

F. A. SABBATON.
 Manufacture of Gas.

No. 139,083.

Patented May 20, 1873.

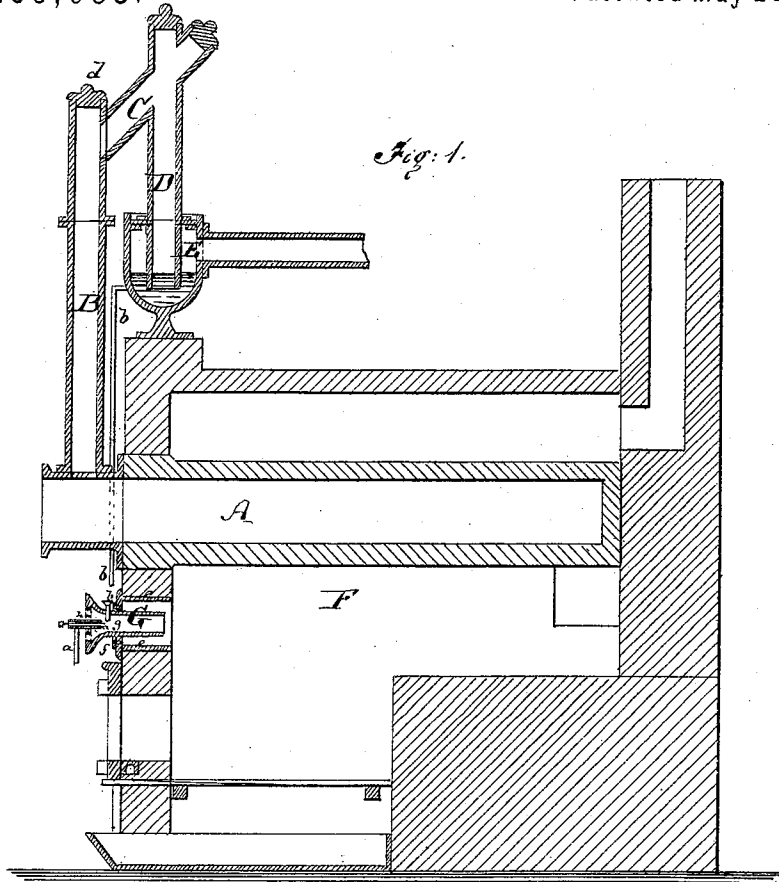


Fig. 1.

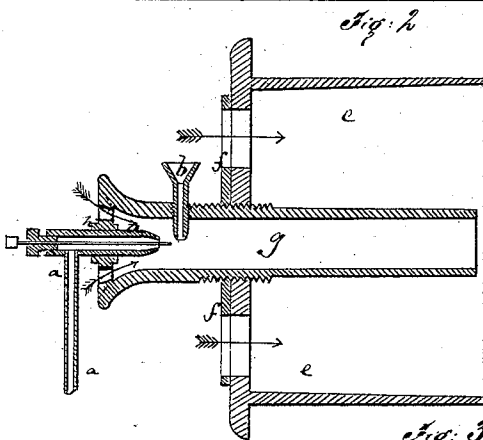


Fig. 2.

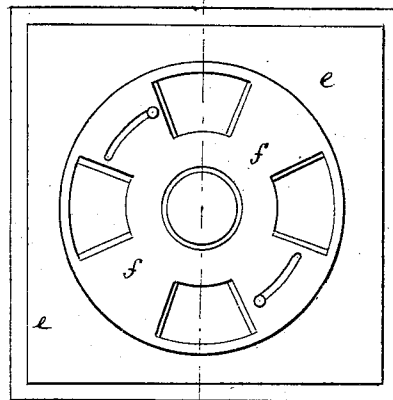


Fig. 3.

Witnesses:

Chas. Nide
 W. A. Graham

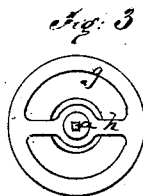


Fig. 4.

Inventor:

F. A. Sabbaton

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Munnif
 Attorneys.

UNITED STATES PATENT OFFICE.

FREDERICK A. SABBATON, OF TROY, NEW YORK.

IMPROVEMENT IN THE MANUFACTURE OF GAS.

Specification forming part of Letters Patent No. **139,083**, dated May 20, 1873; application filed April 27, 1873.

To all whom it may concern:

Be it known that I, FREDERICK A. SABBATON, of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Apparatus for the Production of Gas for Heating and Lighting Purposes, of which the following is a specification:

Figure 1 is a vertical longitudinal section of a gas-retort, oven, or bench provided with my improvement. Fig. 2 is an enlarged sectional view of the injector used thereon; Fig. 3, a front view of the injector-pipe; and Fig. 4, a front view of the air-regulator, or register, on the injector.

Similar letters of reference indicate corresponding parts.

This invention consists in the adaptation or application to a gas-retort of a combined steam and air injector, whereby the tar from the hydraulic main or other gas depository is, in fine spray, forced under the retort and consumed. I apply this injector for the purpose of consuming the coal-tar or other gas deposit produced in the manufacture of gas, thus saving a large amount of fuel used in heating the retort, and so arranged that the coal-tar or other gas deposit from the hydraulic main or other place of deposit is carried direct to the injector, which is compactly arranged above the furnace-door; and, by means of a current of steam, a spray of tar or other gas deposit, in combination with atmospheric air, is forced into the fire-box or furnace, and there consumed.

A in the drawing represents the retort, B the stand-pipe, C the bridge-pipe, D the dip-pipe, and E the hydraulic main. G is the injector for introducing the tar and air into the furnace, and *a* the steam-pipe leading to the same. *b* is the pipe conveying the tar from the hydraulic main E to the injector, and thence to the fire-box or furnace F. The in-

jector G consists of a case or box *e*, which is fitted into the front of the fire-box, and open on the inner side, while its outer face is perforated and provided with an adjustable register, *f*, for the admission of air to the furnace. The admission of air through the box *e* can thus be regulated by the register. Through the middle of the box *e* is fitted an open-ended tube, *g*, with funnel-shaped outer end, also for the admission of air. The tar-supply pipe *b* enters the tube *g* at the top or side, while the steam-pipe *a* is screwed into a cross-bar, *h*, in the mouth of the tube *g*. The gas from the retort is, through the pipes B, C, and D, conveyed to the hydraulic main E, where the tar is deposited. The tar flowing from the hydraulic main through the pipe *b* to the injector G is forced in a spray by means of a jet of steam from the steam-pipe *a*, in combination with a current of atmospheric air, indicated by the arrows in Fig. 2, into the fire-box F, where it is consumed. The air openings and register are for the admission of air around the large tube *g*, whereby the same is prevented from burning off and protected from deposits of hard carbon, which would soon clog the tube without the air current.

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

1. The combination of a steam and air injector with the hydraulic main and tar-conveying tube, for feeding the contents of the hydraulic main to the furnace, as set forth.

2. The air-register *f* applied to the perforated face of the box *e*, in combination with the tube *g* and pipes *a* *b*, as specified.

FREDERICK A. SABBATON.

Witnesses:

EDWARD MARTIN,
T. B. MOSHER.