

(No Model.)

A. D. DAVIS.
TUBULAR BOILER.

No. 305,802.

Patented Sept. 30, 1884.

Fig. 1.

Fig. 3.

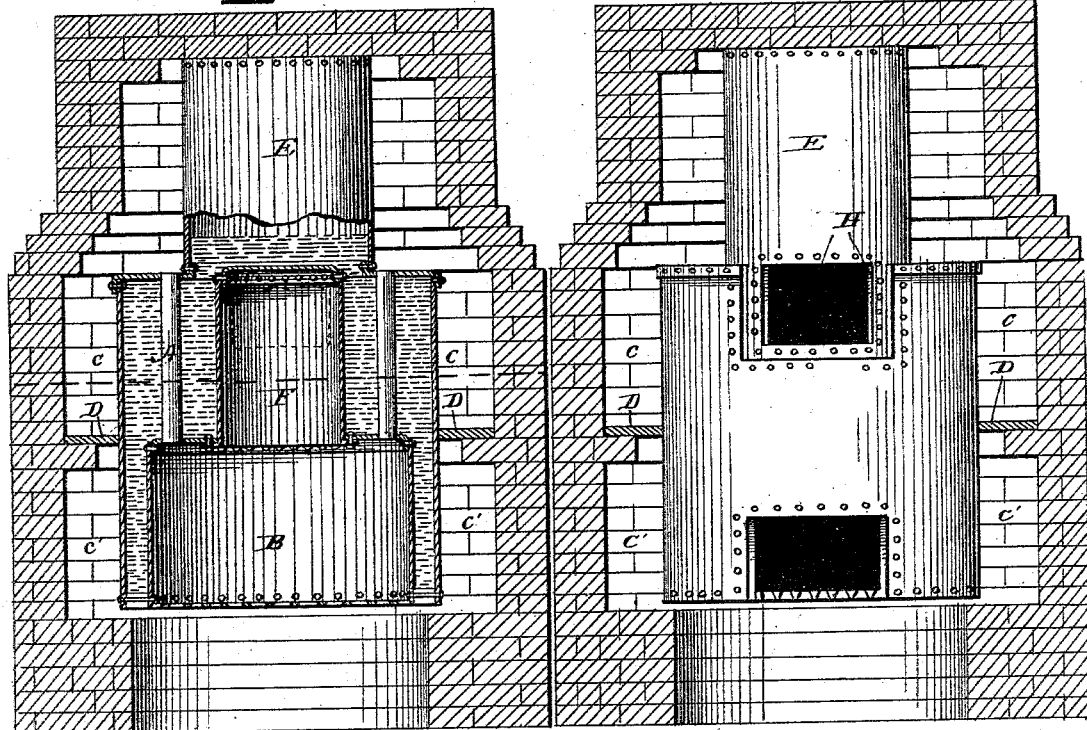
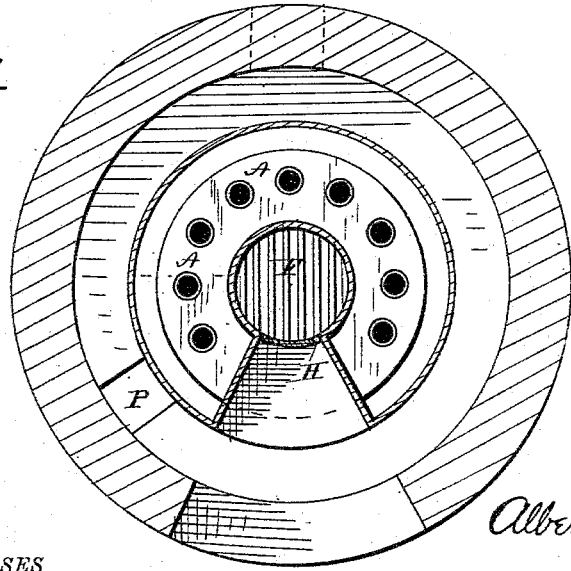


Fig. 2.



WITNESSES
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ALBERT D. DAVIS, OF COLORADO SPRINGS, COLORADO.

TUBULAR BOILER.

SPECIFICATION forming part of Letters Patent No. 305,802, dated September 30, 1884.

Application filed February 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALBERT D. DAVIS, a citizen of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented a new and useful Improvement in Tubular Boilers, of which the following is a specification, reference being had to the accompanying drawings.

Figure 1 is a transverse vertical section of an upright tubular boiler in place in the furnace embodying the improvements of my invention; and Fig. 2 is a horizontal section on the broken line in Fig. 1. Fig. 3 is an elevation showing the exterior of the fire-box, magazine, and steam-dome.

This invention has relation to upright tubular boilers; and it consists in the novel construction and arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claim appended.

Referring by letter to the accompanying drawings, B designates the fire-box; F, the magazine provided with a door, H, through which the magazine is filled with coal.

A A designate tubular metal smoke-flues, which lead from the fire-box out through the top of the boiler, as shown. These flues A should be sufficient in number to nearly surround the magazine, but should not be employed where they will interfere with the doors of the magazine and fire-box.

E designates the steam-dome, and *c c* and *c'* the brick flues, which are separated by plates D D or brick-work that can be carried over to the boiler-shell. The division-plates or brick-work partition are provided with a smoke passage or opening, P, through which the smoke passes from the upper flues, *c c*, to the lower flues, *c' c'*.

The action of the fire is as follows: First, it passes from the fire-box B through the submerged flues A A, thence into the upper brick flues, *c c*, and nearly around the boiler, where it dives down through the passage P into the lower brick flues, *c' c'*, thence into the chimney. It will be seen that the metal flues A are completely submerged; or, in other words, they are entirely surrounded by water. At the same time they are accessible for cleaning through the fire-box, so that all of the soot falls outside of the boiler. These flues A carry the flame direct from the fire-box to the outer shell of the steam-dome.

For residence-heating this construction will be found to possess great advantages. There is no danger from fire; it requires little attention; may be easily and thoroughly cleaned. It is a base-burner, and, owing to its great heating-surface, economizes in fuel.

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

In a tubular boiler, the combination, with the boiler and steam-dome, of the submerged fire-box B, the submerged magazine located centrally above the fire-box and beneath the steam-dome, the submerged flues A, leading from the top of the fire-box through the top of the boiler at the base of the steam-dome, and the flues *c c'*, surrounding the boiler and steam-dome, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALBERT D. DAVIS.

Witnesses:

A. DIXON,
GEO. W. ZOLLER.