

**No. 627,139.**

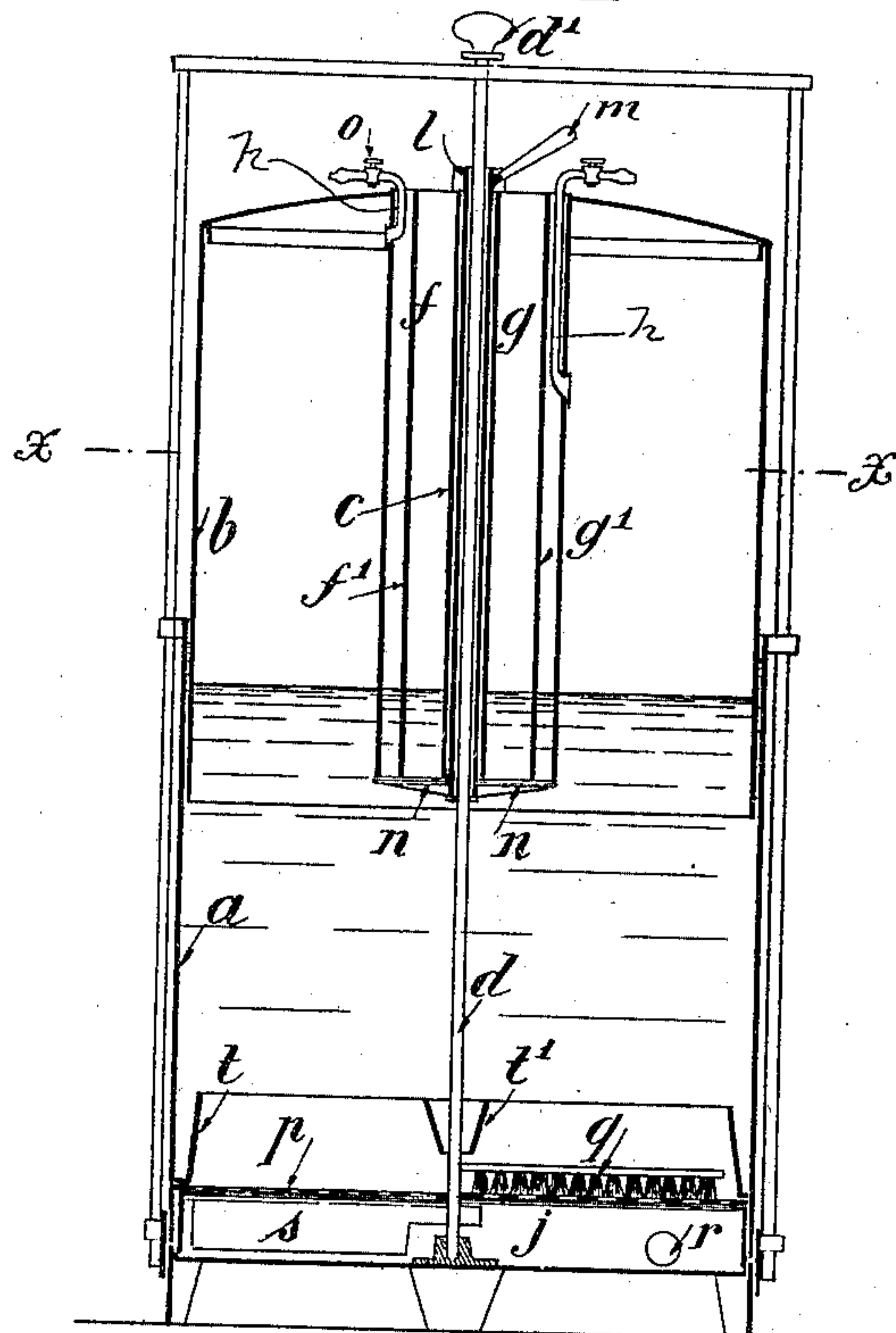
**Patented June 20, 1899.**

**J. E. A. V. POURCELLE.