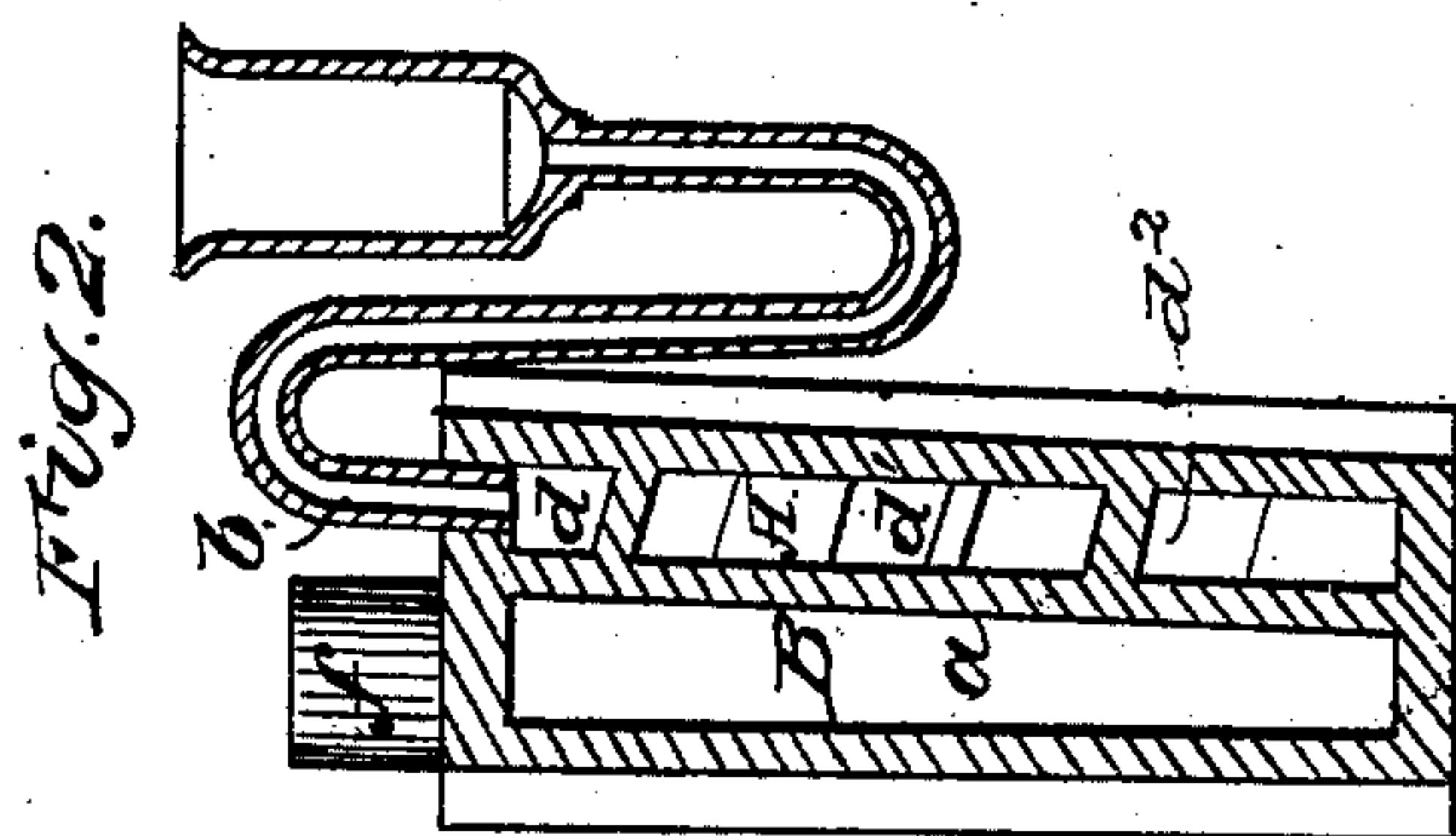
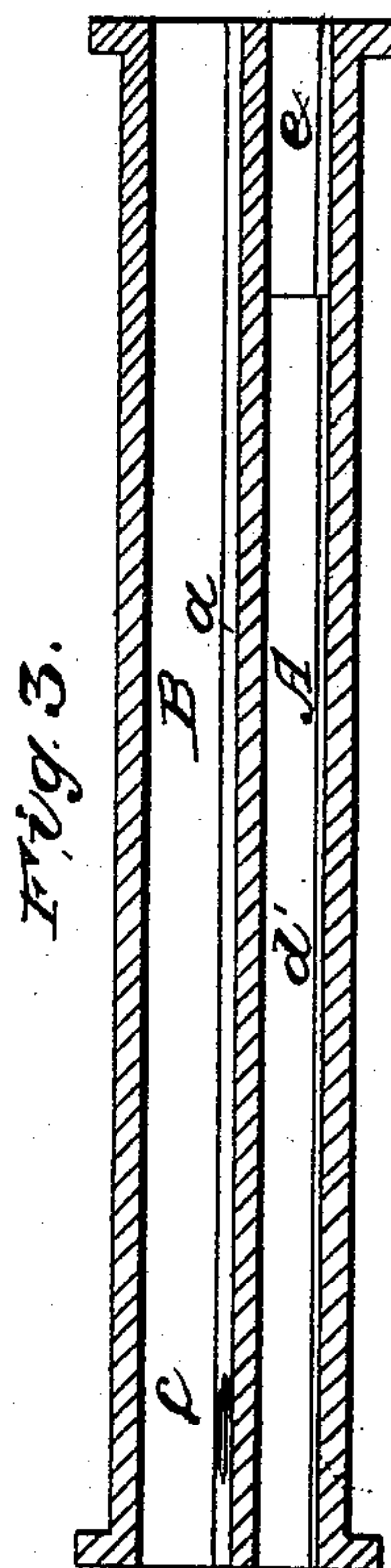
