(No Model.)

J. H. WYNNE.

HOT WATER BOILER.

No. 465,420. Patented Dec. 15, 1891.

Fig. 1.

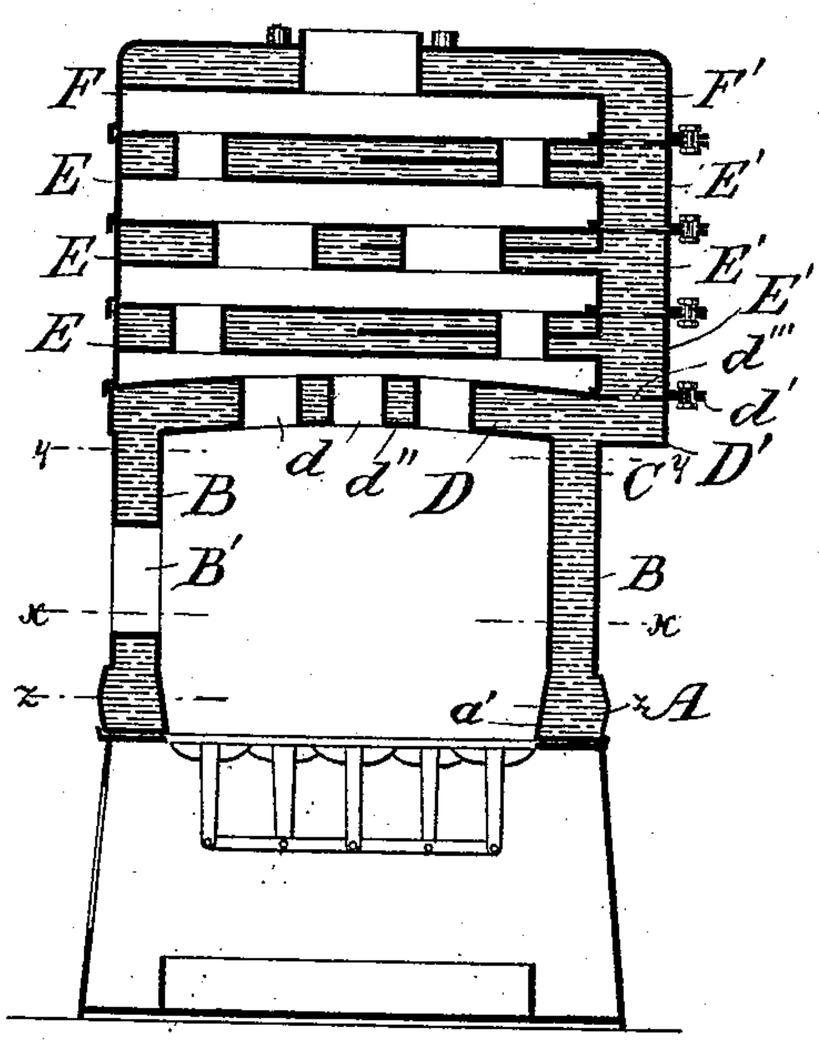


Fig. 2.

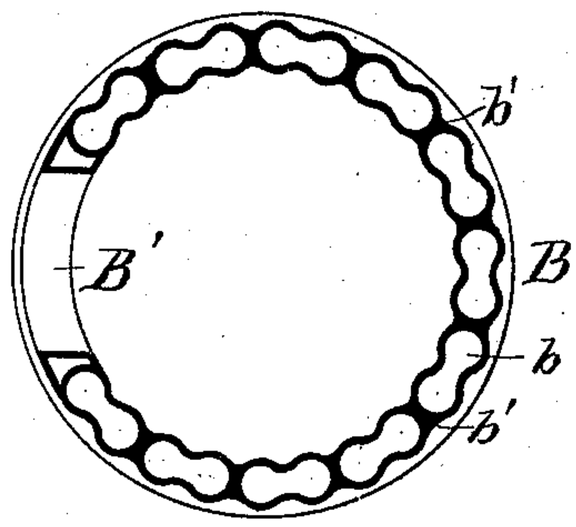


Fig. 3.

