

No. 773,914.

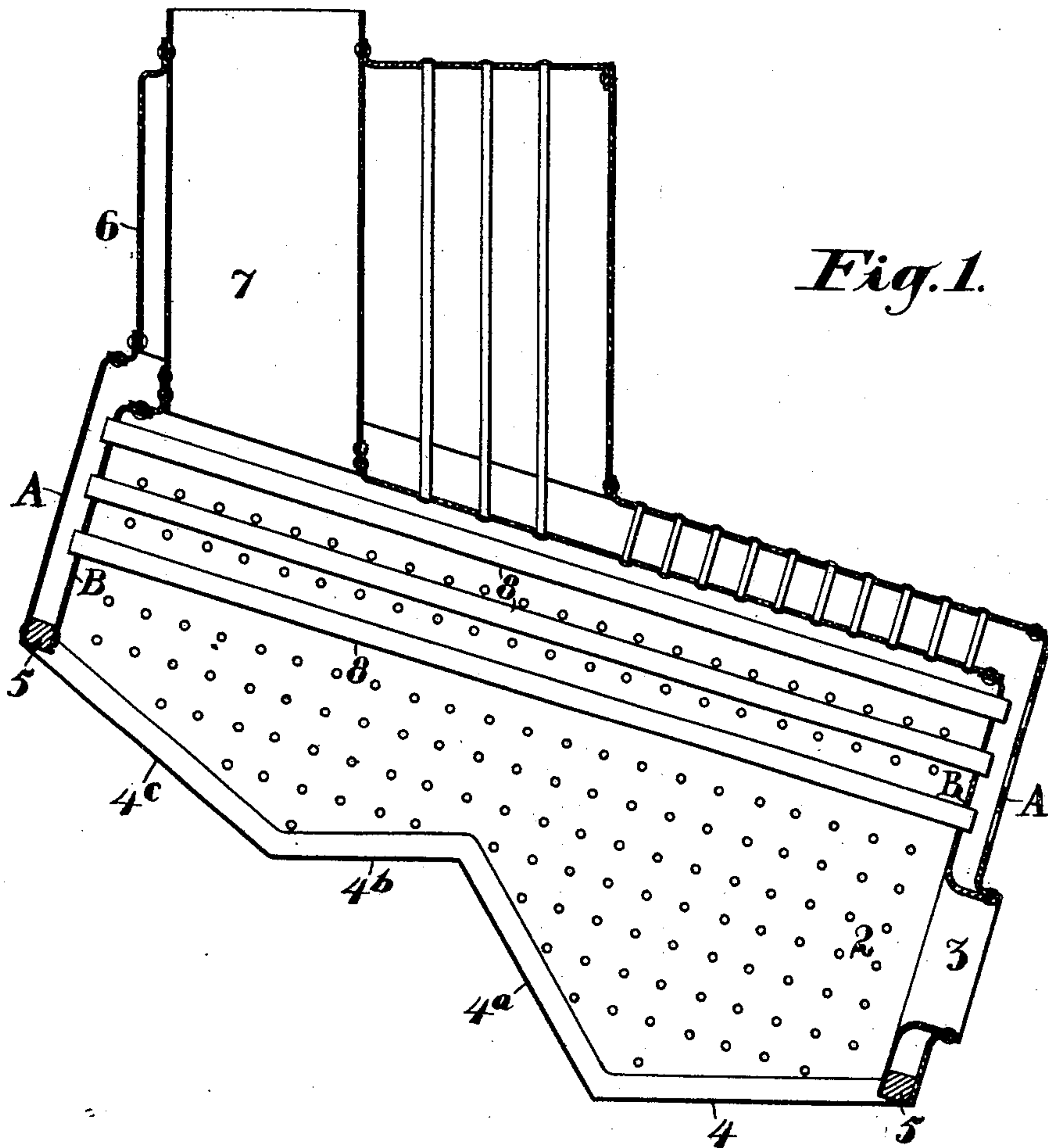
PATENTED NOV. 1, 1904.

D. BEST.
STEAM BOILER.

APPLICATION FILED DEC. 17, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:-

F. C. Fiedner
J. H. Morse

Inventor,

Daniel Best
By Geo. H. Strong.

