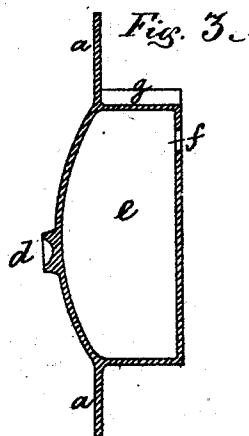
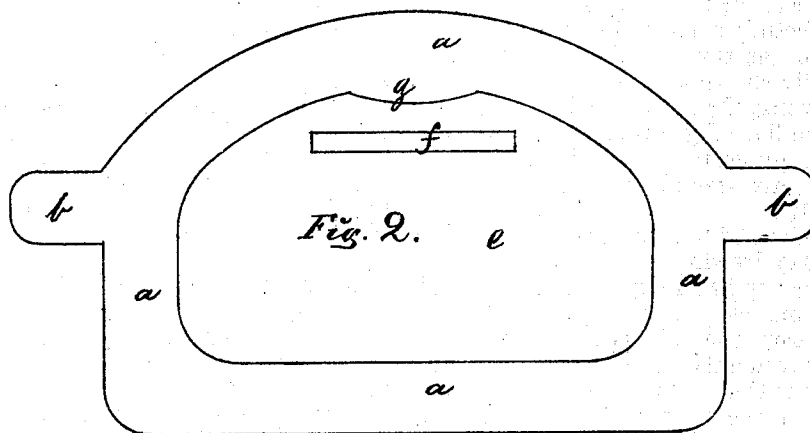
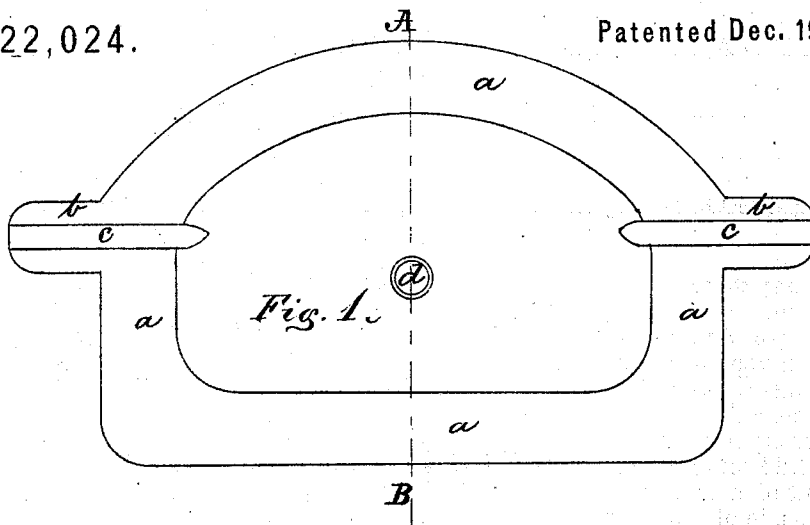


EDWARD JONES.

Improvement in Coal Gas Apparatus.

No. 122,024.

Patented Dec. 19, 1871.



Witnesses:
Wm. H. Lewis
Myron A. Cole.

Inventor:
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his attorney.

UNITED STATES PATENT OFFICE.

EDWARD JONES, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN COAL-GAS APPARATUS.

Specification forming part of Letters Patent No. 122,024, dated December 19, 1871.

To all whom it may concern:

Be it known that I, EDWARD JONES, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Gas-Retort Lids, of which the following is a specification:

The nature of my invention relates to an improvement on lids for gas-retorts, consisting in the employment of a box containing water, attached to the inside of the lid that is provided with an opening through which the water can evaporate, and thus dissolve and prevent the accumulation of coal-tar in the stand-pipe, for the purpose of effecting a clear and unobstructed passage for the gas through the stand-pipe, as will now be fully shown and described.

On the drawing, Figure 1 represents an outside view of the lid. Fig. 2 represents an inside view of the lid and water-box, and Fig. 3 represents a central cross-section over the line A B taken on Fig. 1.