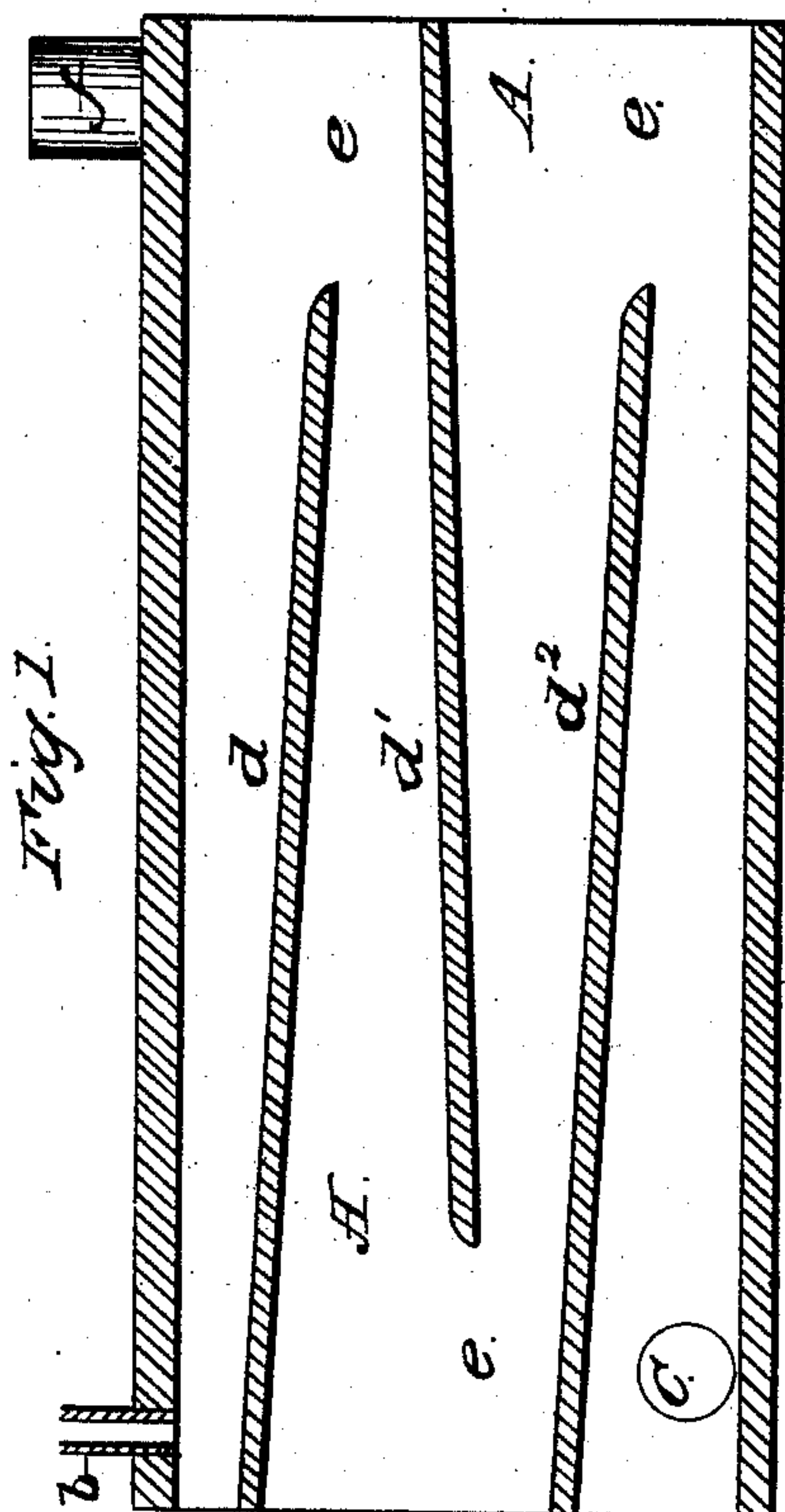


