

(No Model.)

H. WILCKE.

FURNACE.

No. 345,014.

Patented July 6, 1886.

fig. 1.

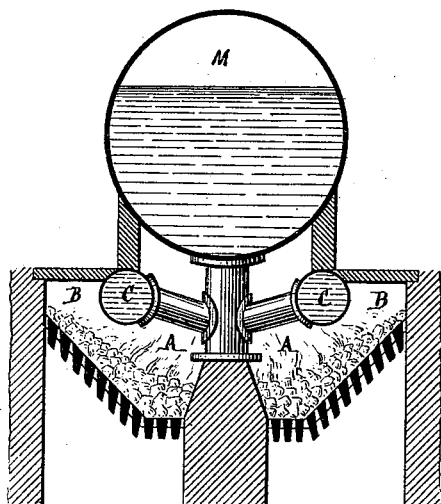


fig. 2.

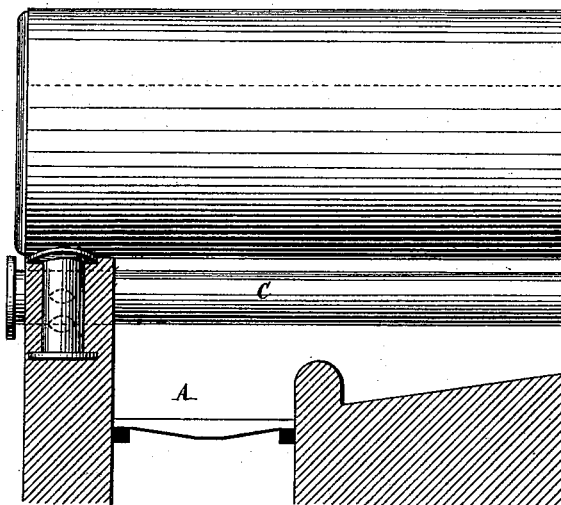


fig. 3.

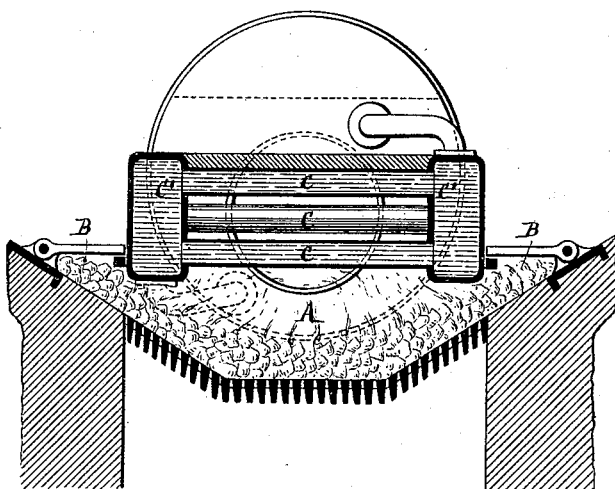


fig. 4.

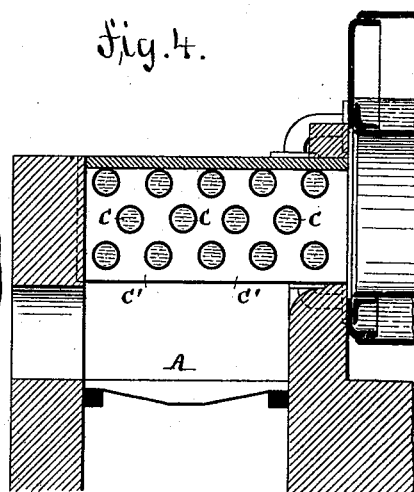
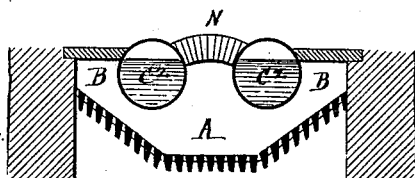


fig. 5.

WITNESSES:

F. W. Rosenbaum
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INVENTOR

Heinrich Wilcke
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UNITED STATES PATENT OFFICE.

HEINRICH WILCKE, OF BERLIN, GERMANY.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 345,014, dated July 6, 1886.

Application filed February 26, 1886. Serial No. 193,275. (No model.) Patented in Germany August 2, 1885, No. 34,571; in Belgium September 7, 1885, No. 70,140; in Austria-Hungary October 3, 1885, No. 36,183 and No. 68,661; in France January 21, 1886, No. 151,957, and in England January 22, 1886, No. 1,001.

To all whom it may concern:

Be it known that I, HEINRICH WILCKE, of the city of Berlin, Kingdom of Prussia, and Empire of Germany, have invented certain
5 new and useful Improvements in Furnaces, of which the following is a specification.

This invention relates to that class of smoke-consuming furnaces in which the fuel-hoppers or receptacles are separated from the
10 fire-place proper by walls of fire-brick.

The object of my invention is to utilize the heat from the fire to greater advantage; and for this purpose it consists in combining with the boiler and furnace water-drums separating
15 the furnace proper from the fuel hoppers or chambers, said drums being used in place of fire-brick walls.

In the accompanying drawings, Figure 1 is a cross-sectional elevation of my improved
20 smoke-consuming furnace. Fig. 2 is a side view of the same, parts being broken out and others in section. Fig. 3 is a cross-sectional view of a modified construction. Fig. 4 is a sectional view of part of the same. Fig. 5 is a
25 cross-sectional view of another modification of the same on a smaller scale.

Similar letters of reference indicate corresponding parts.

The boiler M may be of any well-known
30 construction.

The furnace is provided with two fire-places, A A', and two compartments, B B, or hoppers for the fuel, which gradually slides down the inclined grate to the fire-places. The
35 fire-place proper and the compartments B are separated by the water-drums C, below and parallel with the boiler, said drums being suitably connected with the boiler. The drums C are used in place of the fire-brick
40 walls heretofore provided in smoke-consuming furnaces.

Where the boiler is provided with a water-heater, as shown in Figs. 3 and 4, the drums C are replaced by two boxes, C', connected by the pipe c, directly above the fire-places, 45 said boxes separating the fuel-compartments from the furnace proper, as shown in Fig. 3.

If desired, the boiler may be dispensed with entirely, and two water-drums, C² C², used, each being a boiler by itself, the drums C² C² 50 being connected by a brick arch, N, and also serve to separate the fuel hoppers or compartments from the furnace proper.

In all cases a water compartment, drum, or box is used in place of a brick wall, and thus 55 the heat of the fire utilized to great advantage, as the water in said drum or box is heated and converted into steam.

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 60

1. A smoke-consuming furnace in which a water drum or box is interposed between the furnace proper and the fuel-compartment or hopper connected with said furnace, said box or drum forming a parting wall, substan- 65 tially as shown and described.

2. The combination, with a boiler in a smoke-consuming furnace, of water-drums connected with the boiler and interposed between the furnace proper and the fuel-com- 70 partment for the furnace, said drums acting as parting-walls between the fuel-compartments and the furnace, substantially as shown and described.

In testimony that I claim the foregoing as 75 my invention I have signed my name in presence of two subscribing witnesses.

HEINRICH WILCKE.

Witnesses:

B. ROY,
H. SCHLARY.