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A. F. HAVEN.

Improvement in Covers for Gas Retorts.

No. 122,250.

Patented Dec. 26, 1871.

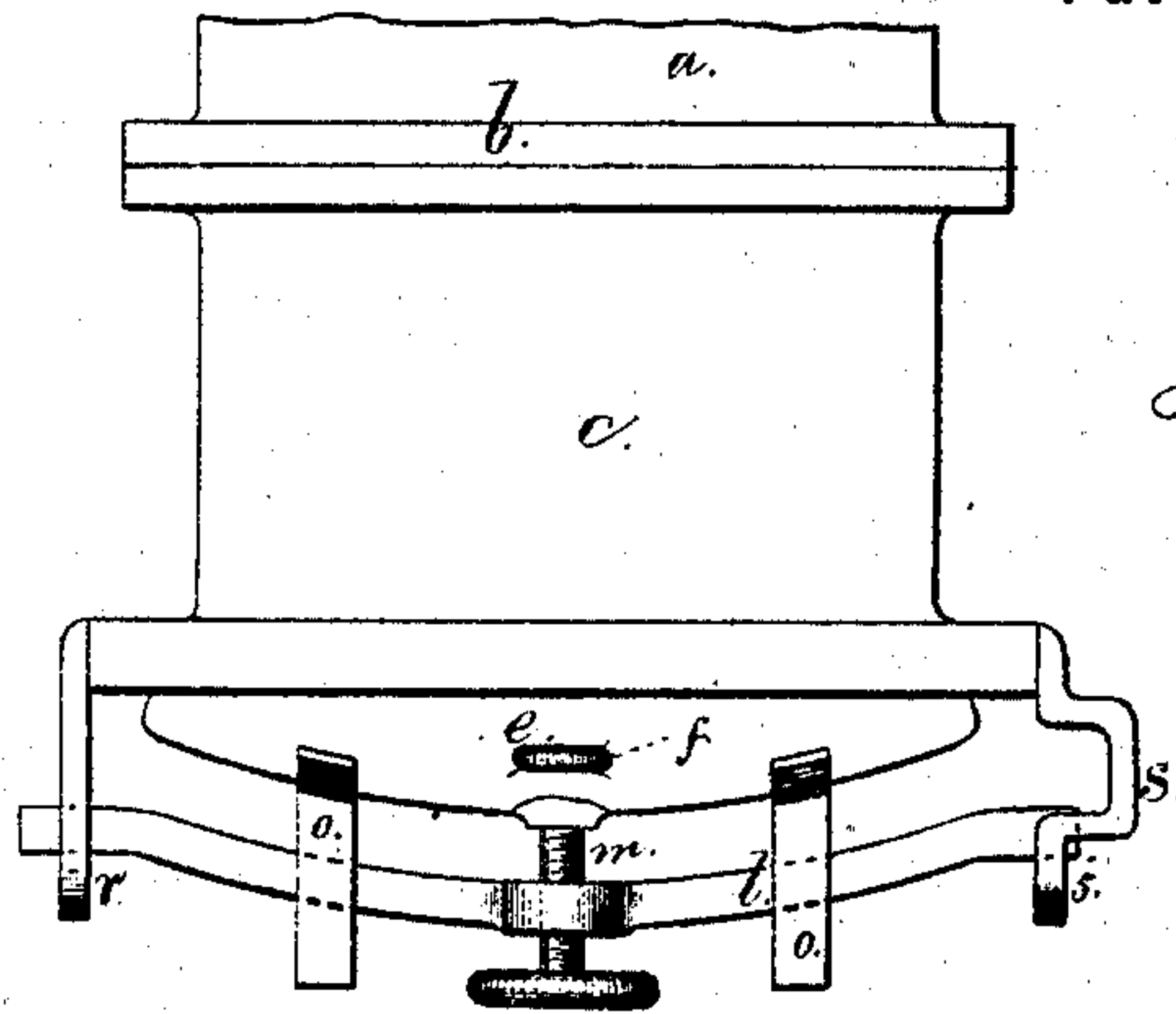


Fig. 2.

