

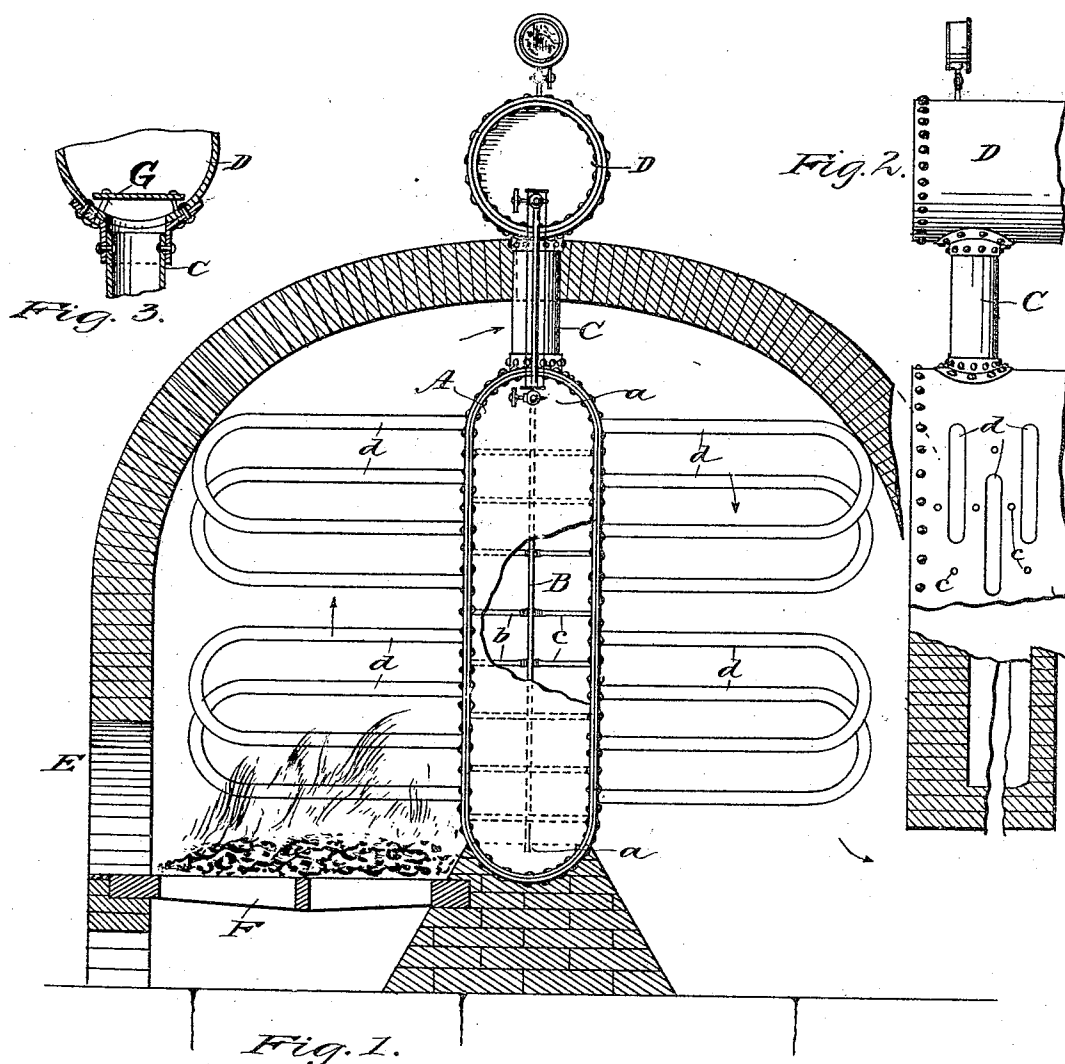
(No Model.)

J. A. WELTON & G. W. WELTON, Jr.

STEAM GENERATOR.

No. 515,267.

Patented Feb. 20, 1894.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN A. WELTON AND GEORGE W. WELTON, JR., OF CANTON, OHIO.

STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 515,267, dated February 20, 1894.

Application filed May 9, 1893. Serial No. 473,613. (No model.)

To all whom it may concern:

Be it known that we, JOHN A. WELTON and GEORGE W. WELTON, Jr., citizens of the United States, and residents of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Steam-Generators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making
10 part of this specification.

Our invention relates to improvements in steam generators and consists of certain features of construction and combination of parts as will be hereinafter described and
15 pointed out in the claim.

Figure 1, of the accompanying drawings is an end view of a steam generator, with a portion of the head cut away to show the interior, illustrating our invention. Fig. 2, is a
20 side view of a fragment of the boiler and the end of steam dome; and Fig. 3, a section of a fragment of steam dome, and connecting pipe.

Referring to Fig. 1, A represents the boiler
25 which may be made of any suitable material and is formed substantially as shown having a greater vertical than horizontal diameter.

For the purposes of this application we have shown a boiler four feet high and twenty
30 inches through horizontally, and six feet long, having vertical sides and circular top and bottom as shown; but other proportions may be substituted when preferred.

About central to the body A, of the boiler,
35 is provided a partition plate B, extending from one end of the boiler to the other, and from points a distance from the bottom and top as shown at *a*. To secure said partition plate B in position, rivets or bolts as *b* are
40 provided, having a threaded central portion *c*, adapted to be turned into threaded apertures in the plate B, the end portions to pass through corresponding apertures in the sides of the boiler in and over which they are
45 united, the bolts serve as stay bolts to the sides of the boiler as well as a support for the plate B. There are also provided on each side of the body of the boiler two series of over-

lapping return pipes *d* as shown in Figs. 1 and 2.

At the upper end portions of the boiler A, are provided upwardly projected tubes C, communicating with a steam dome as shown.

The generator or boiler is inclosed by a brick wall E at the lower portion, of which is
55 provided an opening or door-way through which fuel is passed to the grate F.

G represents a check plate placed in the dome over the end of the tubes C to check the flow of water from the boiler to the dome.
60

In operation the generator is filled with water up to and including a portion of the dome, the tubes C being always filled, fire is made upon the grate F, the flame and heat striking against the side of the generator,
65 passes up and embracing the return tubes *d* on the front and over the top of A, about the tubes C, and down about the return tubes on the rear side, and out at the bottom of the wall to the stack as indicated by the arrows.
70 The plate B checks the flow of water transverse the body of the boiler as ejected from the return tubes, and to cause it to pass about the ends of the plate, the greater heat on the front side, the water will flow up on the front
75 and over and down on the rear side of the plate.

Having thus fully described the nature and object of our invention, what we claim is—

The combination in a steam generator of a
80 body or boiler portion of less diameter in cross section than vertical or longitudinal section, the vertical partition plate B, stay bolts *b*, threaded at their centers and engaging with correspondingly threaded apertures in said
85 plate and their ends connected with the boiler, the return pipes *d* connected with the boiler, the dome D and the deflecting plate G, substantially as herein described.

In testimony whereof we have hereunto set
90 our hands this 25th day of April, A. D. 1893.

JOHN A. WELTON.

GEORGE W. WELTON, JR.

Witnesses:

W. K. MILLER,

BURT. A. MILLER.