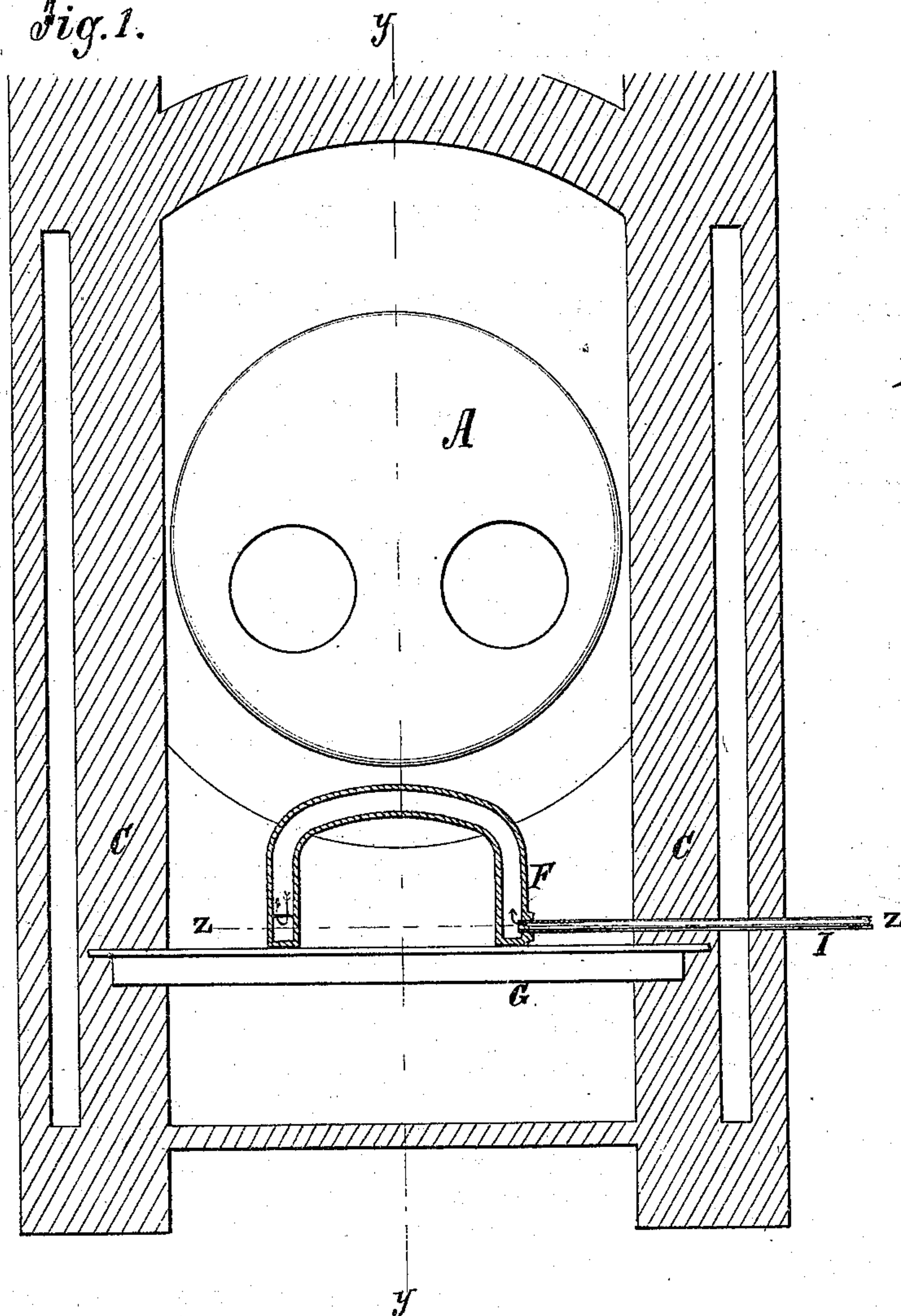
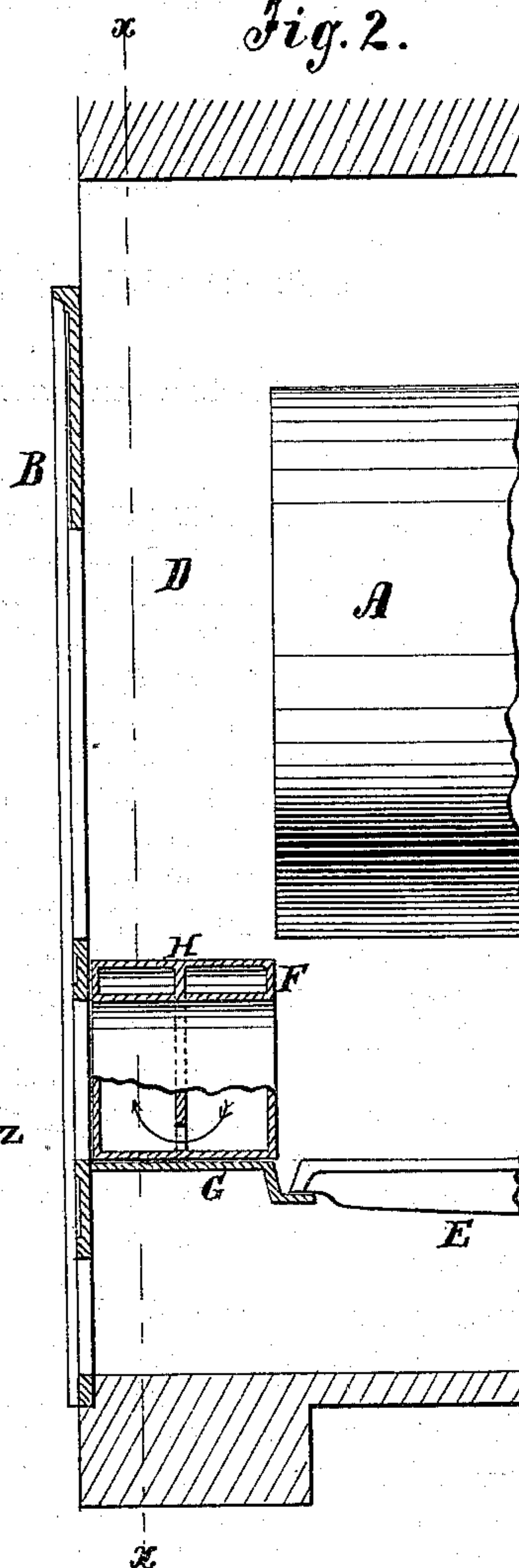


