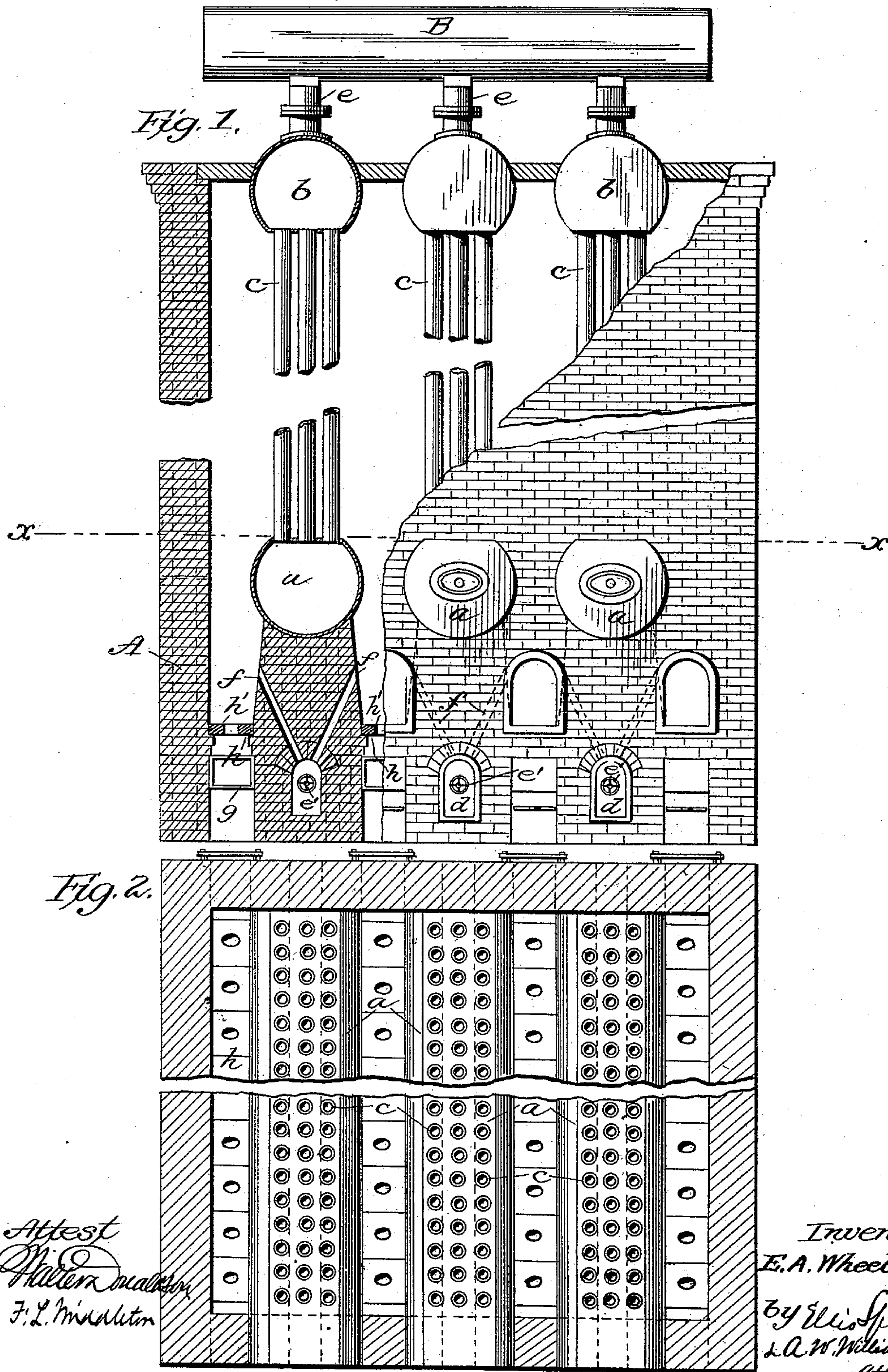


(No Model.)

E. A. WHEELER.  
BOILER FURNACE.

No. 465,303.

