

(Model.)

E. E. GOLD.
STEAM HEATING APPARATUS.

No. 245,479.

Patented Aug. 9, 1881.

Fig. 1.

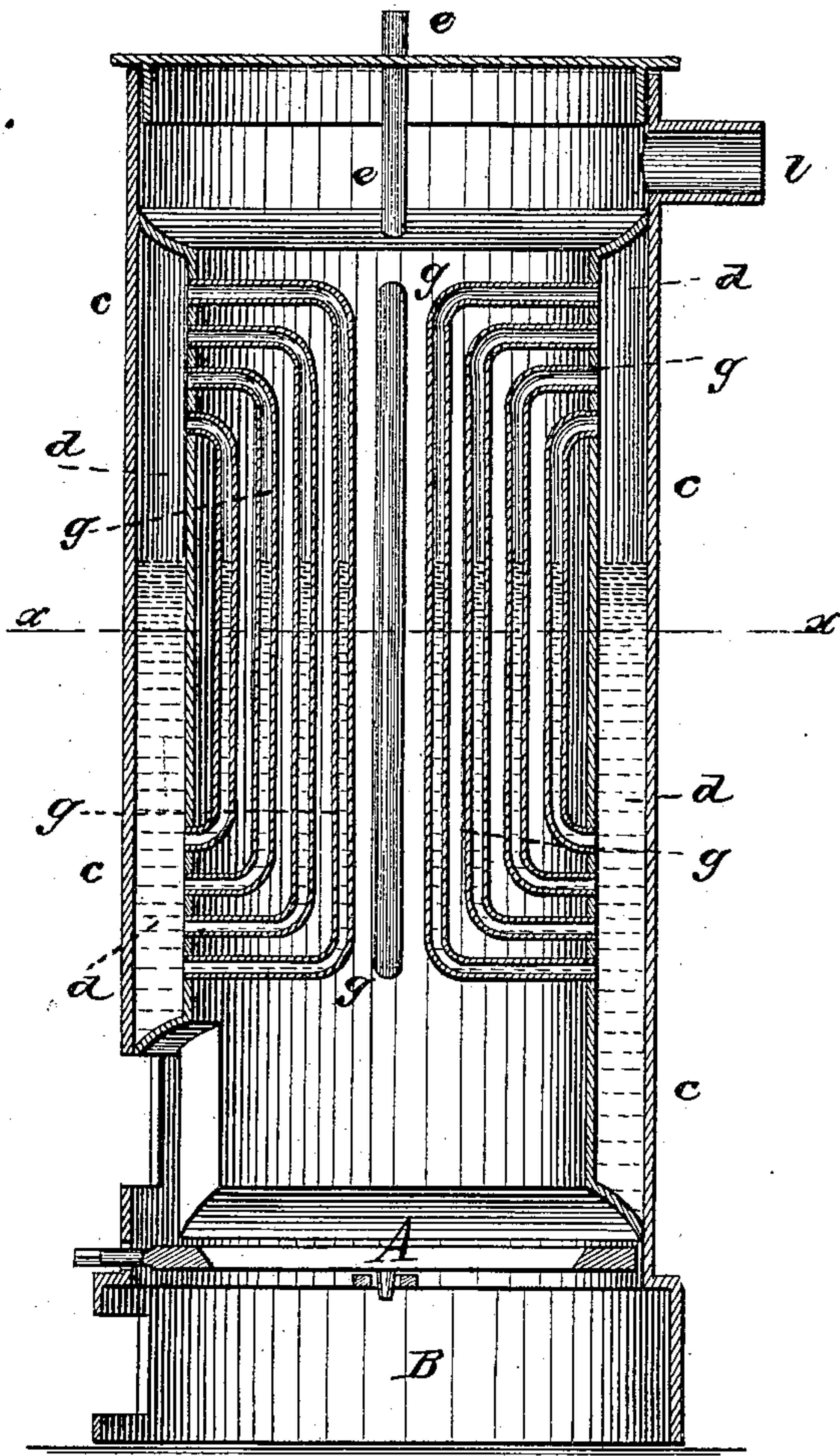
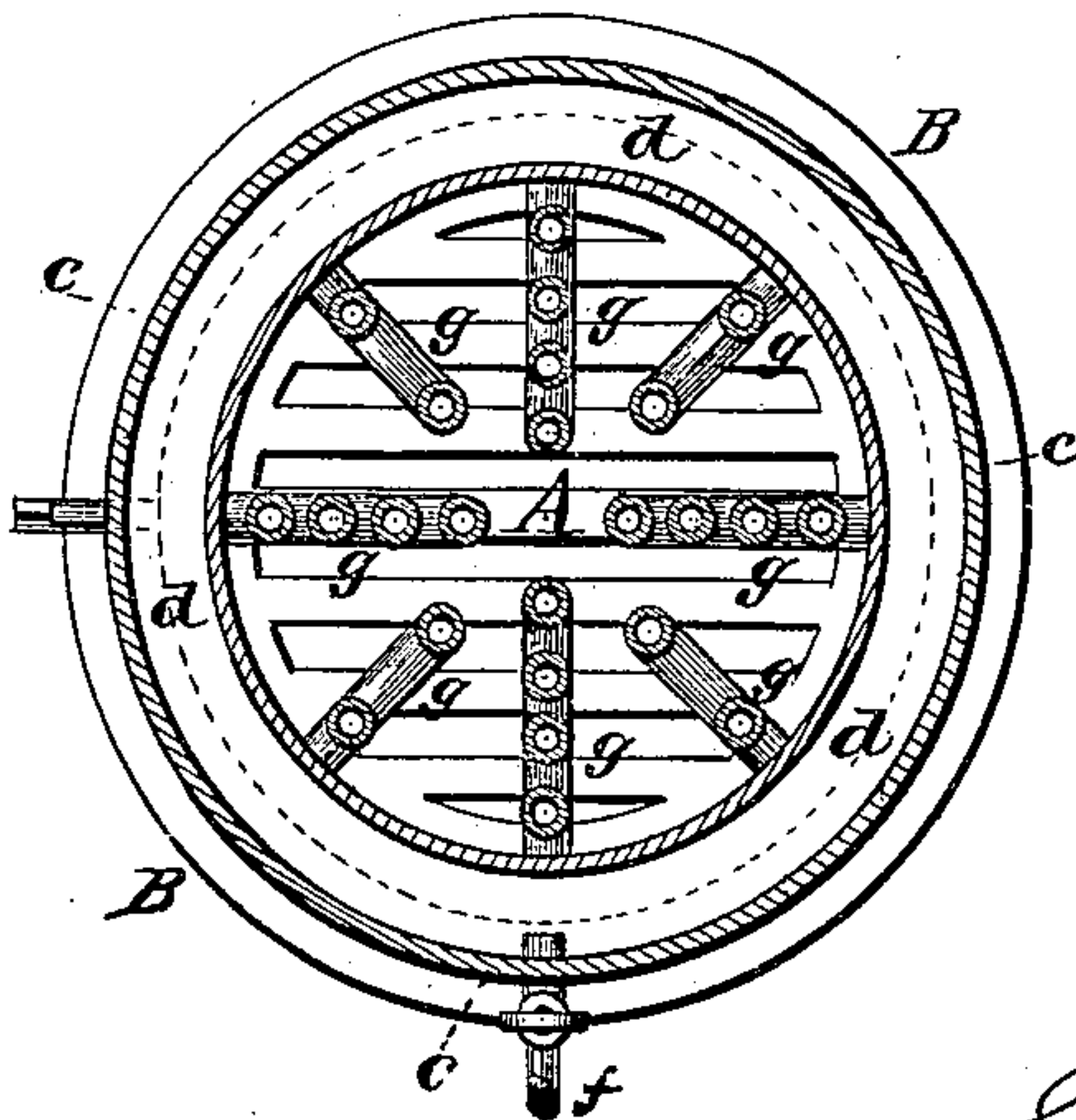


