2 Sheets--Sheet 1.

CHARLES F. DIETERICH & A. SCHUSSLER.

Improvement in Air-Tight Joints for Gas-Retorts.

No. 127,965. Patented June 18, 1872.

Fig. 1.

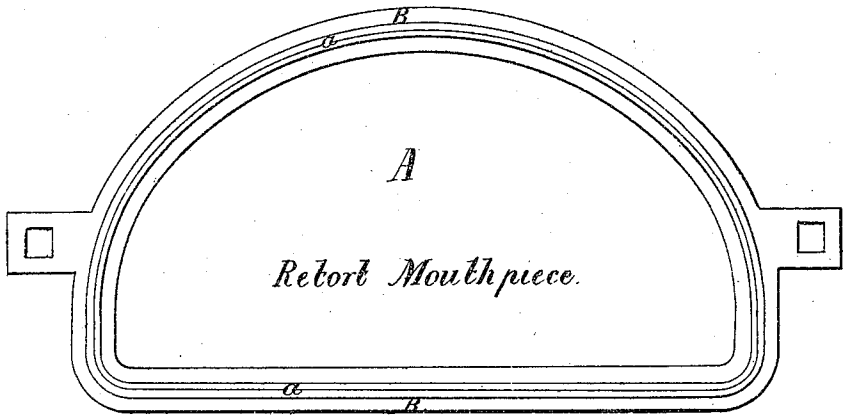
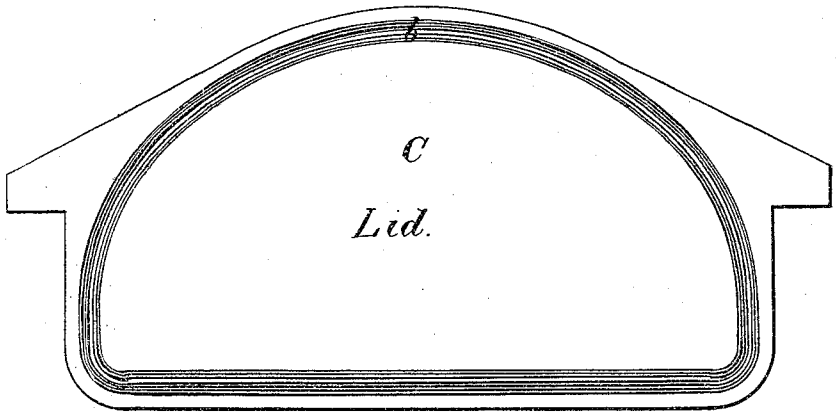


Fig 2.



Witnesses.
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A Livingston Mills

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2 Sheets--Sheet 2.

CHARLES F. DIETERICH & A. SCHUSSLER.

Improvement in Air-Tight Joints for Gas-Retorts.

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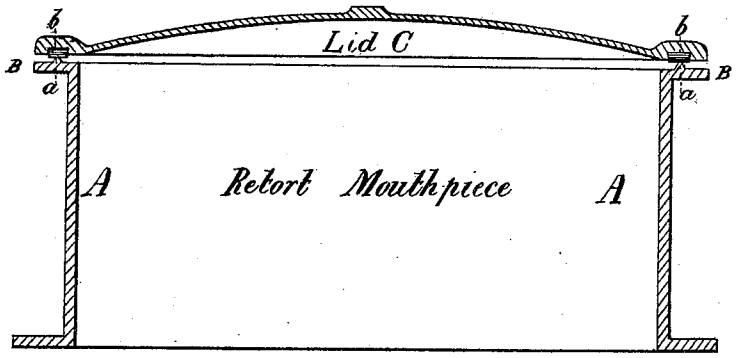
Fig 3.



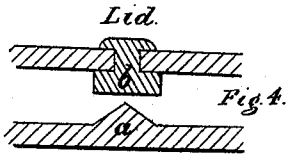


Fig. 4.

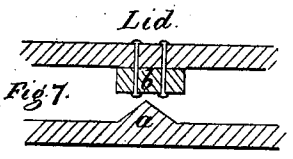


Fig. 7.

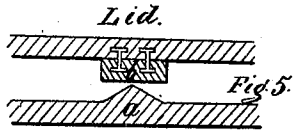


Fig. 5.

