

(No Model.)

S. B. DEXTER.
WATER COOLED DAMPER.

No. 474,227.

Patented May 3, 1892.

Fig. 1.

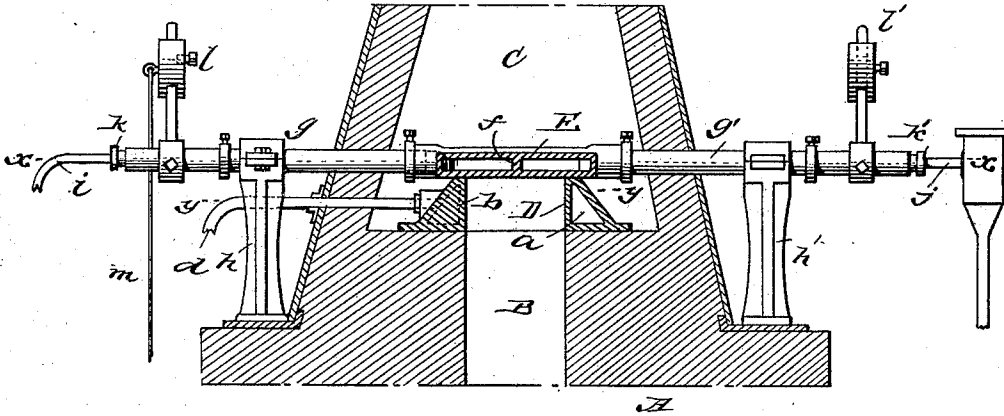


Fig. 2.

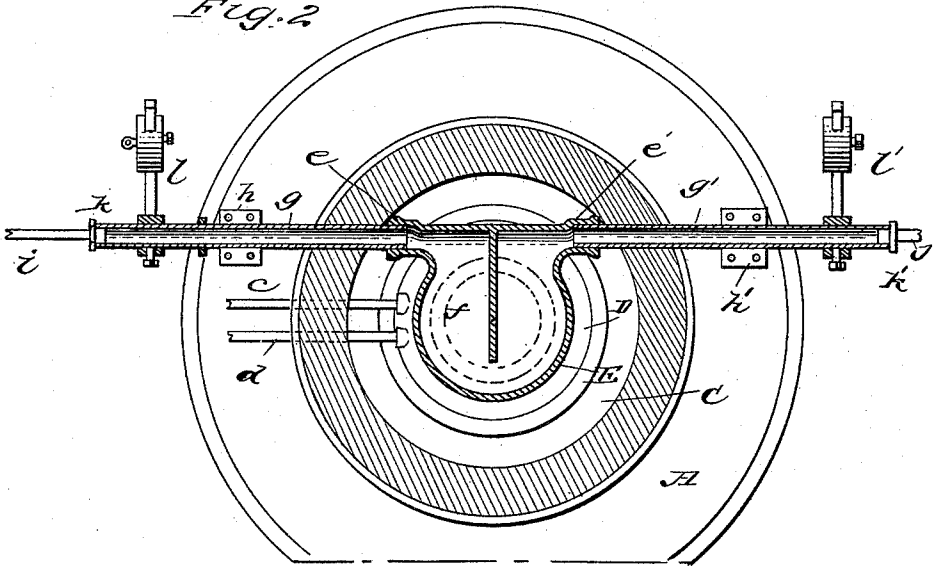
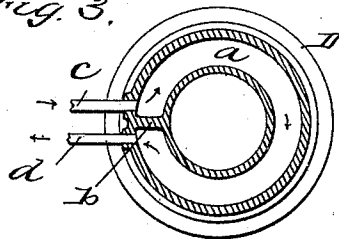


Fig. 3.



WITNESSES:

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SIMON B. DEXTER, OF GLENDALE, MONTANA.

WATER-COOLED DAMPER.

SPECIFICATION forming part of Letters Patent No. 474,227, dated May 3, 1892.

Application filed August 20, 1890. Serial No. 362,510. (No model.)

To all whom it may concern:

Be it known that I, SIMON B. DEXTER, of Glendale, in the county of Beaver Head and State of Montana, have invented a new and Improved Water-Cooled Damper, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical transverse section of a portion of a furnace to which my improved damper is applied. Fig. 2 is a horizontal section taken on line *x x* in Fig. 1, and Fig. 3 is a horizontal section taken on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a damper applicable to all ducts or flues where flame and hot products of combustion pass, and more particularly for use in connection with my improved ore-roasting furnace described in my patent, No. 436,340, dated September 16, 1890.

My invention consists in the construction and arrangement of parts hereinafter described and claimed.

The furnace-walls *A* are provided with a duct *B*, leading to the flue *C*. Upon the walls *A* is placed a hollow annular damper-seat *D*, which is preferably of triangular section. The aperture of the damper-seat is of the form and size of the duct *B* and forms practically a continuation of the said duct. The water-space *a* in the annular seat *D* is stopped at one point by the partition *b*, and in the annular seat, at one side of the partition, is inserted the water-supply pipe *c* and in the opposite side of the partition is inserted the discharge-pipe *d*. The water for cooling the damper-seat enters through the pipe *c*, passes through the annular space in the seat, and is discharged through the pipe *d*.

The damper *E*, which is fitted to the seat *D*, is chambered and provided with lateral branches *e e'*, which are axially in line with each other, their common axis being tangential to the circle upon which the body of the damper is formed. The central partition *f* extends from the side of the damper provided with the

branches *e e'* nearly to the opposite side. In the branches *e e'* are inserted pipes *g g'*, which form the shaft of the damper, and also serve to convey water to and away from the damper. The pipes *g g'* are journaled in standards *h h'*, and in the outer end of the pipe *g* is inserted a water-supply pipe *i* and in the opposite end is inserted the discharge-pipe *j*, the joint between the supply and discharge pipes being made tight by stuffing-boxes *k k'*. The damper *E* is counterbalanced by weighted levers *l l'*, attached to the pipes *g g'* near their free ends. To the lever *l* is pivoted a rod *m*, by means of which the damper is opened or closed. Water enters the damper *E* through the supply-pipe *i*, the pipe *g*, and the branch *e*, and passing through the damper it is made to flow around the partition *f*, after which it passes out through the branch *e'*, the pipe *g'*, and the discharge-pipe *j*.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the hollow seat *D*, having inlet and outlet water-pipes, of the hollow vertically-swinging damper or valve resting on the upper edge of said seat and provided with inlet and outlet pipes *g g'*, respectively, bearings *h h'*, in which said pipes are journaled, arms projecting from pipes *g g'*, adjustable counterbalancing-weights *l l'*, mounted on said pipes, and means for operating the valve, substantially as set forth.

2. The combination, with the enlarged flue *C* and the smaller duct *B*, leading downward from its bottom, of the hollow annular seat on the bottom of the flue concentric with its duct and having the inlet and outlet pipes, the vertically-swinging counterbalanced hollow damper *E* on top of the seat and having inlet and outlet pipes *g g'* extending out through the walls of the flue, bearings *h h'*, in which said pipes are journaled, and means for operating the damper, substantially as set forth.

SIMON B. DEXTER.

Witnesses:

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GEO. B. CONWAY.