**  
**ACETYLENE GAS GENERATOR.**

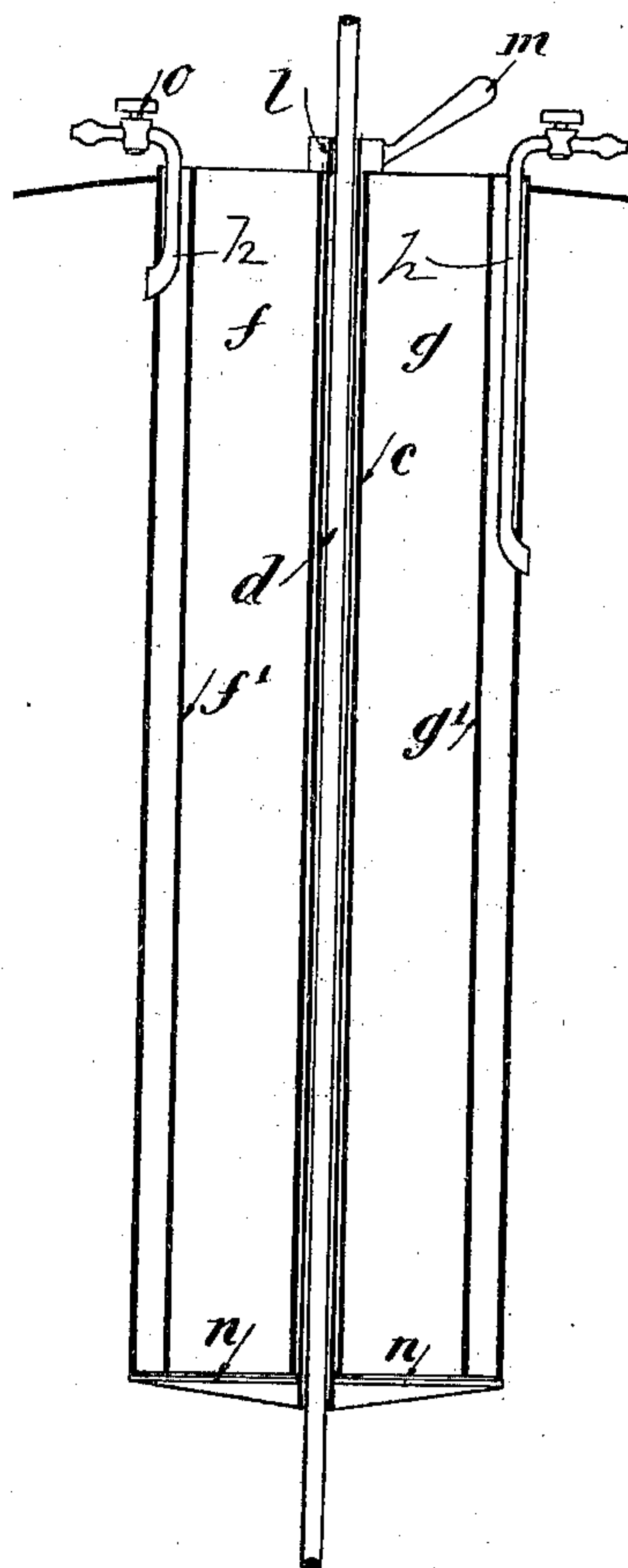
(Application filed Aug. 3, 1898.)

(No Model.)