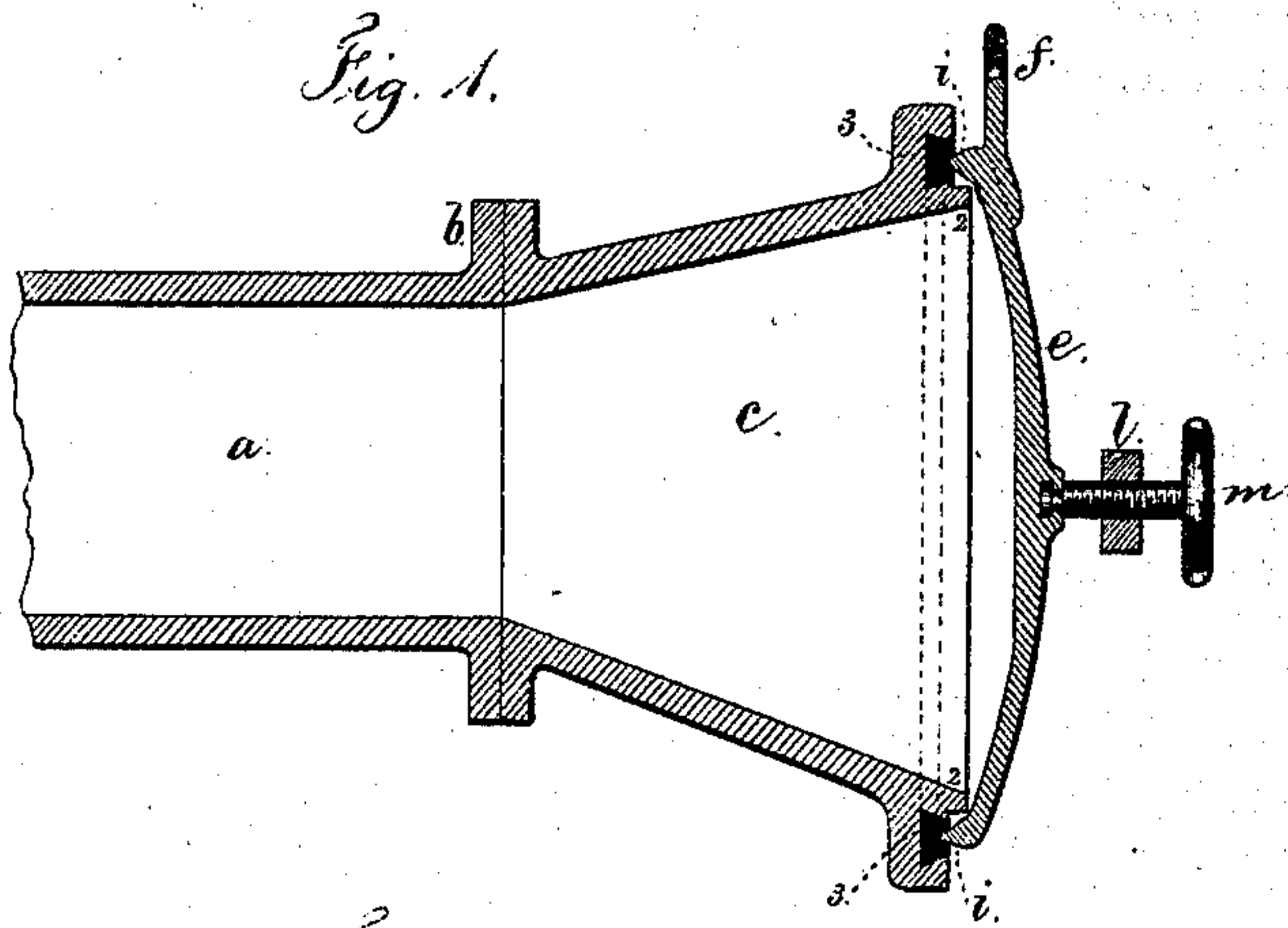


Fig. 1.

