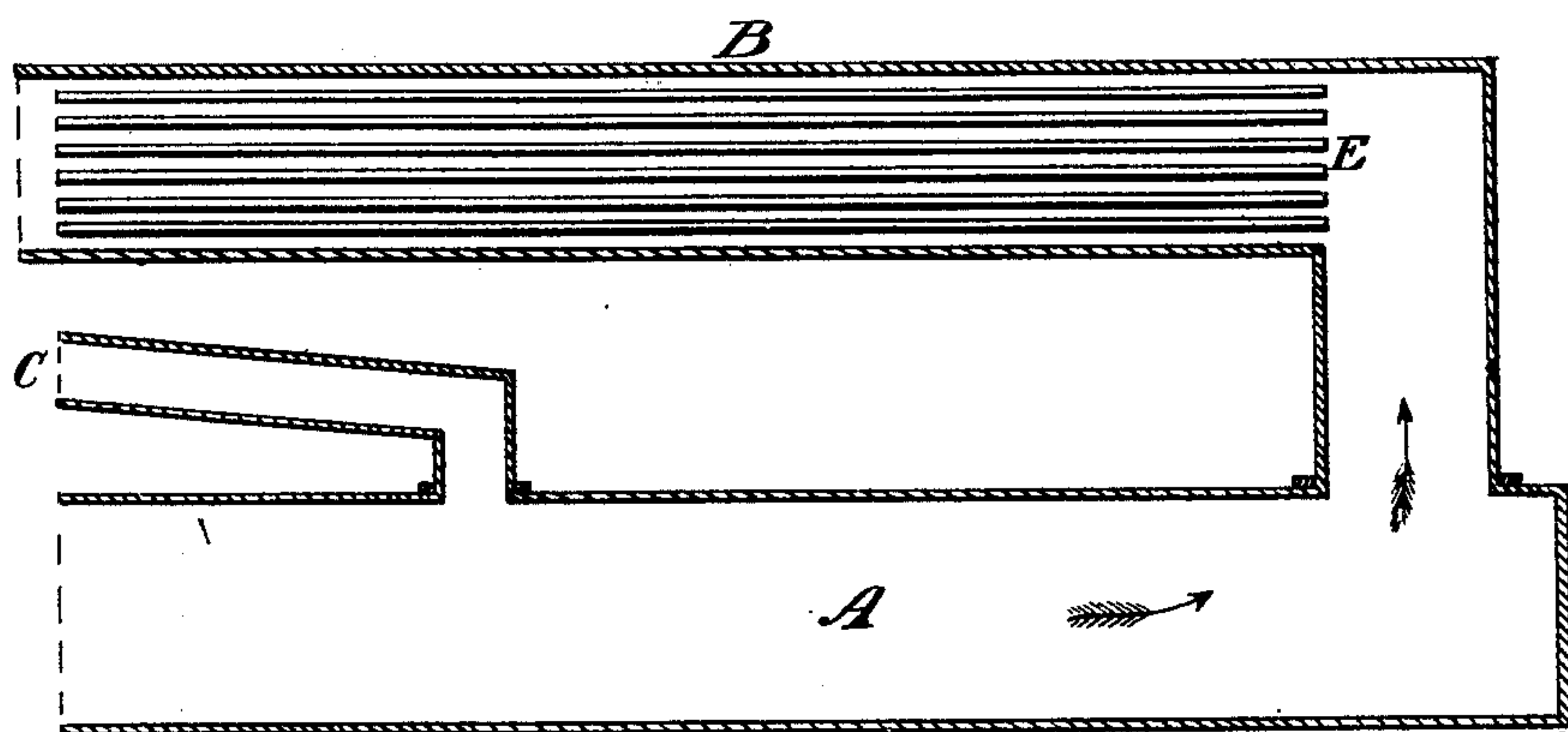
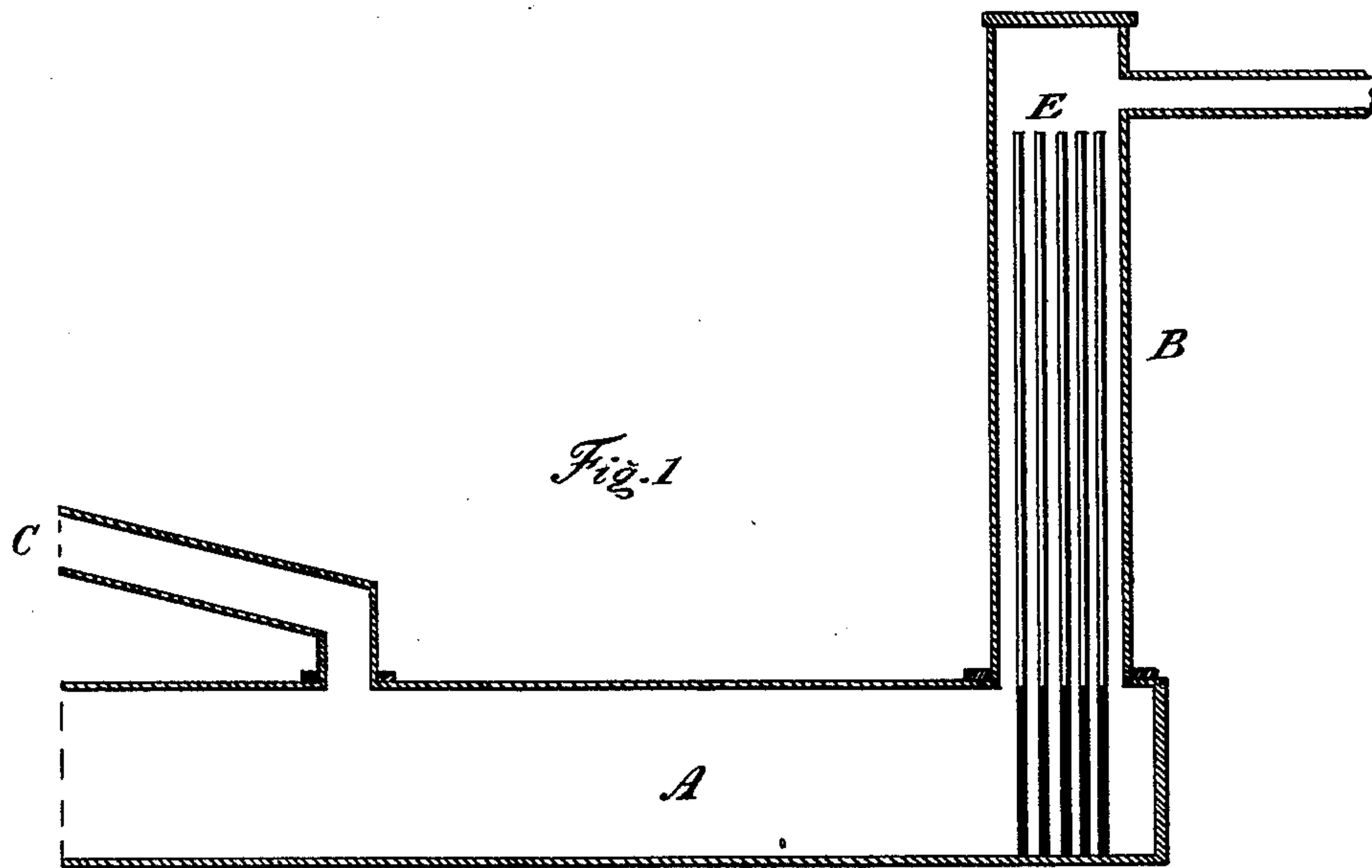


