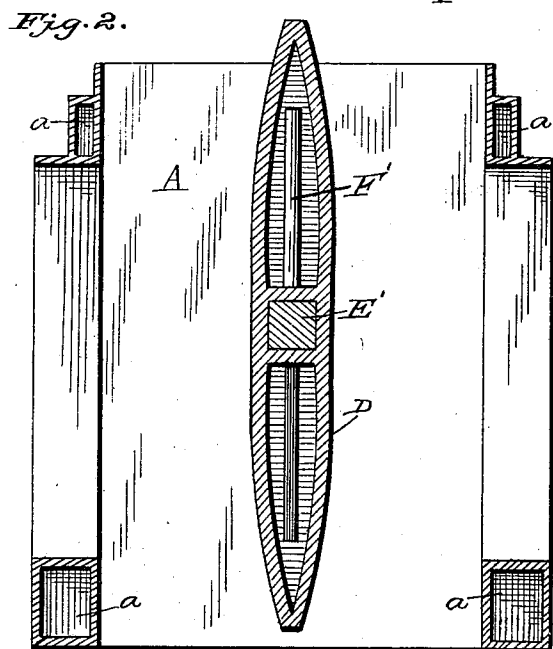
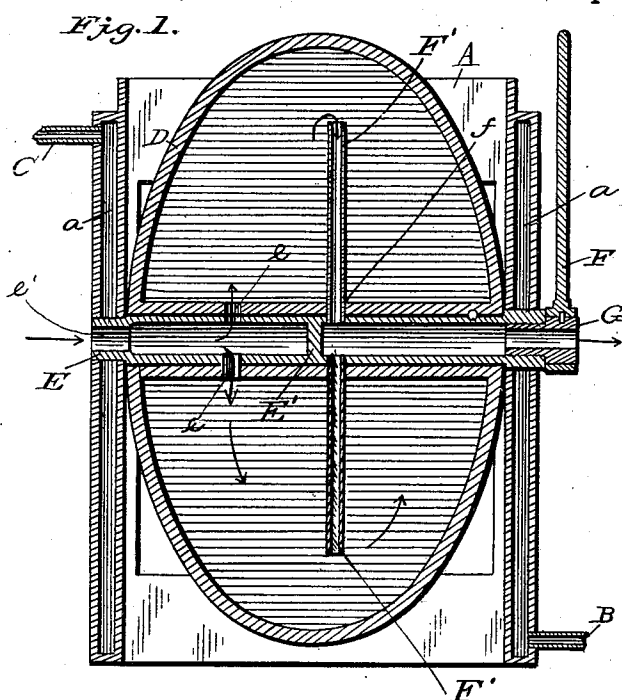


(No Model.)

W. W. SMITH.
VALVE.

No. 567,011.

Patented Sept. 1, 1896.



Witnesses
Edwin G. Lee & Co.,
K. A. Haw

William H. Smith
By John Hedderburn
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM W. SMITH, OF PITTSBURG, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 567,011, dated September 1, 1896.

Application filed November 22, 1895. Serial No. 569,854. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SMITH, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Valves; 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.

This invention relates to certain new and useful improvements in hot-blast valves of that class known as "butterfly" valves, employed in reversible gas-furnaces, and it has for its object, among others, to provide a simple, cheap, and serviceable reversible valve of this character. I employ a square shaft, upon an extended end of which is a lever or wrench or other means whereby the valve may be readily reversed. The box in which the valve is mounted is provided with waterways, through which is kept up a circulation of water to cool the sides and walls of the box.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical section showing the valve within the box. Fig. 2 is a substantially central section through the valve at right angles to Fig. 1.

Like letters of reference indicate like parts in both of the views.

Referring now to the details of the drawings by letter, A designates the box of usual shape, the sides or walls of which are made hollow, as shown at *a*, and with which are connected the pipe B for introducing cold water and the pipe C for allowing of the discharge of the same, whereby a circulation is kept up within the chamber or chambers of the box.

D is a valve. It is mounted upon a square shaft E, mounted in suitable bearings in the opposite walls of the box, and one end is extended and adapted to receive a handle or lever F, by means of which the valve may be reversed. This shaft has an opening *e'* at one end which is adapted to be connected

with any suitable source of supply, the shaft being divided at about its mid-length by the partition or diaphragm E', and openings *e* afford communication between the compartment of the shaft on one side of said diaphragm with the valve proper, while openings *f*, in which are located pipes F', afford communication between the interior of the valve and the compartment of the shaft upon the other side of said diaphragm.

The lever or operating-handle for reversing the valve may be secured in position in any suitable manner, as, for instance, by means of a key driven into a slot therein and into a groove in the end of the shaft or in a hollow plug with a square head that is screwed into the end of said shaft. When a hollow plug G is employed, it is for the purpose of making connection from the inside of the shaft to the inside of the butterfly. As will be seen, there is a shell surrounding the shaft which is cast with the butterfly.

What I claim as new is—

1. A hollow hot-blast valve for gas-furnaces mounted upon a hollow square shaft, provided with a central diaphragm and with means for turning such shaft, said shaft having openings communicating with the interior of the valve upon opposite sides of said diaphragm and a pipe secured in one of said openings and extending into the valve and terminating in proximity to the outer periphery thereof, substantially as and for the purposes specified.

2. A hollow hot-blast valve for gas-furnaces mounted upon a hollow square shaft, provided with a central diaphragm and with means for turning such shaft, said shaft having openings communicating with the interior of the valve upon opposite sides of said diaphragm, a pipe secured in one of said openings and extending into the valve, said valve being mounted in a box having provision for the circulation of water, substantially as and for the purposes specified.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM W. SMITH.

Witnesses:

DANIEL BURNS,
JOHN MCCOY.