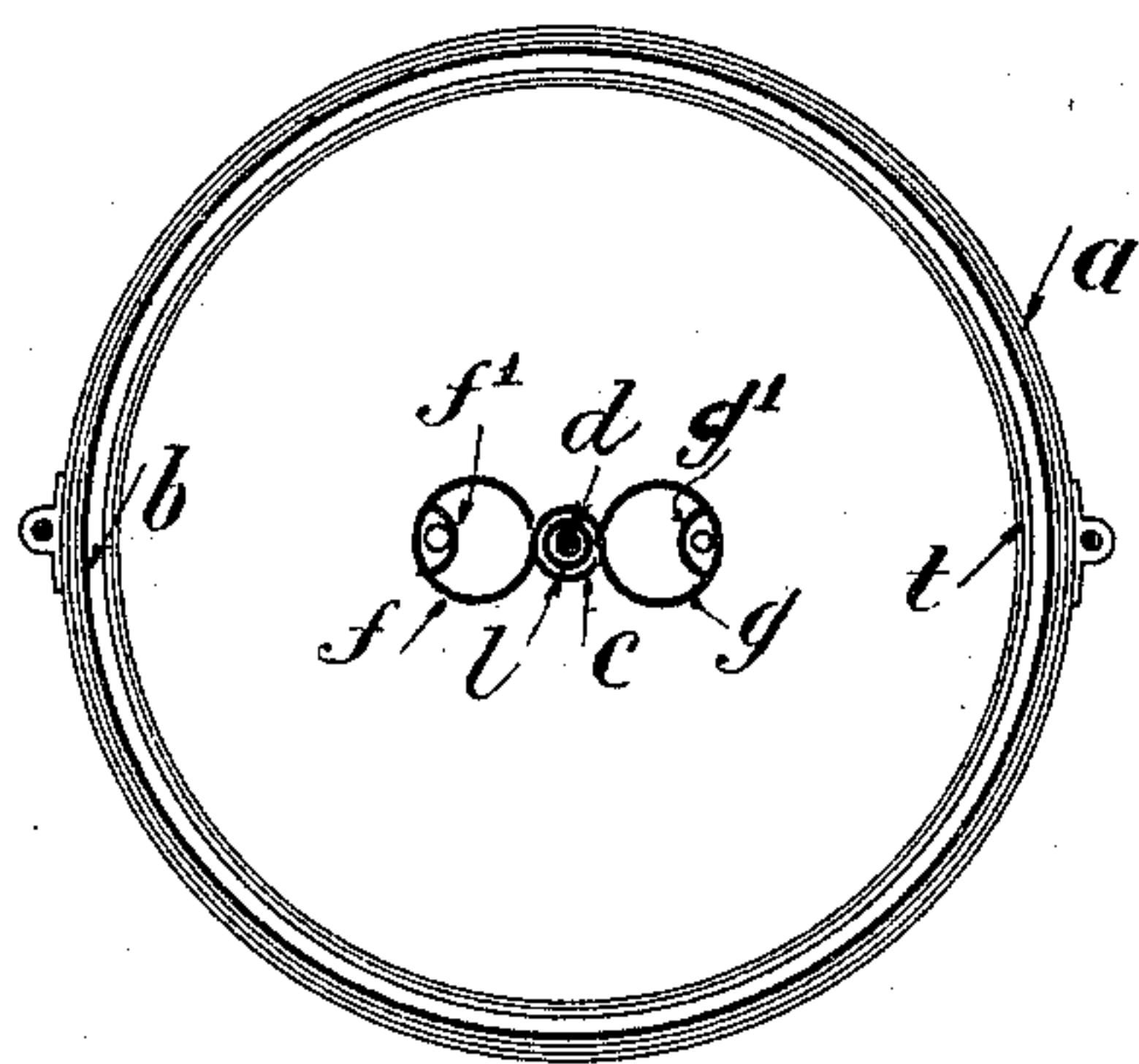
FIG. 1.



FIG\_3\_



FIG\_2 \_



*Witnesses*

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# UNITED STATES PATENT OFFICE.

JULES EMILE ALEXANDRE VALERI POURCELLE, OF CANTIGNY, FRANCE.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 627,139, dated June 20, 1899.

Application filed August 3, 1898. Serial No. 687,610. (No model.)

*To all whom it may concern:*

Be it known that I, JULES EMILE ALEXANDRE VALERI POURCELLE, of Cantigny, (Sonne Department,) in the Republic of France, have invented certain new and useful Improvements in Gas-Producing Apparatus, of which the following is a specification.

My invention relates to gas-producing apparatus; and its object is to provide an acetylene-gas-producing apparatus which shall be simple in construction and easy to control, as will be hereinafter fully described and claimed.

In the drawings hereto annexed and forming part of this specification, Figure 1 is a vertical sectional view of an apparatus embodying the features of my invention. Fig. 2 is a horizontal sectional view on the line  $xx$  in Fig. 1. Fig. 3 is a detached enlarged detail view of a portion of the movable vessel, the suspended chimneys, and the vertical partitions.

