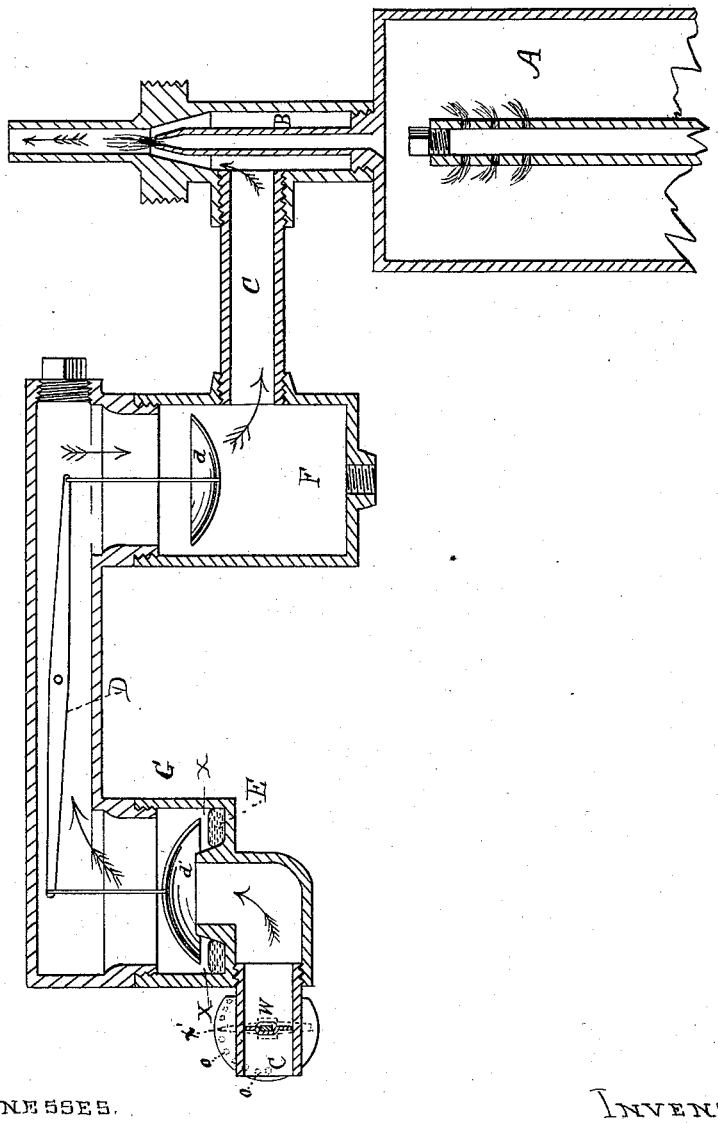
G. W. TINSLEY.

Hydrocarbon Gas Apparatus.

No. 163,117. Patented May 11, 1875.



WITNESSES.

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James Stevenson.

INVENTOR

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UNITED STATES PATENT OFFICE.

GEORGE W. TINSLEY, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN HYDROCARBON-GAS APPARATUS.

Specification forming part of Letters Patent No. **163,117**, dated May 11, 1875; application filed March 1, 1875.

To all whom it may concern:

Be it known that I, GEORGE W. TINSLEY, of Minneapolis, Minnesota, have invented a certain new and useful Improvement in Hydrocarbon-Gas Machines, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings making a part of this specification, in which the figure represents a vertical section.

My invention relates to an apparatus for carbureting air for lighting buildings; and it consists in the construction and arrangement of an air-regulator, in combination with pivoted beam-valves and pipes, as hereinafter explained, and is an improvement on my Patent No. 155,774, dated October 6, 1874.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

A represents the intermediate can, and B the injector, as shown in the said patent. C represents the air-pipe, and *d* the air-valve. This air-regulator is an improvement on the air-valve used in my carbureter, as described in said patent, it having a dish-shaped disk, *d*, for its counterweight, while the inverted dish-shaped disk or check valve *d'* rests with its rim in a cup, E, holding mercury or other heavy liquid when the valve is closed, thus rendering the valve perfectly tight and at the same time very delicate in its action, as it is nearly balanced by the counter-disk *d*. Below the disk *d* is a chamber, F, for the purpose of collecting any liquid which might possibly escape from or through the injector, and which, by the current of air through the pipe C, will be returned to its proper channel.

The operation of my apparatus is as follows: When the injector is put in operation a vacuum is immediately created, and the atmospheric air entering through the valve-cock W raises the valve *d'* and follows the direction indicated by the arrows until it reaches the injector and mingles with the vaporized gasoline in its passage to the gasometer.

The valve-cock W is so constructed with a disk, *x*, and spring-catch *x'* and stops *o*, that I am enabled to open the valve to any extent desired without danger of change.

It is evident that this furnishes a ready and effective means of controlling the character of the gas, as the less air is allowed to pass the valve-cock *w* richer will be the gas, and vice versa.

I am aware that mercury and other heavy liquids have been used for valve seats or seals, and, therefore, I do not broadly claim the same.

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

The combination of the air-regulator, consisting of the case G D F containing pivoted beam, inverted dish-shaped valve *d'*, dish-shaped counterweight *d*, and liquid seat E, with the air-pipe C C, and the injector B, substantially as and for the purpose set forth.

GEORGE W. TINSLEY.

Witnesses:

L. A. BEARDSLEE,

WILL. H. MOXON.