

Stephen Holman.

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PATENTED AUG 1 1871

Securing Retort Lids.

FIG. 1.

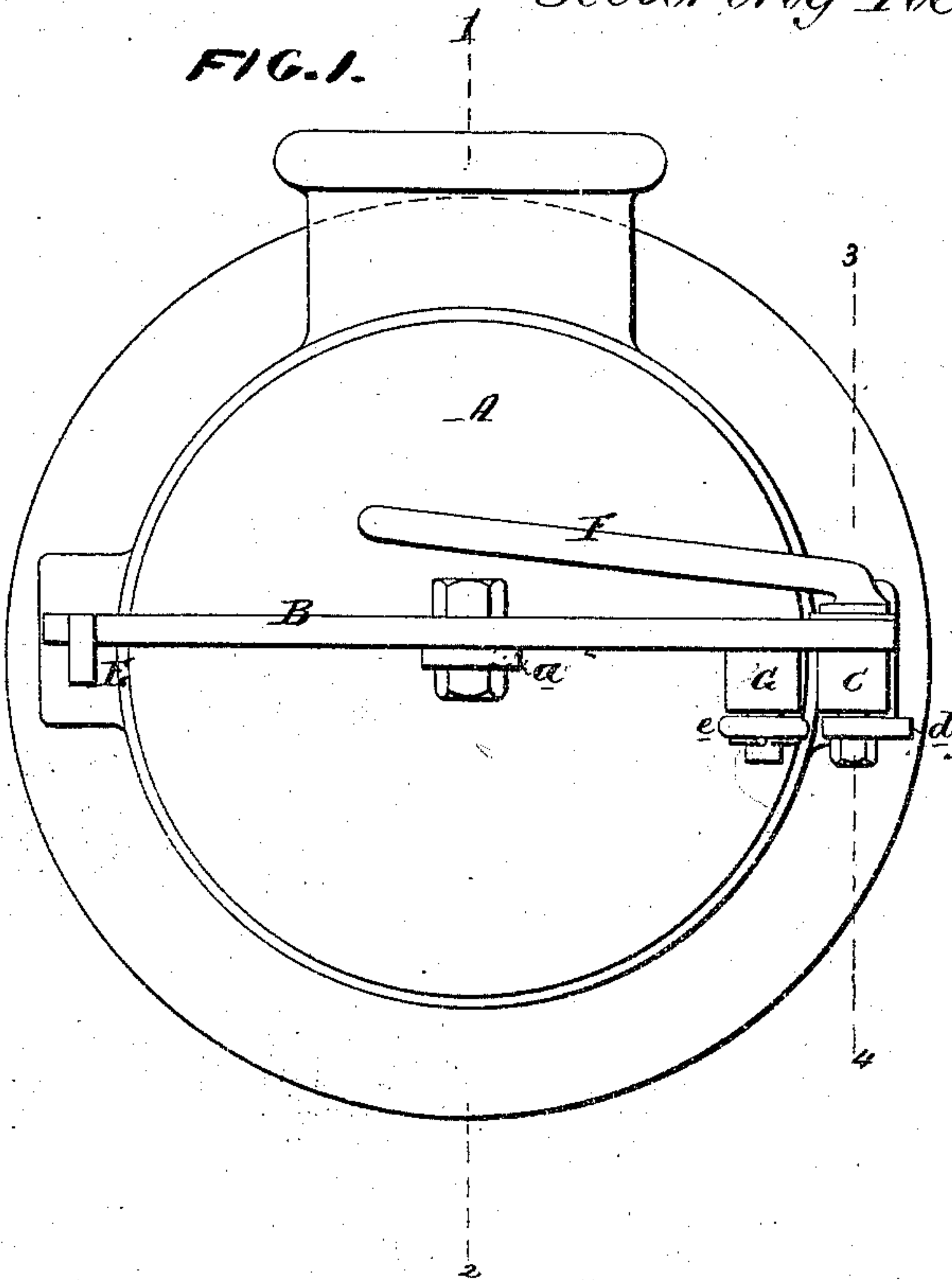


FIG. 3.

