

A. THOMSON.
Closing Gas-Retorts.

No. 149,895.

Patented April 21, 1874.

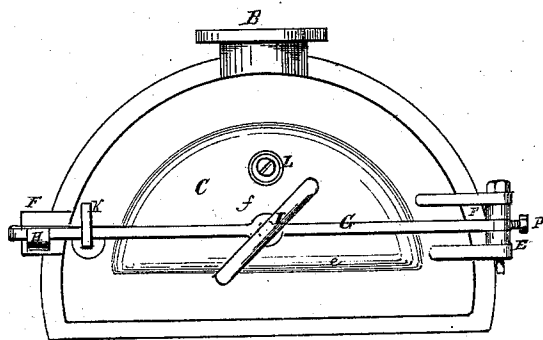


Fig. 1

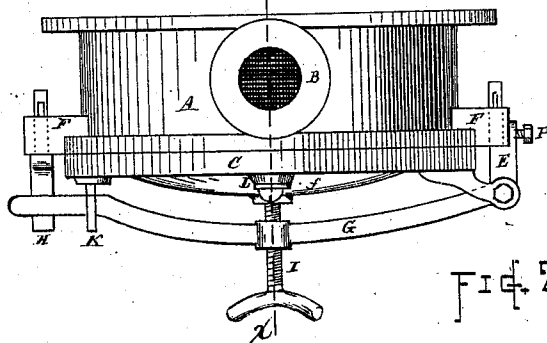


Fig. 2

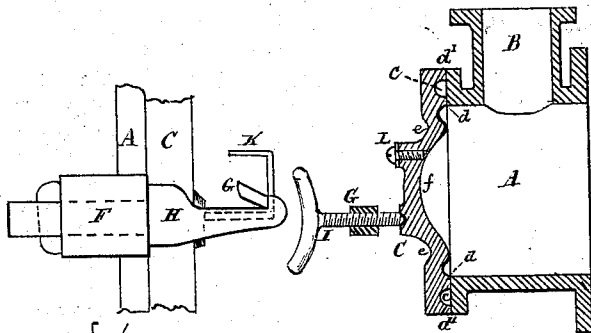


Fig. 3

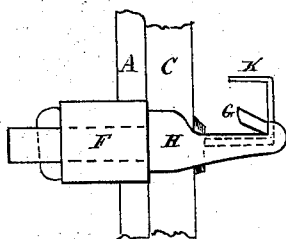


Fig. 4

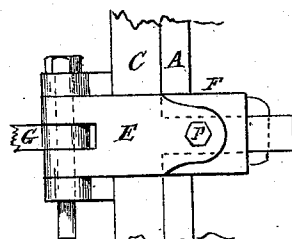


Fig. 5

Witnesses

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IMPROVEMENT IN CLOSING GAS-RETORTS.

Specification forming part of Letters Patent No. **149,895**, dated April 21, 1874; application filed January 23, 1874.

To all whom it may concern:

Be it known that I, ALEXANDER THOMSON, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Self-Sealing Retort-Lids; 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, which form a part of this specification, and in which—

Figure 1 represents a front view of my improved self-sealing retort-lid. Fig. 2 represents a plan view of the same. Fig. 3 represents a central vertical section at line *x x*, Fig. 2. Fig. 4 represents a side view of the latch. Fig. 5 represents a side view of the hinge.

This invention consists in a **D**-shaped retort-lid of improved construction, and in the arrangement of the mechanism for securing and adjusting it in position, whereby the lid is rendered self-sealing, and the operation of opening and closing the mouth of the retort greatly facilitated.

In the drawings, **A** denotes the mouth-piece of the retort, and **B** the bell, to which the stand-pipe is secured. These parts may be of ordinary construction. The face of the mouth-piece **A** is planed off smooth to form a flat seat for the lid **C**, which is made in **D** shape to fit the mouth, and is provided with a groove, *c*, extending around its rim near the edge, and dividing its bearing-surface into two flanges, *d d'*, which are planed off flat at their outer edges to fit closely against the planed face of the mouth-piece. The central portion of the lid **C** is curved inward near the rim, as at *e*, and is then arched or swelled outward at the center, as at *f*, which form prevents the lid from warping by the action of the heat to which it is subjected, while it also gives strength to resist the pressure of the tightening-screw. The lid **C** is hinged at one side to the piece **E**, said hinge-piece **E** being keyed to one of the ears **F** of the mouth-piece, and provided with a flange, which passes by the outer end of the ear-piece **F**, said flange having arranged through it a set-screw, **P**, for the purpose of adjusting the hinge **E** so that the lid will swing squarely against its seat. This adjustment is assisted by inserting a thin wedge or blocking between the edge of the

flange and ear **F**, either at top or bottom, and when the screw is tightened the piece **E** is caused to rock over in the opposite direction, thus throwing the lid slightly up or down, as required. The portion of the piece **E** which passes through the ear **F** is made a little loose in the opening, to allow the slight movement required for adjustment. A cross-bar, **G**, is also hinged to the piece **E** at the same position as the lid, which bar is arranged across the outside of the lid, with its opposite end in position to latch onto the catch-piece **H**, the latter being keyed to the opposite ear **F** of the mouth, as indicated. **I** indicates the clamping or tightening screw passing through the central part of the cross-bar **G**, with its end resting against a suitable boss on the lid **C**, and arranged for pressing the lid firmly against the face of the mouth-piece. **K** indicates a loop for retaining the cross-bar near the lid when the bar is unlatched. The end of the cross-bar **G** is inclined or beveled upward, as shown in Fig. 4, to enable it to readily pass over the end of the latch-piece when closing the lid. **L** indicates a boss and opening for the reception of a test-gage for ascertaining the pressure within the retort. Said opening is provided with a screw-plug or stopper, which can readily be removed when the gage is to be applied. In the operation of my improved self-sealing lid, it simply requires to be closed against the mouth, the cross-bar latched onto its catch **H**, and the screw **I** tightened. This presses the flanges *d d'* firmly to the planed face of the mouth, and securely seals the retort without the use of any luting material. In case any tar or pitch is forced past the inner flange *d*, it becomes hardened in the groove *c*, and tends to seal the parts more closely.

Among the advantages incident to my invention, may be named the following: Its **D** shape obviates the necessity of contracting the mouth or changing it from the form of the retort, thus giving the greatest facility for charging. It requires no luting, and may be quickly opened and closed, and while operating with the greatest convenience and facility, its parts are simple, and not subject to derangement. The lid can be applied to retorts now in use at slight expense.

I am aware that self-sealing retorts-lids of circular form have heretofore been made and used, and I do not herein make claim, broadly, to a self-sealing lid; but

What I do claim as new and of my invention, and desire to secure by Letters Patent, is—

A self-sealing retort-lid made in **D** shape,

with its rim provided with a groove, *c*, and flanges *d d'*, and having its central part curved and arched, as at *e f*, substantially as herein set forth.

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Witnesses:

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