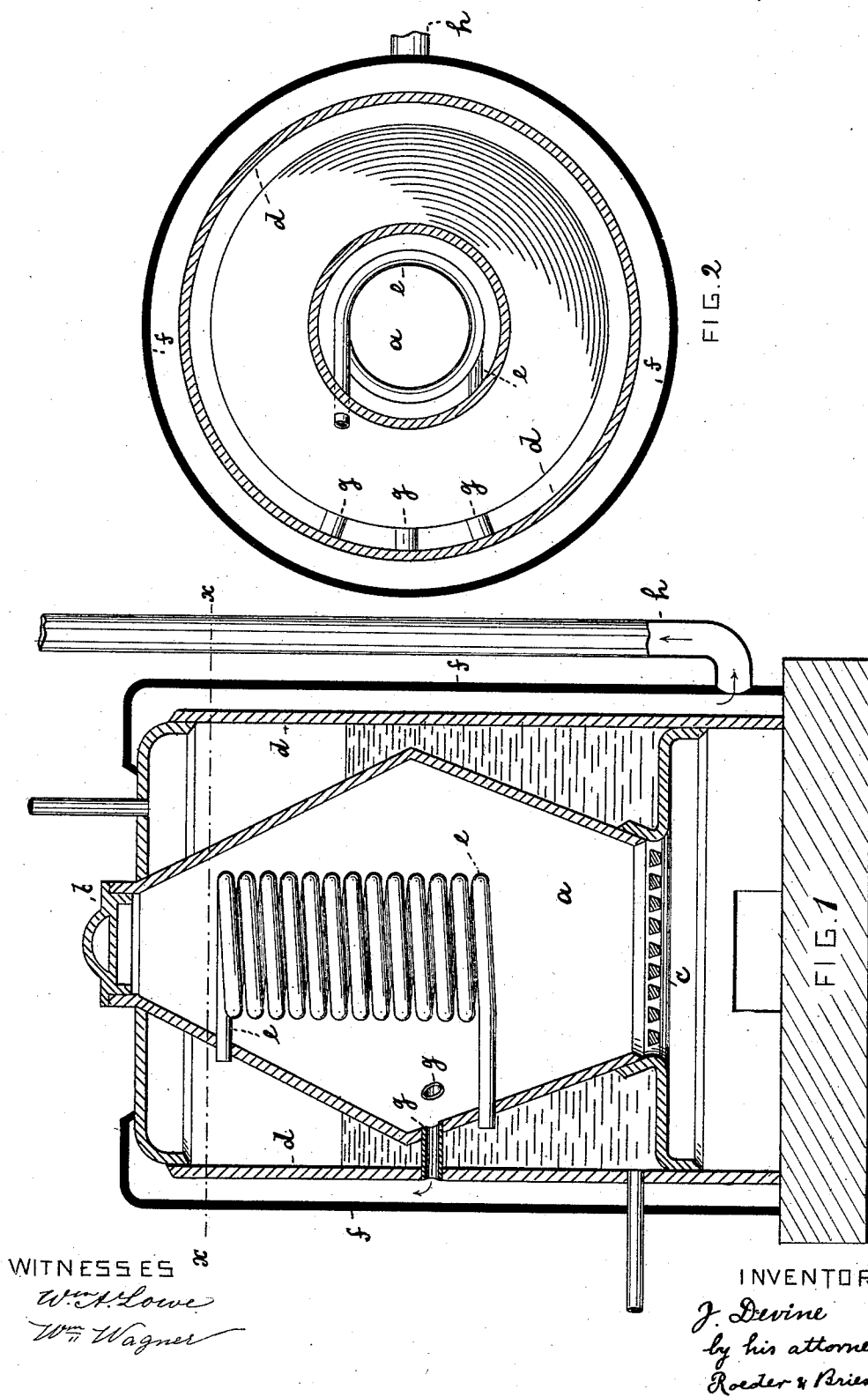


J. DEVINE.
BOILER.

Patented Nov. 26, 1889.



UNITED STATES PATENT OFFICE.

JOHN DEVINE, OF HUDSON, NEW YORK.

BOILER.

SPECIFICATION forming part of Letters Patent No. 415,768, dated November 26, 1889.

Application filed October 2, 1889. Serial No. 325,755. (No model.)

To all whom it may concern:

Be it known that I, JOHN DEVINE, of Hudson, Columbia county, New York, have invented an Improved Boiler, of which the following is a specification.

This invention relates to a boiler of novel construction designed for heating buildings.

It consists in the various features of improvement more fully pointed out in the claim.

In the accompanying drawings, Figure 1 is a vertical longitudinal central section, partly in side view, of my improved boiler; Fig. 2, a horizontal section on line *x x*, Fig. 1.

The letter *a* represents a fire-chamber of double truncated conical form, as shown. It is closed on top by a cover *b* and provided at the bottom with the grate *c*. The fire-chamber *a* is surrounded by a shell *d*, between which and the walls of the fire-chamber there is formed a water-space. Within the fire-chamber there is placed a coil of pipe *e*, that communicates at both ends with the water-space, as shown. Around the shell *d* is placed a jacket *f*, connected to the fire-chamber by means of a series of radial pipes *g*, traversing the water-space. The products of combustion travel from the fire-chamber through the

pipes *g* and enter the jacket *f*, from whence they escape into the stack *h*. This stack opens into the bottom of the jacket at the rear side of the boiler. It will be seen that by the above construction the water is heated from both sides, as well as by the radial pipes. The body of water within the coil *e* receives direct intense heat from the fire-chamber, and thus a constant circulation is produced. The coil *e* serves also as a funnel, through which the coal fed in at the opening *b* falls upon the grate.

What I claim is—

The combination of a fire-chamber having a double truncated conical form and a top coal-feed *b*, with an inclosed coil *e*, a water-chamber surrounding the fire-chamber and connected to the coil, a hot-air chamber around the water-chamber, and with a series of radial laterally-extending tubes passing through the water-chamber and adapted to convey the products of combustion, substantially as specified.

JOHN DEVINE.

Witnesses:

JOHN DOYLE,
PHILIP A. COONEY.