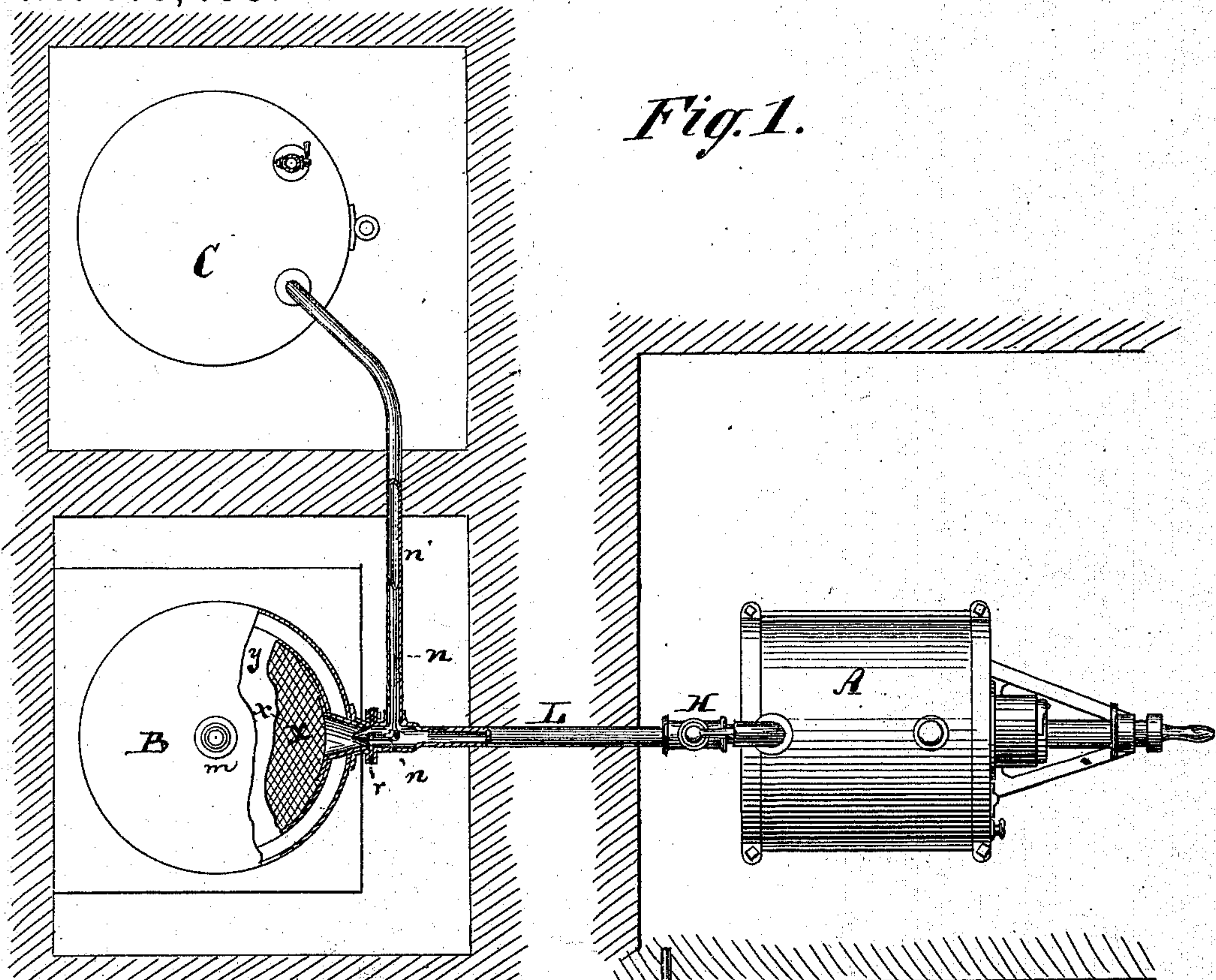


H. JUNGLING.  
Carbureters.