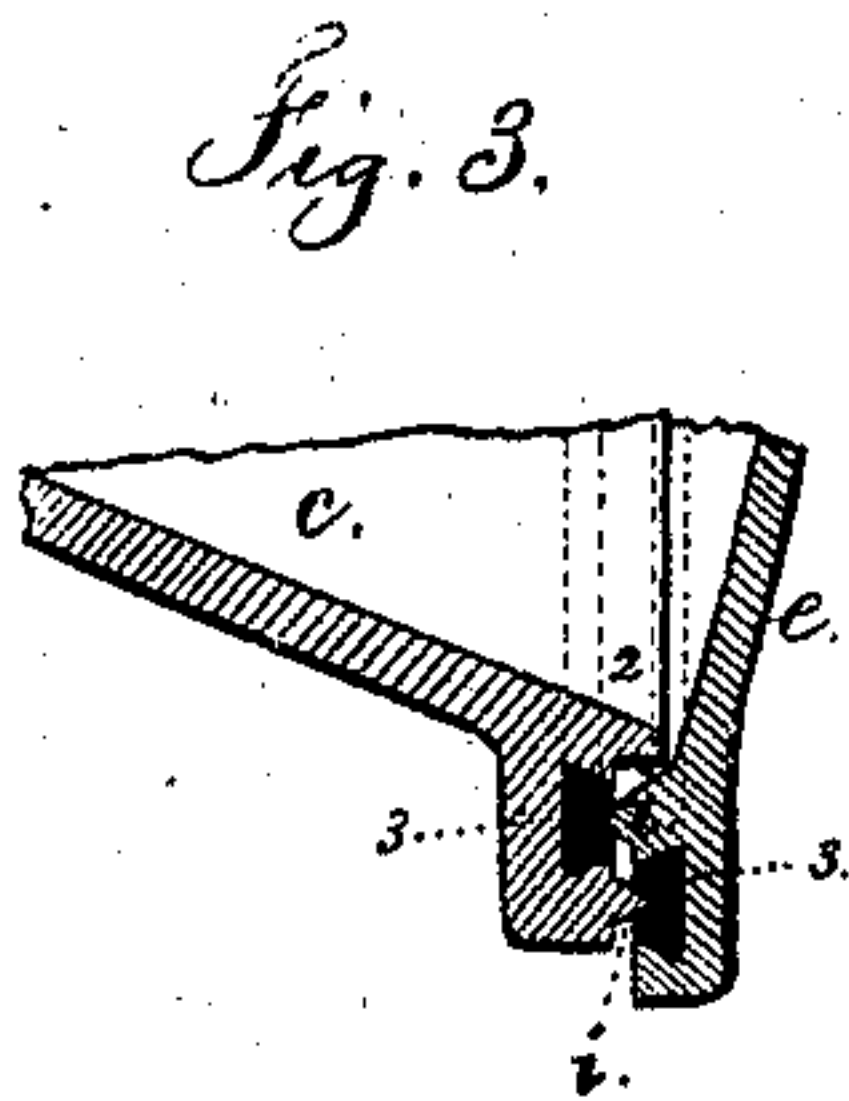


Fig. 3.

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## IMPROVEMENT IN COVERS FOR GAS-RETORTS.

Specification forming part of Letters Patent No. 122,250, dated December 26, 1871.

*To all whom it may concern:*

Be it known that I, ALONZO F. HAVENS, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Covers for Retorts; and the following is declared to be a correct description of the same.

This invention relates to a means for securing retort-covers at the mouths of the retorts in the manufacture of gas.

