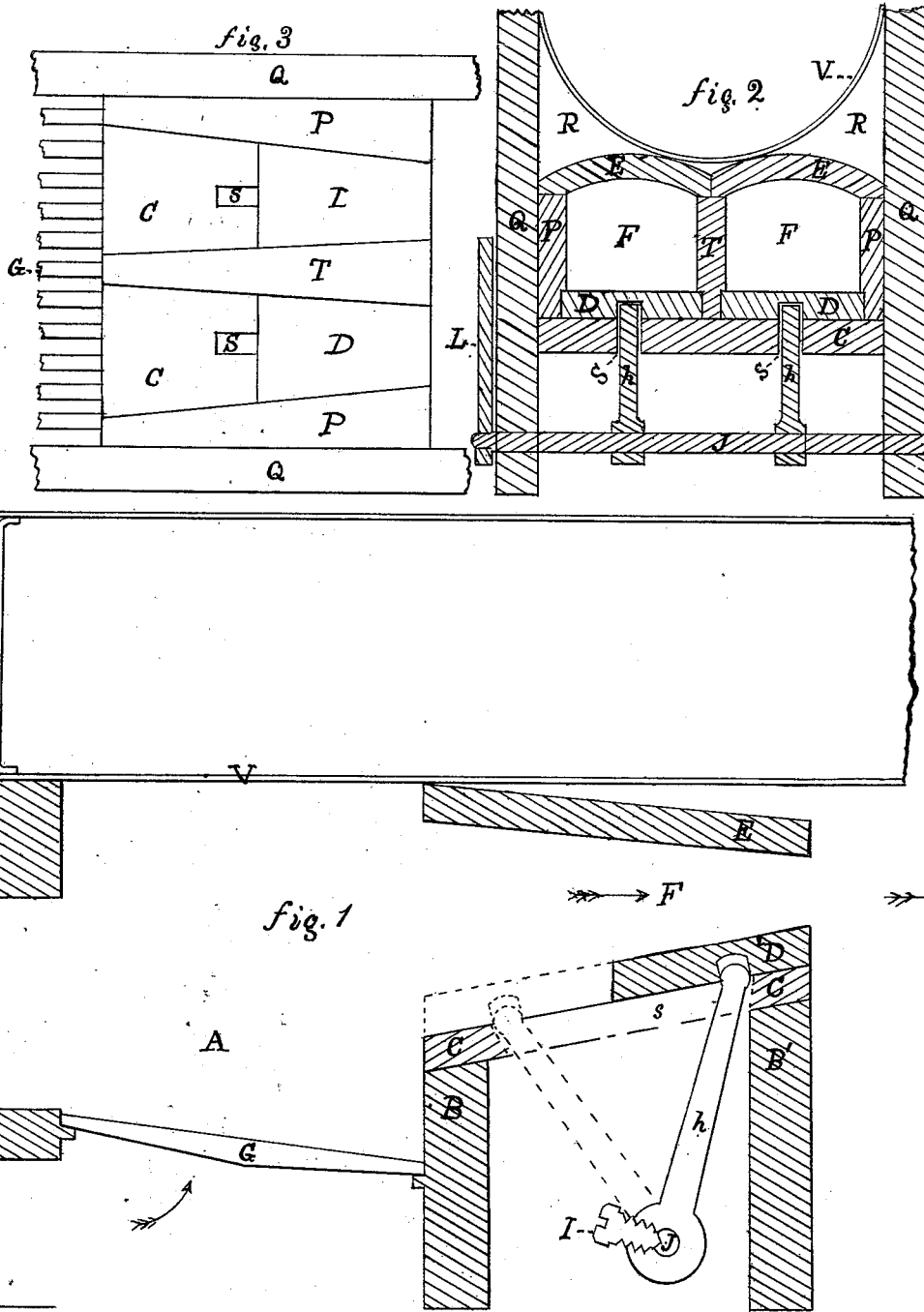


C. F. HUNT.  
STEAM-BOILER FURNACE.

No. 191,433.

Patented May 29, 1877.



Witnesses,  
T. S. Hunt  
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# UNITED STATES PATENT OFFICE.

CHARLES F. HUNT, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN STEAM-BOILER FURNACES.

Specification forming part of Letters Patent No. **191,433**, dated May 29, 1877; application filed January 20, 1877.

*To all whom it may concern:*

Be it known that I, CHARLES F. HUNT, of Chicago, Illinois, have invented an Improved Steam-Boiler Furnace, of which the following is a specification:

The nature of this invention consists of an improved mode of constructing the smoke-passages over the bridge-wall of a furnace for steam-boilers, the object of which is to more effectually consume the gases evolved.

In the drawing accompanying this specification and forming a part of the same, and which are lettered for reference by similar letters for like parts in the several figures, Figure 1 represents a vertical longitudinal section through the furnace, and as far back as the invention relates. Fig. 2 is a vertical cross-section through the bridge-wall and surroundings. Fig. 3 is a horizontal section through the openings F F, Fig. 2, and also showing the top of parts D and C, Fig. 2.

In Fig. 1, A is the furnace proper; B B', the bridge-wall; C, the top of the same; D, is a movable tile of fire-brick or other refractory substance; E, an arch over passage F; G, one of the grates; V, the boiler; h, an arm fastened firmly to a rock-shaft, J, by a set-screw, I.

In Figs. 2 and 3, T is a tapering tile of fire-brick, extending from the front of the bridge-wall to the back of the same, and forming one side of passages F F, and also supporting one side of arches E E. P P are similar tile, and used for a like purpose. Q Q are side walls of boiler-furnace. s s are slots in the fire-brick tile C, through which the arm h passes. L is a lever, fastened outside the wall to the rock-shaft J. R R are spaces between the arches E E and the boiler. These spaces are bricked up at the rear end of the arches, so as to allow none of the products of combus-

tion to pass over the arches. The arches E E are inclined downward from front to rear. The top C of bridge-wall has an upward inclination from front to rear, and the tiles T and P P are tapered to correspond to the inclinations of E E and C, so that when in position the passages F F are large at the front end, and gradually decrease toward the rear. In the bottom of the passages is a movable tile, D, which slides longitudinally upon the tile C. This tile D is moved by the arm h, which is operated by the lever L.

When the lever L is moved to its limit toward the front, the arm h and tile D will be in the position shown by the dotted lines. When the fire is started the tile D is moved to the front, and after the fire-brick have become highly heated the tile D is moved back, thereby contracting the rear end of the passages F F, and causing the products of combustion to pass in close contact with the highly-heated surface of the fire-brick and be more perfectly consumed.

The rear end of tile D may be raised or lowered, if desired, instead of sliding.

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

1. The tapering passages F F, as constructed in combination with a movable tile, D, which is designed to vary the size of the rear end of the passages, for the purpose specified.

2. The rock-shaft J, in combination with the arm h, and movable tile D, and tapering passage F, as and for the purpose specified.

CHARLES F. HUNT.

Witnesses:

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