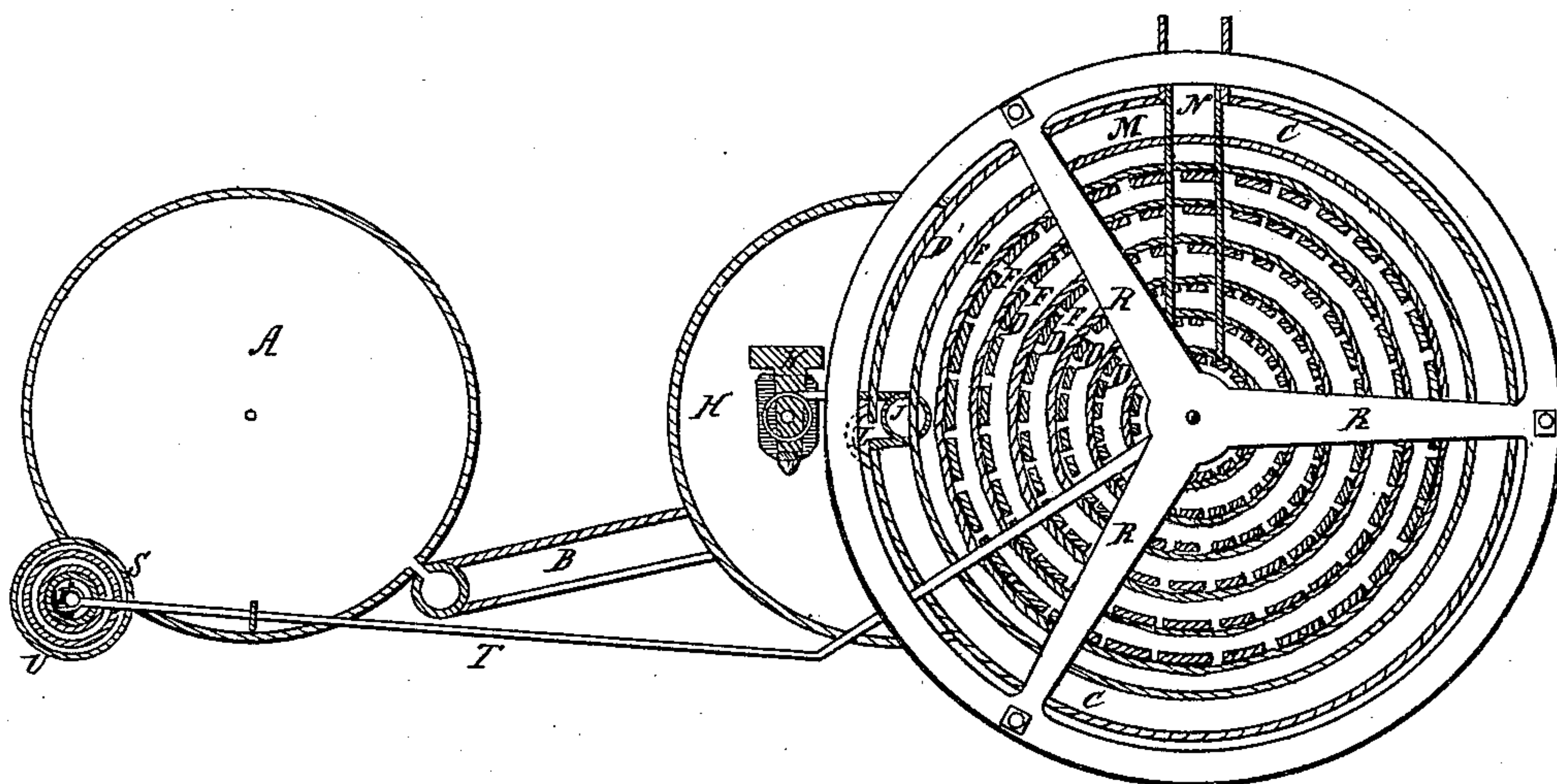