WILLIAM S. WOOD.  
Improvement in Steam Boiler Furnace Doorways.  
No. 125,777. Patented April 16, 1872.

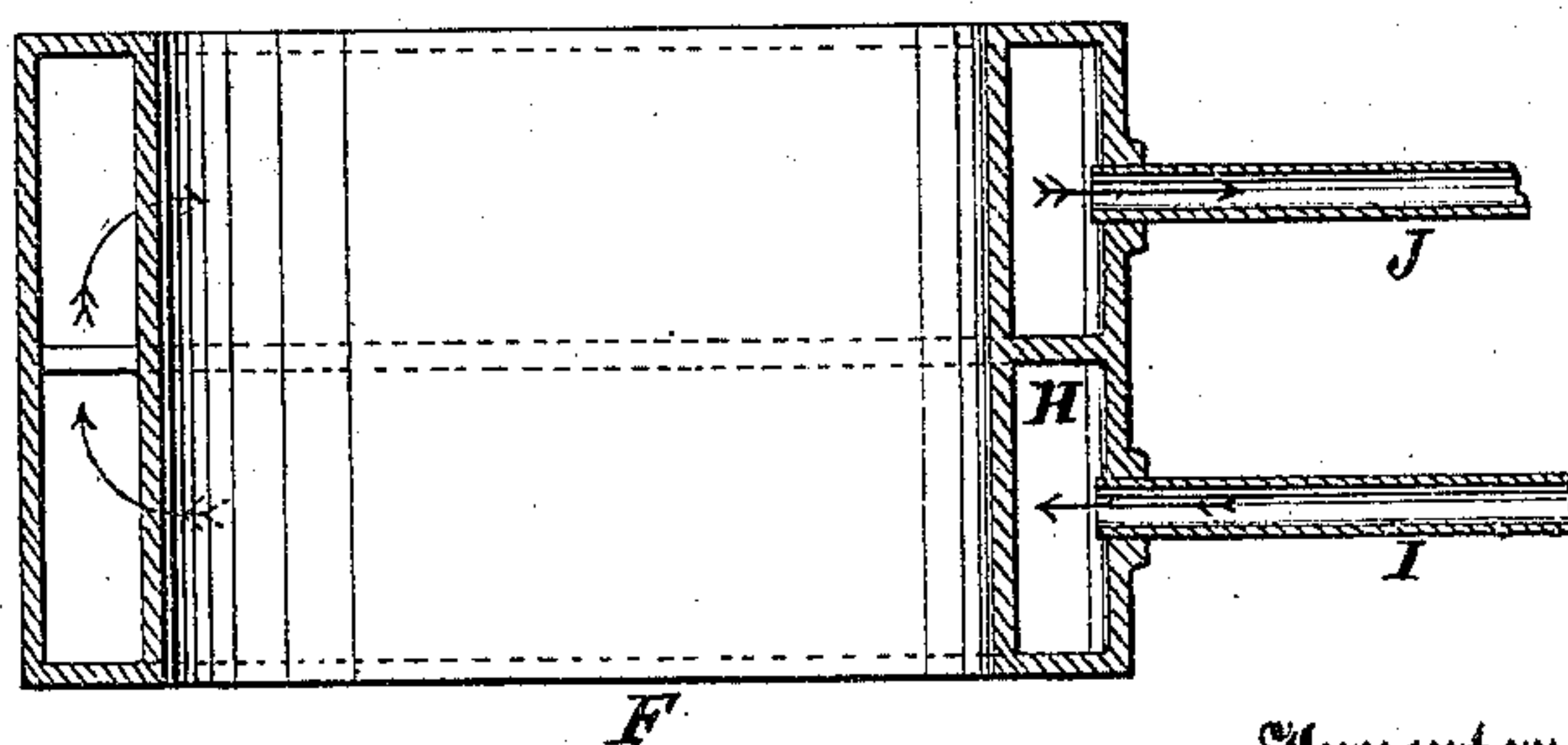
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



