T. UBIL.

MOUTH-PIECES AND LIDS FOR GAS-RETORTS.

No. 192,884. Patented July 10, 1877.

Fig. 1.

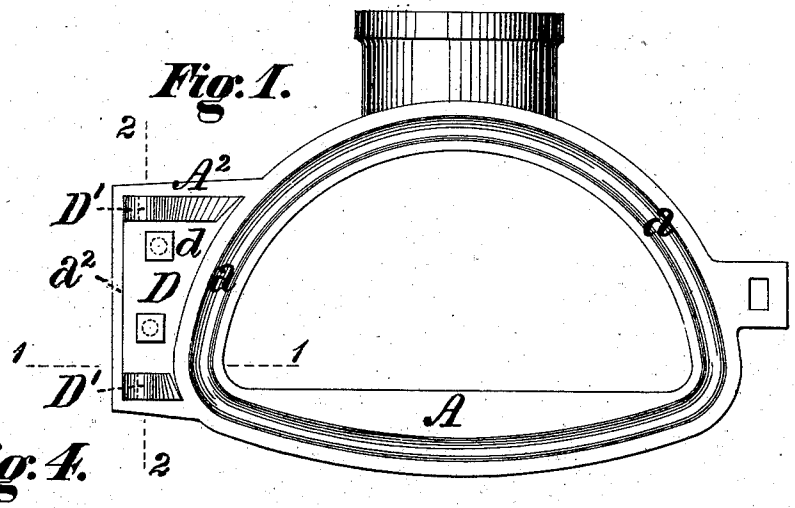


Fig. 4.

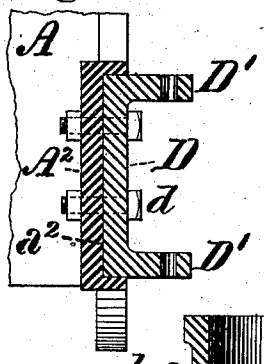


Fig. 6.

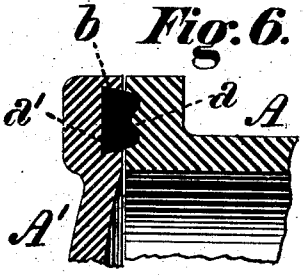


Fig. 5.

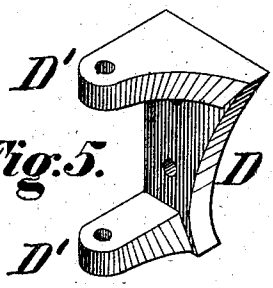


Fig. 2.

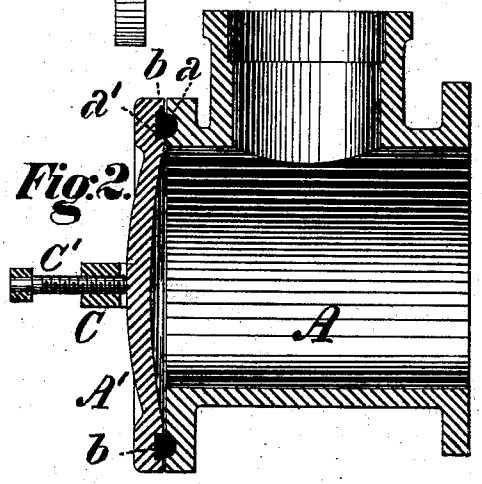
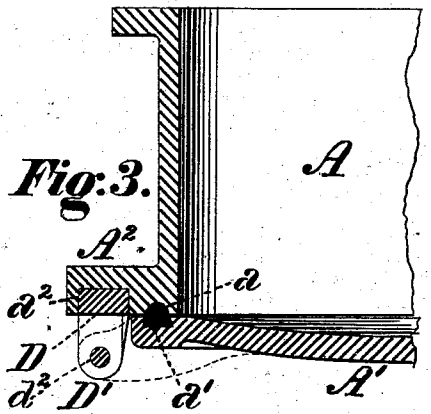


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

TAYLOR UBIL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO THOMAS R. BROWN, OF SAME PLACE.

IMPROVEMENT IN MOUTH-PIECES AND LIDS FOR GAS-RETORTS.

Specification forming part of Letters Patent No. **192,884**, dated July 10, 1877; application filed June 5, 1877.

To all whom it may concern:

Be it known that I, TAYLOR UBIL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Mouth-Pieces and Lids for Gas-Retorts, of which the following is a specification:

The objects of my invention are to provide suitable means for effecting an air and gas tight joint between a retort mouth-piece and its lid; and, further, to reduce the damage resultant from breakage of the lugs or supports of the lid and fastening by an improved means of connecting the same to the mouth-piece.

To these ends my improvements consist, first, in the combination of a retort mouth-piece, having a groove or recess extending around its outer face, with a lid having a groove or recess of symmetrical outline to that of the mouth-piece, and containing a yielding or elastic packing, which projects above its face, and fits into the groove of the mouth-piece, being compressed therein by the screw and cotter-bar or other fastening, by which the lid is pressed up to its position when closing the mouth-piece.

