(No Model.)

J. P. CLARK.

CATCH OR LOCK FOR RETORT LIDS.

No. 493,424. Patented Mar. 14. 1893.

Fig. 1.

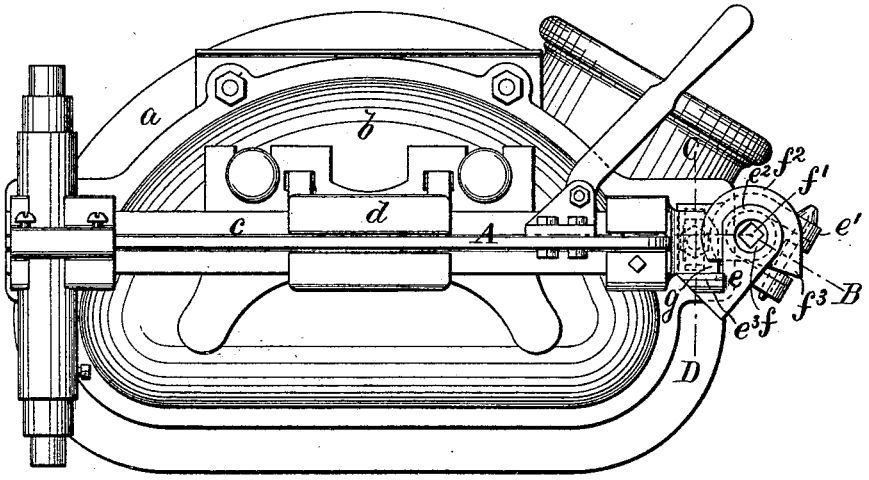


Fig. 2.

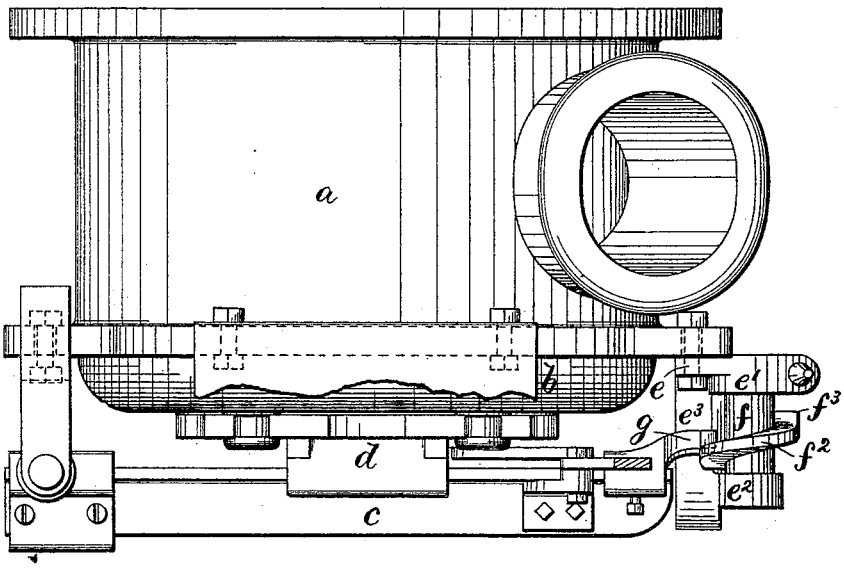


Fig. 3.

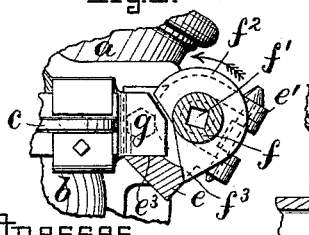


Fig. 4.

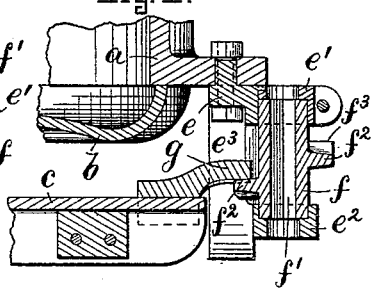
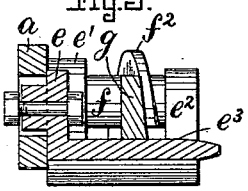


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSIAH P. CLARK, OF BOSTON, MASSACHUSETTS.

CATCH OR LOCK FOR RETORT-LIDS.

SPECIFICATION forming part of Letters Patent No. 493,424, dated March 14, 1893.

Application filed December 8, 1892. Serial No. 454,431. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH P. CLARK, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Catches or Locks for Retort-Lids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in catches or locking devices for retort lids and other similar articles and has for its object to provide a catch which is compact in construction, simple and effective in operation, one in which the pressure of the lid against its seat, when locked, may be varied according to requirements.

The invention is especially applicable to retort lids for gas works in which the lid is mounted on a rod or bar hinged at one end to the mouthpiece of the retort, and locked at the other end by means of a suitable catch or locking device.

The invention consists in the peculiar construction and arrangement as set forth of a screw or worm, the thread of which is arranged to engage the free end of the lid-supporting bar so as to force the lid against its seat on the mouth-piece of the retort by turning the worm on its axis.

