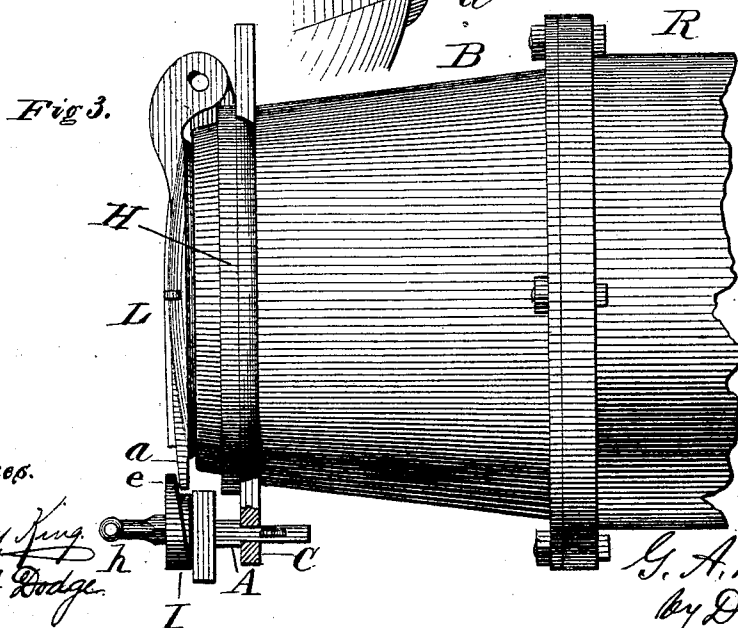
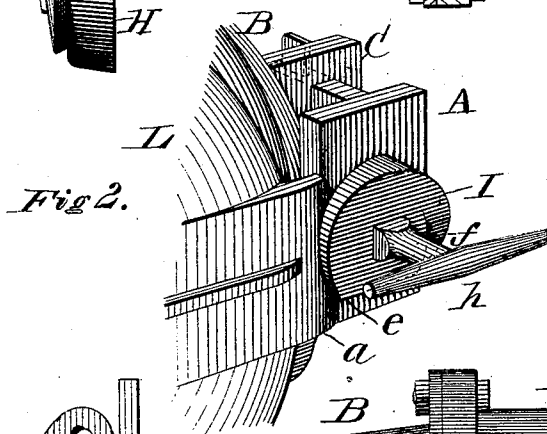
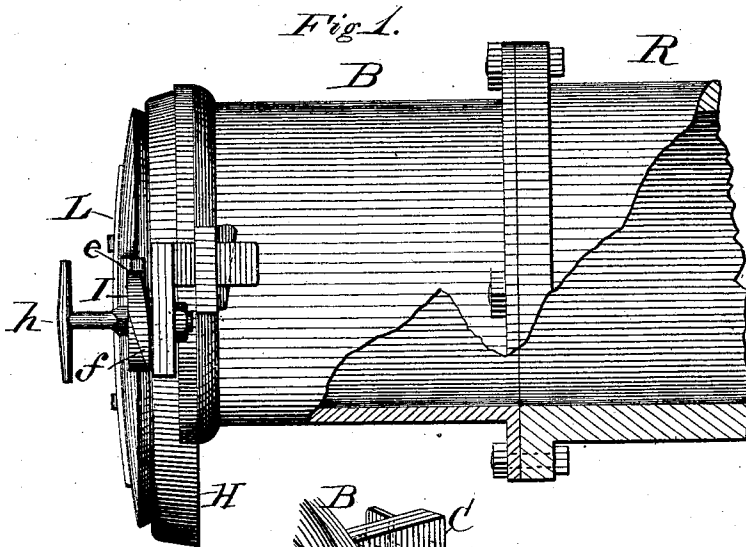


G. A. McILHENNEY.

Gas-Retorts.

No. 145,672.

Patented Dec. 16, 1873.



Witnesses.

Harry King
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Inventor.

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UNITED STATES PATENT OFFICE.

GEORGE A. McILHENNY, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN GAS-RETORTS.

Specification forming part of Letters Patent No. **145,672**, dated December 16, 1873; application filed October 10, 1873.

