

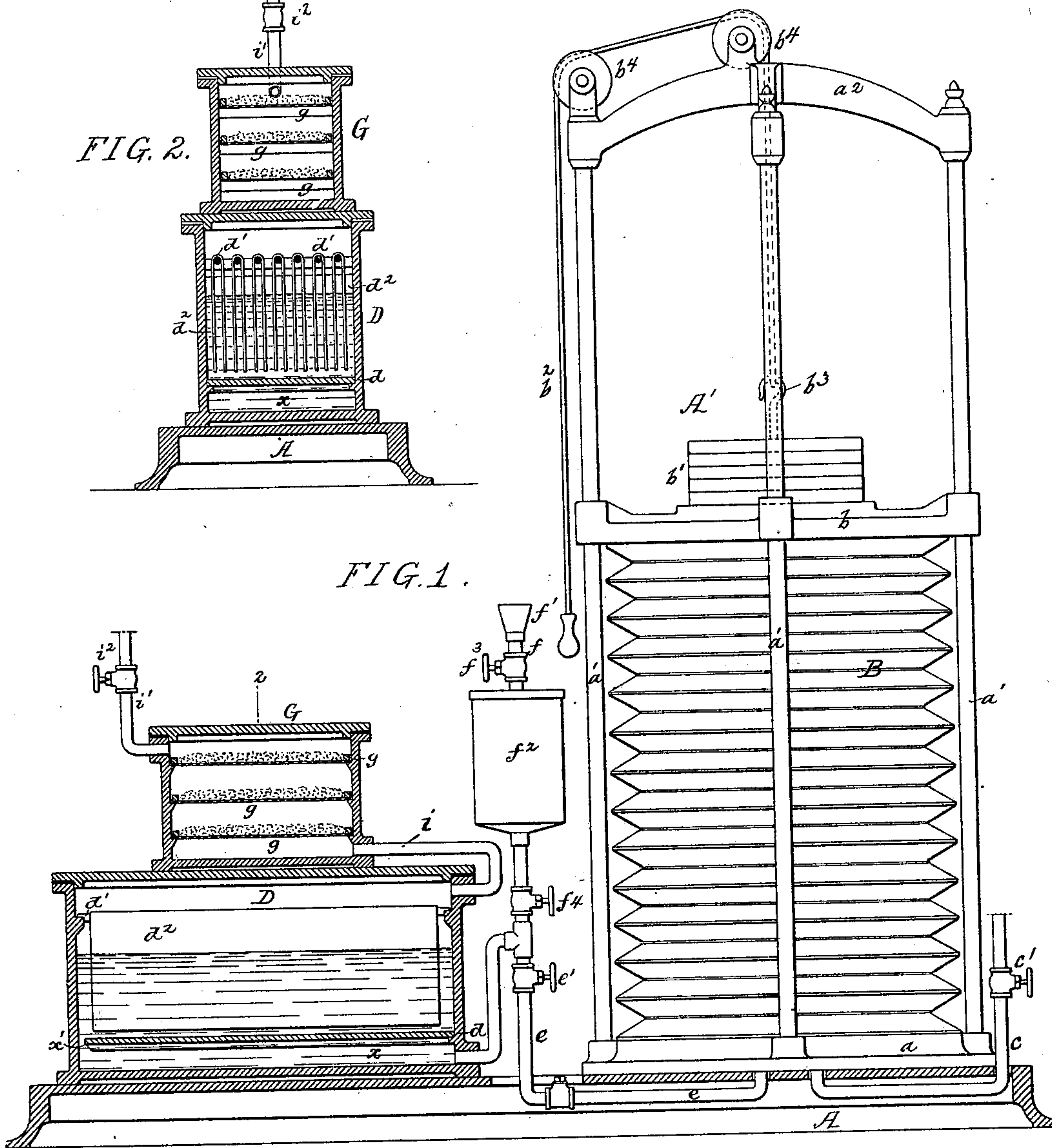