The apparatus comprises, as does an ordinary gasometer, a vessel or tank  $a$  and a movable bell  $b$ . As the apparatus is of comparatively small dimensions, the bell  $b$  is only supported by the gas which it contains, there being no weight or poise to counterbalance it. The said bell is guided in the same direction as its axial line by means of a central pipe or tube  $c$ , which surrounds a swivel-rod  $d$ , which is vertically and axially journaled within the vessel and is capable of turning in its upper and lower bearings, in reality on its pivoted point at its lower end. From the upper end of the bell-shaped vessel  $b$  are suspended chimneys  $f g$ , each of which is separated or divided into two vertical compartments by vertical partitions  $f' g'$ . The said chimneys are arranged around the periphery of the central tube  $c$  and are formed of a single piece of sheet metal bent into the form in cross-section of the ordinary figure 8, substantially the central tube  $c$  separating the loops of the figure 8 where they would otherwise intersect. In said chimneys the greater of the compartments permits of the insertion of the calcium carbide, while in the smaller compartment are vertically arranged the gas-taking pipes  $h$ , which latter open into the bell-shaped vessel  $b$ . A hollow vertical rod  $l$ , provided with a

laterally-projecting arm  $m$  at its upper end, arranged to turn on the central rod  $d$  within the tube  $c$ , is provided at its lower end with metallic disks  $n n$ , which are open to permit the apparatus to be put in operation.

The vessel  $a$  being filled with water to the required height and the disk  $n$  or disks  $n n$  being open to put the apparatus in operation, an amount of calcium carbide corresponding to the quantity of gas required is fed into the chimney or chimneys. In this first supply of material to the apparatus the chimneys  $f$  and  $g$  serve to guide into the water of the vessel or tank  $c$  the entire quantity of carbide supplied to the upper part. The carbide falls through the water onto the perforated bottom  $p$ . The central shaft  $d$  is turned from time to time in order that the radial brush  $q$ , carried by said shaft  $d$  and placed immediately above said bottom  $p$ , may cause the lime resulting from the decomposition of the carbide to pass through the perforations in said bottom and fall into the lower compartment  $j$ , whence a clearing blade or scraper  $s$ , fixedly attached to the shaft  $d$ , ejects it at the proper time through the purging-cock  $r$ . The gas produced, guided by the concentric partitions  $t$  and  $t'$ , rises under the bell-shaped vessel  $b$ , raises the same, and escapes as required when the distributing-cocks  $o$  are opened.

When the apparatus is operating, the supply of carbide is made through the chimneys  $f$  and  $g$ , which are closed at their lower ends by the registers  $n n$ , the quantity of the carbide resting on said registers  $n n$ . In this way as soon as the low position of the bell  $b$  shows that the provision of gas is about to run out the handle  $m$  has only to be turned to let the supply of carbide fall into the vessel or tank, the registers  $n n$  being closed immediately afterward in order to close the chimneys  $f g$ . Therefore the apparatus can be run continuously without being obliged to stop for a moment the consumption of gas each time it is required to renew the supply of carbide to the apparatus.

The apparatus will also operate as a generator of carbonic acid if the vessel or tank be filled with chlorhydric acid and if carbonate of calcium be supplied through its chimneys.



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

1. In a gas-producing apparatus capable of  
5 producing acetylene gas, hydrogen gas, carbonic-acid gas and the like, the combination of the vessel or tank having an inner perforated bottom and a draw-off cock below  
10 said perforated bottom; a gasometer-bell vertically guided in the direction of its axial line; chimneys *f* and *g* carried by the top of said gasometer-bell; registers opening and closing the lower ends of said chimneys; a  
15 central rod connected with said registers, and operating to open and close them, and valve-controlled gas-outlets for permitting the flow of the gas at pleasure, substantially as specified.

2. A gas-producing apparatus, comprising  
20 a vessel or tank; a gasometer-bell; chimneys *f* and *g* carried by the top of said gasometer-bell; registers connected to a central rod for opening and closing the lower ends of said

chimneys *f* and *g*; partitions for dividing each of said chimneys into two compartments, the  
25 larger one for the carbid and the smaller one provided with valve-controlled outlet-tubes; and the central vertically-disposed guide-shaft, substantially as specified.

3. In a gas-producing apparatus, the combination of a vessel or tank; a gasometer-bell  
30 provided along its axial line with a socket which permits it to move up and down on the rotatable central shaft; chimneys *f* and *g* connected with the top of the gasometer-bell and  
35 provided with registers *n n* at their lower ends; a hollow rod *l* surrounding the central shaft and serving to operate said registers *n n*; substantially as specified.

Signed at Paris, in the Republic of France, 40  
this 19th day of July, 1898.

JULES EMILE ALEXANDRE VALERI POURCELLE.

Witnesses:

CAMILLE BLÉTRY,  
EUGENE WATTIER.