To all whom it may concern:

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

My invention relates to gas-retorts; and the invention consists in the peculiar construction of a mouth-piece, and in a novel device for fastening and unfastening the lid or door, as hereinafter more fully described.

Figure 1 is a side elevation, shown partly in section. Fig. 2 is a perspective view of a portion, and Fig. 3 is a top-plan view.

The object of this invention is to make a mouth-piece with a circular door of such a style that it can be bolted to the front of the ordinary D-shaped retort, and have its lower wall or floor come flush with the bottom of the retort, and also to provide a convenient and efficient means of fastening and unfastening the door.

To accomplish these objects, I construct the mouth-piece H with a body, B, of the same form, in cross-section, as the retort R, and with a flange at its rear end, by which it can be securely bolted to the front end of the retort, as represented in Fig. 1, care being taken to so construct this neck B that its bottom shall come flush with the bottom of the retort, and form a continuation thereof, as shown in Fig. 1. At the front end is the mouth-piece H, provided with a circular rim, which projects below the bottom, as shown in Fig. 1, and in which is fitted a circular door, L, as fully described in my former patents. This neck B may be made of uniform diameter its whole length, as represented in Fig. 1; or it may be made to converge toward the front, as represented in Fig. 3, in which latter case the door may be correspondingly reduced in diameter, thereby saving metal and labor.

By this method of constructing and attaching the mouth-piece, it will be seen that they can be readily applied to the retorts in common use without removing or altering the latter, and that, when so applied, there is no cavity or recess in the bottom for tar or carbon to accumulate in, and that thus the retort can be as readily cleared of its contents as though the mouth-piece had not been attached.

It is very desirable to have some means by which the lid or door of the retorts can be easily and quickly opened and closed; and, to accomplish this result, I hang the door on hinges at one side, as shown in Fig. 3, and provide it with a projecting lip, *a*, at its opposite edge, as shown in Figs. 2 and 3. I then provide a handle, *h*, which is journaled in any suitable manner to the side of the mouth-piece, it being shown attached loosely to a plate, A, which, in turn, is secured firmly to an arm, C, projecting laterally from the side of the part B. On the stem or body of this handle *h* I secure or cast a locking-cam, I, which has an incline, *e*, on one side, arranged to engage over the lip *a* of the door, and thereby crowd and hold the door shut, this incline enabling the operator to exert great force on the door, so as to shut it perfectly tight, especially when the door is so formed as to seat itself by a narrow line of contact in the mouth of the retort or mouth-piece, as described in my former patents. On the opposite edge of this locking-cam I another incline, *f*, is formed, as shown in Figs. 2 and 3, it being arranged to engage under the lip *a*, instead of over it, so that, when the handle *h* is turned in the opposite direction, this incline *f* will act to force the door open. The two inclines *e* and *f* constitute, in effect, a thread of a screw, and operate on the same principle; and, indeed, the cam I may be constructed with a large or coarse screw-thread on its periphery, and made to operate the same. It is desirable to make the cam I of such a size that, in order to lock or unlock the door L, it need be turned but part of a revolution, it having one side cut away, as shown in Fig. 2, so that when that side is turned next to the door it will not project over the lip, and thus leave the door free to be swung open or shut without obstruction. As the doors of retorts are stuck fast by the tar and other matter that accumulates at the mouth, this ready and powerful means of opening or loosening it is very important. It is also important as a means of closing it quickly and tightly.

These two features add greatly to value of the ordinary or D-shaped retorts, and by them my improved lids can be most successfully applied to the ordinary retorts without removing

them from their position, it only being necessary to remove their present fronts and bolt on this mouth-piece.

Having thus described my invention, what I claim is—

1. The neck-piece B, provided with the circular mouth H at its front end, and a flange for attaching it to the retort at its rear end, said part B being made D-shaped transversely, and having its floor or lower side flush with the floor of the retort, substantially as described.

2. The neck-piece B, having its rear end of

a form and size to fit the body R of the retort, and made to converge toward its front end, whereby a circular mouth and door of less diameter can be used, as set forth.

3. The locking-cam I, constructed and arranged to operate substantially as described, whereby it can be made to fasten and unfasten the door of a retort, as set forth.

GEO. A. MCILHENNY.

Witnesses:

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