

(No Model.)

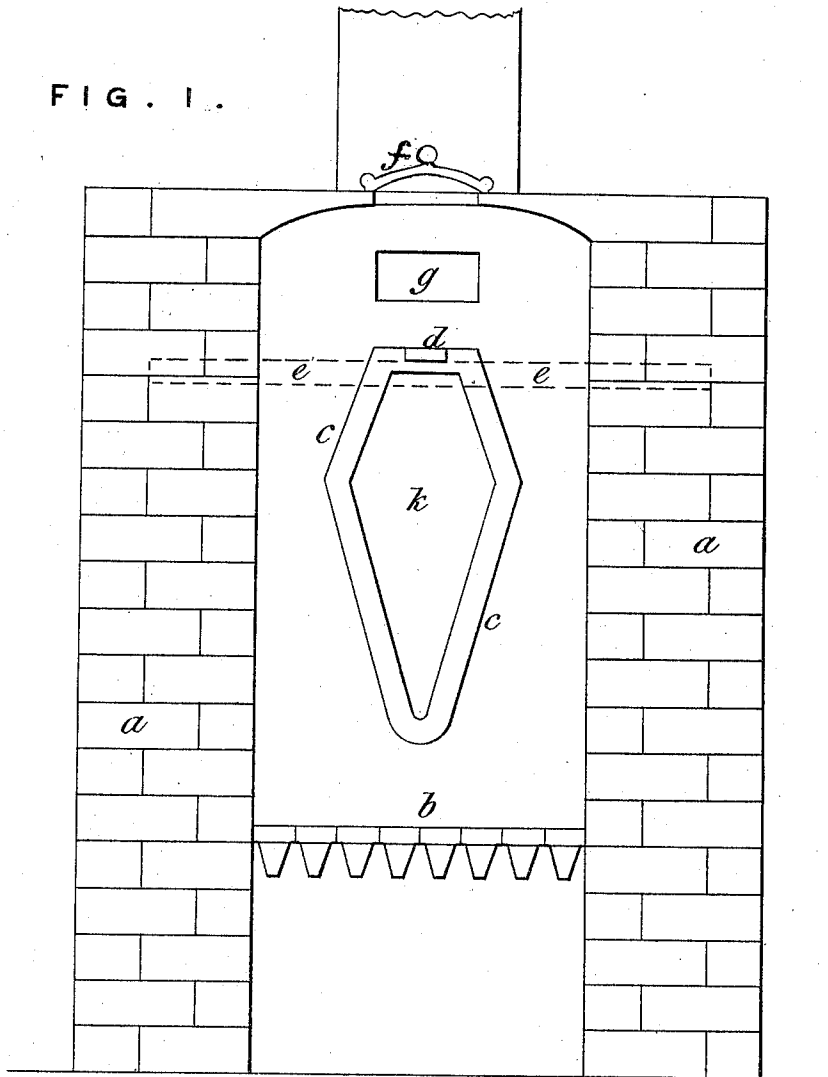
2 Sheets—Sheet 1.

J. WATSON.  
BOILER.

No. 324,902.

Patented Aug. 25, 1885.

FIG. 1.



Witness:  
Matthew Ryan  
A. Brown

Inventor  
John Watson by  
his attorney  
Wm. M. New

(No Model.)

2 Sheets—Sheet 2.

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BOILER.

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FIG. 2.

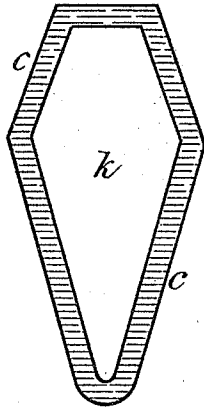


FIG. 3.

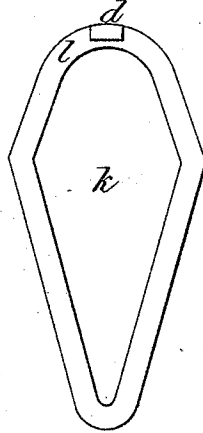


FIG. 4.

