

(No Model.)

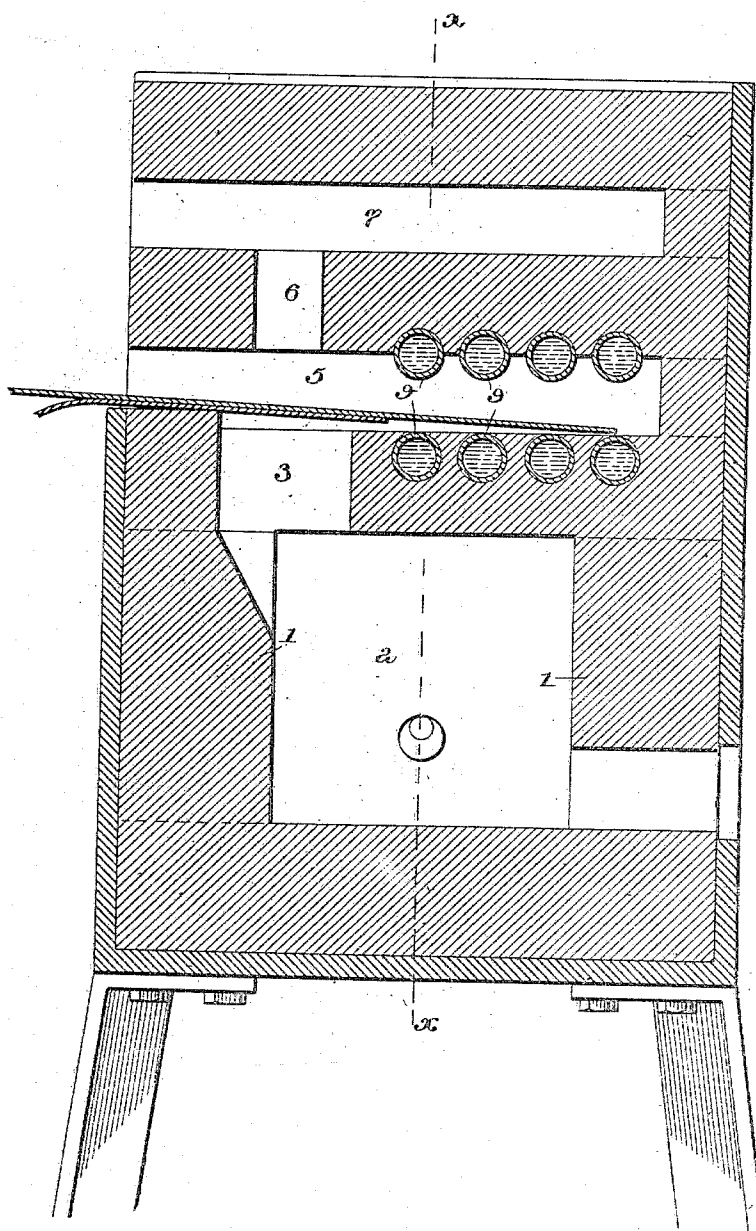
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O. A. AMES.
WELDING FURNACE.

No. 548,496.

Patented Oct. 22, 1895.

Fig. 1.



Witnesses
Arthur Ashley
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his Attorneys

(No Model.)

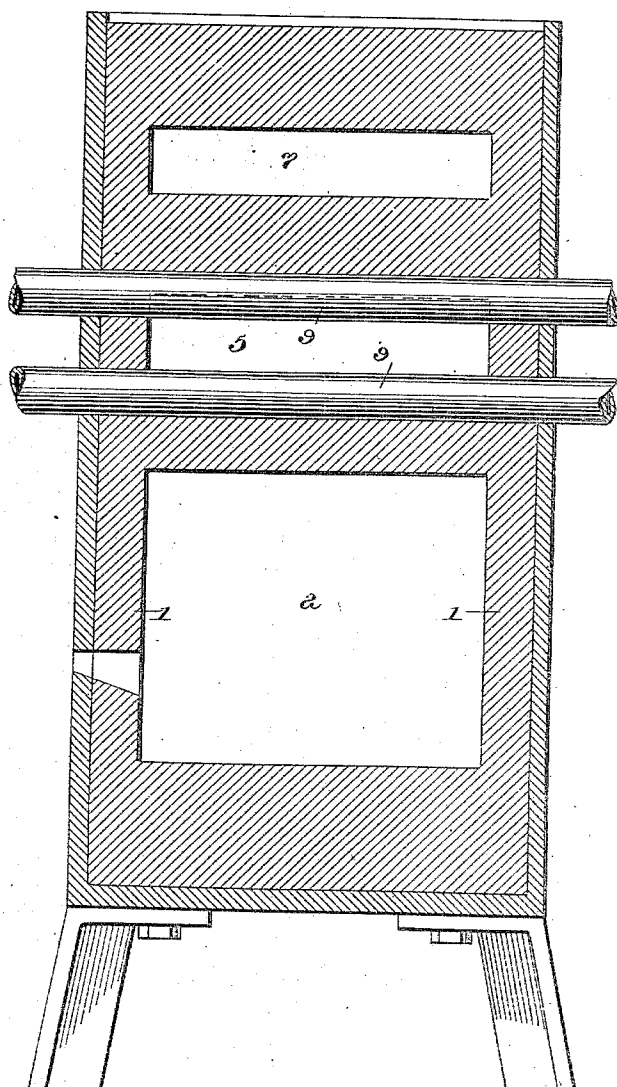
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Fig. 2.
On line X-X



