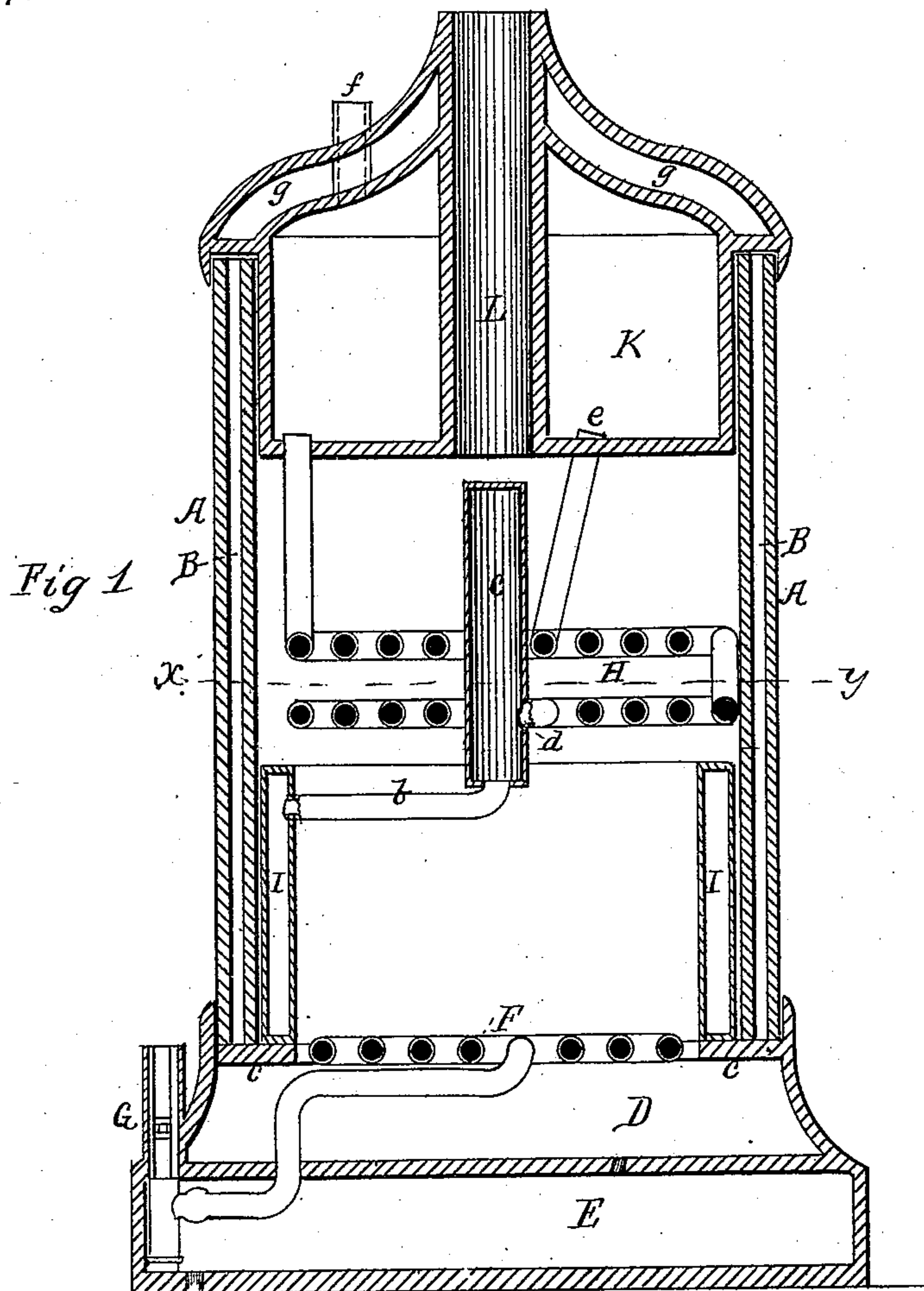


(No Model.)