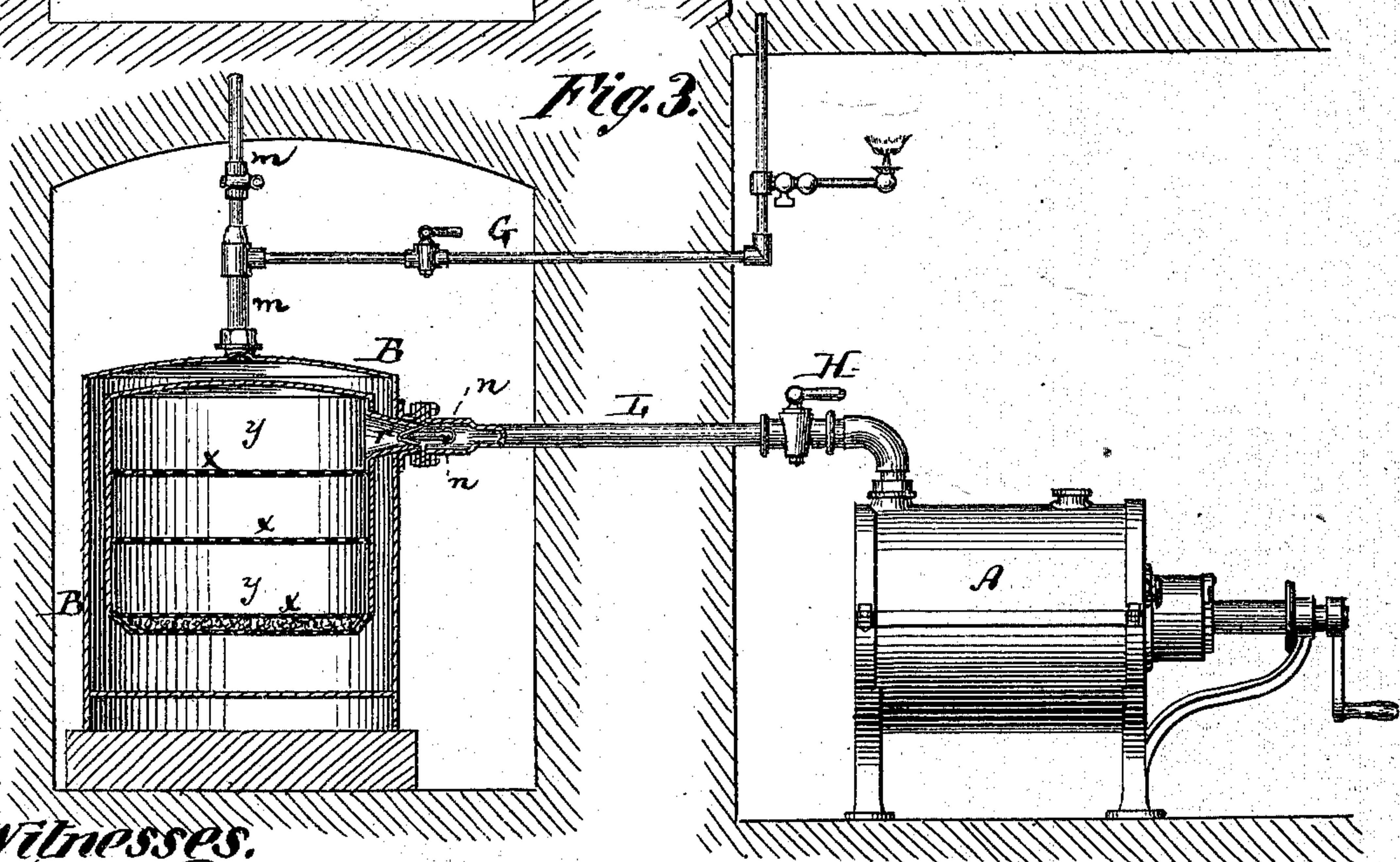
No. 146,458.

Patented Jan. 13, 1874.