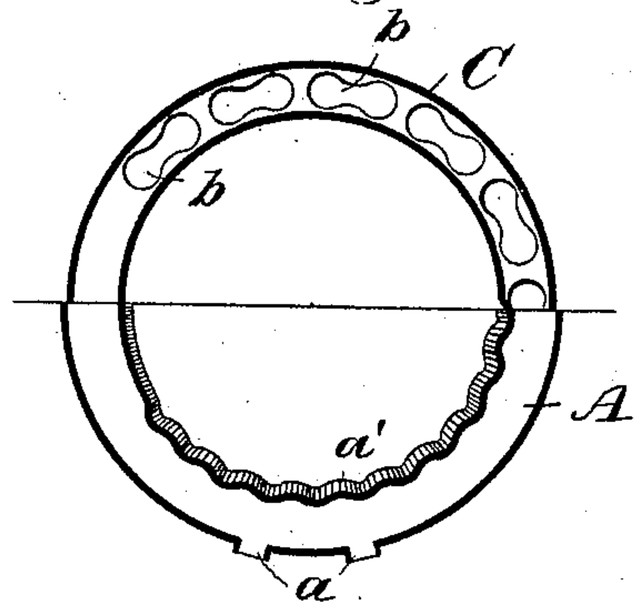


Fig. 4

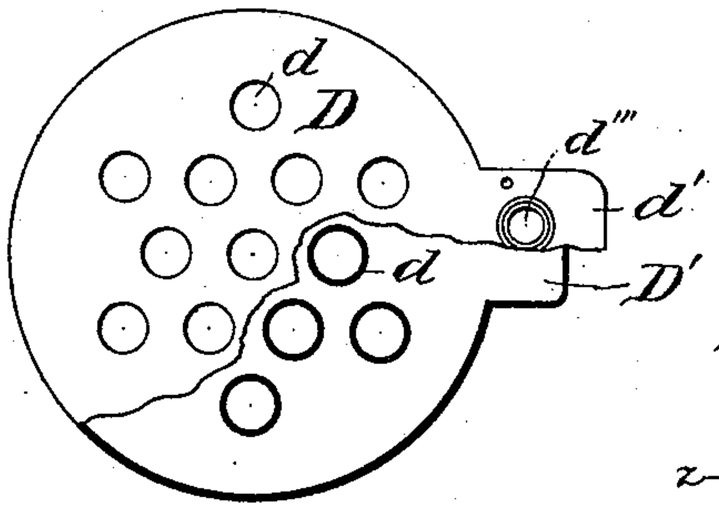
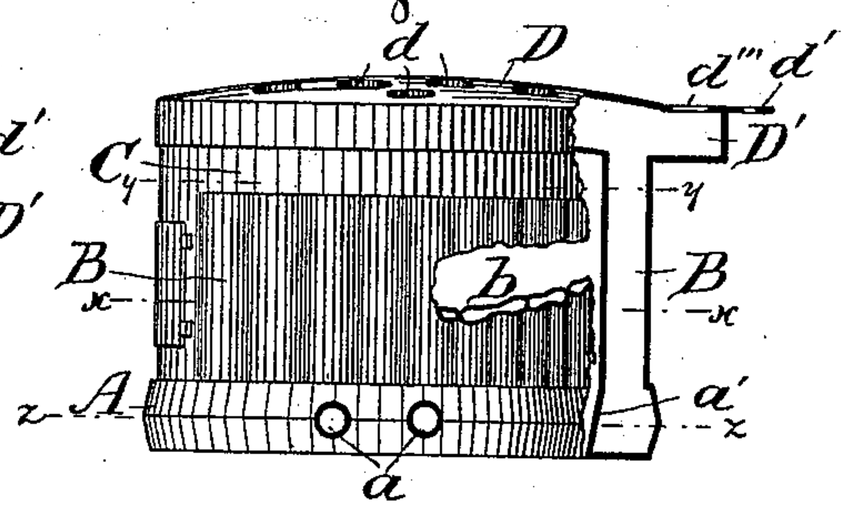


Fig. 5.