My improvements consist, secondly, in the combination of a retort mouth-piece, having a recessed side flange, with a removable hinge-piece fitting into the recess of said flange, and secured thereto so as to be readily renewed in the event of breakage, without affecting the position or the other connections of the mouth-picee.

In the practice of gas-engineering, various expedients have been from time to time proposed and practiced for the purpose of preventing the entrance of air and escape of gas between retort mouth-pieces and their lids. Various materials in the nature of luting have been employed for this purpose, and in some instances copper or lead has been inserted in grooves in the mouth-piece, and compressed therein by a projecting rib or tongue on the lid. Fusible alloy has also been similarly employed.

An objectionable feature in such application has, however, existed in the fact that the packing is to a greater or less degree forced out of its groove by the entering rib upon the application of pressure by the fastening device, and thereby exposed to the destructive effect of the direct action of heat.

In the use of my improvement the projecting portion of the packing material is covered and protected by a receiving-groove, into which it is compressed, and a tight joint is thereby insured without the necessity of frequent renewals.

Retort mouth-pieces are, further, ordinarily constructed with the lugs or bearing-pieces, to which the lid and fastening are to be hinged, cast upon them, and in such case the breakage of a lug, which frequently occurs in the operations of drawing or charging, entails the removal and loss of the entire mouth-piece. My improvement enables a broken lug to be readily and speedily replaced without the removal of or detriment to the mouth-piece or retort, or their connections.

In the accompanying drawings, Figure 1 is a front or face view of a retort-mouth embodying my improvements; Fig. 2, a vertical central section of the same; Fig. 3, a horizontal half-section at the line 1 1 of Fig. 1; Fig. 4, a vertical section through the side flange and hinge-piece; Fig. 5, a view, in perspective, of the hinge-piece detached; and Fig. 6, a section on an enlarged scale, showing a modification in the form of one of the packing-grooves.

To carry out my invention, I form upon the front or face of the retort mouth-piece A a groove or recess, *a*, extending entirely around said face, and being, preferably, of a curved or segmental cross-section, and upon the inside of the lid A^1 a groove, a^1, symmetrical in outline, or corresponding with the groove *a*, but dovetailed or undercut on one or both sides, the better to retain the packing *b*, with which it is filled. The packing may consist of any proper yielding or elastic material—as, for instance, lead or copper—and in some cases I propose to employ vulcanized rubber, and a sufficient quantity is inserted to project outside of the groove a^1, in substantially similar form and dimensions to the transverse section of the groove *a*, the full section of the packing being shown in solid black in Figs. 2, 3, and 6. Upon the closing of the lid against the mouth-piece, and the application

of pressure by the cotter-bar C and screw C′, or by any other fastening device which may be employed, the projecting portion of the packing *b* is forced into and compressed against the groove *a*, forming a gas-tight joint around the mouth, and being protected by its grooves from the direct action of heat.

I have specified a curved or segmental cross-section for the groove *a;* but this, while preferable, is not essential, and in Fig. 6 a kidney form or triple-curve section of the groove is shown.

It will be further obvious that the relative positions of the retaining and receiving grooves might be reversed, if desired, without departing from the spirit of my invention, the prominent feature of which consists in providing a cover or receptacle for the projecting portion of the packing.

A side flange, A^2, is formed upon the mouth-piece A, within which flange is formed a recess, a^2, to receive a removable hinge-piece, D, which fits neatly therein, and is secured by a bolt or bolts, *d*. The base of the hinge-piece D is of sufficient area to give firmness to the union made between it and the recessed flange, this feature causing this part of my invention to differ from other expedients intended to serve the same purpose, and making a firmer and more solid connection than can be formed by fitting the hinge-piece in sockets not having provision for receiving an extended and flat area of plate forming the base of the hinge-piece. Lugs D′ are formed upon the hinge-piece to receive the hinge-pin d^2, upon which the cotter-bar C and lid A^1 are pivoted.

In case of breakage of either of the projecting lugs, the hinge-piece can be readily removed, and another substituted at trifling cost, without affecting the position of the mouth-piece and stand-pipe.

I am aware that joints have been made in gas-retort mouth-pieces by the compression of a yielding packing between a recess and an entering rib or projection, as in the patents of W. H. St. John, No. 16,075, November 11, 1856, and N. Aubin, No. 17,068, April 21, 1857. I do not, therefore, broadly claim the use of packing in combination with grooved surfaces in a joint.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, with a gas-retort mouth-piece having a groove or recess around its outer face, of a lid having a groove of corresponding outline filled with yielding or elastic packing, which projects and fits into the groove of the mouth-piece when the lid is closed thereon, substantially as set forth.

2. The combination of a retort mouth-piece, having a recessed side flange and a removable hinge-piece, with a plate fitting into the recess of said flange, and bolted thereto, substantially as set forth.

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Witnesses:
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