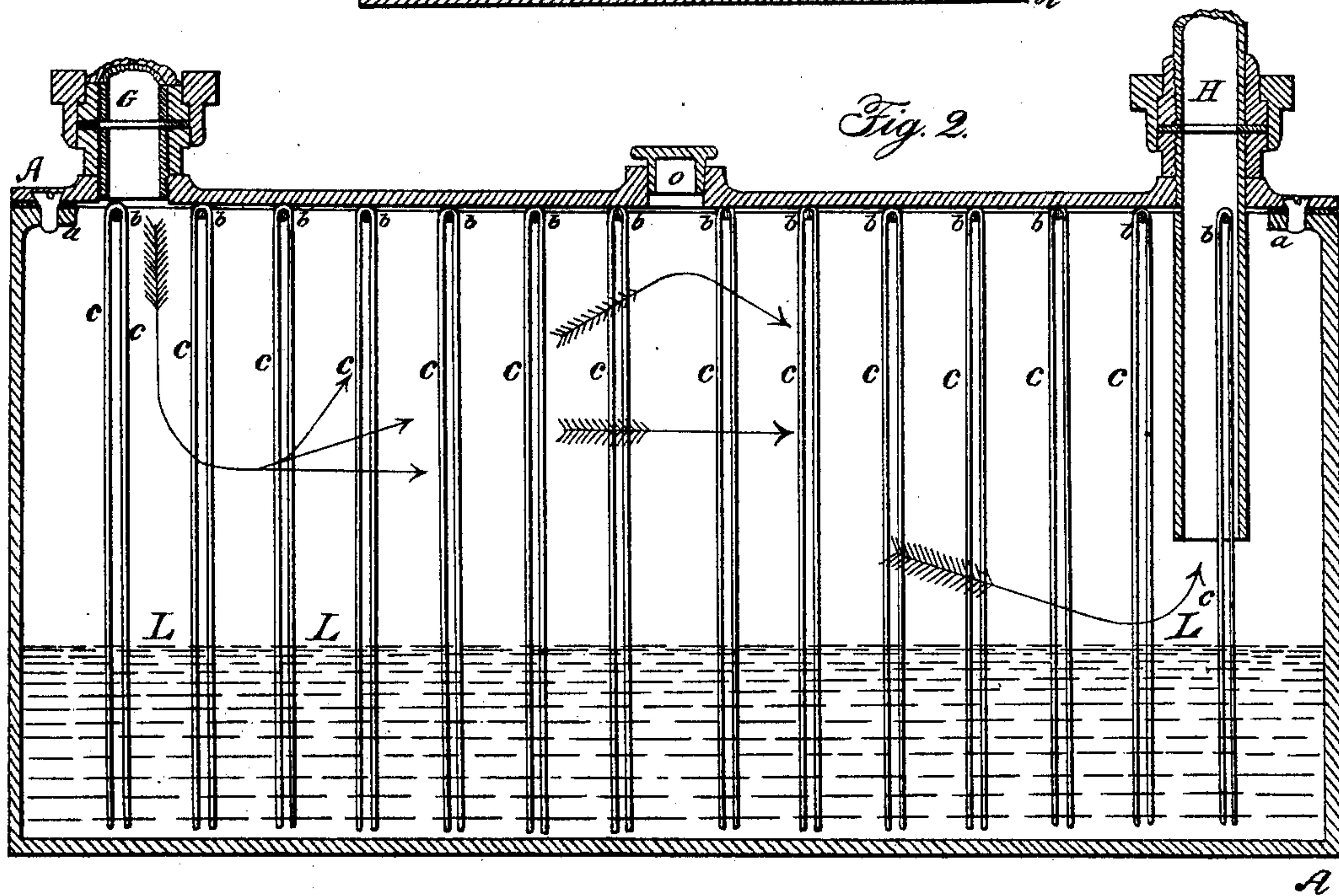
