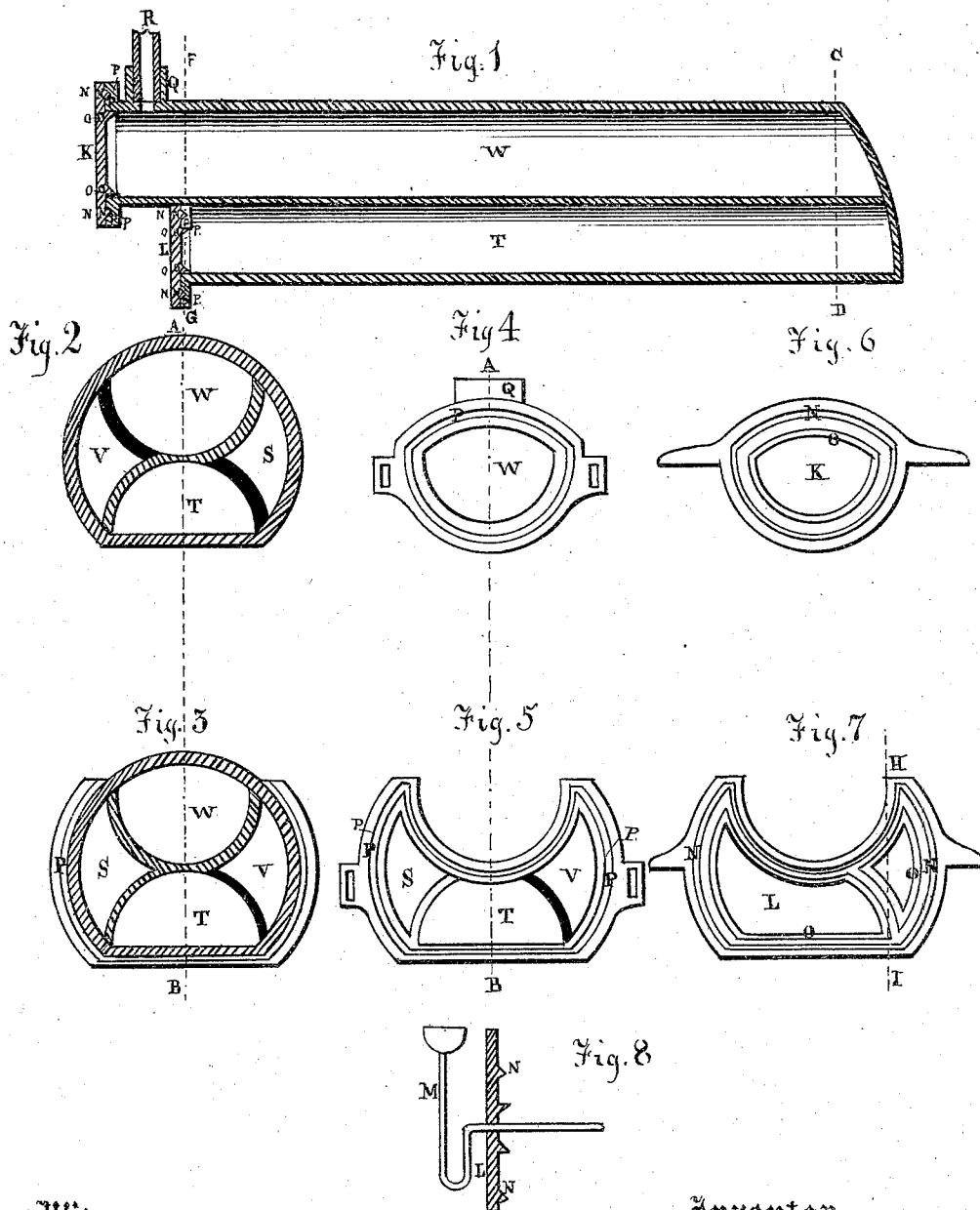


W. C. WREN.

Manufacturing Illuminating Gas.

No. 137,750.

Patented April 8, 1873.



Witnesses

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WILLIAM C. WREN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MANUFACTURING ILLUMINATING-GAS.

Specification forming part of Letters Patent No. **137,750**, dated April 8, 1873; application filed March 11, 1873.

To all whom it may concern:

Be it known that I, WILLIAM C. WREN, of Brooklyn, in the county of Kings, in the State of New York, have invented a new and improved mode of manufacturing gas from crude petroleum or other liquid hydrocarbons; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and the letters of reference marked thereon.

My invention relates to the manufacture of illuminating-gas from crude petroleum or other hydrocarbon that can be first reduced to a fluid. I have found that to produce a fixed gas from petroleum, it not only requires the degree of heat—say a good bright-red heat—but the fluid when vaporized must be carried over a sufficient surface to thoroughly decompose it, and at the same time must not be allowed to cool at any part of the passage of the vapor over or between the heated surfaces. To accomplish the result as set forth, I use a compound retort of novel construction, as hereinafter described.

Figure 1 is a longitudinal section on the line A B, showing the projection of one of the chambers beyond the face of the main part of the retort. Fig. 2 is a cross-section on the line C D. Fig. 3 is a cross-section on the line F G. Fig. 4 is a front view of the one chamber that projects beyond the others with a flange all around to close with a lid separate from the rest. Fig. 5 is a view of the face of the main part of the compound retort, showing a flange around the same, against which is placed a lid, Fig. 7, to shut up the remaining chambers. Fig. 6 is a view of the inside of the lid K with the A-shaped tongue N projecting from the face, and the lips O projecting and of the shape to just enter the chamber W. Fig. 7 is a view of the inside of the lid L with the lips O projecting from the face to form a groove, into which the edge of the partition forming the chamber S fits. Fig. 8 is a sectional view of the lid L, Fig. 7, on the line H I, with the siphon M attached and the siphon-pipe extended on the inside to

project into the chamber S when the lid L is put in place.

I place the retort, as described, in a furnace of any desired construction to heat the same to a bright-red heat. I lute the covers K, Fig. 6, and L, Fig. 7, and when I put them in place the A-shaped tongue N on the face of the lids fits into the V-shaped groove P on the faces, and the lips O projecting on the covers just fit into the different chambers and closes them, and the siphon being attached to and through the lid L projects into the chamber S. The siphon-pipe must be made long enough to reach the part of the retort which is red-hot, as the material used leaves a less deposit of carbon. Having my retort hot I pour the petroleum into the siphon M, in a continuous stream, in such quantity as may be required, which passes on to the rear of the chamber S, then returns through the chamber T, thence to rear of chamber U, then through chamber W, and passes thence out through the stand-pipe H.

What I claim as my invention is—

1. A compound retort divided longitudinally, so that one or more of the sections shall project beyond and be longer than the others, as described.
2. The compound retort, as described, in combination with the lid K to close the chamber W, as described, with the lid L to close the chambers S T U as described.
3. The A-shaped projection N in combination with the lips O on the covers, and the grooves P on the faces of a compound retort, as described.
4. The combination of two or more covers for one end of a compound-retort, as described.
5. The siphon M with the projection through the cover L and into the chamber S, for the purpose as described.
6. The siphon projecting as shown, in combination with the lid K and lid L and compound retort, as and for the purpose described.

Witnesses:

WILLIAM C. WREN.

J. H. BLACK,

H. B. CULVER.