

G. A. McILHENNEY.
Gas Retort Closing.

No. 137,704.

Patented April 8, 1873.

Fig 1.

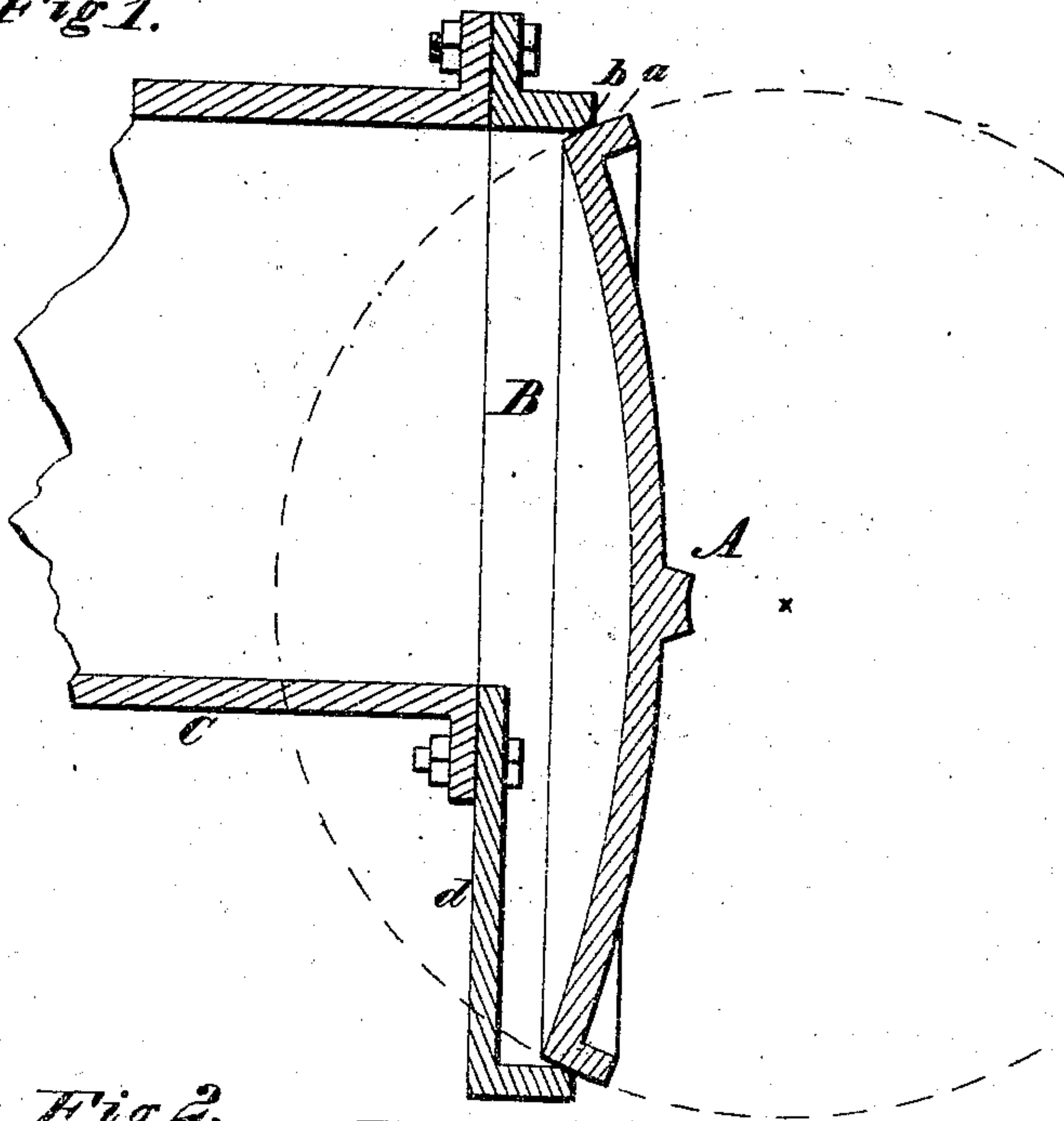
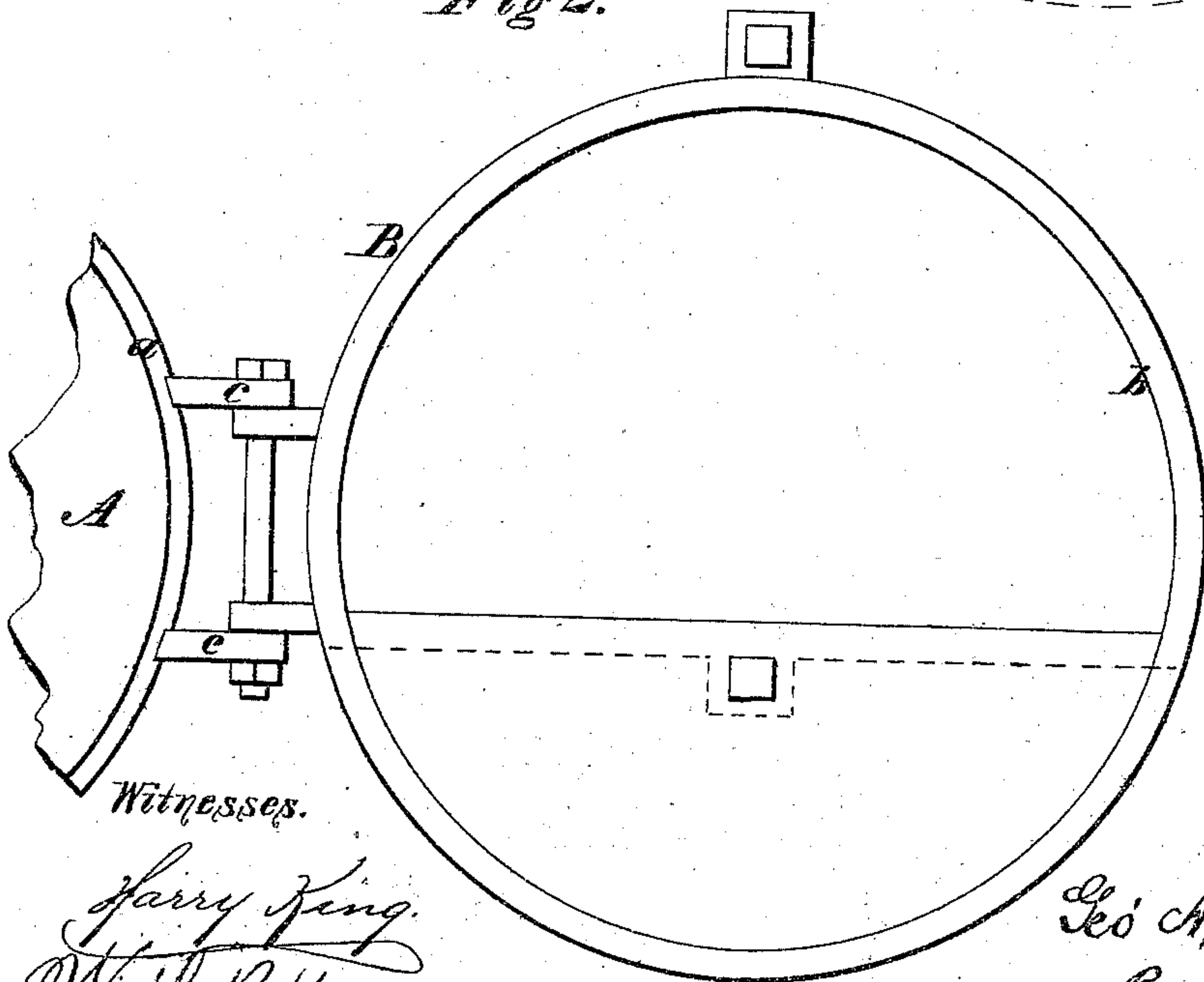


Fig 2.



