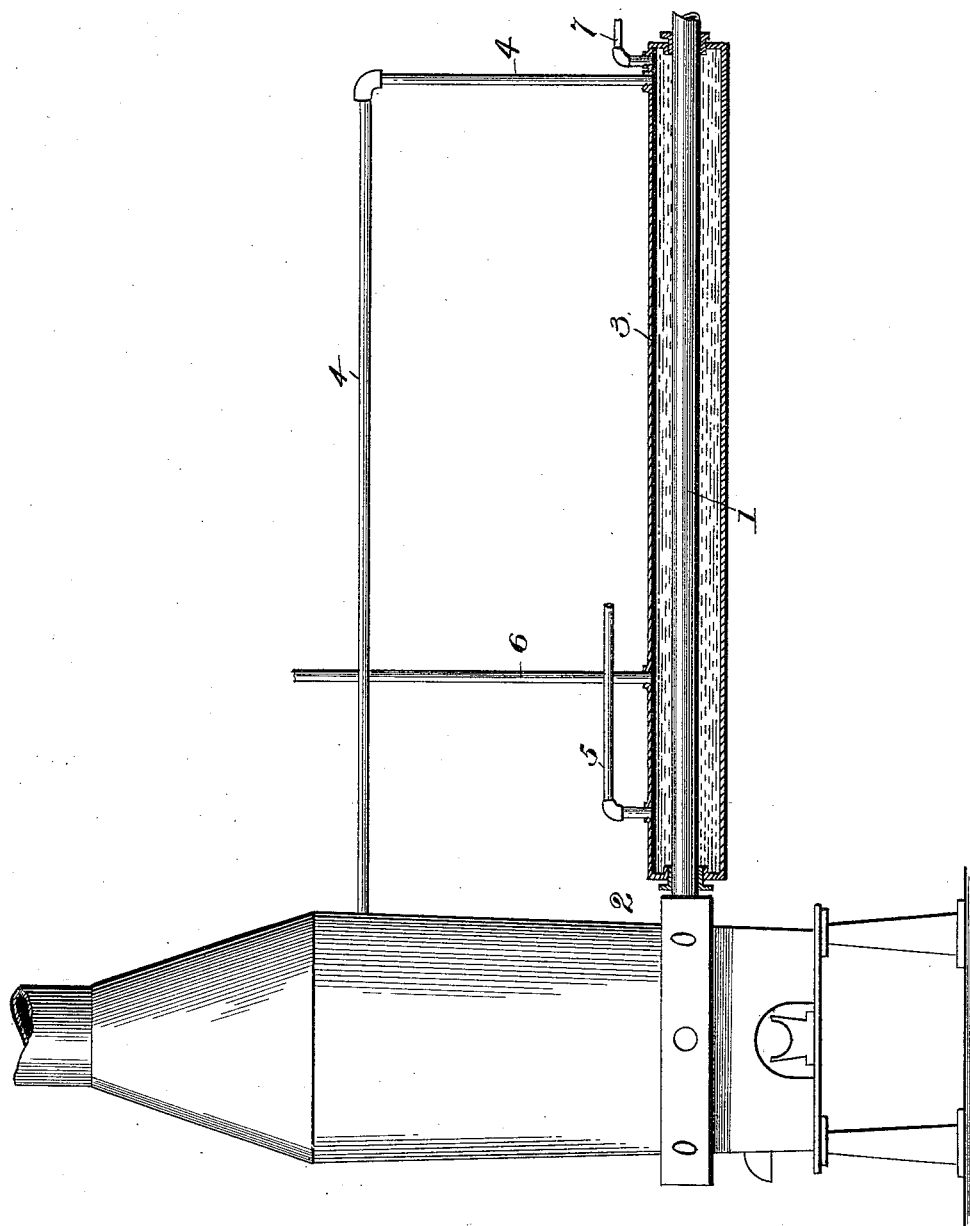


(No Model.)

W. RYAN.
HOT AIR FURNACE.

No. 526,087.

Patented Sept. 18, 1894.



Witnesses
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WILLIAM RYAN, OF GLOBE, ARIZONA TERRITORY.

HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 526,087, dated September 18, 1894.

Application filed June 4, 1894. Serial No. 513,430. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM RYAN, a citizen of the United States, residing at Globe, in the county of Gila and Territory of Arizona, have invented certain new and useful Improvements in Hot-Air Furnaces; 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 hot air furnaces for the purpose of heating a blast of air to be used in smelting furnaces and has for its object to simplify the construction and arrangement of such devices and to insure a more positive operation.

With these and other objects in view, the invention consists of the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawing, the figure is a sectional elevation of a furnace comprising an ordinary water jacket with the improvement attached thereto and shown in section.

Referring to the drawing, the numeral 1 designates a blast pipe coming from a blower and entering the wind-box 2 on the frame in the ordinary manner. Around this pipe 1 is a casing 3 of some suitable material and of a proper or desired dimension in which circulates the waste water from the jacket which is conducted to the casing by a pipe 4 attached to the jacket of the furnace and also the said casing. After the heated water has traversed the water space around the blast-pipe, it flows out through a pipe 5 and thence to a sewer or waste, or to be used again if needed. Attached to the casing 2 is a steam escape pipe 6 which is provided to allow the escape steam if any should be formed, thereby preventing any undue pressure from that

source. At some convenient point in the casing, a pipe 7, is attached, through which the exhaust steam from the engine is let into the casing thereby adding its heat to that of the water, and at the same time the water within the casing acts as a condenser for the engine. By the mechanism set forth, it will be seen that the air passing through the pipe 1 is heated before entering the wind-box in a simple and convenient manner, with the advantage of utilizing the heating medium for other purposes.

Having thus described the invention, what is claimed as new is—

1. In combination with a water jacket blast furnace having a blast supply pipe, a casing around the said blast supply pipe in which circulates the waste water from the jacket, pipes connected to the said casing for conveying the water to and from it, and a vertical steam pipe through which the steam can escape, substantially as and for the purposes specified.

2. In combination with a water jacket blast furnace having a blast supply pipe, a casing surrounding the said blast supply pipe in which circulates the waste water from the jacket, a pipe connecting the casing with the water jacket of the blast furnace and a pipe attached to the casing by which the exhaust steam from an engine may be conveyed to the water in the casing, substantially as and for the purposes specified.

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

WILLIAM RYAN.

Witnesses:

E. P. MAYHEW,
ED LAINE.