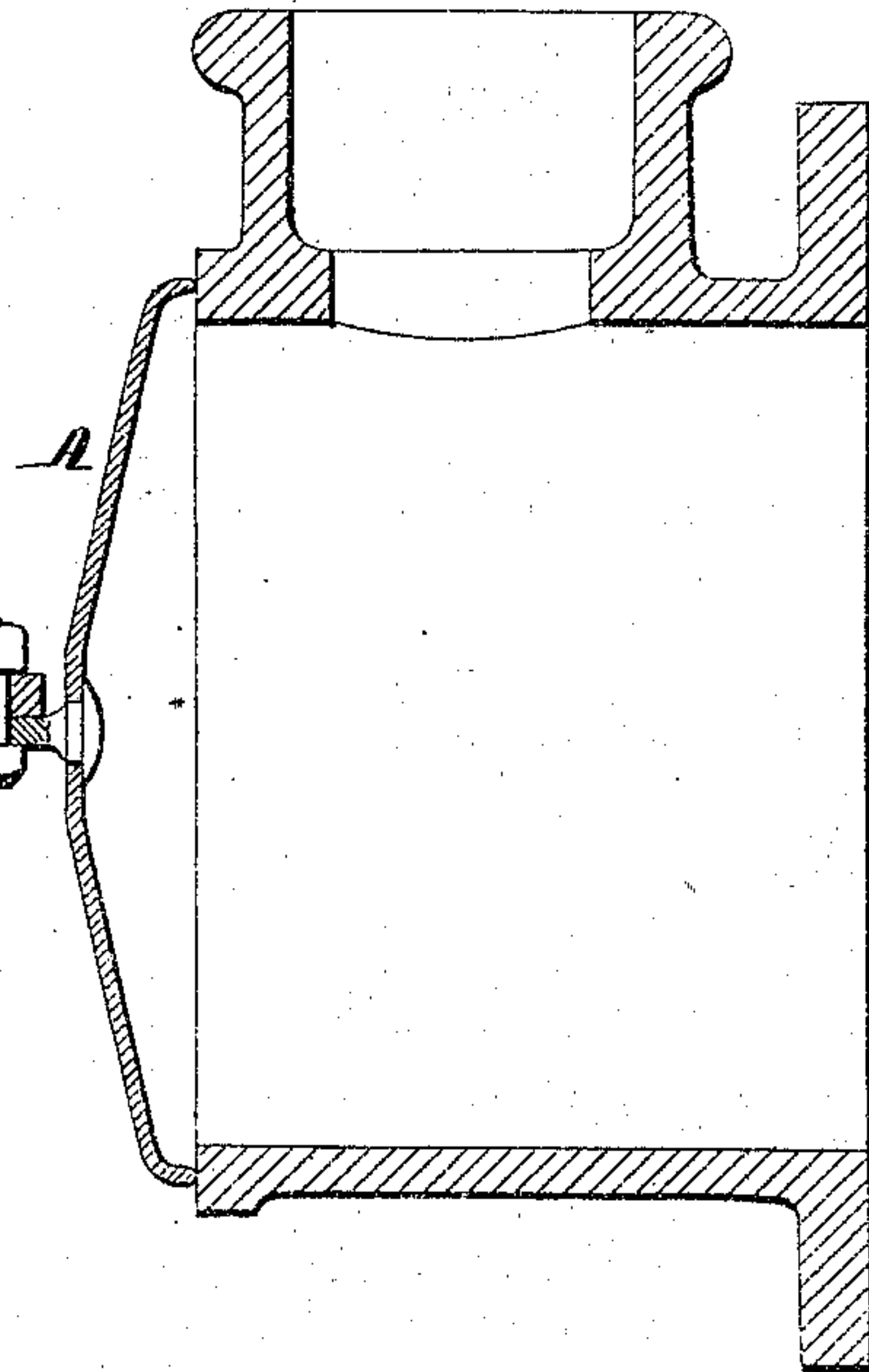


FIG. 2.