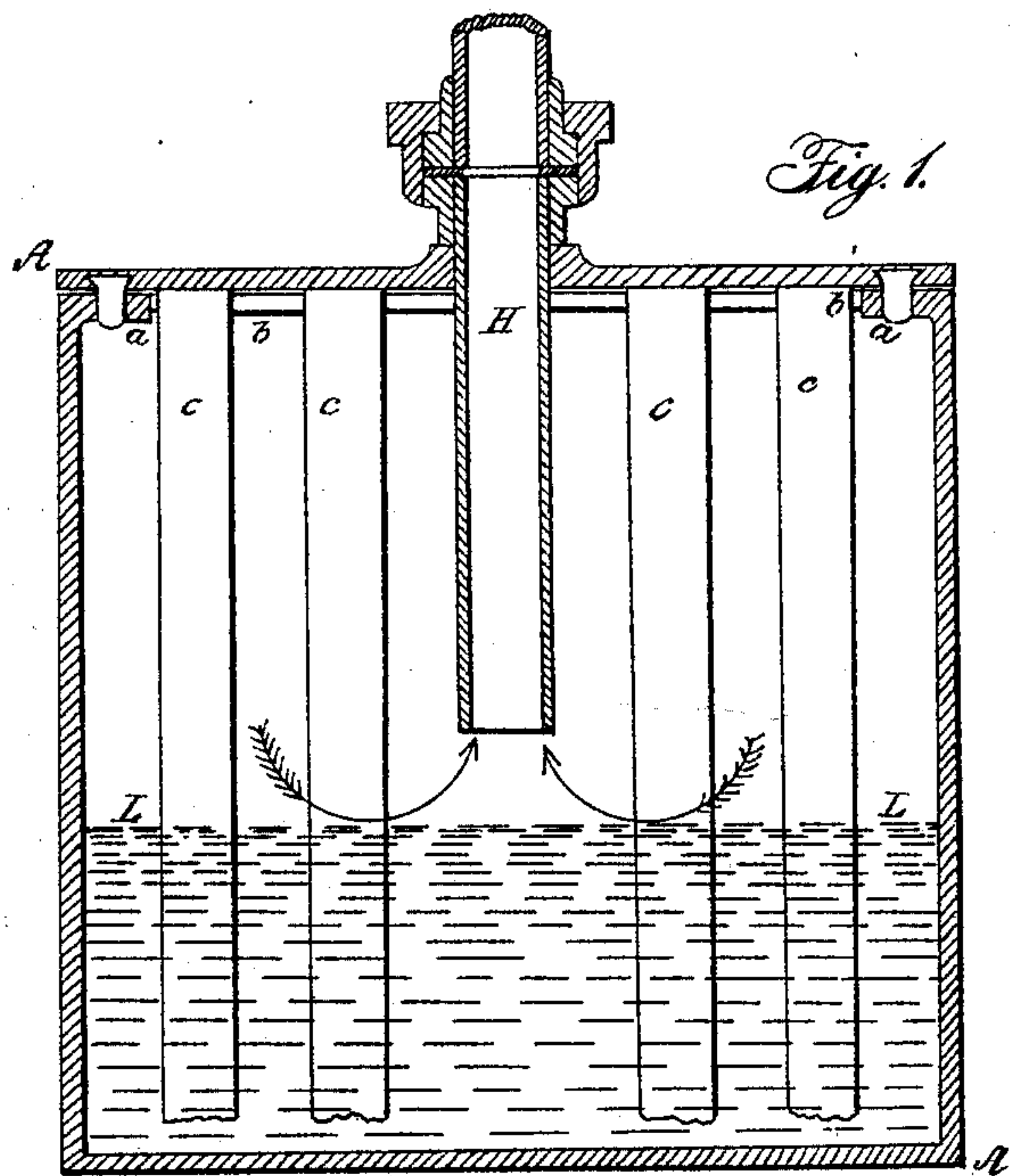