**Witnesses:**

*A Bennekenhoff.*  
*Geo. W. Mabee*

**Inventor:**

*W. S. Wood*

**PER**

*Munroe*

**Attorneys.**

# UNITED STATES PATENT OFFICE.

WILLIAM S. WOOD, OF NEWTOWN, NEW YORK.

## IMPROVEMENT IN STEAM-BOILER FURNACE DOOR-WAYS.

Specification forming part of Letters Patent No. 125,777, dated April 16, 1872.

Specification describing a new and Improved Fire-Proof Arch for Steam-Boiler Furnaces, invented by WILLIAM S. WOOD, of Newtown, in the county of Queens and State of New York.

This invention has special reference to the door-way of steam-boiler furnaces; and consists of a hollow arch partially surrounding the door-way, which separates the door-way from the front "uptake" of the boiler, as will be hereinafter more fully set forth and described.

In the accompanying drawing, Figure is a vertical section of Fig. 2, taken on the line  $x$ . Fig. 2 is a vertical section of Fig. 1, taken on the line  $y$ . Fig. 3 is a horizontal section of the hollow arch, taken on the line  $z$ , Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the boiler. B is the front plate; C, the brick or mason work. D is the uptake, which receives the smoke from the return-flues of the boiler, and conducts it upward on its way to the chimney. E is the furnace-grate beneath the boiler. F is the hollow arch forming the top and sides of the furnace door-way. ~~This arch rests upon the plate G, which plate also supports the front ends of the grate-bars, as seen in Fig. 2. The arch is divided by a partition-plate, H, (one or more.)~~ I is a tube, through which a current of water or air is forced into one of the compartments of the arch. J is a tube, through which the water is conducted from the arch. The course of the water or air is indicated by the arrows in Fig. 3. As steam-boilers were formerly "set," the

end of the boiler was supported by the front plate, or was flush therewith; and the uptake from the boiler-flues was made of sheet-iron, and attached to the outside of the front plate or end of the boiler. The present mode of setting a steam-boiler is to support it on stands, and drop it back from the arch-plate, as seen in Fig. 2, thus leaving the uptake inside the front plate, thereby greatly improving the appearance of the whole arrangement without contracting the smoke-channels or interfering with the draught of the furnace. The fuel door-way must, of course, be separated from the uptake, and it has hitherto been arched with brick; but, as the heat from the furnace is intense at this point, such arches are soon destroyed, making almost constant repairs or renewals necessary.

I am aware of the patent granted to T. S. Clogston, June 18, 1867, and wish to disclaim all that is shown and described by him. I esteem my invention to be a valuable improvement upon his, and one which makes the arch much more serviceable and durable.

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

In combination with the steam-boiler furnace, the hollow arch F, substantially as and for the purposes described.

W. S. WOOD.

Witnesses:

GEO. W. MABEE,  
T. B. MOSHER.