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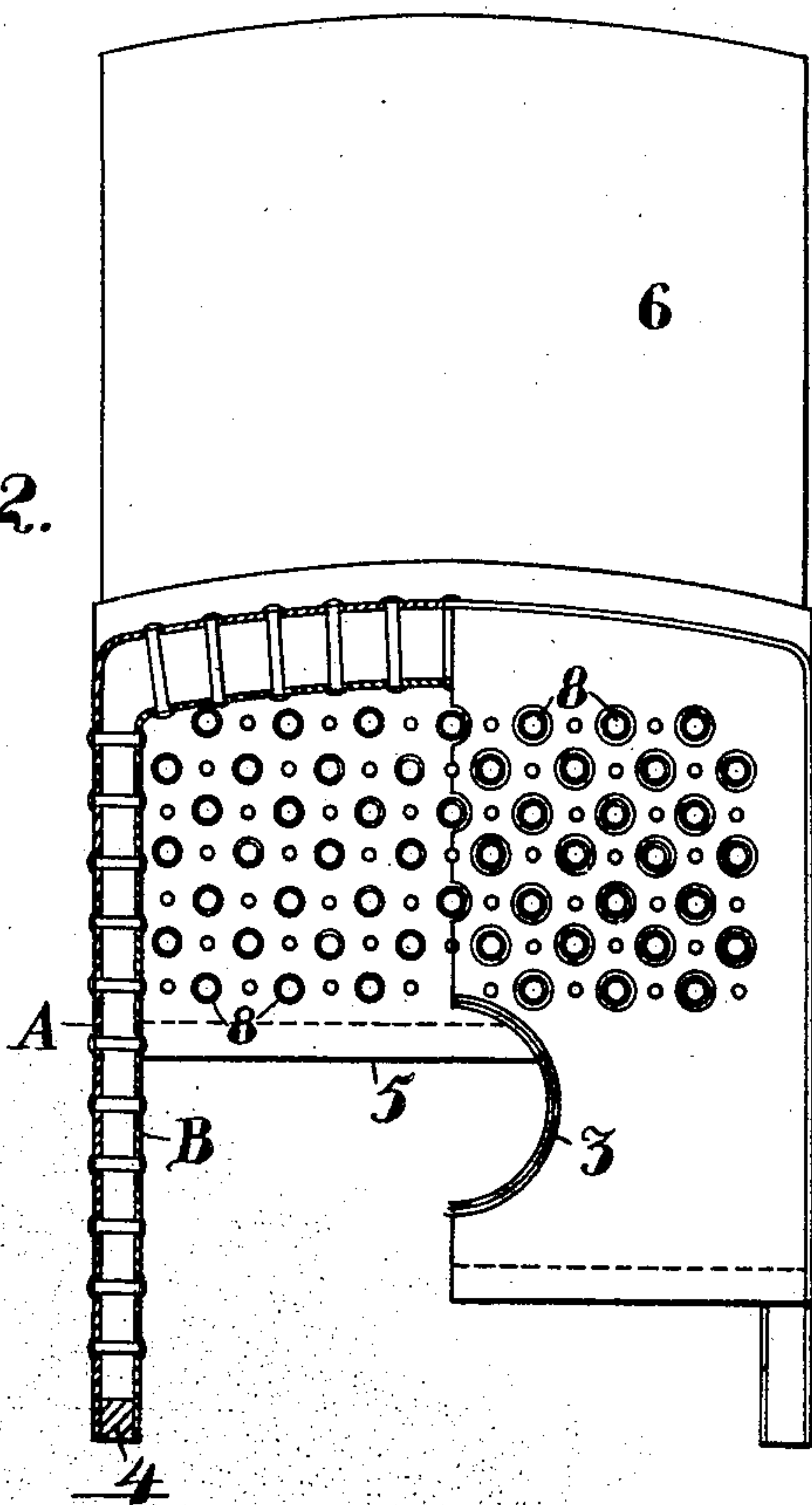
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

DANIEL BEST, OF SAN LEANDRO, CALIFORNIA, ASSIGNOR TO CLARENCE L. BEST, OF SAN LEANDRO, CALIFORNIA.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 773,914, dated November 1, 1904.