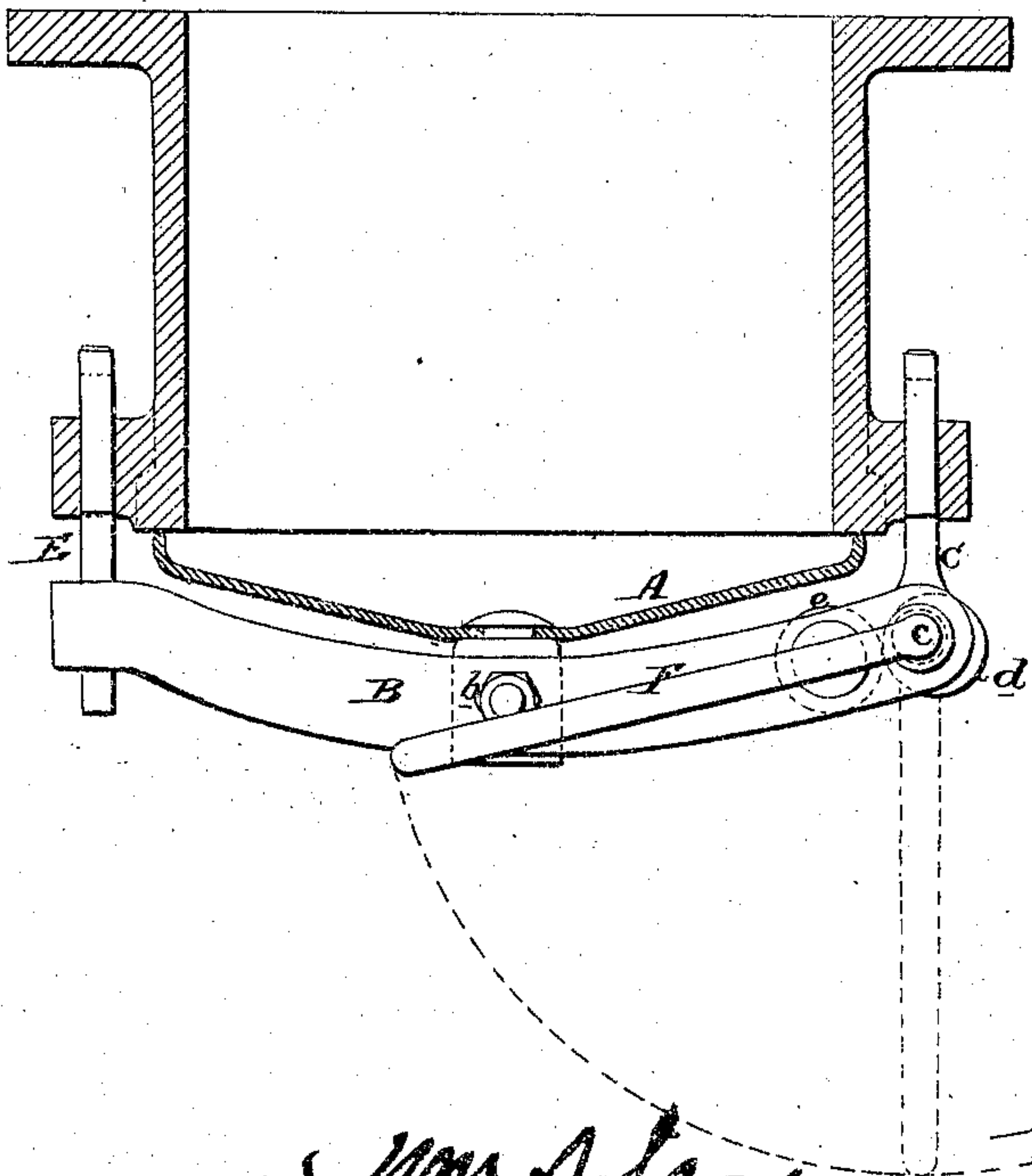