J. BURNS.  
Gas-Retorts.

No. 200,820.

Patented March 5, 1878.



*Fig. 2.*

*Attest:*

*Thomas Beech,*  
*P. J. Edmund,*

*Inventor:*

*James Burns*

# UNITED STATES PATENT OFFICE.

JAMES BURNS, OF LONDON, ONTARIO, CANADA.

## IMPROVEMENT IN GAS-RETORTS.

Specification forming part of Letters Patent No. **200,820**, dated March 5, 1878; application filed April 18, 1877.

### *To all whom it may concern:*

Be it known that I, JAMES BURNS, of the city of London, in the Province of Ontario, Canada, have invented certain new and useful Improvements on Gas-Retorts; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, where—

Figure 1 is a sectional view of my invention, showing one of the retorts as constructed perpendicularly to the other. Fig. 2 is another sectional view, wherein the retorts are placed parallel to each other.

Similar letters of reference indicate corresponding parts.

A is a retort for wood or coal, which, in generating gas, is subjected to heat in the ordinary manner. B is another retort for the reception of the gas generated in first one, and communicating directly therewith at the back, as shown.

A series of tubes or bars, E, are placed in retort B, in order to increase the heating-surface thereof and prevent the escape of any essential oils arising from the generation of the gases from either coal, wood, or oil, thus obtaining all the gases which can be generated from the substances used, the vapors generated in retort A having to pass in the direction of the arrows through retort B, and coming in contact with the tubes or

bars placed therein before finding an outlet at the mouth of retort B, and thus becoming wholly decomposed. By this means a greater quantity of gas is produced, and the formation of tar, which contains the better qualities of the substances used, is prevented.

C is a separate retort, for supplying oil-vapor to the retort A. This retort, being inclosed in the brick-work which surrounds the retort A, subjects the oil to a sufficient degree of heat to vaporize it before it enters the retort A near the mouth, and comes in contact with the excessively-heated surface thereof, thus avoiding the deposition of carbon in any of the subsequent receivers of the gas.

I am aware that the use of two connecting-cylinders in a gas-retort, one of which has an induction-tube through which the hydrocarbons pass, and the other constructed to form a solid cast-iron retort with wrought-iron tubes, are old, and such I do not desire to claim, broadly, as my invention; but

What I claim as my invention is—

The herein-described gas apparatus, consisting of retort A, tubular retort B, and oil-retort C, the several parts constructed and relatively arranged with each other, as specified.

JAMES BURNS.

Witnesses:

THOMAS BEECH,  
P. J. EDMUND.