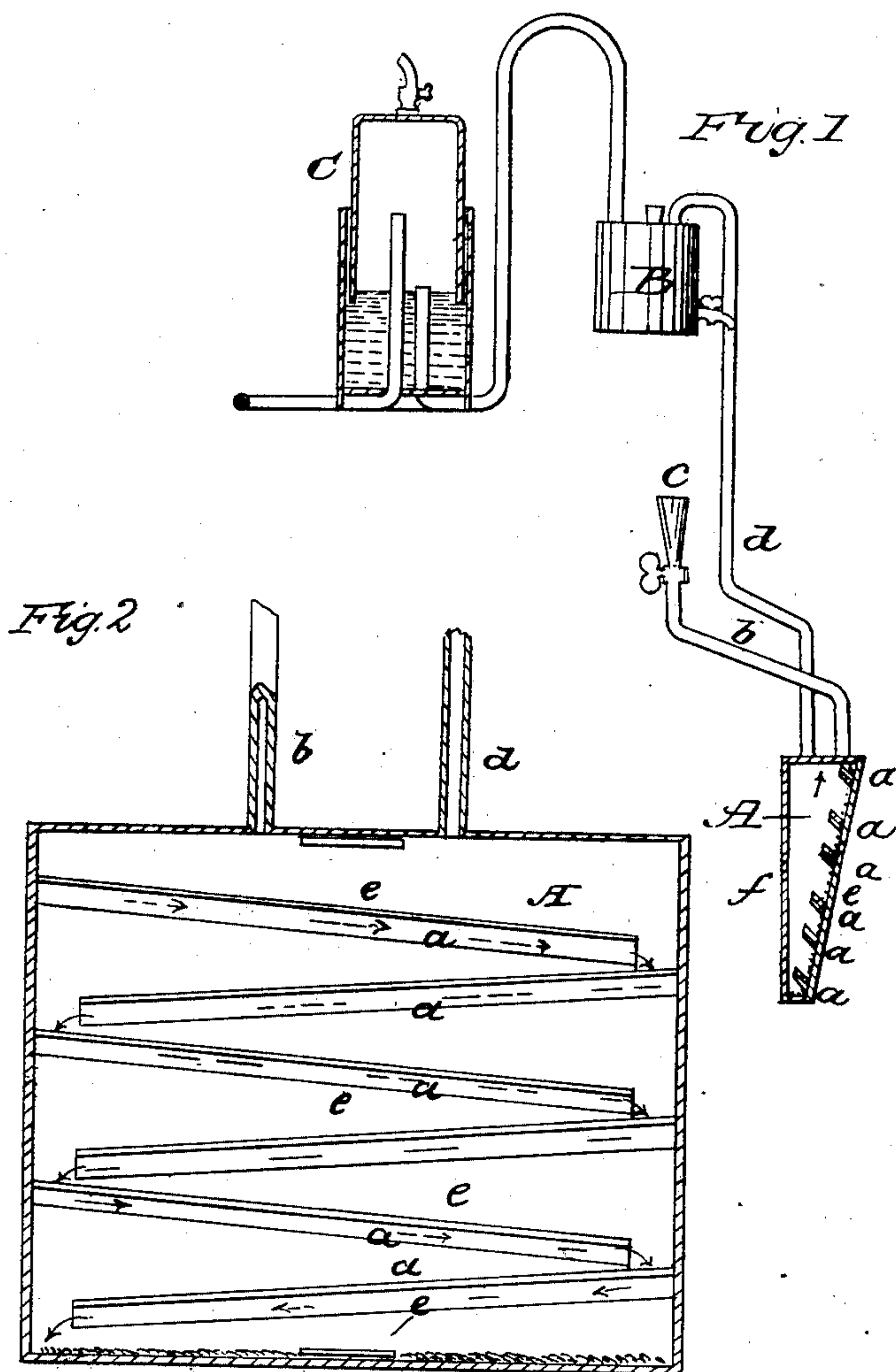


A. K. TUPPER.
Gas Generating Apparatus.

No. 28,421.

Patented May 22, 1860.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

A. K. TUPPER, OF MILFORD, MICHIGAN.

APPARATUS FOR GENERATING GAS.

Specification of Letters Patent No. 28,421, dated May 22, 1860.

To all whom it may concern:

Be it known that I, A. K. TUPPER, of Milford, in the county of Oakland and State of Michigan, have invented a new and useful
5 Improvement in Gas-Generating Apparatus, to be Applied to Domestic Stoves or Ranges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompany-
10 ing drawings, forming part of this specification, in which—

Figure 1, is an elevation partly in section of a complete apparatus, illustrating my invention. Fig. 2, is a vertical section of the
15 retort at right angles to Fig. 1, on a larger scale.

Similar letters of reference indicate corresponding parts in both figures.

My invention consists in a certain novel
20 construction of a gas retort for the generation of gas from liquid substances or substances which are liquefied by heat whereby it is adapted to be heated by the fire of a domestic stove.

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

A represents the retort made of an oblong form in its longitudinal vertical section as
30 shown in Fig. 2, with all sides flat, and very narrow from back to front, of an increasing width from bottom to top in its transverse section, the slope incident to such increasing width being at the back *e*, on the interior
35 of which there are formed a series of gutters *a, a*, arranged one below another, such gutters commencing at opposite ends alternately and each sloping downward nearly to the other end, so that the oil or fluid substance
40 from which gas is to be generated being supplied by the feed pipe *b*, to the uppermost gutter, may run slowly down, the several gutters and down the back of the retort from one gutter to another, and all that is not
45 converted into gas or vaporized on the passage may be deposited on the bottom. The opposite side or front *f*, of the retort is upright and without gutters and a considerable space is left between it and the edges of
50 the gutters for the passage of gas and vapors. The retort thus constructed may be arranged at the back of the fire box of the stove or range, or in other suitable position

relatively to the fire box with surrounding flues so that its bottom and two large flat
55 sides may be heated, and that the upright front or side *f*, may be hotter than the sloping back or side *e*, on which are the gutters *a, a*. The feed pipe *b*, may be arranged within the stove pipe, so that the feed fun-
60 nel *c*, may be heated to melt any substance requiring melting that may be used for generating the gas and that all offensive odors may be conveyed to the chimney, a door being provided in the stove pipe to
65 permit the introduction of the gas making materials to the said funnel. The pipe *d*, by which the gas passes off may also be arranged within the stove pipe. The purifier
70 B, and gasometer C, may be arranged in any suitable positions close to or at any convenient distance from the stove.

The operation of this retort is as follows. The fluid substance being admitted by the feed pipe *b*, to the uppermost gutter and
75 running in a thin stream down the several gutters and down the back *e*, of the retort from one gutter to another, a considerable portion of it is converted into gas and more vaporized before it can reach the bottom,
80 and all that reaches the bottom in a fluid state is there either converted into gas or vaporized. The gases and vapors in rising to the pipe *d*, pass over and near the surface of the opposite and hotter side *f*, of the re-
85 tort and in their passage over and near this hot surface the vapors are decomposed into permanent gas.

The sides *e*, and *f*, of the retort instead of being flat may be curved to suit the form of
90 the stove to which it is to be applied.

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

The retort A, having on one side below the feed pipe a series of gutters arranged
95 with a descent from one to the other in opposite directions alternately, and having a narrow space between the said gutters, and the opposite side for the upward escape of the gas and vapor substantially as herein
100 described.

A. K. TUPPER.

Witnesses:

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