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD E. GOLD, OF NEW YORK, N. Y.

STEAM HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 245,479, dated August 9, 1881.

Application filed May 27, 1881. (Model.)

To all whom it may concern:

Be it known that I, EDWARD E. GOLD, of New York, in the county of New York and State of New York, have invented certain
5 new and useful Improvements in Steam Heating Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to
10 make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention relates to an
15 improved steam heating apparatus in which the boiler has inlet and outlet pipes, is formed by the double walls of a drum arranged above a fire-grate, and communicates with pipes arranged within the drum or stack, all as hereinafter described and claimed.

In the drawings, Figure 1 is a central vertical section, and Fig. 2 is a transverse section, taken on the line *x x*, Fig. 1.

Referring to the accompanying drawings by
25 letter, A represents the fire-grate, and B the ash-pit, of my improved steam heating apparatus. These may be of ordinary or suitable construction, and in adapting the same for use in connection with my devices such masonry-
30 work may be employed as will seem best in the judgment of the constructor.

The walls *c c*, which surround the fire-grate at their base, inclose a space, *d*, which is in the nature of a jacket encircling the inner
35 wall, and constitutes the boiler. This jacket, in which I propose heating water for the generation of steam, is closed at its upper and lower ends, and has a pipe or pipes, *e*, leading therefrom, whereby the steam will be con-
40 ducted away from the boiler to the apartments or other places to be heated.

A supply of water is to be admitted into the boiler through a three-way cock, *f*, such cock being employed so that a return-pipe from
45 the pipes which pass through the compartments to be heated may be connected therewith, and thereby admit of a return to the boiler of the water and steam.

Above the fire-place, and connecting with
50 the boiler, are several series of pipes, *g g*. Under the mode herein shown of arranging each

series of pipes in the line of a vertical plane radiating from a line through the center of the space surrounded by the boiler the said space or stack will be conveniently utilized, a free
55 circulation of the flame and heat between and around the pipes induced, and at the same time spaces in the nature of flues or channels be formed between the several series, whereby both the pipes and the inner wall of the boiler
60 will be exposed to the action of heat and flame.

The exterior casing of the boiler preferably projects upwardly above the closed upper end of the boiler, and is suitably closed.

A flue, *l*, is provided for carrying off the pro-
65 ducts of combustion, and this flue may connect by a return-flue with the fire-place, so that the same may be returned to the fire, and thereby waste avoided.

The water, as it is heated, circulates through
70 the pipes and boiler, and hence admits of its being effectively heated.

It will be noticed that while the pipes *g* of each series are of different lengths, yet the upper ends of all the pipes open into the steam-
75 space of the boiler and the lower ends into the water-space; hence an equalized pressure is obtained in all the pipes and in the boiler, and the water is rapidly heated to generate
80 steam.

I am fully aware that in various steam-generating devices circulating pipes have been arranged in different ways, and I do not claim such, broadly, as my invention.

What I claim, and desire to secure by Let-
85 ters Patent, is—

In combination with an upright boiler having an annular water and steam space, and an interior space or flue for the passage of the products of combustion, a number of series of
90 pipes of unequal lengths, arranged in vertical planes, and having the upper ends of all the pipes opening into the steam-space, and the lower ends into the water-space, substantially
95 as and for the purposes herein set forth.

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

EDWARD E. GOLD.

Witnesses:

H. HAFENERSTER,
JAMES MOORE.