

C. L. VASQUEZ.

GAS-GENERATING APPARATUS.

No. 170,788.

Patented Dec. 7, 1875.

Fig. 1.

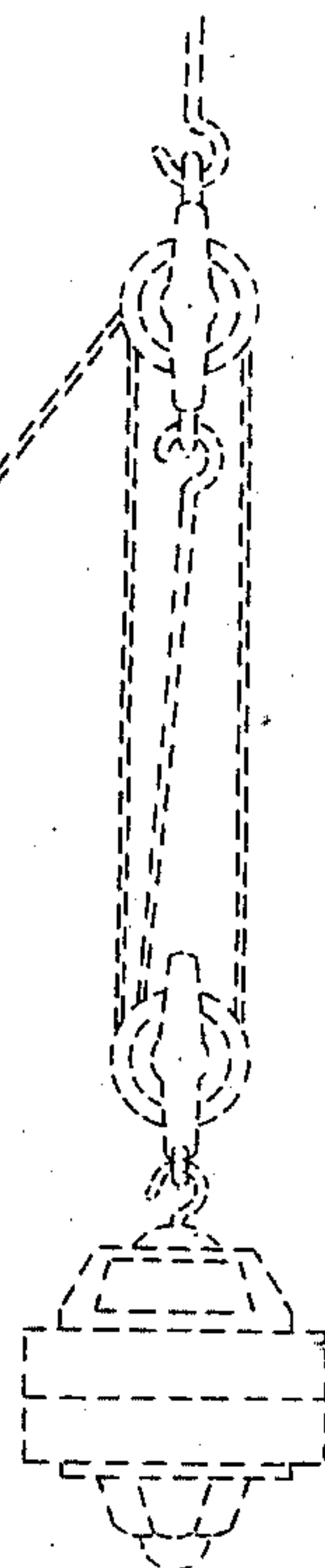
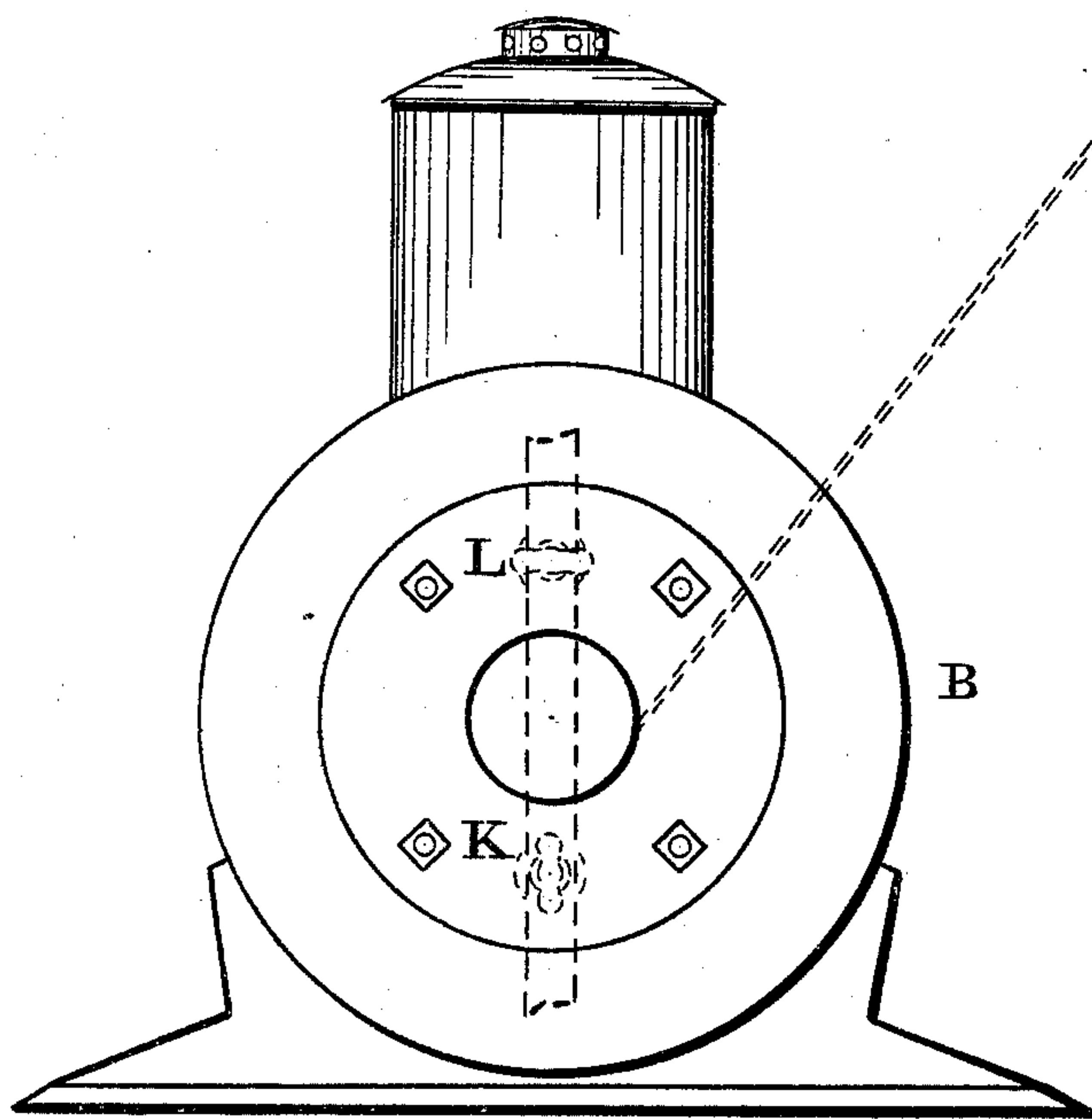