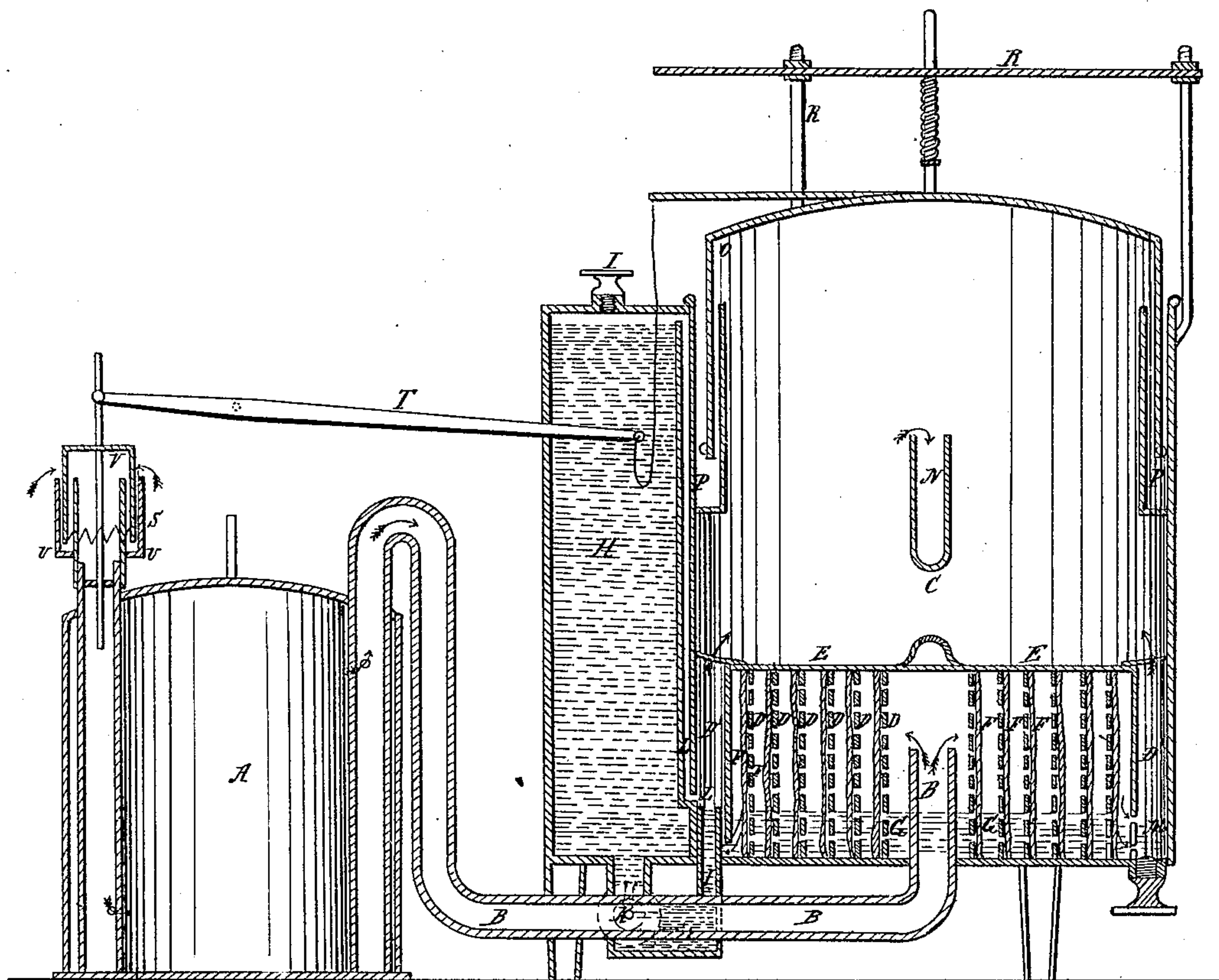