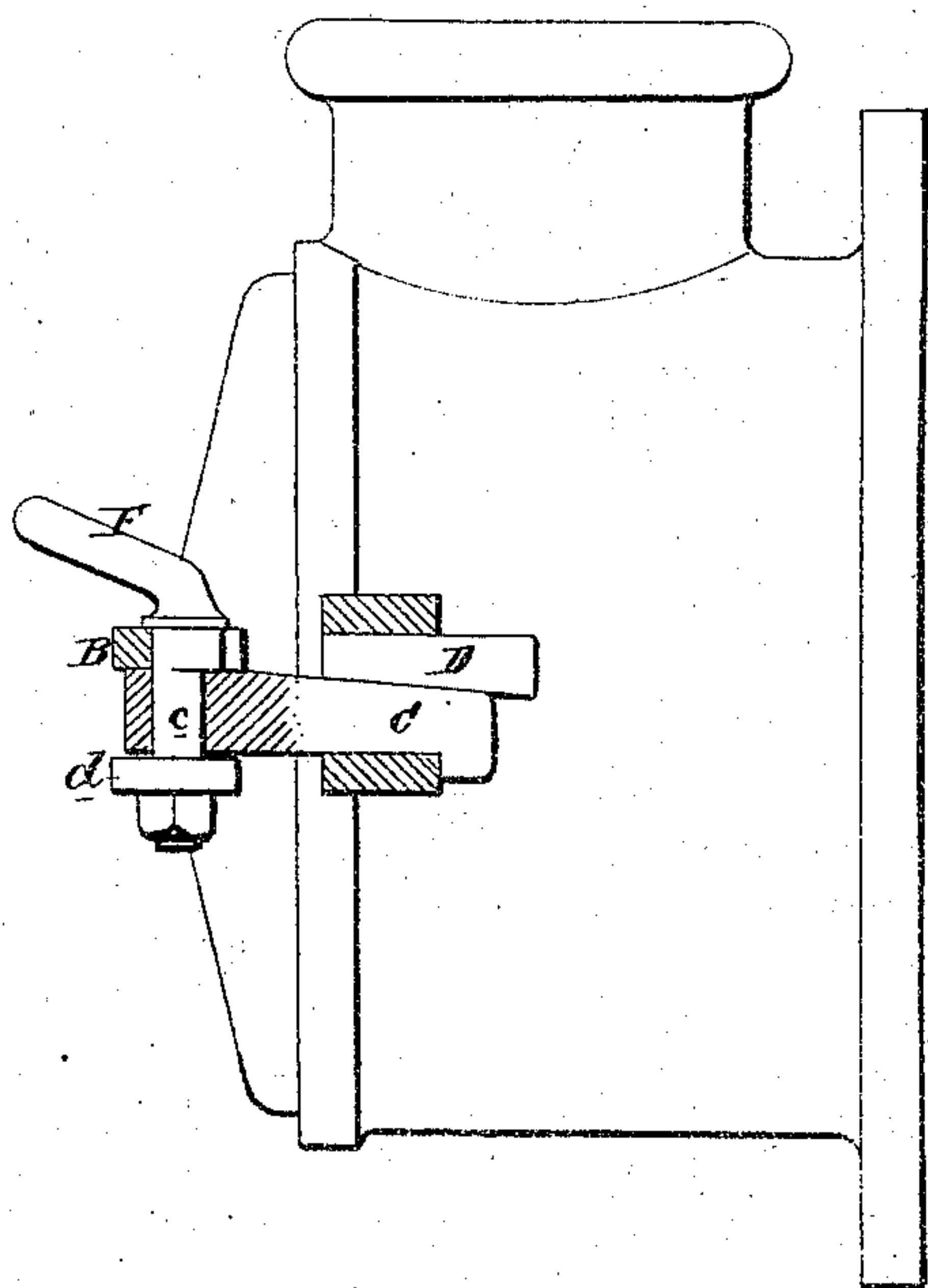