A. K. TUPPER.

Gas Retort.

No. 32.802.

Patented July 9, 1861.



Witnesses  
J. W. Coombs.  
J. H. Tusch

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# UNITED STATES PATENT OFFICE.

A. K. TUPPER, OF PONTIAC, MICHIGAN.

## GAS-RETORT.

Specification of Letters Patent No. 32,802, dated July 9, 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

5 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 accompanying drawings, forming part of this specification, in which—

10 Figure 1, is a longitudinal vertical section of a retort with my improvement. Fig. 2, is a transverse vertical section of the same. Fig. 3, is a horizontal section of the same.

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

15 My invention consists in the construction of a retort for making illuminating gas from rosin, oil or other substance which can be introduced in a liquid state, with two upright chambers side by side, one of which

20 having the feed pipe attached contains a series of partitions inclined longitudinally in opposite directions alternately and provided with openings to allow the liquid substance

25 to run from one to the other from the top to the bottom of the series, so that all may be converted into gas or vapor before passing by an opening near the bottom to the

30 other chamber to which is connected the outlet pipe and in which the decomposition of the vapors are completed.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

35 A, B, represent the two chambers of the retort which with the exception of its having one or both ends made separate and movable, may be composed of a single casting, the chambers being narrow, upright or

40 nearly so and separated by an upright partition *a*, which is only thick enough to give the requisite strength, said partition having an opening *c*, near the bottom to constitute a means of communication between the two

45 chambers. A, is the inlet chamber having the inlet pipe *b*, for the introduction of the melted rosin or oil to the retort, arranged at the top of the said chamber and near one end thereof.

50 *d*, *d*<sup>1</sup>, *d*<sup>2</sup>, are the longitudinally inclined

partitions in the inlet chamber A, extending all across the said chamber and so nearly from end to end thereof as to leave only a small opening *e*, at the lower end of each, the said opening in each of said partitions 55 being at the opposite end of the retort to that in the partition above or below it. The inclination of the uppermost partition *d*, is downward from the inlet pipe *b*, and the inclinations of the others are reversed alternately. The opening *c*, is arranged under the highest portion of the lowest partition *d*<sup>2</sup>. The partitions *d*, *d*<sup>1</sup>, *d*<sup>2</sup>, are represented in Fig. 2, as inclined transversely, but this is immaterial as their transverse arrangement may be horizontal. The outlet 65 chamber B, has no partitions being simply a plain chamber. The outlet pipe *f*, is arranged at the top of the said chamber B, and near the opposite end to that where the 70 opening *c*, is situated.

The retort may have the sides perfectly flat as represented or of other form, and is to be so exposed to a fire in any suitable manner as to heat both its sides and its bottom. The melted rosin or fluid matter introduced at *b*, drops on to the partition *d*, and flows down that partition to its opening *e*, through which it drops to the next partition *d*<sup>1</sup>, and so on, flowing down the several 80 partitions back and forth from one end to the other of the retort and being thereby vaporized and partly decomposed into gas. The gas and vapor pass together through the opening *c*, and the decomposition is completed in the chamber B. 85

By the use of this retort I am enabled at the same time to manufacture from rosin very economically, illuminating gas and lamp black of the very finest quality the latter being deposited all over the surfaces of the chambers of the retort and its removal being easily effected on the removal of one of the movable ends of the retort, and it is in this manufacture of lamp black simultaneously with the manufacture of gas that I consider the advantage of my invention to consist. 95

I do not claim the invention of a cellular retort; nor do I now claim a series of re- 100



versed inclined gutters within a retort as that is claimed in my Letters Patent of May 22, 1860. But

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

The combination in the retort, of the upright partition  $a$ , the reversed inclined partitions  $d$ ,  $d^1$ ,  $d^2$ , on one side of  $a$ , and the

chamber B, without partitions on the opposite side of it, all substantially as herein 10 specified.

A. K. TUPPER.

Witnesses:

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