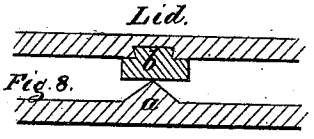


Fig. 8.

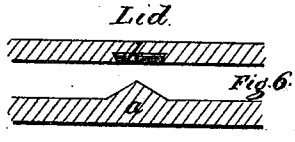


Fig. 6.

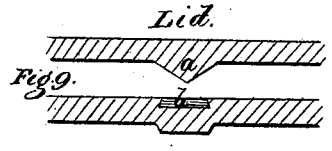


Fig. 9.

Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES F. DIETERICH AND AUGUST SCHÜSSLER, OF NEW YORK, N. Y.

IMPROVEMENT IN AIR-TIGHT JOINTS FOR GAS-RETORTS.

Specification forming part of Letters Patent No. 127,965, dated June 18, 1872.

To all whom it may concern:

Be it known that we, CHARLES F. DIETERICH and AUGUST SCHÜSSLER, of the city, county, and State of New York, have invented a new and useful Improvement in Air-Tight Joints for Gas-Retorts, of which the following is a specification, reference being had to the accompanying drawing forming part thereof.

The same letters represent similar parts in the several figures.

Figure 1, Plate 1, is a view of the front surface of the neck of a gas-retort. Fig. 2, Plate 1, is a view of the face of a lid designed to fit upon and close the neck of the retort, Fig. 1. Fig. 3, Plate 2, is a cross-section of the neck of a gas-retort with its lid, closing it, in position. Figs. 4 to 9, inclusive, Plate 2, exhibit several modifications of the method employed to fasten our lead-packing to the neck of the retort or to the lid.

Our invention relates to forming an air-tight joint for gas-retorts by attaching to the lid a fillet of lead, extending around it near the edge, and providing the outer face of the flange surrounding the neck of the retort with a corresponding rib or projection that presents a sharp edge, which, by pressure of the lid against the said neck, is forced into the lead.

A, Plate 2, represents the neck of a gas-retort made in the usual form, the outer end being surrounded by a flange, B, upon which to fasten the lid C designed to close it. Upon the face of this flange is cast or otherwise formed a rib or projection, *a*, extending entirely around the said flange. This projection is triangular in form, as represented in the drawing, whereby its apex presents an edge more or less sharp. C is the lid for closing the mouth of the retort. Around its border is secured a fillet of lead, *b*, or some soft alloy of that metal corresponding to the rib *a* upon the face of the retort. This fillet of lead is to be secured upon the lid in some convenient manner, so that, while the lid may be put on and taken off without disturbing or displacing it, it may be readily removed when worn out and replaced by a new one. This end may be effected in many ways, some of which are represented upon Plate 2. In Fig. 3 a single groove is made in the lid and the lead run into it. Fig. 4 shows a mode of fastening the lead cast upon the surface of the lid by making holes through the latter, allowing the lead to run through them and riveting it down upon the opposite side. Fig. 5 shows the lead run upon studs cast onto the lid. Fig. 6 shows the lead run entirely into a dovetailed groove. Fig. 7 shows the lid simply bolted on. Fig. 8 shows a band of lead lying upon the face of the lid, and secured to it by running a portion into a dovetailed groove. If desired, the lead may be attached to the neck of the retort and the angular projection cast or formed upon the lid, as shown in Fig. 9, which we regard as an equivalent arrangement. The better arrangement, however, is to secure the lead to the lid and form the projection upon the flange upon the retort.

The lid and face of the retort being thus constructed and provided, it is evident that when the former is pressed against the latter by being bolted or clamped to it, the edge of the projection *a* will be forced into the lead, forming thereby an air-tight joint, and that each time that the lid is removed and replaced the rib will readily embed itself anew in the lead by not a very severe pressure. When, by repeated removals and replacements, the lead becomes worn out, it may be easily and conveniently taken off and new lead applied.

The application and use of lead forms a convenient, economical, and entirely effectual air-tight joint for the purpose specified.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination, upon the faces of the lid and neck of a gas-retort, of the rib *a* and the lead-packing *b*, all constructed, combined, and operating substantially as and for the purpose specified.

CHAS. F. DIETERICH.
AUG. SCHÜSSLER.

Witnesses:
WM. C. REDDY,
A. LIVINGSTON MILLS.