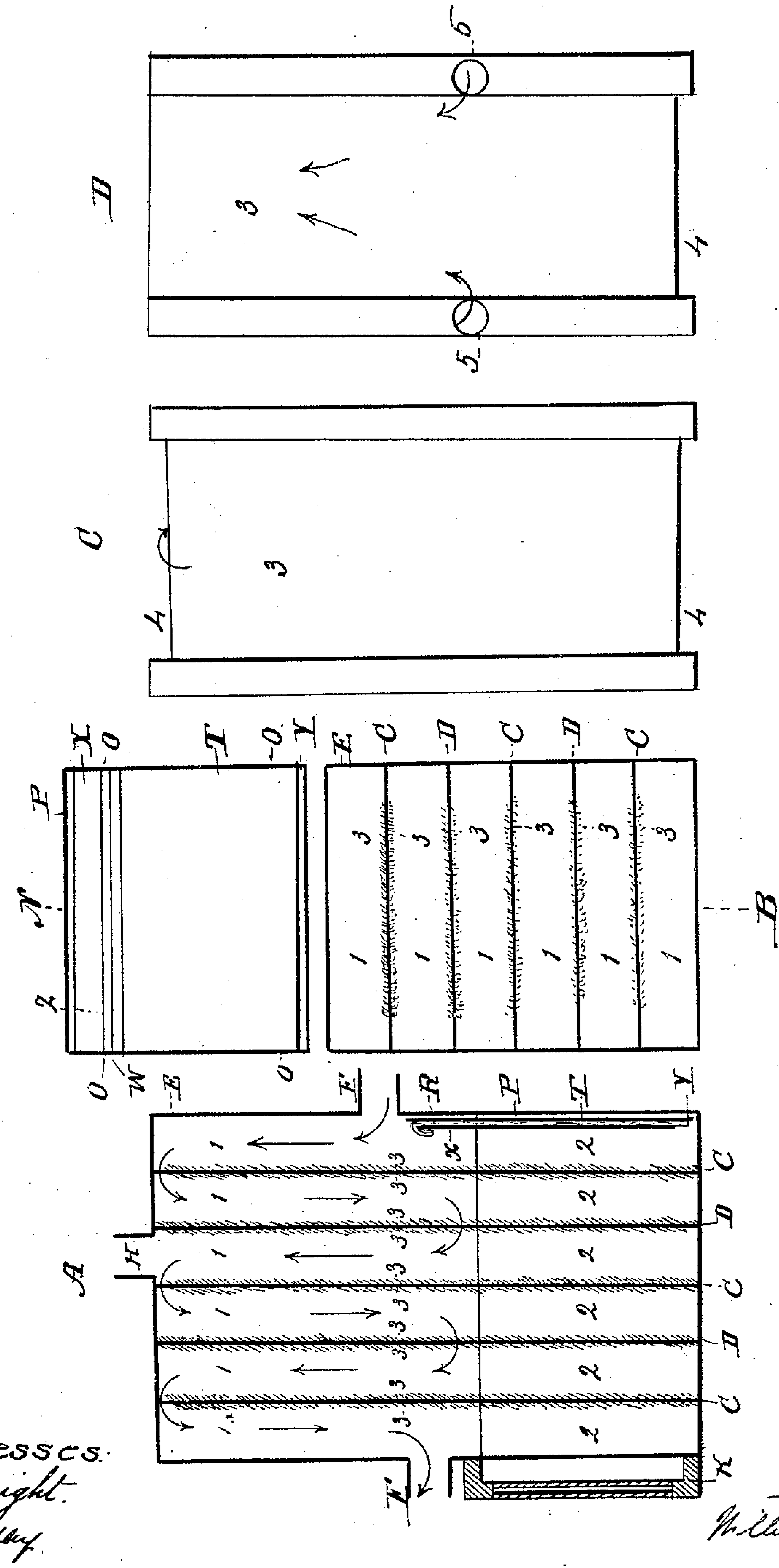
W. M. WRIGHT.

Gas Carburetor.

No. 56,503. Patented July 17, 1866.



Witnesses.
H. D. S. Wright.
Thos. Yardley.

Inventor:
William M. Wright.

UNITED STATES PATENT OFFICE.

WILLIAM M. WRIGHT, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF AND JAMES E. PILKINGTON, OF SAME PLACE.

IMPROVED APPARATUS FOR CARBURETING GAS.

Specification forming part of Letters Patent No. **56,503**, dated July 17, 1866.