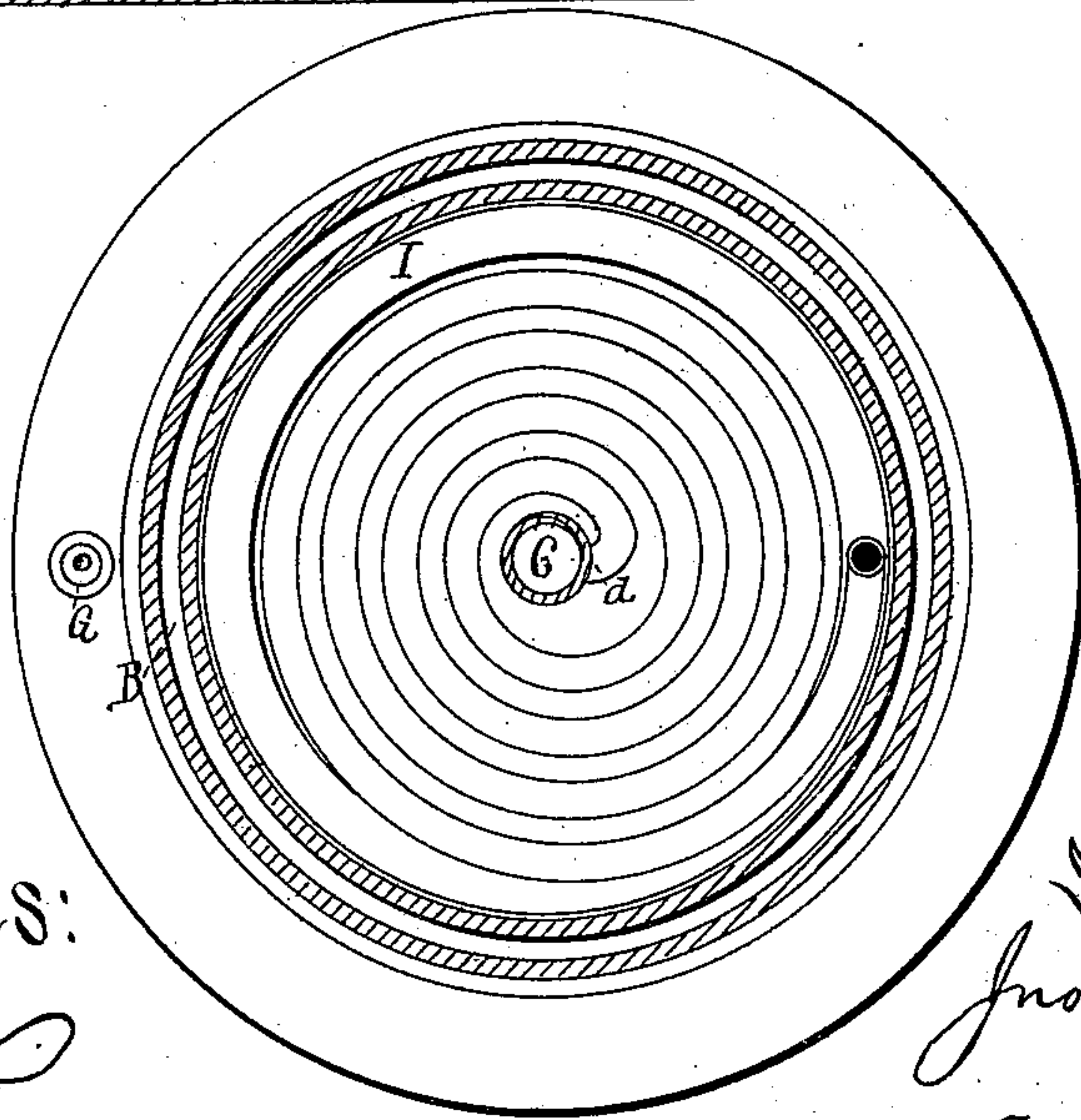
J. N. WINGETT.  
STEAM GENERATOR.

No. 306,985.

Patented Oct. 21, 1884.



*Fig 2*



WITNESSES:  
J. W. Garner  
L. F. Gardner

Inventor.  
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per  
J. A. Lehmann  
att'y.

# UNITED STATES PATENT OFFICE.

JOHN N. WINGETT, OF WASHINGTON, PENNSYLVANIA.

## STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 306,985, dated October 21, 1884.

Application filed March 3, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN N. WINGETT, a citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to an improvement in steam-generators; and it consists in a tubular coil forming the grate-bars, into which the water is forced by a pump or an injector, and from it led into a chamber forming the fire-  
15 box, from which it passes into a chamber connected with a second coil that conducts the steam into a steam-dome from which the engine is supplied, the whole being inclosed by a shell with an inner and an outer wall, the  
20 space between which is to be filled with a non-conducting material, as will be fully described hereinafter.

The accompanying drawings represent my invention.

25 Figure 1 is a vertical section of a boiler embodying my invention. Fig. 2 is a horizontal cross-section of the same, taken above the grate, on the line *x y*.

A represents a cylindrical shell composed  
30 of an inner and an outer wall, with an open space, B, between them for the introduction of a non-conducting material to confine the heat within the shell. The shell A stands on a flange, C, projecting inwardly from a base  
35 formed by the ash-pit D on top of the water-tank E. Over the ash-pit D is a flat tubular coil, F, that forms the grate-bars, into which the water is forced by a pump, G, or by an  
40 injector. The coil F is surrounded by the fire-box I, that stands on the flange C, inside the

shell A, and receives the water from the coil F. From the chamber between the walls of the fire-box the water passes, by the tube *b*, into a chamber, *c*, surrounded by a second coil, H, into which the water enters through 45 an opening, *d*, and is expelled at the other end of the coil, combined with steam, by way of the opening *e* into the steam-dome K, that surrounds a central flue, L. The steam-dome K rests upon the cylinder A, and is provided 50 with a double roof, between which is an open space, *g*, to be filled with a non-conducting material. Through the roof of the dome is a passage, *f*, through which steam is supplied to the engine. 55

Having thus described my invention, I claim—

1. The combination of the tubular coil F, which forms the grate, the force-pump, to which the lower end of the coil is attached, 60 and the water-tank E, located in the base, and in which the pump is placed, substantially as shown.

2. The arrangement of the water-tank E, force-pump G, coil F, fire-chamber I, pipe *b*, 65 chamber *c*, coil H, and steam-dome K, substantially as described.

3. The combination of the double-walled shell A, the steam-dome K, having the double cover *g*, and flanges to catch down over the 70 top of the shell, the steam-dome being placed inside of the top of the shell, and having the pipe L made through it, substantially as set forth.

In testimony whereof I affix my signature in 75 presence of two witnesses.

JOHN N. WINGETT.

Witnesses:

LOUIS MOESER,  
WILH. VOLBERS.