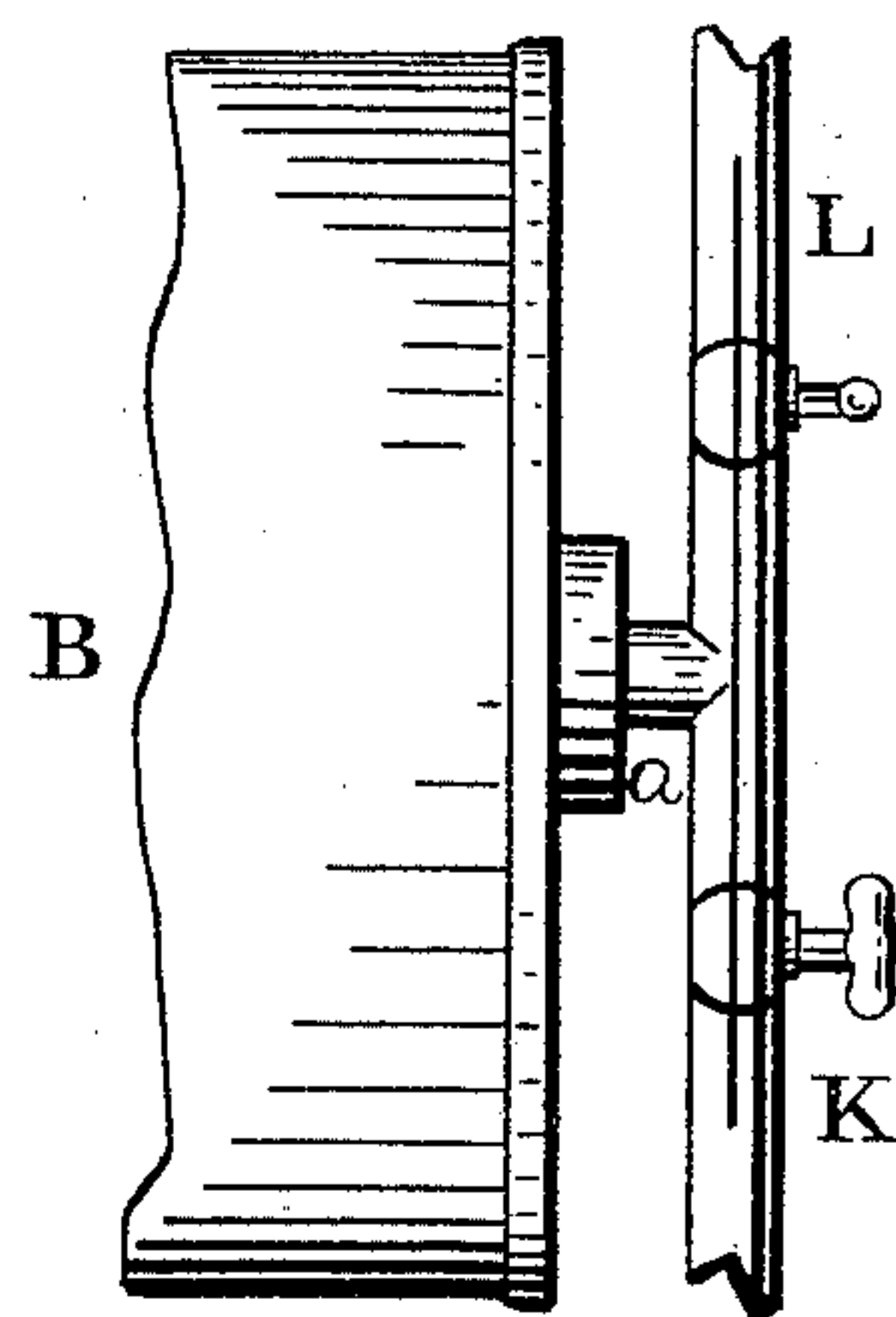
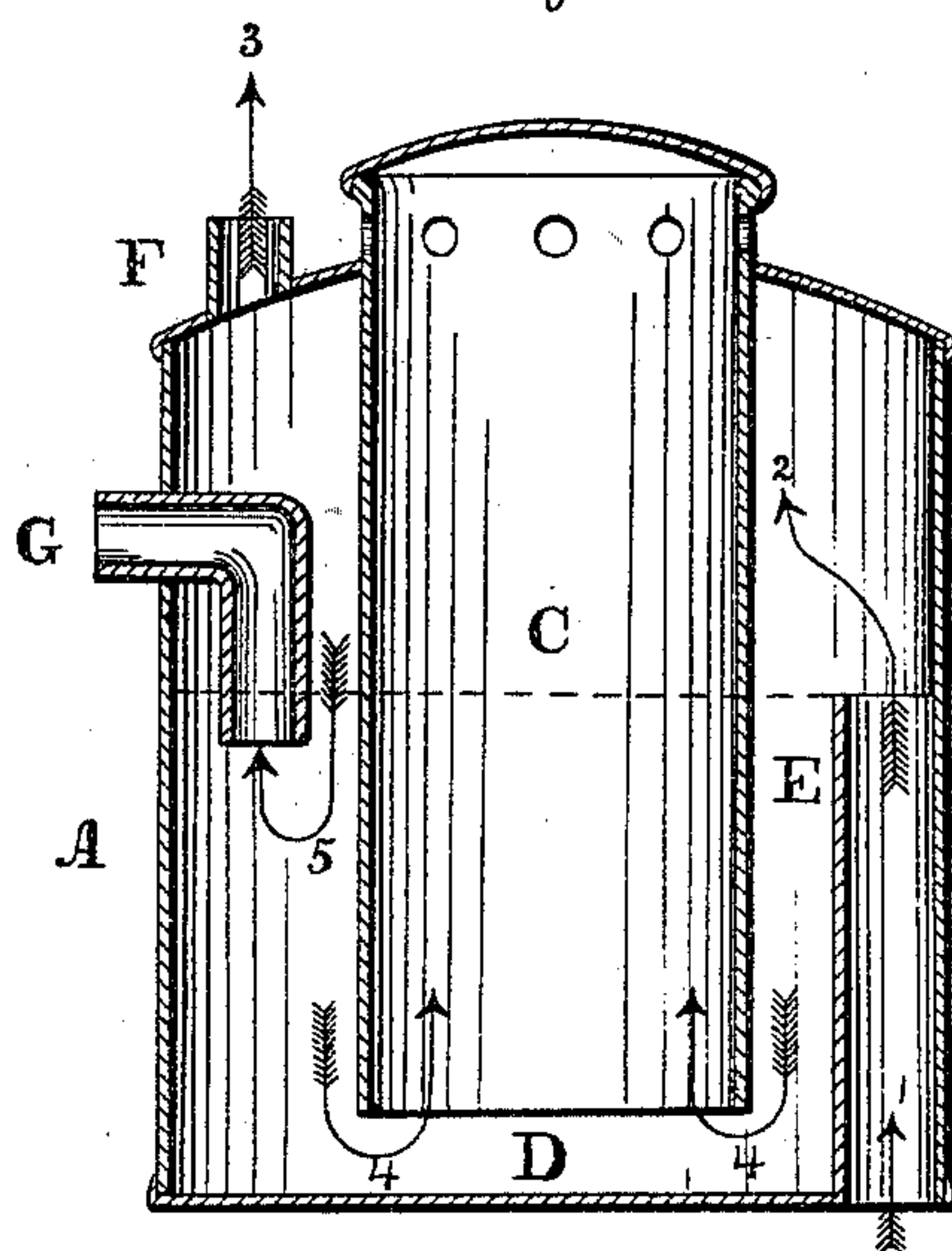