Application filed December 17, 1903. Serial No. 185,485. (No model.)

To all whom it may concern:

Be it known that I, DANIEL BEST, a citizen of the United States, residing at San Leandro, in the county of Alameda and State of California, have invented new and useful Improvements in Steam-Boilers, of which the following is a specification.

My invention relates to improvements in steam-boilers; and it consists of an inclined water-tube boiler with surrounding water-legs, an inclosed furnace in the lower end, a steam-dome at the upper end, and an escape flue or chimney connecting with the fire-space around the water-tubes and extending through said steam-dome.

It also comprises details of construction, which will be more fully explained by reference to the accompanying drawings.

Figure 1 is a longitudinal vertical section of my boiler. Fig. 2 is a rear end view and partial vertical transverse section.

It is an object of my invention to improve the general construction of the boiler.

As shown in the drawings, A and B are outer and inner walls of the boiler. These double walls extend upon both sides, the top and the ends, and they are suitably connected by stay-bolts, as shown.

2 is the furnace, having the usual grate-bars at the bottom and fire-door, as at 3.

The side legs of the boiler are shown as connected with square iron bars fitted into the space between the lower ends of said legs, as at 4, and these bars are bent to follow the contour of the sides from the front to the rear. Beyond the furnace portion of the grate these bars are bent upward at an inclination, as shown at 4^a, and this portion may be lined with fire-brick or fire-clay on the inner surface against which the direct heat of the fire-box impinges. Upon the upper ends of the incline 4^a these bars are bent into a substantially horizontal position, as at 4^b, and from the rear of this horizontal portion they are again inclined upward, as at 4^c, connecting with the rear and shallower portion of the boiler, as shown at 5. These two portions 4^b and 4^c are covered with a thin bottom plate extending across from side to side, thus com-

pleting the closure of the lower part of this portion of the boiler.

6 represents a vertical cylindrical shell extending upwardly from the highest part of the inclined portion of the boiler and connected with the space between the outer and inner shells, so that water normally stands at some height in this vertical portion, and the upper part serves as a steam-chamber.

The products of combustion from the furnace 2 pass from the furnace up through the inclined portion and around the tubes contained therein, and thence escape through a vertical stack 7, which passes directly through the vertical chamber 6 and at the side nearest that end of the inclined boiler portion.

The tubes 8 are made of any suitable or desired size and extend through the inner wall B at the ends of the inclined portion and open into the space between the inner walls B and the outer walls A, so that water circulating freely through the space between the double walls will also pass up the incline through the tubes to the upper end, being discharged into space between the walls at that end and returning between the shells to the lower end, thus making a very complete circulation.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An inclined boiler consisting of concentric outer shells forming a water-space, bars of substantially zigzag form following the contour of the lower edges of the shells between which said bars are secured to form water-legs, tubes connecting the end spaces of said boiler whereby water circulation may be maintained through said tubes and between the shells and a vertical single shell portion extending upwardly from one end of the boiler and connected with the interspace between the shells, a fire-box at one end of the boiler and a chimney extending upwardly through the vertical portion of the boiler.

2. An inclined boiler consisting of concentric shells forming surrounding and end water-spaces, and having irregular bottom formation, irregular bars conforming to said lower edges of the shells and secured be-

tween said shells to form water-legs, tubes connecting said end spaces whereby circulation through said tubes and interspaces is produced, a vertical single wall portion connecting with the higher part of the interspace between the boiler-shells, a vertical chimney extending through said vertical portion and at one side of the center thereof, and a fire-box located at the lower and opposite end of the boiler.

3. The combination in a boiler of outer and inner shells with intermediate side and end water-space, said shells standing in an inclined position with water-tubes extending through the ends of the inner shell, rectangular bars bent to follow the contour of the lower edges

of the shells between which said bars are riveted to form water-legs, a furnace located at the lower end of the boiler, a vertical steam-dome connected with the upper end of the intermediate space between the shells, and a chimney-flue extending through said steam-dome, with its lower end opening into the fire-space surrounding the upper ends of the water-tubes.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

DANIEL BEST.

Witnesses:

A. B. THOMAS,
CHAS. H. HALE.