Patented Dec. 15, 1891.





# UNITED STATES PATENT OFFICE.

EARL A. WHEELER, OF SHARON, PENNSYLVANIA.

## BOILER-FURNACE.

SPECIFICATION forming part of Letters Patent No. 465,303, dated December 15, 1891.

Application filed March 7, 1891. Serial No. 384,088. (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.

This invention has been applied for in the Dominion of Canada, the application for Letters Patent having been filed on the 16th of April, 1891, Serial No. 56,682.

My invention is an improved boiler-furnace of that style in which horizontal boilers are used in pairs connected by vertical stacks of pipes, the steam-drum being in connection with the upper boilers of the series.

My object is to provide for the rapid and uniform heating of the boilers and circulating-pipes, and in a simple manner provide for the complete combustion of the fuel.

My invention consists of a series of boilers and their circulating-pipes arranged within a heating-space, the lower branches of the series being supported upon hollow pedestals, so as to expose the maximum amount of surface, with burners or grates upon each side of the boilers, an air-flue in the pedestals, and openings from said air-flues to the space above the grates, the air being heated by contact with the walls of the boiler-support.

In the drawings, Figure 1 shows my improved furnace with a stack of boilers in place, a portion of the front wall being broken away. Fig. 2 is a sectional view on line *x x* of Fig. 1.

In the figures, the furnace-walls inclosing the heating-space are shown at A. The series of boilers are arranged in pairs, those of the lower series, marked *a*, being connected to the boilers *b* of the upper series by stacks of circulating-pipes *c*. The lower series of boilers are mounted on pedestals or supports, as hereinafter described, these supports being arranged above the level of the floor of the furnace and having concave tops to receive the boilers. The width of the supports is less than the diameter of the boilers, the outer walls being made tapering, so as to thus expose a

maximum amount of boiler-surface to the action of the heat consistent with strength and vitality. The other boiler of the pair is supported by the circulating-pipes at the upper part of the furnace and extends parallel to the lower boiler. A steam-drum B connects with the upper series of boilers, as shown at *e*.

Upon each side of the pedestal supporting a boiler I arrange a burner if gas is to be used or a grate if other fuel is to be used, and by this means the boiler is heated very rapidly and uniformly. As the pedestal is hollow, preferably composed of brick, the location of the burners or grates below the level of the same has the effect of heating the walls of the pedestal and the air within the hollow interior, and this also adds to the rapidity with which the boiler will be heated. I further utilize the hollow pedestal, which extends from front to rear of the furnace, preferably by taking therefrom the heated air and supplying it to the flame above the burner or grate to promote combustion, and thus increase the heating capacity of the furnace. I provide a door *d* for the hollow pedestal at the end, with a damper *e'*, which may be regulated, as desired, to allow of the inlet of air. From the interior of the pedestal the air heated by contact with the walls rises through openings *f*, which extend upwardly on each side in an inclined direction to a point above the burner or grate, so as to meet the unconsumed products of combustion and furnish the necessary amount of air thereto to consume them. Any number of these passages may be provided as may be found desirable. I may use burners *h* on each side of the pedestal supported above a gas-flue, as at *g*, or I may use grates at the points marked *h'*, if this is found desirable.

I do not limit myself to the series of upper and lower boilers, as a single pair may be heated in the same manner and equally as effectively.

I claim as my invention—

1. A boiler-furnace consisting of a heating-space, an upper and lower boiler connected by a series of pipes, a pedestal for supporting the lower boiler, a burner or grate on each

side thereof, and openings through the pedestal opening at a point above the grates, substantially as described.

2. In a boiler-furnace, a series of pedestals,  
5 a series of boilers mounted thereon, vertical tubes connecting said boilers with an upper set of boilers, connections from the upper set to a steam-drum, burners or grates upon each side of the pedestals, and air-flues leading

from the hollow interior of the pedestals to a point above the grates or burners, substantially as described. 10

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

EARL A. WHEELER.

Witnesses:

JACOB HERRINGTON,  
A. W. WILLIAMS.