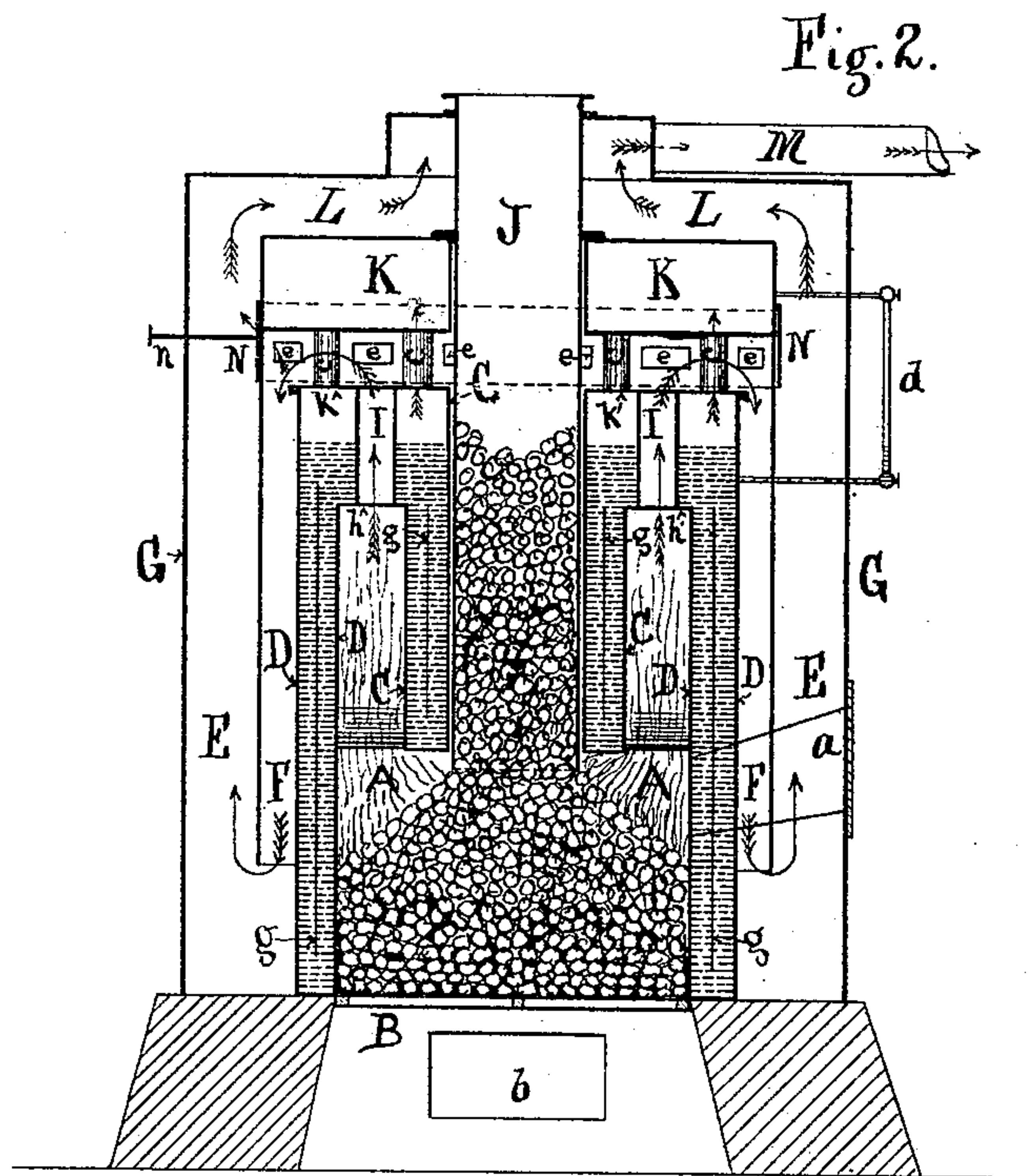
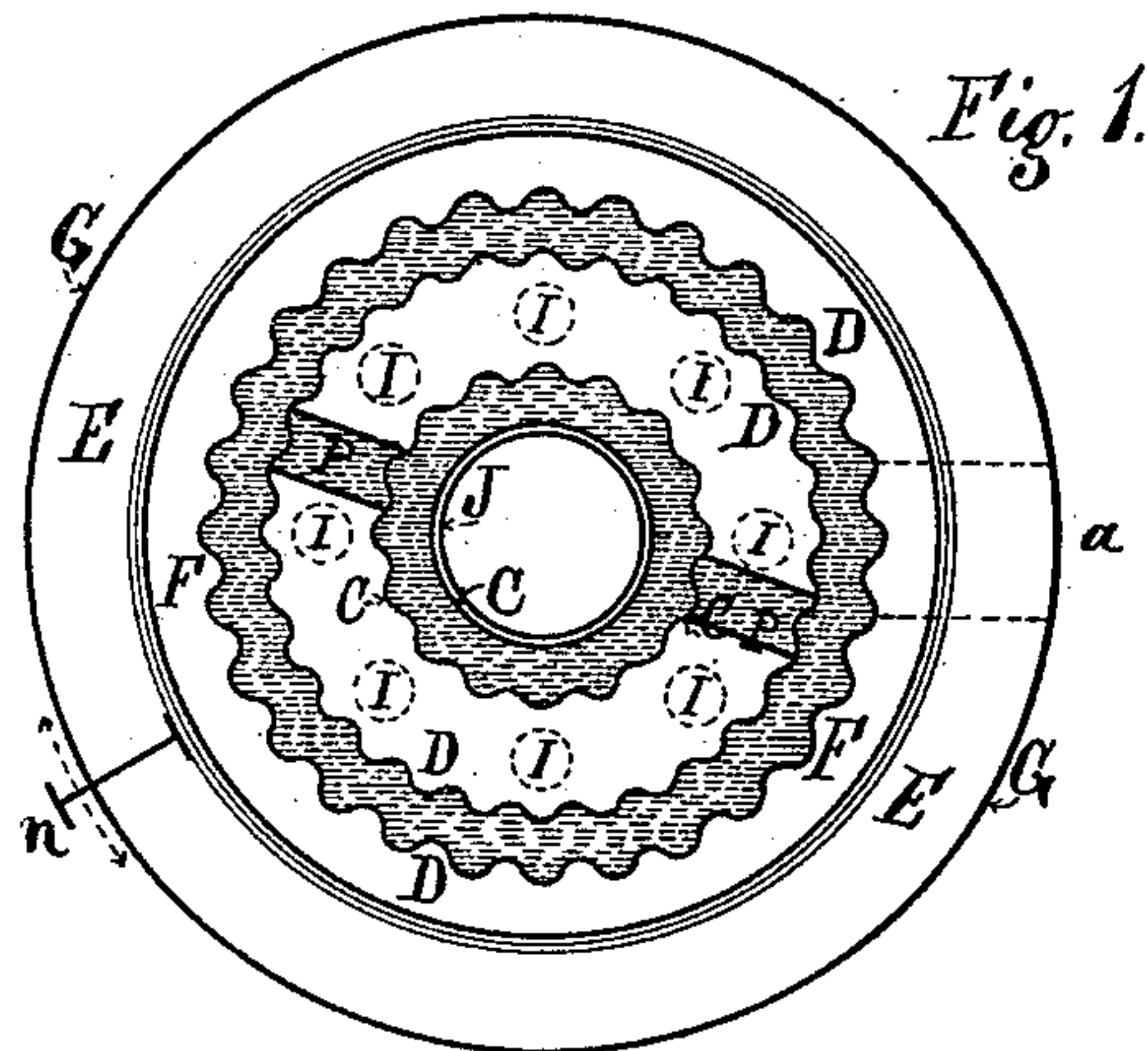


