

A. K. TUPPER.

Gas Retort.

No. 33,921.

Patented Dec. 10, 1861.

Fig. 1

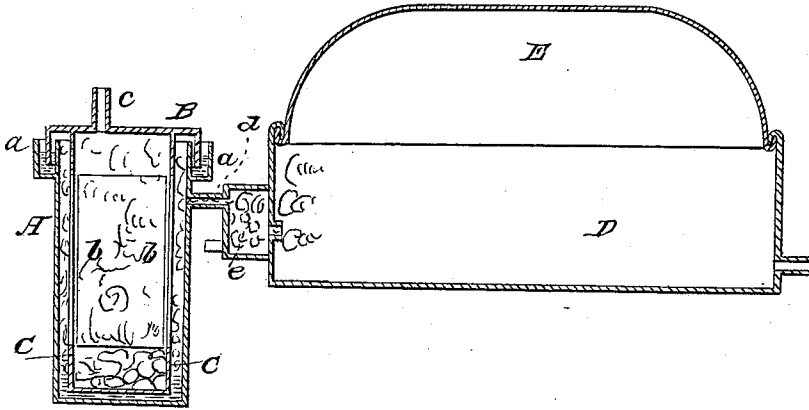


Fig. 2

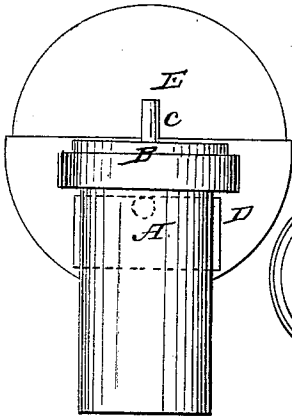


Fig. 3

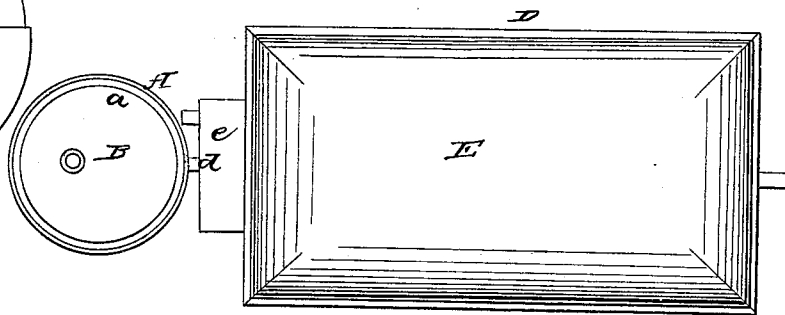
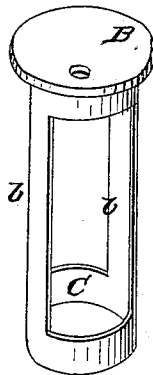


Fig. 4



witnesses

*G. L. Reid*  
*J. W. Combs*

Inventor.  
*A. K. Tupper*  
per *Wm. H. C.*  
*Attorney*

# UNITED STATES PATENT OFFICE.

A. K. TUPPER, OF PONTIAC, MICHIGAN, ASSIGNOR TO HIMSELF, JOSEPH E. TUPPER, AND JNO. W. GREEN, OF SAME PLACE.

## IMPROVEMENT IN GAS-RETORTS.

Specification forming part of Letters Patent No. 33,921, dated December 10, 1861.

*To all whom it may concern:*

Be it known that I, A. K. TUPPER, of Pontiac, in the county of Oakland and State of Michigan, have invented a new and useful Improvement in Gas-Retorts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of a gas apparatus with my improvement. Fig. 2 is an elevation of the same at right angles to Fig. 1. Fig. 3 is a plan of the same. Fig. 4 is a perspective view of the open coke-box, which constitutes my improvement.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to upright retorts for the manufacture of gas from oils or other liquid substances, or substances which are rendered liquid by heat. In such retorts it has been customary and is generally very desirable to use a quantity of coke or other substance in lumps for the two purposes of presenting a large heating-surface for the decomposition of the liquid and of collecting the residuary carbon and impurities which would otherwise cake and collect upon the bottom of the retort. This substance requires to be changed from time to time to remove the residuum of the liquid, and has heretofore generally, if not always, been removed piece by piece or in shovelfuls at some inconvenience.

The object of this invention is to remove the whole of the said substance at once; and to this end it consists in what I call a "coke-box" or "coke-basket," attached to the cover of the retort for containing the said substance, the whole of which is thereby enabled to be removed at once by the simple act of taking off the cover of the retort.

To enable others skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings.

A is the body of the upright retort, and B is the cover or cap, which may be combined with the body by means of a fusible metal

joint *a*, or in any other suitable manner which provides for its easy removal.

C is the coke-box, or, as it may be termed, the "coke-basket," attached to the cover or cap B. This box or basket is of a form in its horizontal section to correspond with the horizontal section of the body A, but is smaller, in order that there may be room for the gas and vapors to pass round it, and it is open at the top and suspended from the cover by means of two rods or broad strap-pieces *b b*, which are long enough to let down the box or basket nearly to the bottom of the retort. The cover, the strap-pieces, and the box or basket may be all composed of a single casting. *c* is the feed-pipe attached to the cover, and *d* is the outlet-pipe leading from the upper part of the body A to the drip-box or condensing-chamber *e* of the gasometer D E. The retort may be heated by a stove or furnace similar to what is commonly used for upright or pot retorts.

When the cover with its attached box or basket C is applied to the retort and the retort is in operation, the oil or other liquid from which gas is to be made fed in at the pipe *c* drops onto the coke or other substance in the basket or box C, and in running over the lumps of the said substance is quickly vaporized, and the vapor passing round and in contact with the heated sides of the body A is converted into permanent gas. When it is desired to change the coke or other substance in the box or basket C, the cover B is lifted off and the said box or basket removed from the retort, emptied by being overturned, and then refilled and replaced in the retort by putting on the cover.

What I claim as my invention, and desire to secure by Letters Patent, is—

The coke-box or basket C, combined with the cover or cap B of the retort, substantially as and for the purpose herein specified.

A. K. TUPPER.

Witnesses:

H. WARNER,  
L. L. WAY.