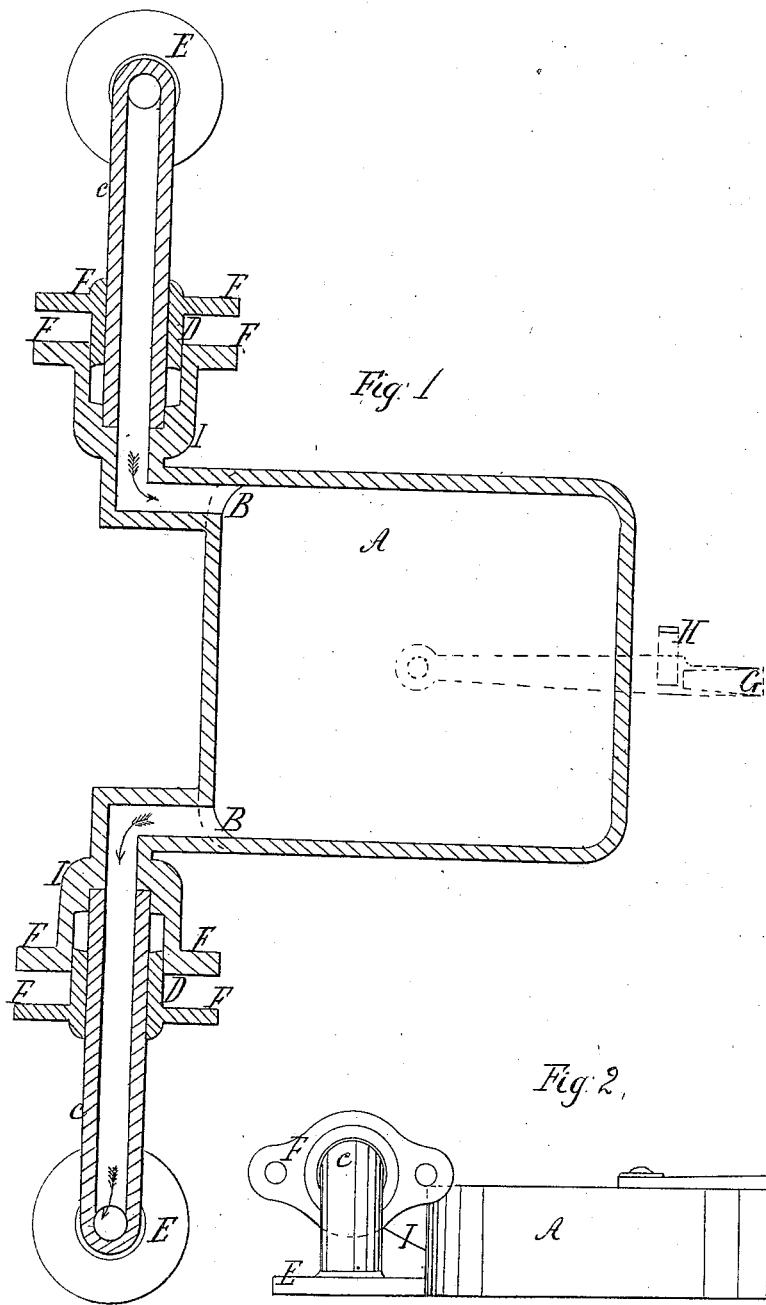


*I. W. Ayres,*  
*Steam-Boiler Attachment.*  
*No. 5,888.                      Patented Oct. 31, 1848.*



# UNITED STATES PATENT OFFICE.

ISAAC W. AYRES, OF NEW YORK, N. Y.

## WATER-DOOR FOR STEAM-BOILERS.

Specification of Letters Patent No. 5,888, dated October 31, 1848.

*To all whom it may concern:*

Be it known that I, ISAAC W. AYRES, of the city, county, and State of New York, have invented a new and useful improvement in water-doors for steam-boilers or furnaces, by which water or steam may be conveyed to the door from the boiler and back again to the same by means of a pipe connected with the boiler-head at the top and bottom of the door, which pipes by means of sockets or stuffing boxes form the hinges for the door to revolve upon.

But to describe more particularly the nature of my invention I will proceed to describe the mode of constructing and combining the several parts of the same by referring to the accompanying drawings.

Figure 1, represents a cut section of the door, and connecting pipes; and Fig. 2, an end view of the same; the same letters, in the several drawings, having reference to the same parts wherever they occur.

Letter A and A represent the door. In Fig. 2, it represents the side view of the door, which is made of a frame of iron, (or copper if required,) as shown in the cut section, (Fig. 1,) and faced with plates of iron or other metal, so as to make the door a perfectly water or steam tight box, or may be made by casting the door in composition or other metal in one piece so as to form the door, with the connecting pipes I I I, attached thereto, as shown in Figs. 1 and 2; and forming at letters B, B, &c., in the back edge of the door, the induction and eduction pipes, the arrows, showing the direction of the steam or water to, and from the boiler, for the purpose of obtaining a greater amount of heating or fire surface in the boiler, and keeping the fire room cool, as

well as the preventing of the door burning out; the steam, or water, acting as a medium to carry off the excess of heat, and thereby keep up a uniform temperature throughout the door and boiler.

Letters C, C, and C, Figs. 1 and 2, connecting pipes from the boiler, and jointing to the water door pipes by means of glands D, D, on which the door revolves when opened to stoke the fire.

Letters E E, &c., are flanges on the end of the pipes C and C for attaching the same to the boiler head, by bolting or riveting: and letters F, F, and F the stuffing boxes and glands, for connecting the pipes C and C from the boiler, and pipes I and I from the door, for the purpose of making a steam or water tight hinge for the door to revolve upon when being opened or closed.

Letters G and G, the latch secured in the usual way on the outer face of the door, and buttoning or latching over the staple H and H (Figs. 1 and 2,) on the head of the boiler.

Having now described the mode of making my water door for steam boilers or furnaces I will proceed to state what I claim, and wish to secure.

What I claim therefore is—

1. The water door so arranged as to have a continuous circulation passing through it in combination with steam boilers or furnaces.

2. And I also claim the mode of connecting the same to the head of a steam boiler or furnace in the manner and form substantially as herein described.

ISAAC W. AYRES.

Witnesses:

R. S. JONES,  
JOHN H. MOTT.