Fig. 3.

Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE,

CHARLES L. VASQUEZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
REX & BOCKINS, OF SAME PLACE.

IMPROVEMENT IN GAS-GENERATING APPARATUS.

Specification forming part of Letters Patent No. **170,788**, dated December 7, 1875; application filed
April 13, 1875.

To all whom it may concern:

Be it known that I, CHARLES L. VASQUEZ, of the city and county of Philadelphia, and the State of Pennsylvania, have invented a new and useful Improvement in Gas-Generators; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a front view of the device embodying my invention. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a side view of a detached portion.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists in an apparatus which is adapted to compensate for an increase in the pressure of air and gas, or for back pressure of gas, whereby there is a uniformity in the supply of air to the carbureter, and likewise in the flow of gas therefrom, and danger of explosion is avoided. It also consists in a hot and cold air pipe for the blower.

Referring to the drawings, A represents a cylinder, which is located upon, aside, or near the blower or air-pump B of a carbureting or gas apparatus. This cylinder is closed at top and bottom, and within the same is suspended a cylinder, C, which is of smaller diameter than the cylinder A, is open at top and bottom, and extends to near the bottom of the cylinder A, so that there is a space, D, between the bottoms of the two cylinders, communicating with each other. E represents a tube, which projects and opens into the cylinder A, and communicates with the blower B, said tube extending, preferably, to a height not less than half that of the cylinder A. F represents a tube, which communicates with the cylinder A, and conveys air therefrom to the carbureter. G represents a tube, one end of which projects into the cylinder A, and the other ends opens into the atmosphere, the end in the cylinder A extending below the top line of the tube E.

The operation is as follows: Water is introduced into the two cylinders to about the top of the tube E, so that the bottom of the tube G and of the inner cylinder C are sealed thereby, the height of water being adjusted relatively to a determined pressure of air. The air from the blower B enters the cylinder A through the tube E, as shown by arrow 1, is directed through the upper space of said cylinder, as at arrow 2, and escapes through the pipe F, arrow 3, to the carbureter. As long as the air enters the cylinder A with uniform pressure it will flow to the carbureter with like effect. Should there be an increased pressure or excess of air the increased volume thereof acts downward on the water, and, owing to the communication D between the two cylinders, the water is permitted to descend in the cylinder A, the subsequent natural course thereof being upward into the cylinder C. (See arrows 4.) This falling or descent of the water in the cylinder uncovers the bottom of the tube G, and thus provides means for escape of the increased pressure or excess of air, as indicated by arrow 5. When the normal pressure is restored the water falls in the cylinder C and rises in cylinder A, thus again sealing or covering the bottom of the tube G.

In the event of an increase of pressure of gas in the carbureter, or what is known as "back pressure," the gas avails itself of the air-conveying tube F, and rushes therethrough to the cylinder A.

The action of the gas in this case on the water is similar to that of the air, as has been set forth. The water is forced from the cylinder A, and the bottom of tube G being thereby uncovered, the gas has an outlet to the atmosphere.

It will be seen that, as there is provision or compensation made for the increased pressure of air to the carbureter, or increased or back pressure of gas, the light produced will be uniform and steady.

K represents the pipe which feeds the blower B with air. In order that the air may be warmed or heated before passing into the blower, said pipe is continued, as at L, beyond its point of

connection with the small pipe *a*, immediately leading into the blower, and extended to the range, stove, or other heating apparatus of the house, so that when the blower is in operation the heat of the apparatus will be drawn into the pipe L, and unite with and warm the ordinary air entering at K, the warmed air entering the blower through the pipe *a*.

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

1. The combination, with a carbureter or gas apparatus, of a compensator, constructed of the cylinder A and inclosed cylinder C, with the communicating space D between

them, the conveying-tube F, the upwardly-projecting tube E, and the downwardly-projecting tube G, all constructed and operating substantially as and for the purpose set forth.

2. The combination, with the blower, of the warm and cold air pipes K L, continuous of each other, and having an outlet-pipe, *a*, common to both pipes, as set forth, and for the purpose described.

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Witnesses:

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