*Fig. 1.*



*Fig. 3.*



Witnesses.  
John Becker.  
Fred Haynes

H. Jungling  
by his Attorneys  
Brown & Allen

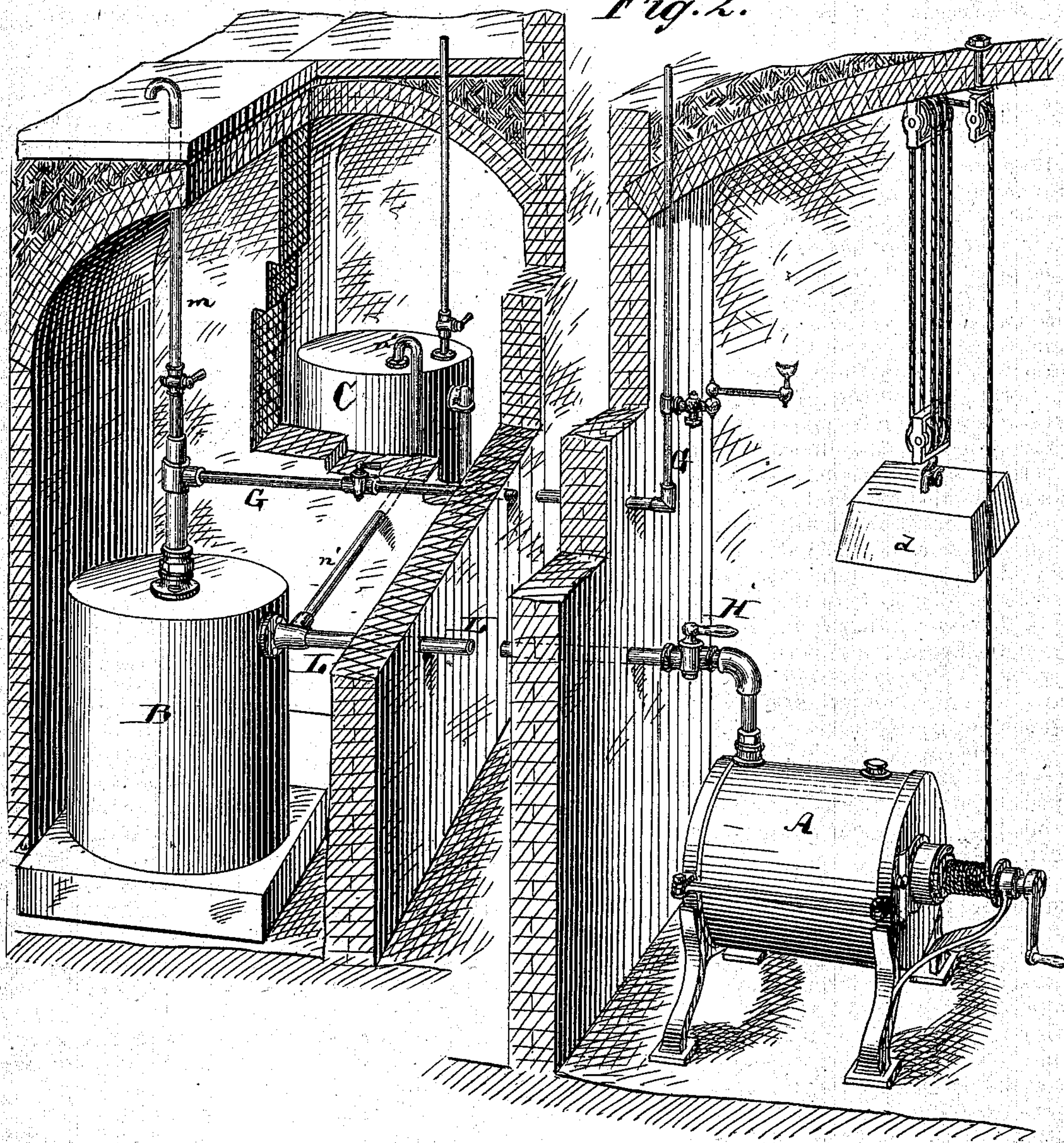


H. JUNGLING.  
Carbureters.

No. 146,458.

Patented Jan. 13, 1874.