It further consists in an increased height of the thread of the worm at one part of the same so as to form a stop, in connection with some stationary part of the device, to limit the movement of the worm when the bar is unlocked and so as to allow the bar to be turned on its pivot to open the retort lid, also in minor details of construction.

On the accompanying drawings, which illustrate my invention as applied to a retort lid,—Figure 1 represents a front elevation of a retort mouth-piece and lid provided with my improved catch, showing the lid locked against the mouth-piece. Fig. 2 represents a plan of the same. Fig. 3 represents a detailed sectional front elevation of the locking device, showing the position of the parts when the lid is unlocked. Fig. 4 represents a detailed horizontal section of the locking device, on the line A,—B, Fig. 1. Fig. 5 represents a detailed vertical section of the same on the line C—D, in Fig. 1.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

The mouth piece *a*, lid *b*, supporting bar *c* and the intermediate connecting mechanism *d* between the lid and the supporting bar whereby the lid is adjustably hung upon the bar, form no essential part of my present invention, and may be varied by the use of any of the well known forms of lids now in common use, in connection with my improved catch.

Attached to the mouth-piece or made in one piece therewith is a bracket *e* and within bearings e' e^2 on said bracket is loosely journaled the screw or worm *f*, which worm is turned in its bearings by means of any suitable wrench (not shown on the drawings) which is inserted within the squared perforation f' in the worm, or the worm may be supplied with other and well known means for turning it in its bearings. The lid *b* is hinged to the side of the mouth-piece opposite to where the worm *f* is attached, and is free to be turned upon its hinge or hinges from contact with the worm, and sufficiently to leave a clear and unobstructed entrance to the mouth-piece whenever the worm is in the position as hereinafter described. The forward end of the thread f^2 of the worm is arranged to come in front of a projection *g* attached to or made in one piece with the bar *c* when the lid is closed against the mouth-piece and to engage said projection to force the lid against the mouth-piece when the worm is turned in the direction of the arrow in Fig. 3, in order to lock the lid and to make a tight joint between the lid and the mouth-piece. The inner end of the thread of the worm is increased in height as shown at f^3 so as to come in contact with the bracket *e* and form a stop when the worm is turned in an opposite direction to that of the arrow in Fig. 3 and the lid is unlocked. This stop f^3 is so arranged that when it is brought to bear against the bracket *e*, as shown in Fig. 3, and limits the movement of the worm in that direction, it will cause the forward end of the thread of the worm to as-

sume such a position as to allow the bar *c* and its attached projection *g* to be turned on their fulcrum and the lid to be opened or closed.

In order to prevent any sagging of the lid when closed but to guide it and hold it in its proper position against the mouth-piece, I provide the bracket *e* with the ledge e^3 upon which the free end of the bar *c* or the projection *g* thereon, slides when the lid is being closed and upon which it rests when the lid is closed. This ledge prevents the bar or its projection from being forced downward by the action of the worm upon the projection in locking the lid.

It is obvious to any mechanic that the pivotal connection between the bar *c* and the mouth-piece *a* might be dispensed with and the bar provided with a projection *g* at each end of the same, which projections would be acted upon by two separate worms attached to the mouth-piece in order to lock the lid, in which case the lid would be entirely detached from the mouth-piece. Furthermore the projection *g* might be attached to or made in one piece with the lid itself and the lid hinged directly to the mouth-piece, without departing from the spirit of my invention.

This, my improved catch or lock, is applicable to other than retort lids and I do not wish to limit myself to its use on retort lids alone, as it may be used in other connections without departing from my invention.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. In a catch or lock for retort lids, the combination, with the mouth-piece *a*, the lid *b*, supporting bar *c* hinged at one end to the mouth-piece, connecting mechanism *d* between the lid and the supporting bar, and the projection *g* attached to the bar, of the bracket *e* attached to the mouth-piece, the screw or worm *f* mounted in bearings on the bracket having the thread f^2 to engage the projection *g* to lock the lid and having also the stop f^3 to limit the movement of the worm when unlocking the lid, so as to allow the lid to be turned on its hinge to open the retort, and the ledge e^3 upon the bracket to support the lid in order to prevent it from sagging or being displaced when the worm is acting upon the projection *g* in locking the lid, for the purpose set forth.

2. In a catch or locking device for retort lids, and other similar articles, the combination with the mouth-piece, the lid, and a projection attached to the lid, of a worm or screw mounted upon and rotatable on its longitudinal axis within bearings on the mouth-piece, the thread of which engages said projection to lock the lid upon its seat on the mouth-piece, and having the height of its thread increased at one place to engage a stationary part of the mouth-piece to form a stop to the rotation of the worm when unlocking the lid, so as to allow the lid to be operated to open the retort, for the purpose set forth.

3. In a catch or locking device for retort lids and other similar articles, the combination with a mouth-piece, a lid hinged thereto, a projection attached to the lid, and a worm or screw to engage the projection to lock the lid upon its seat, of a ledge upon which the projection rests and is supported when acted upon by the worm to prevent sagging and displacement of the lid, for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in presence of two subscribing witnesses.

JOSIAH P. CLARK.

In presence of—
HENRY CHADBOURN,
CHARLES W. JONES.