J. A. BASSETT.

Carbureter.

No. 46,771.

Patented Mar. 14, 1865.



Witnesses:

M. Bellamyfield
T. B. Russell.

Inventor:

John A. Bassett

UNITED STATES PATENT OFFICE.

JOHN A. BASSETT, OF SALEM, MASSACHUSETTS.

IMPROVED APPARATUS FOR CARBURETING AIR.

Specification forming part of Letters Patent No. 46,771, dated March 14, 1865.

To all whom it may concern:

Be it known that I, JOHN A. BASSETT, of Salem, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Apparatus for Carbureting Air or Gases; and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawings accompanying this specification.

The nature of my invention consists in the arrangement and construction of a carbureting apparatus, by means of which the air to be carbureted is caused to come in contact with the hydrocarbon liquid in very finely-divided streams, so that each atom of air may be brought in contact with an atom of hydrocarbon vapor, and in the arrangement of these surfaces so that this operation is successively repeated, each time increasing the surface, so that the air may be regularly and gradually charged with an increasing amount of vapor until it is saturated.

It also consists in enveloping a series of concentric porous diaphragms with a fibrous material woven expressly for the purpose, and possessing the greatest amount of capillary power in the direction of its length, through and over which the air passes to be carbureted.

It also consists in controlling the action of the pump by which the air is supplied to the carburetor, so that the amount of air required to keep the holder at the proper height may be admitted and regulated.

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

In the drawings, Figure 1 is a sectional view, and Fig. 2 is a plan, of the apparatus used.

Similar letters of reference refer to like parts in both section and plan.

The air which forms the base of the gas to be manufactured is pumped into the carburetor by the pump A, which consists of the dry meter used for measuring gas, adapted to this purpose, and which may be actuated by any of the motors in use, of which I prefer to use a train of gearing and weight. From the pump A the air is forced through the pipe B into the carburetor C. A series of concentric diaphragms or cylinders, D, made of perforated tin-plate, are arranged around the inlet-pipe

B, the opening of which is above the level of the hydrocarbon liquid, at regular distances apart. These partitions are covered by a plate, E, at the top, and attached to them for the convenience of lifting out, &c. They are covered with a textile fabric, F, woven for this purpose, the filling of which is made of large loose threads of long fiber for the purpose of absorbing as much of the hydrocarbon as possible. This is stretched tight over these cylinders, and the air is obliged to pass successively through them.

The hydrocarbon liquid G is maintained at a constant level in the carburetor by means of a reservoir, H, which is filled at the cap I, and which passes into the carburetor by means of the pipe J. A stop-cock, K, is placed in this pipe, and when the reservoir is to be filled this cock is to be shut. After it is full the cap I should be closed air-tight. The stop-cock K is then opened. The hydrocarbon liquid will then flow in and fill the carburetor up to and covering L, which communicates with a pipe above the level of the liquid in the reservoir. When this opening is covered, the supply will be stopped until, by the exhaustion of the liquid below the level of the opening, air is admitted to the reservoir, and it is again supplied, and thus a constant level is maintained.

The outer cylinder, D', of the series D is not perforated, except near the bottom, where there is a ring of openings, M, about a quarter of an inch below the level of the liquid. The air passes through these openings below the level of the liquid, bubbling out into the body of the carburetor. Completing the carbureting process, it then passes out at the outlet-pipe N, to be burned.

A constant pressure is maintained upon the gas by the use of the holder O, which moves in the water-seal P, and is guided by the frame R.

The motion of the gas-holder is controlled by the mercury-valve S, which is attached by the lever and cord T to the rod on the top of the holder. When the holder rises as high as is desired, the lever is raised, depressing the valve, and throttles the supply of air until the holder is lowered by the use of the gas. When the lever drops, the valve opens, and thus a regular supply of air is maintained in proportion to the amount used, and the holder is

prevented from rising against the frame R, which would render the light unsteady by varying the pressure, and the lower edge would unseal, allowing an escape of gas. This valve consists of an annular cup, U. A cap, V, having the lower edge serrated, is inverted over the cup, and attached by the rod to the lever and cord.

The arrows show the direction of the currents of air.

The object in view in this invention is the regular, progressive, and uniform carburation of the air. It is almost entirely automatic, the gas being made only as it is wanted.

As the air passes through the first of the diaphragms or cylinders, it receives at this point a very small portion of vapor. At the next partition the streams of air are again divided and strained. This process is repeated with a constantly increasing surface, which allows for the expansion of the air as it absorbs the hydrocarbon, and it can by no means escape a thorough permeation of the vapor.

It is important to use a fabric in covering the partitions which shall possess great capil-

lary power. I have attained this object in the fabric shown.

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

1. The general arrangement of the apparatus, consisting of the several parts as shown and specified.

2. The carburation of air or gases by the use of the concentric perforated cylinders with the fibrous covering, and partially immersed in the hydrocarbon liquid, maintained at a uniform height, substantially as shown and described.

3. The automatic regulation of the quantity of air to be admitted to the carburetor by means of the valve connected with and operated by the holder through the lever and cord or their equivalents, when used for this purpose, as shown and specified.

JOHN A. BASSETT.

Witnesses:

M. B. MANSFIELD,
T. B. RUSSELL.