J. F. BOYNTON.

Carbureter.

No. 69,621.

Patented Oct. 8, 1867.



Witnesses:

*S. L. Slosson*  
*Stanley Bagg*

Inventor:

*John F. Boynton.*



# United States Patent Office.

JOHN F. BOYNTON, OF SYRACUSE, NEW YORK, ASSIGNOR TO HENRI L. STUART, OF NEW YORK CITY.

*Letters Patent No. 69,621, dated October 8, 1867.*

## IMPROVED GAS-LIGHT MULTIPLIER.

The Schedule referred to in these Letters Patent and making part of the same.

### KNOW ALL MEN BY THESE PRESENTS:

That I, J. F. BOYNTON, of the city of Syracuse, county of Onondaga, and State of New York, have invented a new and useful Improvement in that Class of Apparatus applied to the Increase of the Illuminating Elements always necessary in the ordinary illuminating gas for lighting dwellings and cities.

It is well known that if the ordinary illuminating gas be passed a considerable distance through cold tubes or pipes, as is always the case in cold climates, much of the illuminating property is lost; in fact, the hydrocarbons, such as benzine, toluole, &c., which I consider very important elements, are precipitated in condensation, and may be found at the water-traps of the street mains instead of being carried to the burners where they are most needed. However perfectly the gas may be manufactured and started from the works, it will thus be readily seen how its illuminating properties may be and are always to a greater or less degree diminished before it reaches the consumer. Many methods have, too, from time to time, been suggested for overcoming the difficulty, and the most practical are certainly those which will supply the deficient illuminating elements nearest the point of consumption, or where they cannot again be lost. This is the object of my invention, and consists simply of an apparatus for thoroughly commingling the deficient hydrocarbons with the depreciated gas; and the following is a sufficiently accurate account or description to enable any one skilled in such matters to construct the same, when taken in connection with the accompanying drawings, which form a part of my specification.

Figure 1 represents a cross-section of the "multiplier."

Figure 2, a longitudinal section of the same.

Like letters refer to like parts in all the drawings.

A A is a box or receiver, of any convenient size and form, for holding the carbons and agents for mixing them with the gas. I have preferred to make mine of cast iron, and about as high as they are wide, and twice the length of their height. At the top of said box, as shown at *a a*, is a flange projecting inward, which serves, in addition to a broad surface, for receiving the cover as a support for wires or ribs *b b b b*, and to which are suspended strips or strands of fibrous material, as at *c c c c*, said strips reaching down into the liquid in the lower part of the box, as at L. These wires or ribs are let into recesses or notches in these flanges to such a depth that when the cover is placed upon the top of the box it prevents the wires from shifting out of place. The hydrocarbons, of which there are great varieties, are poured into the "multiplier" at O, or any convenient opening in the box, and it is unnecessary to introduce more at any time than to keep the lower ends of the fibrous strips well saturated, as it is intended that said strips shall, by their capillary attraction, lift the carbons toward the top of the box, and thereby expose them upon a very extensive surface to the depreciated gas which is introduced, as at G, at one end of the "multiplier," and after commingling with the exposed carbons passes out at the opposite end to the burners through the tube H. The immense surface and multitudinous points which this fibrous material thus affords in so compact a space will be found, I believe, the very best agents for commingling the carbons with the gas.

By this arrangement the gas is thoroughly charged with hydrocarbons, whereby its illuminating power is brought up to the highest point. The construction of the apparatus is such as to secure perfect safety and efficiency. From the manner in which the carburetting-chamber or box is closed there can be no leak either of liquid or gas, even under strong internal pressure, which has not been obtained with water or mercury seals, as heretofore used. The interior of the box or carburetter I have described as filled, or partially filled, with capillary material. This I regard as the best arrangement; but it is evident that the interior of the closed box may be divided up so as to form tortuous passages.

The essential feature of my apparatus is a closed box or vessel, with its interior filled, or partially filled, with capillary material, or its equivalent, so as to secure a large evaporating surface. I do not confine myself to any form of box, or to any kind of packing to close the joint between the box and its lid or cover, nor to the arrangement of the interior of the box for the purpose of securing a large evaporating surface, for these may be all greatly varied without departing from the principle of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A closed box, containing capillary material, or its equivalents, with entrance and exit-tubes, so as to charge gas with volatile hydrocarbons, substantially as described.
2. A box with a lid and close joints, so as to form a carburetting-chamber for gas, substantially as described.
3. A close chamber or box, with cloth or other capillary material on rods or supports, substantially as described.

JOHN F. BOYNTON.

Witnesses:

S. H. SLOSSON,

THOMAS S. BREWSTER.