Witnesses:
Chas. Raley.
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UNITED STATES PATENT OFFICE.

JOHN HERBERT WYNNE, OF MONTREAL, CANADA, ASSIGNOR TO HUBERT R. IVES, OF SAME PLACE.

HOT-WATER BOILER.

SPECIFICATION forming part of Letters Patent No. 465,420, dated December 15, 1891.

Application filed October 12, 1891. Serial No. 408,445. (No model.)

To all whom it may concern:

Be it known that I, JOHN HERBERT WYNNE, of Montreal, in the Province of Quebec, in the Dominion of Canada, have invented certain new and useful Improvements in Hot-Water Boilers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part hereof.

My invention, which will be hereinafter fully set forth and claimed, relates to the fire-pots of that class of hot-water boilers in which the upper portion is built up of superimposed sections.

Figure 1 is a vertical section of a boiler constructed with my improved fire-pot. Fig. 2 is a horizontal section of the fire-pot on line *x x*, Figs. 1 and 5. Fig. 3 is a horizontal section of the fire-pot on lines *y y* and *z z*, Figs. 1 and 5. Fig. 4 is a top view of the same, partly in section. Fig. 5 is an elevation of the fire-pot on a larger scale, partly in section.

A, Figs. 3 and 5, is an annular base-ring provided with one or more inlet-nozzles *a* and having its internal wall *a'* corrugated and tapering inwardly toward the center of the ring from top to bottom, so that the internal space of the ring is smaller at the bottom than at the top, and the former corresponds with the size of the grate without leaving a shoulder on which ashes and other débris can accumulate. C is another annular ring corresponding to the ring A, but having, preferably, plain internal and external surfaces. These two rings are connected integrally by a cylinder B, corrugated internally and externally, except over and under the fire-door, Figs. 2 and 5, the corrugations forming the walls of twin tubes *b*, connected by webs *b'*, which tubes open into the rings A and C at bottom and top, respectively, and form a free communication between them.

B' is the opening for the fire-door.

D is a hollow disk having a number of perforations *d*, acting as flues, and which disk is integrally formed with the top ring C, the interior space of the one communicating freely with that of the other. The bottom *d''* of said disk forms the furnace-crown and is dished or arched.

D' is an excrescence provided with a flange *d'*, in which two openings *d'''* are left for connection with the superimposed sections. The sloping corrugations *a'* of the base-ring A are continuations of the corrugations on the interior of the cylinder B.

It will be particularly noted that all the parts A, B, C, and D are integrally formed or connected and form one piece.

E E E and F are the intermediate and top sections superimposed on the top D and on each other. They are provided with overlapping rims at the lower edge and have flanged excrescences E' and F', corresponding to the excrescence D', to which they are bolted. All said sections are provided with flue-openings, the top having only one, to which the chimney-flue is connected. The top section is provided with nozzles, from which the hot water is drawn.

The cold water enters the base-ring A by the nozzle or nozzles *a*, filling said ring. It then rises through the twin tubes *b* into the top ring C and thence into the top D. From there it takes its exit by the openings *d'''* and circulates through the sections E until rising to the top F, whence it is drawn off. The twin tubes in the cylinder B promote circulation, as the water is enabled to rise from the base-ring A at all points. The top D, being cast in one piece with the top ring C, also promotes circulation by allowing access to said top from all points, and the dishing or arching of the crown promotes durability in preventing cracking from unequal expansion and contraction.

I claim as my invention—

In a hot-water boiler, the combination of the annular base-ring A, having its interior wall tapering and corrugated and its external wall provided with inlet-nozzles, the annular ring C, the corrugated cylinder B, having vertical twin ducts formed by the corrugations communicating with the interior of the rings

A and B and integrally formed therewith, and the hollow disk D, integrally formed with the ring C, and the internal spaces of the two parts communicating with each other freely and having the dished crown d'', flues d, and extension D′, with flange and openings d''', substantially as set forth.

In testimony whereof I have signed in the presence of the undersigned witnesses.

JOHN HERBERT WYNNE.

Witnesses:
A. HARVEY,
B. HARVEY.