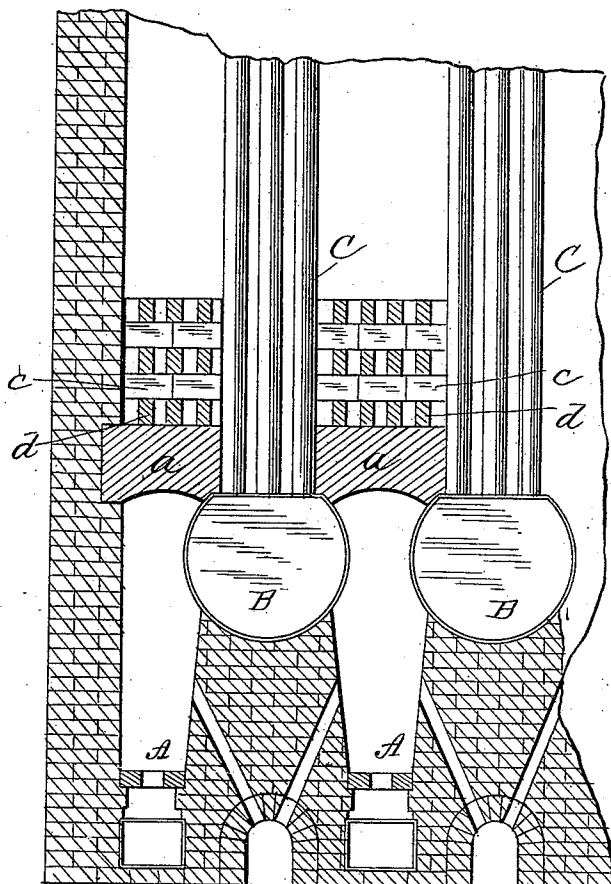


(No Model.)

E. A. WHEELER.
BOILER FURNACE.

No. 471,449.

Patented Mar. 22, 1892.



Attest
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UNITED STATES PATENT OFFICE.

EARL A. WHEELER, OF SHARON, PENNSYLVANIA.

BOILER-FURNACE.

SPECIFICATION forming part of Letters Patent No. 471,449, dated March 22, 1892.

Application filed November 4, 1891. Serial No. 410,840. (No model.)

To all whom it may concern:

Be it known that I, EARL A. WHEELER, a citizen of the United States of America, residing at Sharon, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Boiler-Furnaces, of which the following is a specification.

My invention is an improvement in boiler-furnaces, and is shown particularly as applied to the boiler-furnace illustrated in an application filed by me on the 7th day of March, 1891, Serial No. 384,088. I do not, however, limit myself to the application of the present invention to my particular form of boiler-furnace, as it may be applied with equally good effects to other forms of furnaces where there are a double set of boilers connected by intermediate pipes.

In the accompanying drawing the boilers and the furnace illustrated are precisely similar to what is shown in my pending application, the view being an end elevation with a part of the brick-work in section.

The furnace is shown at A, and two boilers of the lower set at B. The upper boilers are not shown, but a portion of the connecting-pipes are shown at C.

My principal object is to utilize to the greatest possible extent the heat generated by the furnace, and in carrying out this object I aim to retard the escape of the heat by absorbing it, between the furnace and place of exit, in material which is in close proximity to the stacks of connecting-pipes between the boilers.

In adapting this invention to my improved form of furnace, I bridge over the upper part of the furnace-opening by means of arched bricks of a suitable size, as shown at *a*. These bricks are preferably laid about four inches apart throughout the length of the boilers, and these serve to support a series of fire-brick of ordinary size, as at *d*, placed at right angles to the direction of the length of the large brick. A space is left between these

bricks, as shown, and upon these are placed another series of bricks, as at *c*, reversed in position, thus forming a checker-work construction providing openings for the passage of the products of combustion or for draft, but interposing a mass which absorbs all the heat from the furnace, and, as this material surrounds the connecting-stacks of pipes, it will be seen that the heat is thoroughly utilized at the most available point. These brick may be built up to the top of the stacks of pipes, if desired, or may stop at any intermediate point, as may be found desirable.

In the use of this invention with furnaces where there is perfect combustion the openings through the brick may be closed at the top, so as to retain all the heat; but where natural draft is required or it is desired to allow the escape of the products of combustion they may be left open and in connection with the flue.

I claim as my invention—

1. In combination with a series of boilers and interposed stacks of connecting-pipes, a furnace and an interposed absorbent material surrounding the stacks to retard the escape of the heat between the furnace and the place of exit, said material surrounding the stacks of pipes, substantially as described.

2. In combination with a set of boilers, with a series of connecting-pipes between, and with a furnace for heating said boilers, said boilers resting upon arches, fire-brick spanning the spaces at the top of the arches, with spaces between, and a series of fire-brick placed in tiers at right angles to each other upon the arched brick, said brick encircling the pipes and interposed between the furnace and the exit, substantially as described.

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

EARL A. WHEELER.

Witnesses:

G. W. SHILLING,
A. W. WILLIAMS.