FIG. 4.



WITNESSES

*Wm. A. Steel*  
*John Parker*

*Stephen Holman*  
*by his attor.*  
*Shroven and Son*



# UNITED STATES PATENT OFFICE.

STEPHEN HOLMAN, OF LONDON, ENGLAND.

## IMPROVEMENT IN SECURING LIDS TO GAS-RETORTS.

Specification forming part of Letters Patent No. 117,631, dated August 1, 1871.

*To all whom it may concern:*

Be it known that I, STEPHEN HOLMAN, of Lawrence Pountney Lane, in the city of London, England, engineer, have invented improvements in apparatus for hinging, adjusting, and fastening gas-retorts and other lids, covers, or doors, of which the following is a specification:

This invention relates to a mode of holding or securing retort-lids or covers against their mouth-pieces, whereby the retort is more readily opened and closed than by the ordinary arrangement or method of securing; and in order that my said invention may be fully understood, I shall now proceed more particularly to describe the same, and for that purpose shall refer to the four figures on the annexed drawing.

Figure 1 of the accompanying drawing is a front elevation. Fig. 2 is a sectional plan; Fig. 3, a vertical longitudinal section taken through 1 2 in Fig. 1. Fig. 4 is a side elevation, partly in section, taken along the line 3 4 in Fig. 1, of my improved holding or securing arrangement.

The lid A has a central stud, *a*, riveted, cast, or otherwise secured thereto, which stud *a* connects the lid permanently to the center of the cross-bar B by an eccentric pin or bolt, *b*, passing through the stud *a* and cross-bar B, the object of which will be hereinafter described. One end of the cross-bar is hinged, by an eccentric hinge-pin or bolt, *c*, (shown more clearly in Fig. 4,) to a jointed lug, C, secured by a cotter or key, D, in an ear cast on one side of the mouth-piece, while the other end of the said cross-bar rests upon a corresponding lug or catch, E, similarly secured to the opposite side of the mouth-piece, and having a catch or raised portion on the end thereof for the cross-bar to bear against when the lid or cover is tightened up. A lever-handle, F, is attached to or formed on the top of the eccentric hinge-pin or bolt *c*, while to the lower end of the said pin or bolt there is secured a cam or eccentric, *d*, which turns with the bolt and presses against an anti-friction roller, *e*, carried by a stud, G, which projects from the under side of the cross-bar for the purpose presently to be explained. In Fig. 2 the lid is represented as being pressed up tightly against the mouth-piece, but in order to open the same the handle F is

pulled over, as shown by the dotted arc, and by the time it has assumed the position shown by dotted lines the eccentric pin or bolt *c* will have acted upon the end of the cross-bar B and caused the lid not only to be withdrawn slightly from the mouth of the retort, but to have a slight lateral sliding motion thereon, so as to remove any grits which may have collected upon the junction surfaces, and which might interfere with the tightness of the joint at the next closing. The further movement of the lever F causes the eccentric or cam *d* so to bear against the roller *e* as to elevate the free end of the cross-bar clear of the catch in the lug E, whereupon the lid and cross-bar are free to be swung around so as to expose fully the interior of the retort. The object of the eccentric pin *b* is to adjust the lid to the exact proper distance from the mouth-piece and compensate for wear, so that when the cross-bar is returned to its catch the turned-up edge of the lid will touch, but not be in forcible contact with the mouth-piece. The final nip or pressure is applied by bringing the lever F into the position shown in Fig. 2.

Having now described my invention, and how the same may be carried into effect, I would observe, in conclusion, that what I claim as novel and original is—

1. The lids or covers of gas-retorts attached to the cross-bars, the whole being hinged to the mouth-pieces, substantially as hereinbefore described and illustrated by the drawing annexed.
2. The eccentric adjusting and hinge-pins *b* and *c*, in combination with the cross-bars B, substantially as and for the purpose hereinbefore described.
3. The mode of lifting the cross-bar B out of its catch by means of a cam or eccentric, *d*, on the hinge-pin *c* acting upon an anti-friction roller or stud, *e*, carried upon the under side of the cross-bar, substantially as hereinbefore described and illustrated by my drawing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

Witnesses: STEPHEN HOLMAN.  
J. W. FRIGORT,  
WM. D. WOOD.