A. S. KING.

Gas Retort.

No. 34,303. Patented Feb. 4, 1862

FIG. 1

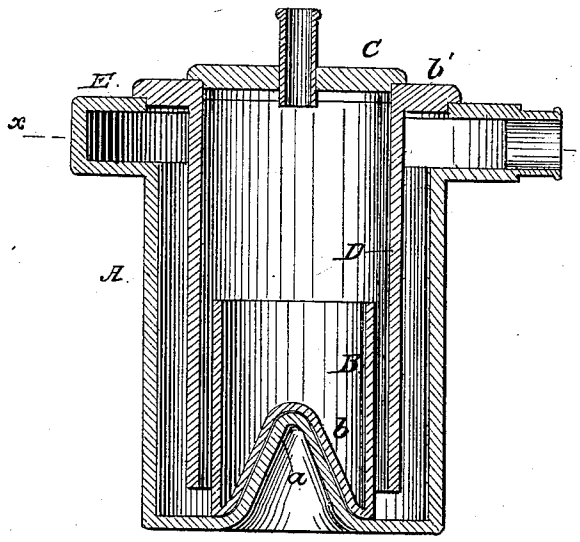
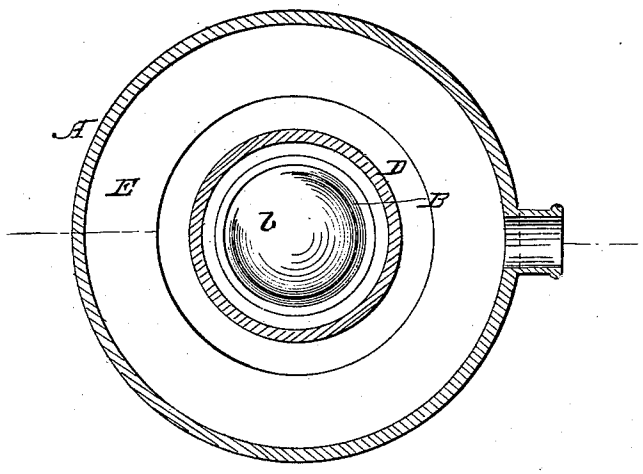


FIG. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

A. S. KING, OF COMMERCE, MICHIGAN.

IMPROVEMENT IN GAS-RETORTS.

Specification forming part of Letters Patent No. **34,303**, dated Februrary 4, 1862.

To all whom it may concern:

Be it known that I, A. S. KING, of Commerce, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements 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—

Figure 1 represents a vertical central section of my invention. Fig. 2 is a horizontal section of the same taken in the plane indicated by the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in the employment of a movable cup provided with a hollow cone at its bottom to fit over a conical protuberance projecting from the bottom of the retort for the purpose of increasing the heating-surface and spreading the material of which the gas is manufactured over a greater surface than can be done on a plain bottom, and also for retaining the residuum from the material used, so that said residuum may be readily removed from the retort by simply removing the cup, this operation being facilitated by having the cap or cover of the retort movable.

It consists, further, in the arrangement of an annular chamber or belt in connection with the inner and outer retorts and extending around the inner retort for the purpose of preventing a draft of the gas in any one direction from the lower part of the retort, thereby allowing sufficient time for the perfect conversion of the material used into gas and preventing the escape of the material in the form of vapor.

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

The body of the retort A is cast or constructed in any desirable manner and its bottom is provided with a conical protuberance *a*. This protuberance projects from the center of the bottom and it is hollow so as to increase the heating-surface. Fitted over said protuberance is the cup B, the bottom of which is provided with a conical projection *b*, corresponding to the cone *a*. This cup serves to receive the material of which the gas is manufactured, and by the conical projection on its bottom said material is distributed and its conversion into gas facilitated. The residuum remaining in the retort from the material used is retained in the cup B, and by taking out this cup said residuum can easily be removed. In order to facilitate the removal of the cup the cover or cap C of the retort is made movable, so that the same can be taken off and the cup removed without disturbing any of the other parts of the retort.

The cap C is placed loosely on the inner retort D, and said retort is suspended from a flange *b'*, bearing on the upper surface of the retort A, and it extends down to within a short distance of the bottom, its diameter being such that an open space *c* is left between its inner surface and the outer surface of the cup B. By this arrangement the vapor or gas rising from the material is compelled to pass up into the inner retort D and down through the annular space *c* before it reaches the outer retort A; and, furthermore, an annular chamber or belt E is provided in connection with and at the upper part of the retort A, extending around the inner retort D, for the purpose of preventing a draft of the gas in any one direction from the lower part of the retort A. By these means time is allowed for the perfect conversion of the material used into gas, and the escape or waste of the material in the form of vapor, which would be condensed again in the purifier, is prevented.

This retort is very simple in its construction; it can be easily operated, and it produces a large percentage of pure gas without or with very little waste, and with a comparatively small quantity of fuel.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The employment of a movable cup B, provided with a hollow cone *b* at its bottom, in combination with a retort A, provided with a conical protuberance *a* at its bottom and with a movable cap C, substantially in the manner and for the purpose shown and described.

2. The arrangement of the annular belt E, in combination with the outer retort A and with the inner retort D, as and for the purpose specified.

A. S. KING.

Witnesses:

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