*Fig. 2.*



Witnesses.  
John Becker.  
Fred Harnes

H. Jungling  
by his Attorneys  
Brown & Allen



# UNITED STATES PATENT OFFICE.

HUGO JÜNGLING, OF HANOVER, PRUSSIA.

## IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. 146,458, dated January 13, 1874; application filed August 13, 1873.

*To all whom it may concern:*

Be it known that I, HUGO JÜNGLING, of Hanover, in the Kingdom of Prussia, have invented certain Improvements in Gas Apparatus, of which the following is a specification:

This invention has for its object to produce a gas-generator or carbureter in which the danger of ignition and explosion is avoided, and in which gas may be produced on the very moment and to the very extent when and as it is wanted, and in which, furthermore, the current of air introduced from the air-producer to the generator corresponds exactly to the quantity of gas which is consumed, in which even undistilled hydrocarbons can be used and consumed, and in which, finally, the apparatus is not subject to repeated filling and restoring.

My invention consists in combining the liquid-pipe with an air-pipe, both of said pipes being connected with the liquid-reservoir and the air-pipe leading from the blower into the gas-generating chamber, whereby a constant pressure of air is present in the reservoir, and at the same time the liquid is forced into the generator in the form of a spray.

In the drawing, Figure 1 is a top view, partly in section, of my improved gas apparatus. Fig. 2 is a perspective view of the same, and Fig. 3 is a side view of the blower and generator.

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

A represents an ordinary blower, by which air is forced, in the usual manner, into a pipe, L, a weight, *d*, or other power, operating the same. The air from the blower A passes through the pipe L into a generator, B, the end of the pipe L, before entering the generator B, being shaped into a nozzle, *r*. A second pipe, *n*, conveying the liquid to be evaporated from a reservoir, C, to the generator B, enters the pipe L directly behind the nozzle *r*, and terminates in the nozzle. The air forced through the nozzle *r* creates a suction in the pipe *n*, and draws thereby the liquid through such tube *n* into a cylinder, *y*, that is contained within the generator B, throwing it in form of a fine spray, as indicated in Figs. 1 and 3. It is evident that the stronger the current of air passing through the tube L, the more of the liquid it will carry along with it, so that the mixture will always be in the same proportion. A pipe, *n'*, surrounds the pipe *n*, in

order to convey as much air from the pipe L to the top of the reservoir C as liquid has been discharged through the pipe *n* into the cylinder F, thus preventing a vacuum in the reservoir C. In order to entirely utilize precipitations from the mixture of the air and liquid introduced as spray and subjected to instant evaporation, as well as to make the produced gas perfectly homogeneous, and to give the discharged gas a uniform motion, the mixture is, before leaving the generator B, forced through a series of sieves, *x x*, situated in the cylinder *y* beneath the outlet of the pipe L. The gas created by the evaporation of the fine spray discharged from the nozzle *r* will then pass downwardly through the sieves *x*; thence upward, between the cylinder *y* and the outer case of the generator B, into the gas-pipe G. A small upright pipe, *m*, serves to let off the non-impregnated air, or any other light gas that may have accumulated in case the vessel B has not been used for any length of time.

The three main parts A, B, and C of the apparatus are entirely separated from each other, and erected preferably in such a manner that the reservoir C is situated on a lower level than the generator B and blower A. This separation prevents the danger of fire, which is further avoided by admitting the liquid from the reservoir C always in proportion to the consumption of gas. When it is desired to arrest the operation of the machine, it is only necessary to shut a stop-cock, H, in the pipe L, which will prevent the blower from forcing air through such pipe, and consequently from operating.

I do not claim the process of charging air or gas with hydrocarbon fluids by the atomizer or injector principle; but

What I claim as my invention is—

The air-pipe *n'*, surrounding the liquid-pipe *n*, and both connected with the liquid-reservoir C and air-pipe L, having the nozzle *r* for spreading the liquid and air in the cylinder *y* of the generator B, all in the described combination, substantially as set forth.

This specification signed by me this 6th day of June, 1873.

HUGO JÜNGLING.

Witnesses:

CHR. FISCHER,  
H. HEIMERS.