Witnesses.

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IMPROVEMENT IN GAS-RETORT CLOSINGS.

Specification forming part of Letters Patent No. **137,704**, dated April 8, 1873; application filed February 20, 1873.

To all whom it may concern:

Be it known that I, GEORGE A. McILHENNEY, of Washington, in the county of Washington and District of Columbia, have invented certain Improvements in Lids and Mouth-Pieces for Gas-Retorts, of which the following is a specification:

My invention relates to lids and covers for closing gas-retorts without the use of luting; and consists, first, in making the lid in the form of the segment of a sphere, so that when inserted it has a narrow line of bearing in the mouth, and is certain to fit without being accurately adjusted; and second, in forming the mouth-piece with a circular front, which may be turned up in a lathe to form an accurate seat for the lid, and with an irregular back, which may be fitted to the retorts now in use.

Figure 1 is a vertical central section through my lid and mouth-piece, in position on an ordinary D-retort; and Fig. 2, a front view of the same with the lid swung open on its hinges.

In constructing my lid I make it of a circular form, with its outer edge *a* rounded off, so that in cross-section the two opposite edges form arcs of a circle lying in a plane at right angles to the face of the lid, as shown by the dotted lines in Fig. 1; or, in other words, I make the lid in the form of a segment of a sphere. I then construct the mouth-piece B also in a circular form, with its inner front edges *b* slightly rounded off, as shown in Fig. 1. The lid and mouth are both turned up in a true circular form, and made of such sizes that the lid may be inserted within the mouth, as shown in Fig. 1.

When the lid is inserted it will be seen that its line of bearing is very narrow; but, as the two parts are made with great accuracy, a perfectly gas-tight joint is formed upon forcing the lid home. The lid, having its edges rounded spherically, will, like a ball-valve, seat itself at once without being adjusted, and will bear closely around its entire circumference, whether inserted truly or with one edge further inward than the other. Owing to the narrow bearing there is no danger of the lid being prevented from seating itself by obstructions adhering to the edge of either

part. In case of there being any obstruction at one point the lid can be tipped or turned so as to bear at other and clean points, and thus a tight joint be formed immediately without stopping to clean the lid. As the lid bears on the corner or edge of the mouth-piece there is, of course, no danger of the mouth being so obstructed as to prevent the lid from being seated. Another advantage of the narrow bearing-surface is, that when the lid is forced home the surfaces are pressed together with more closeness or tightness than would be the case with a broad bearing, where the pressure would be distributed over a larger surface. The lid and mouth-piece, constructed as described, will always form a tight joint upon being forced together. They require no particular adjustment of the lid; obstructions in the form of adhering tar, coke, &c., will not prevent the lid from being closed home; and the joint is not affected by the expansion or contraction of the metal.

In constructing the lid and mouth they are turned or finished up in a lathe, as being the cheapest and most accurate method. In order to permit of this being done it is, of course, necessary to make them of the circular form.

In order to adapt these circular parts for application to the ordinary retorts of the D-form, and to other retorts of an irregular form, I make the back of the mouth-piece of a form and size to correspond with that of the retort, as shown. In this way I am enabled to make my circular lid and mouth applicable to all retorts as they now stand; and, consequently, I can put my devices into the market as an article of trade, to be purchased and applied by the companies to their present retorts.

In the drawing I have shown the lid hinged to the mouth; but they may be, and generally are, made separate and detached therefrom.

The lid is, in all cases, whether hinged or otherwise attached, allowed a certain amount of play or movement, so that it may be tipped and turned to a slight degree.

It is obvious that lids and mouths of other forms may have their edges arranged to fit in

the manner shown; but the form shown is, for many reasons, preferable to all others.

Having thus described my invention, what I claim is—

1. A lid for gas-retorts in the form of a spherical segment, arranged to fit within the mouth of the retort in the manner shown and described.

2. In combination with a circular lid, A, a mouth-piece, B, having its front made of a circular form to receive the lid, and its back made of an irregular form to fit the retort.

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Witnesses:

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