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UNITED STATES PATENT OFFICE.

OAKES ANGIER AMES, OF NORTH EASTON, MASSACHUSETTS.

WELDING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 548,496, dated October 22, 1895.

Application filed February 28, 1895. Serial No. 540,031. (No model.)

To all whom it may concern:

Be it known that I, OAKES ANGIER AMES, a citizen of the United States, residing at North Easton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Welding-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.

My invention relates to improvements in furnaces for heating the blades of shovels and similar objects for the purpose of welding the straps thereto.

The ordinary furnaces for heating shovel-blades for the above purpose are very objectionable on account of the heat extending over the entire blade, forming a scale, which renders polishing very difficult, and the removal of which decreases the thickness of the metal.

By my invention the above objections are obviated and a furnace produced in which that portion of the shovel-blade which is not required to be heated is kept comparatively cool, while the part to which the strap is to be secured is subjected to a welding heat.

The invention consists, essentially, in a furnace provided with a series of water-pipes arranged above and below the chamber which receives the blade to be heated, said pipe being connected with a source of supply by which a constant circulation is kept up therein, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a central longitudinal section of a furnace constructed in accordance with my invention.

Fig. 2 is a cross-section on the line $x x$, Fig. 1. In the said drawings, the reference-numeral 1 designates the furnace-walls; 2, the fire-box; 3, the opening through which the flame escapes to the heating-chamber 5 above, which receives the shovel-blade to be heated, and 6 and 7 passages for the escape of the products of combustion.

So far the construction described forms no part of my present invention, and may be of any ordinary or suitable construction.

The heating-chamber 5 extends from the front of the furnace to near the rear thereof, and has an opening in the front for the insertion of the article to be heated. Located in the top and bottom of this chamber are a number of water-pipes 9, connected at one end with any suitable source of supply, while the other end or ends communicate with an escape-pipe by which the water is carried away after circulating through the pipes. By this means a constant circulation is kept up in the pipes. It will be seen that the lower set of pipes are flush with the bottom of the heating-chamber, while the upper set extend below the top thereof.

The operation will be readily understood. The shovel blade and strap are placed in the heating-chamber so that the welding point will lie just over the top of the flame-opening 3, with the body of the blade resting upon the lower set or water-pipes. The flame from the fire-box will heat the blade and strap at the point named, while the water circulating through the pipes will keep the body of the blade comparatively cool, thus preventing the formation of scale.

It will be obvious that water-jackets may be employed in lieu of the pipes at the top and bottom of the heating-chamber without departing from the principle of the invention.

I am aware that heretofore water-pipes and water backs or jackets have been employed in furnaces for the purpose of preventing the walls from becoming unduly heated; and therefore such is not broadly claimed by me, my invention being designed to prevent the overheating of the bodies of shovel-blades, as above set forth.

Having thus fully described my invention, what I claim is—

1. In a welding furnace, the combination with the fire box having a flame opening near its front end and the heating chamber above the fire box with which said flame opening communicates, said chamber being open at its front end and closed at the rear, of the water circulating pipes located in the top and bottom of said heating chamber and intermediate the closed end thereof and the flame opening, substantially as described.

2. In a welding furnace, the combination
with the fire box having a flame opening near
its front end, the heating chamber above the
fire box with which said flame opening com-
5 municates having an escape opening aligned
with said flame opening, of the water circu-
lating pipes located in said heating chamber
at the top and bottom thereof and in rear of

the flame opening, substantially as and for
the purpose specified. 10

In testimony whereof I affix my signature
in presence of two witnesses.

OAKES ANGIER AMES.

Witnesses:

OTIS E. SPOONER,
CHAS. A. WOOD.