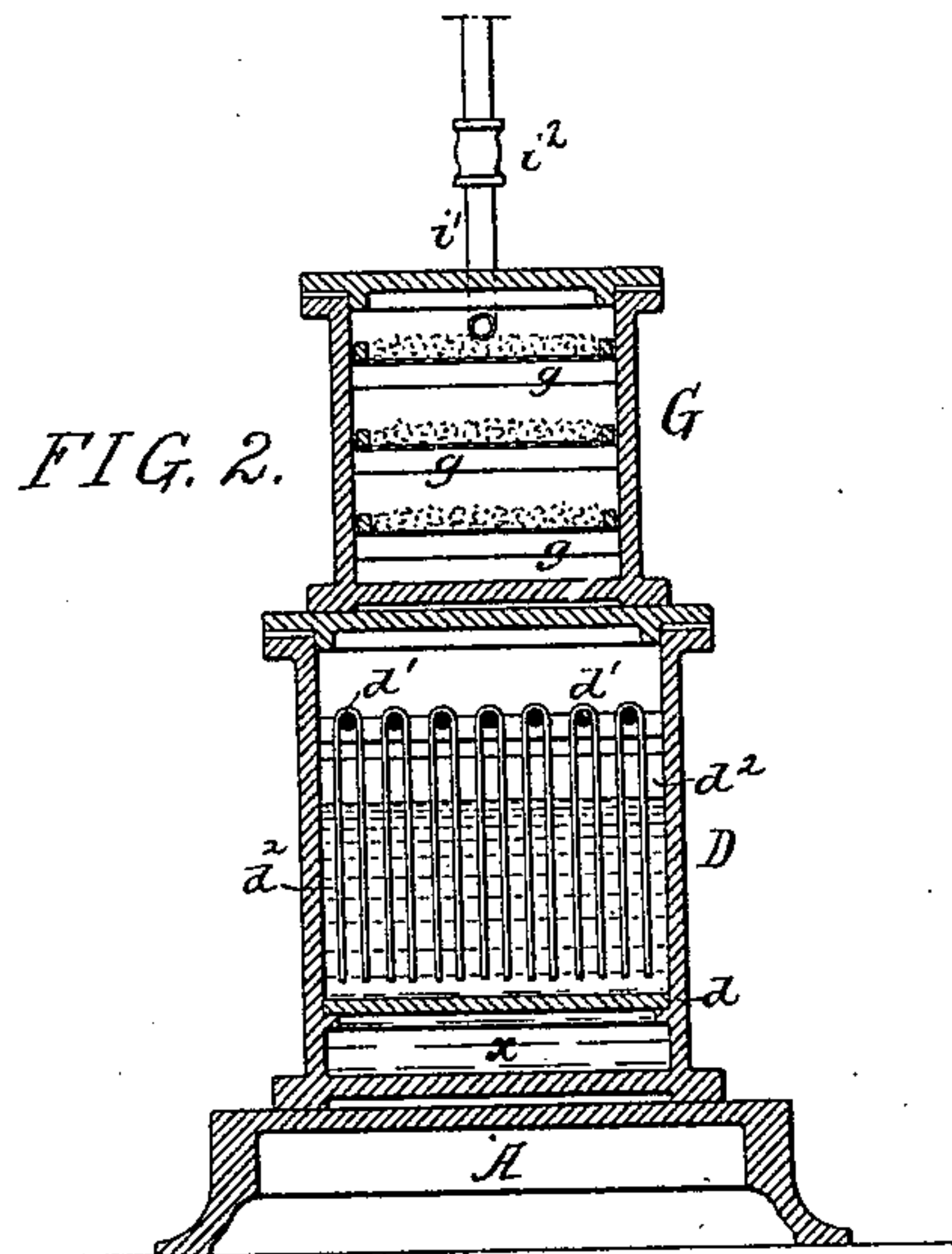
No. 626,176.

