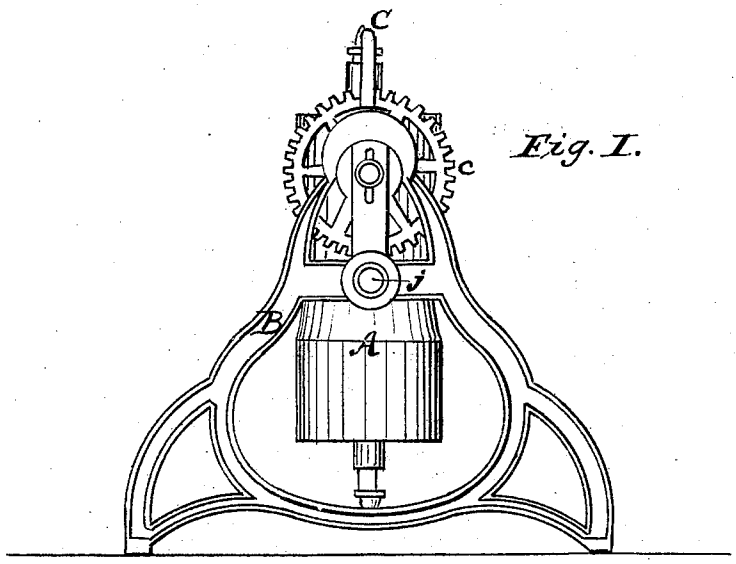


Fig. I.

Fig. III.

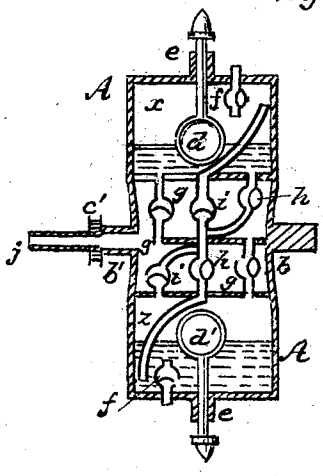
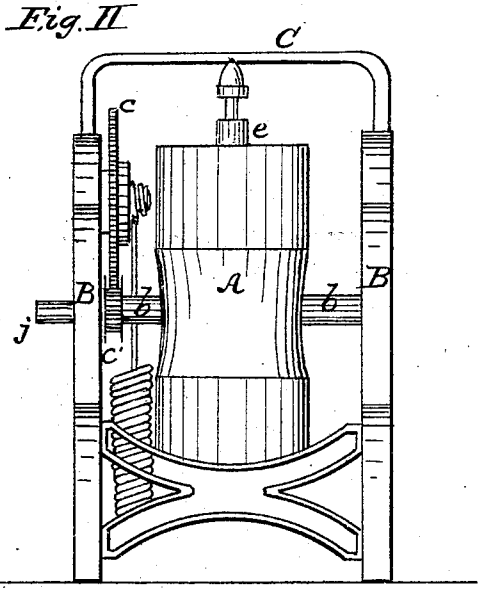


Fig. II



Witnesses:

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Inventor:

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United States Patent Office.

ROBERT J. MALCOLM, OF CINCINNATI, OHIO.

Letters Patent No. 78,600, *dated June 2*, 1868.

IMPROVED APPARATUS FOR GENERATING GAS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT J. MALCOLM, of Cincinnati, county of Hamilton, and State of Ohio, have invented new and useful Improvements in Gas-Generators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure I is a side elevation.

Figure II is a front elevation of the same.

Figure III is a transverse section of the revolving cylinder.

Similar letters of reference indicate like parts.

This invention relates to that class of gas-generaters in which a fluid is used for making the gas, and consists of a cylinder, revolving longitudinally on trunnions, and divided into three departments. The fluid being poured into the uppermost department, runs, by a pipe, into the lowest one, forcing the gas that accumulated into the middle department, and thence out, through a conducting-pipe, for use.

It also has weights or springs arranged for the purpose of reversing the position of the cylinder. There are also floats, for the purpose of arresting the motion of the cylinder, and holding the same in a perpendicular position, and also for detaching the cylinder when all the fluid has escaped from the uppermost department.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A A is a cylinder, divided into three departments, *x*, *y*, and *z*, by the partitions *a a'*. Said cylinder revolves on trunnions *b b'*, in frame B B. C is a gear-wheel, which drives pinion *c'* on the trunnion *b'*, and is driven by springs or weights, to be wound up in the ordinary way. *d d'* are floats, with stems passing out through stuffing-boxes *e e'*. *c* is a part of frame, so constructed that it will arrest the motion of the cylinder by the end of the float coming in contact with it. *f f'* are valves, for the introduction of the fluid, and also to take in fresh supplies of air. *g g'* are valves, which conduct the gas from departments *x* and *z* to the middle one. *h h'* and *i i* are four valves, through which the fluid passes from departments *x* to *z*, and back when reversed. The state of the valves, whether closed or open, is easily seen in Fig. III, where open valves are represented by a curved line, lying to one side of the globe, and when closed the curved line lies over the aperture of the valve. It will be borne in mind that all these valves act by gravitation.

The operation of my invention is as follows: Fluid of any suitable nature, such as petroline, &c., is poured into department *x*, through aperture and valves *f*, until this department is almost full. The fluid then runs through the valves *h h'*, into and filling department *x*, forcing the gas that has there accumulated up through valve *g*, and out through pipe *g'*, from whence it is conducted, by pipes, throughout the house, in the usual way. While the fluid has been running out of the upper department, an equal volume of air was admitted by valve *f'*, and as soon as the fluid has all or nearly all escaped from department *x*, the float, having followed, detaches it from piece C, and the spring, through pinion *c'*, revolves the cylinder until the cross-piece C intercepts its motion by coming in contact with float *d*. The fluid is now all in department *z*, and uppermost, and the operation continues as before.

I do not claim broadly the revolving cylinder; as I am well aware that that is not new; but

What I claim as new, and desire to secure by Letters Patent, is—

1. Carburetting air by reversing the vessels or chambers *x* and *z*, substantially as described.

2. The combination of vessels or chambers *x* and *z*, so that as the compound vessel is revolved or reversed, air is drawn in and forced out alternately as described.

3. The valves *f f'*, *g g'*, *h h'*, *i i'*, in combination with their respective pipes, when used as set forth.

4. The floats *d d'*, and cross-bar C', or its equivalent, as specified.

5. The combination of the cylinder A, frame B, and floats *d d'*, when operating as and for the purpose specified.

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Witnesses:

JOHN P. BENSON,

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