Similar letters refer to similar parts wherever they occur in the drawing.

A great difficulty has long been experienced by coal-gas manufacturers in keeping the stand-pipes leading from the retorts free from being clogged up by accumulated coal-tar that is carried with the gas from the retorts. The coal-tar thus carried from the retorts adheres firmly and rapidly to the sides of the stand-pipes, whereby the said pipes are clogged up in a short time, so that in some gas-works it is hardly safe to leave the retorts unattended for any time for fear the stand-pipes would be stopped by accumulated coal-tar, and thereby make accidents liable to occur from over-pressure in the retorts. Several experiments have been tried to avoid this difficulty, but they have all been more or less defective in their operations. The most effective way to remove the coal-tar accumulations in the stand-pipes, has been to open the stand-pipes at the top occasionally, and then scrape the coal-tar off by suitable tools, or burn it off by making a fire in the stand-pipe, both ways of which have been time-wasting and costly, as it had to be done as often as the retorts were charged or oftener, according to the coal that was used for the manufacture of coal-gas. To prevent the said coal-tar accumulations in the stand-pipes is the purpose of my invention, wherefore I construct my improved gas-retort lid as follows:

a on the drawing is the lid, provided with ears

b b, on which the lid is supported and hung in the usual way. *c c* are strengthening ribs on the ears *b b*, for the purpose of combining strength and lightness to the lid. *d* is a projecting hub, on the outside of the lid, on which the screw is pressing that holds the lid in close contact with the end of the retort in the usual way. On the inside of the lid I attach a box or receptacle, *e*, that may be cast in one piece with the lid, or made separate, screwed, bolted, or hung onto the inside of the lid, as may be advisable. The receptacle *e* is provided with an opening, *f*, near the upper end, as shown. As the stand-pipes generally are placed near to the front of the retorts, I make a cavity, *g*, on the top of the box *e*, so as not to obstruct the passage to the stand-pipes. The receptacle *e* is to be filled with water before the lid is attached to the retort, that will evaporate by the heat in the retort.

The steam that is evaporated from the water in the box *e* is ejected through the opening *f*, and rises with the gas up in the stand-pipe, where it dissolves, softens, and combines with the deposited coal-tar that is thus made thin and allowed to descend easily back in the retort.

A secondary advantage that is obtained by the use of water evaporated up through the stand-pipe is, that the ammoniacal gases that evaporate from the coal in the retorts are condensed, partly or in whole, and thus deposited in the contents of the hydraulic main instead of being carried in gas-form with the gas to the purifiers.

By the use of a water-box, *e*, attached to the inside of the lid on a retort, the lid is kept a great deal cooler, and the heat from the retort prevented from escaping through the lid better than if a solid lid is used.

It is well here to state that the walls of the box *e* provide, as it were, strengthening-ribs for the lid *a*, by which arrangement the lid *a*, and box *e* with the water contained therein, can be made to weigh not more than the common lids now in use, so that it will not require any more power to remove and replace my improved lid than it will to remove and replace the ordinary solid lid. Should it be necessary to replace the evaporated water in the box *e* oftener than once every time the retort is charged anew, I could easily arrange an injection-pipe on the outside of the box *e* so that I can fill the box *e* with water when the lid is attached to the retort.

To operate my improved lid I remove it from

the retort when the retort is to be charged and place the lid on the floor or otherwise, with the opening *f* upward, and fill the box *e* with water by means of any suitable vessel or water-pipe, and replace the lid on the retort in the usual way.

Having thus described fully the nature, construction and operation of my invention, I wish to secure by Letters Patent and claim—

A receptacle, *e*, containing water, provided with one or more openings, *f*, attached to or made in one piece with a gas-retort lid, for the purpose as herein fully set forth and described.

EDWARD JONES.

Witnesses:

ALBAN ANDRÉN,
WM. H. LEWIS.

(66)