Patented May 30, 1899.

F. LOGAN.
CARBURETER.

(Application filed Feb. 15, 1898.)

(No Model.)



Witnesses:
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Munroe Boye

Inventor:
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UNITED STATES PATENT OFFICE.

FERDINAND LOGAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
TWO-THIRDS TO THOMAS LEIPER HODGE, OF SAME PLACE, AND
PRICE WETHERILL JANEWAY, OF MEDIA, PENNSYLVANIA.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 626,176, dated May 30, 1899.

Application filed February 15, 1898. Serial No. 670,389. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND LOGAN, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Gas Apparatus, of which the following is a specification.

The object of my invention is to construct an apparatus for the manufacture of gas in an economical manner.

My invention relates particularly to the carbureter through which air is passed under pressure.

In the accompanying drawings, Figure 1 is a side view, partly in section, of my improved gas apparatus; and Fig. 2 is a section on the line 2 2, Fig. 1.

A is the base of the machine, and on this base is mounted the air-pressure apparatus A', consisting in the present instance of a bellows B, secured to a bottom plate *a* and to a sliding head *b*. Extending from the bottom plate *a* in the present instance are four standards, on which the top plate of the bellows slides, and these standards are supported at the top by suitable frames *a*².

*b*¹ are weights which can be mounted on a head, and any number of these weights can be arranged to give the desired pressure.

c is the air-inlet pipe, having a stop-valve *c'*, and *e* is the outlet-pipe to the carbureter.

*b*² is a cord or chain which is attached to the hook *b*³, secured to the head *b*, and this rope passes over guide-wheels *b*⁴.

When the air is about exhausted from the bellows, by simply drawing upon the cord *b*² the head *b* can be raised. Before raising the head the valve *c'* is opened, so as to allow air to freely enter the bellows. When the head is raised sufficiently, the valve *c'* is shut, so that the air will be held until the valve *e'* in the pipe *e* is opened.

D is the carbureter, made in the present instance in the form of a quadrangular casing, having a partition-plate *d* near the bottom, and this partition-plate stops short of one end, forming a space *x* under the plate and a channel *x'*, which forms a communication with the main body of the carbureter.

Mounted on brackets in the carbureter are a series of bars *d'*, from which are suspended

sheets of absorbent material. These sheets in the present instance consist of strips of fabric, on which are secured sheets of asbestos.

I charge the carbureter with a liquid solution to about one-half its capacity, leaving the other half as a gas-chamber. I preferably introduce the mixture into a feed-pipe *f*, which has a funnel *f'* at its upper end, the mixture flowing into a measuring vessel *f*², and above this vessel is valve *f*³ and below this vessel is a valve *f*⁴, so that by opening the valve *f*³ and pouring the liquid into the measuring-receptacle *f*² the proper amount of liquid is measured to charge the apparatus, and by opening the valve *f*⁴ and closing the valve *e'* the liquid will flow into the apparatus through a portion of the air-pipe.

When the carbureter is charged, the valve *f*⁴ is closed and the valve *e'* opened, so that air under pressure will be admitted to the carbureter.

Mounted in the present instance directly upon the carbureter is a purifier G, having a series of trays *g* mounted on lugs on the casing, and these trays are made, preferably, of frames, on which is stretched wire-gauze. I spread upon these trays magnesia, preferably in the powdered form.

The gas enters the purifier from the carbureter through a pipe *i* and escapes from the purifier through a pipe *i'*, provided with a suitable valve *i*². This outlet-pipe *i'* communicates with the gas-pipes leading to the several burners.

I may use any hydrocarbon, such as benzine or naphtha, in the carbureter, and I may use with this an enricher, if necessary, and as the air passes into the carbureter from the air-pressure apparatus it passes under the partition-plate *d* up through the passage *x'* into the main chamber of the carbureter. The air-gas thus produced passes through the pipe *i* into the purifier G, passing through the several layers of magnesia or other suitable material and out through the pipe *i'* to the service-pipe.

If it is wished to produce fuel-gas only, I may dispense with the purifier, and in this event I simply force air under pressure through the liquid contained in the carbureter.

reter, and the gas thus produced accumulates in the upper portion of the carbureter and may be used either direct or transferred to a holder for use as a fuel-gas, and it may then
5 pass through the purifier to produce a rich illuminating-gas.

I claim as my invention—

1. The combination in a carbureter of a gas apparatus, of the casing having a partition
10 arranged at a distance above the bottom, an inlet for air entering the space under the partition, an opening in the partition communicating with the main chamber of the carbureter, a series of absorbent sheets mounted
15 in the chamber above the partition so that air forced into the casing will pass through the liquid under the partition and then through the liquid in which the absorbent sheets are partially submerged, substantially as de-
20 scribed.

2. The combination in a carbureter, of a casing containing liquid, a horizontal partition near the bottom of said casing, an opening in one end of the partition, a series of
25 sheets of absorbent material suspended within the casing above the partition, an inlet for air below the partition and at the end oppo-

site the opening in the partition, and an outlet for carbureted-air gas above the liquid-level so that air will travel through the liquid
30 under the partition and up and past the suspended sheet of absorbent material to the outlet, substantially as described.

3. The combination in a carbureter, of a casing containing liquid, a solid horizontal
35 partition-plate near the bottom of the casing stopping short of one end of the casing and thus forming a passage, a series of rods in the upper portion of the carbureter, absorbent sheets consisting of fabric surfaced with as-
40 bestos suspended from said rods and partially immersed in the liquid, a combined air-inlet and liquid-feed pipe entering the carbureter under the partition, air and liquid valves for said pipe, and an outlet-pipe at the top of the
45 carbureter, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FERDINAND LOGAN.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.