

J. D. PIERCE.
Water Tube Boiler.

No. 167,562.

Patented Sept. 7, 1875.

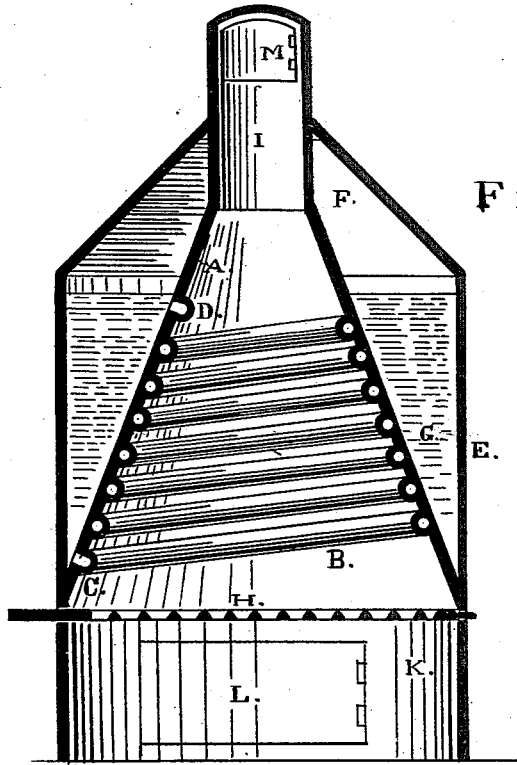


Fig. 1.

WITNESSES:

W. B. Smith
E. J. Smith

INVENTOR:

James D. Pierce

UNITED STATES PATENT OFFICE.

JAMES D. PIERCE, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN B. SMITH, OF SAME PLACE.

IMPROVEMENT IN WATER-TUBE BOILERS.

Specification forming part of Letters Patent No. **167,562**, dated September 7, 1875; application filed December 26, 1874.

To all whom it may concern:

Be it known that I, JAMES D. PIERCE, of Milwaukee, in the county of Milwaukee, in the State of Wisconsin, have invented certain Improvements in Steam-Boilers, of which the following is a specification:

My invention has for its object the making of steam for various purposes, and is accomplished with an upright boiler with the fire-surface on the inside of same, with an iron coil embedded in the inner surface of the fire-chamber and forming part of same, this coil to be filled with water, and opening into the water-chamber at the top and bottom of same.

Figure 1 is an upright sectional view of my invention.

A is the shell of the fire-chamber and inner surface of the boiler; B, a coil or tubes of iron embedded in the shell; C, the lower outlet of the coil; D, the upper outlet of the coil; E, the outside shell of the boiler; F, steam-space in the top of the boiler; G, water-space in the boiler; H, fire-grate; I, chimney for the passage of smoke; K, the ash-pit; L, the door to the ash-pit and for draft; M, door to the opening for feeding in fuel.

This boiler is easily made. The shell of the fire-chamber is cast onto the flues, thus making the coil a part of the shell, and it is easily managed. The fire is built on the grate H, and the fuel may be put in so as to fill the fire-chamber to the top of the rail. The fire, coming in contact with the coil B, heats the water therein, which circulates in at the bottom and out at the top, heating the water in the space G; and, the shell A being heated also, steam is made very rapidly; and chimney I, passing through the steam-chamber F, will heat the steam and keep it dry.

I claim—

1. In a steam-boiler the shell A, coil B, inserted or embedded half-way in said shell, and chimney I, all arranged and combined substantially as set forth.

2. Inside shell A, coil B, embedded as described, outside shell E, outlet and inlet C and D, steam and water space F and G, grate H, and chimney I, all in combination arranged substantially as described.

JAMES D. PIERCE.

Witnesses:

J. B. SMITH,
E. J. SMITH.