To all whom it may concern:

Be it known that I, WILLIAM M. WRIGHT, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and improved apparatus for increasing the bulk as well as the illuminating property of the heavy carbureted hydrogen or olefiant gas used to light our streets. This has been often attempted before by many different contrivances. Therefore I lay no claim to the principle, but to an improved apparatus by which these gases can be held as long as desired in contact with the vapor of hydrocarbon fluids while passing through the apparatus. Thus in a box twelve (12) inches square the gas can be made to traverse a chamber one hundred and forty-four (144) inches, (or more, if required,) charged with hydrocarbon vapor. Being thus so long held in contact with the vapor it receives additional equivalents from it, so as not only increases its volume, but greatly improves its illuminating power. I do hereby declare the following is a full, clear, and exact description of the construction and operation of my improvement, reference being had to the annexed drawings, making a part of this specification, in which—

Figure A is an upright sectional view, showing the gas-chamber formed by the division-plates. Fig. B is a transverse section. Figs. C and D are division-plates; Fig. E, the box; Figs. F F, the gas-pipe attachments; Fig. H, opening for pouring in the hydrocarbon fluid; Fig. K, glass gage; Fig. R, sectional view of flat tube; Figs. 1 1 1 1 1 1, gas-chamber; Fig. N, flat tube; Fig. 2, hydrocarbon fluid; Fig. 3, cloth covering on plates; Fig. 4, notches in division-plates; Fig. 5, opening in division-plate D.

The box can be made of tin or galvanized iron, or their equivalents, and should be of such a size as to effect the work contemplated. A box one foot square is a convenient size, and when charged with one gallon of hydrocarbon fluid of a proper kind will carburet from seven to ten thousand feet of gas, according to the quality of it.

The division-plates are made of the same material as the box, and are of two kinds. The plates C are notched above and below, Fig. 4. The plates D are notched below, Fig. 4, with two openings, Figs. 5 5, about one-third distance from the bottom. The size of these openings should correspond with the amount of gas to be passed through them. These plates are covered with woolen or cotton cloth, Figs. 3 3, leaving bare a half-inch on either side to permit the plates being soldered in the box.

In making the box one side should be left off, so that the division-plates can be inserted in the following manner: First, mark off equidistant spaces on the sides of the box; then take a plate, C, and place it first in position and solder it fast—viz., the whole length of plate on both sides; then take a plate, D, and place it next in position, and solder the same as the other, including the upper end, thus alternating until all are fixed in, ending with a plate, C. Now solder on the remaining side. The box should be tested as to its being gas-tight before being used. Now charge the box with the hydrocarbon fluid to a point below the holes in the plate D, which can be best determined by the glass gage K. The box should be well shaken, so as to fully saturate the cloth. When it is attached for practical purposes its operation is as follows: The gas enters at the opening, Fig. F, and takes the course of the arrows in the drawing A, rising through the top of the box, passing through the notch, Fig. 4, of the plate C, then descends to the openings, Fig. 5, in the plate D, passing through them, and thus up and through the entire length of the chamber till it makes its exit at Fig. F into the ordinary pipes and fixtures, to be conducted to the points for using.

The amount of fluid in the box can be seen by examining the gage, Fig. K. It should be replenished when within one-half inch of the bottom. The gas is by the chamber held long in contact with the cloth saturated with hydrocarbon.

The broad flat tube, Fig. N, is made of two pieces of tin. The back plate, Fig. P, is one-eighth ($\frac{1}{8}$) of an inch deeper than the front plate, T.

The edges *o o o o* are soldered their whole length. Into this flat tube is drawn a piece of flannel cloth of double thickness. Its lower edge is seen at Fig. Y and the upper end at Fig. X, where it is turned over one inch as an apron on the front plate, T. This piece is held down by the small bar of tin W. This flat tube can be placed at the side of the box, as seen in the drawing A, or alongside of the division-plates; or, if desired, it could be made to take the place of the division-plates.

For a box twelve (12) inches square I would recommend the use of four (4) of these tubes, placed at different parts of the box. I do not claim the principle of capillary attraction.

The operation is as follows: The fluid is drawn up through the tube by capillary attraction from the lowest part of the box only, and enters the tube at Fig. Y and is discharged by the apron Z. This operation is constantly going on, so that in twenty-four hours one gallon of hydrocarbon fluid will change its relative position as to bottom, top, and middle positions. By the operation of this flat tube there is kept up a continual interchange of every drop of hydrocarbon fluid contained in the box within a given time, and this goes on until it is all consumed.

By the application of this principle the last drop of the hydrocarbon is kept at the same specific gravity as when it was put into the apparatus.

The hydrocarbon cannot become less volatile as it decreases in bulk by evaporation, but will maintain its original volatility as long as any portion of it remains, thus overcoming the great difficulty experienced by experimenters, viz: that the ratio of decrease of volatility in hydrocarbon fluids is in proportion to the decrease of bulk by evaporation.

I claim—

1. The use of division-plates covered with cloth or its equivalent material, with their openings, notches, and adjustments in an inclosed box, so as to form a continuous air-tight chamber when the lower part of the box is charged with a fluid, as and for the purpose described.

2. The use of the flat tube, or its equivalent arrangement, for preventing the heavier portions of the fluid hydrocarbon from remaining at the bottom of the box, thereby securing a uniform volatility from all the fluid till it is consumed, as and for the purpose described.

3. A combination of division-plates, openings, notches, cloth coverings, and flat tube in an inclosed box, substantially as and for the purpose described.

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