In retorts heretofore constructed the cross-bar is separate and detached from the cover so that two heated parts have to be handled in opening the retort; and the clay luting employed to make a tight joint is a source of trouble and expense, as each time the retort is opened the clay luting has to be applied afresh.

My invention is made for facilitating the insertion and withdrawal of the charge and for securing the cover to the retort.

I make use of a retort end that is circular where the cover is applied, and the sides converge to the shape of the retort at the mouth thereof. Around this retort end is a flange, and the cover of the retort sets upon the same, said cover being concave, and the joint is formed by a circular rib pressed upon a ring of plaster of Paris or similar material. The cross-bar of the retort is connected to the cover by means of guides and a screw, so that the cross-bar and cover are not separated, but are constantly properly in position for being applied to the mouth of the retort.

In the drawing, Figure 1 is a section of the said retort end and cover. Fig. 2 is a plan of the retort end, cover, and cross-bar, and Fig. 3 shows a modification in the shape of the ribs upon the cover or retort.

The retort *a* is made with the usual flange *b*, but instead of this flange receiving the cover I make use of the retort end *c* that is bolted to the flange *b*, and is made flaring so that the sides diverge into a circular form where the cover is applied. This retort end and cover are especially intended for use with the water-seal to the main, set forth in my patent No. 118,608; hence I have shown upon the cover *e* a ring, *f*, for the chain passing to the lever of the water-seal, and intend that said cover shall be elevated, after it has been removed from the end of the retort, and then drawn down and placed upon the retort end

as the seal is opened. The cover *e* is made convex on its outer side, and an inclined V-formed flange, *i*, around its back edge sets around a projecting guide-flange, 2, upon the retort end, which parts serve to bring the cover into its proper position. The V-flange or rib is employed to make a tight joint against a ring of plaster of Paris, 3, or similar material introduced in a dovetail groove. The V-formed flange *i* may be a single or a double concentric rib to take the surface of one or two rings of plaster; or the parts may be made double, as in Fig. 3, there being a ring of plaster and a V-rib on both the cover and the retort. The cross-bar *l*, sometimes called the "cotter-bar," is made with a screw, *m*, through the middle, that enters the middle of the cover *e*, where it is connected by a bushing or pin and groove that allows of rotation, but prevents the screw drawing away from the cover; and this bar *l* is between guides *o o* that project from the cover and hold the bar in position, but allow of its movement by said screw *m*. At one side of the retort end *c* is the hook *r*, beneath which one end of the bar *l* is placed, and the other end of said bar *l* is passed behind the lip 5 of the other hook *s*; thereby the bar will be held against the action of the screw *m* in forcing the cover firmly against the retort end to make a tight joint.

The cover can be slackened previous to removal by unscrewing the screw *m*; and, in consequence of the construction shown of the hook *s*, the cover can be lifted out with a less movement of the screw *m* than heretofore usual.

I am aware that the retort-cover has been pressed against the metal of the retort end; but in practice I have found this to be a failure, because the tar burns upon the metal and prevents a tight joint. I have successfully employed plaster of Paris in the groove around the retort to take the V-rib of the cover, and find that the tar does not burn thereon, but sinks into the plaster and forms a durable packing, possessing a sufficient yielding and adhesive character to form a perfectly-tight joint when the V-rib of the retort-cover is pressed upon the same.

I do not claim one or more ribs and elastic packing in grooves; neither do I claim attaching the cover to the cross-bar.

I claim as my invention—



1. The rib 2 around the mouth of the retort end in combination with the V-rib upon the retort-cover to guide said cover to place, as set forth.
2. The groove 3 containing plaster of Paris or other cement in combination with the V-rib on the cover e, as and for the purposes set forth.
3. The cross-bar l, supported by the guides o o upon the cover e, in combination with the hooks r and s upon the retort end, substantially as and for the purposes set forth.

Signed by me this 13th day of October, A. D. 1871.

ALONZO F. HAVENS.

Witnesses:

GEO. T. PINCKNEY,  
CHAS. H. SMITH.

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