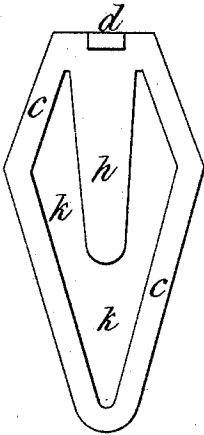
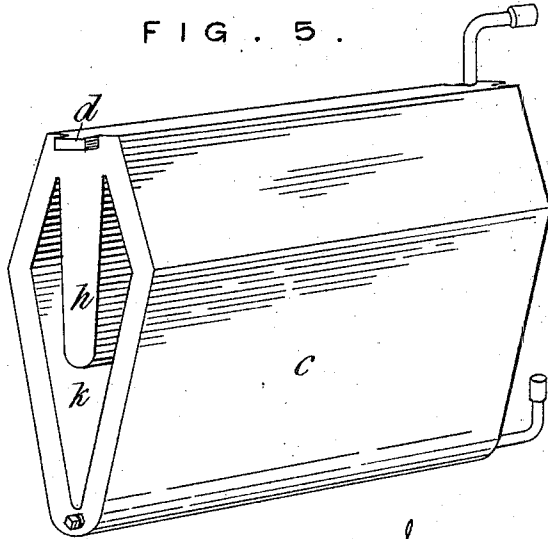


FIG. 5.



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Wm. M. Mason

# UNITED STATES PATENT OFFICE.

JOHN WATSON, OF ST. ALBANS, COUNTY OF HERTFORD, ENGLAND.

## BOILER.

SPECIFICATION forming part of Letters Patent No. 324,902, dated August 25, 1885.

Application filed July 28, 1884. (No model.) Patented in England January 1, 1884, No. 156.

*To all whom it may concern:*

Be it known that I, JOHN WATSON, a subject of the Queen of Great Britain, residing at St. Albans, in the county of Hertford, England, florist, have invented certain new and useful improvements in the construction of boilers for heating conservatories, greenhouses, and other analogous purposes, (for which I have obtained a patent in Great Britain, No. 156, bearing date January 1, 1884,) of which the following is a specification.

The object of my invention is to effect improvements in boilers of the description known as "Watson's Suspension Boiler," for heating conservatories, greenhouses, and other analogous purposes, and to construct the same in a simple and efficient manner, and with a large heating-surface. I construct such boilers of wrought or cast iron or other suitable metal, the body of the boiler being horizontal and having an internal horizontal flue. The sides of the boiler rise diagonally outward toward the upper part, for about two-thirds of the height. The two sides are then turned inward at a considerable angle up to the crown, which is horizontal; but I do not confine myself to any particular angles, as they may be very much varied. The walls, bottom, and crown are so constructed as to form water-spaces, as usual with horticultural boilers. The metallic surfaces of my improved boilers are utilized as heating-surfaces, the furnace being placed underneath the boiler, and the heating-gases circulate outside the boiler, and also through the central flue, communicating heat to the plates before passing away by the chimney.

In constructing my improved boilers of large size, I provide an additional amount of heating-surface by means of a central water-way, of a wedge form, attached to the crown and running the whole length of the internal flue. In small boilers this addition may be dispensed with to save expense. The usual fittings, pipes, and plugs are fitted to provide for the circulation of the water flowing off and cleansing the inside of the boiler; and in order that my said invention may be clearly understood, reference is hereby made to the accompanying drawings, in which similar

letters of reference indicate corresponding parts.

Figure 1 is an end view of my improved boiler in position in the furnace, with the front wall removed. Fig. 2 is a cross-sectional view of the same. Fig. 3 shows another formation of crown to the boiler, being made semicircular, or thereabout, at *l*, as shown. Fig. 4 is an end view showing a method of obtaining increased heating-surface, when required; and Fig. 5 is a perspective view of Fig. 4.

*a a* is the brick-work; *b*, the furnace-bars; *c*, the boiler. *k* is the internal flue. *d* is a lug or stud, one of which is provided at each end of the boiler, and which lugs rest upon suspension-bars, one of which is shown at *e* by dotted lines. *f* is a man-hole and cover, and *g* is the flue.

In Fig. 4 an additional central water-way, *h*, is shown, for increasing the heating-surface when necessary.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A steam-generator for heating conservatories and similar structures, composed of a furnace and a boiler with sloping sides, suspended within the furnace, as shown, said sides surrounding a flue space, substantially as described.

2. The combination, in a steam-generator, of a furnace composed of walls *a* and grate-bars *b*, with a horizontal boiler, *c*, with sloping sides, suspended within the furnace, and a horizontal flue, *k*.

3. The combination, of a steam-generator, of a heating-furnace, *a b*, with boiler *c*, having sloping sides, an internal flue, *k*, and a central water-way, *h*, projecting into the central flue, *k*, and being suspended substantially as described.

I testify whereof I have hereunto set my hand this 16th day of June, 1884.

JOHN WATSON.

Witnesses:

GEO. C. DOWNING,  
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GEO. J. B. FRANKLIN,  
17 Gracechurch Street, London.