(No Model.)

E. D. MORE.
STEAM BOILER.

No. 353,752.

Patented Dec. 7, 1886.



WITNESSES:-
A. M. Pierce,
M. E. Roberts.

INVENTOR:-
Elisha D. More
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Atty.

UNITED STATES PATENT OFFICE.

ELISHA D. MORE, OF NEW YORK, N. Y.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 353,752, dated December 7, 1886.

Application filed June 18, 1886. Serial No. 205,531. (No model.)

To all whom it may concern:

Be it known that I, ELISHA D. MORE, a subject of the Queen of Great Britain, residing in the city, county, and State of New York, have
5 invented certain new and useful Improvements in Steam-Boilers, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates specially to improvements in steam-boilers carrying low pressures, constructed and adapted to house or building heating purposes.

The object of my improvements is to cheapen the construction and improve the efficiency
15 and economy of the same as far as possible in their daily operation.

To attain such object my improvements consist in forming the sides of the boiler and water-legs of corrugated metal, whereby an increased
20 heating-surface exposure is effected in proportion to the depth or radius of the corrugations.

Other improvements consist in suspending from the crown-sheet a circular water-leg, concentric with the outer circle of the boiler, and
25 having the sides thereof composed of corrugated metal for increasing the heating-surface exposure.

Other improvements consist in connecting the outer circular water-leg of the boiler with
30 the inner suspended water-leg by tubular passages to assist in the circulation and handling of the water within the boiler.

Other improvements consist in the combination of an upper independent circular steam-chamber with the circular vertical boiler constructed in all its vertical sides of corrugated metal, whereby the steam is thoroughly dried and superheated before passing out to be used for heating or other purposes.

Other improvements consist in the combination of the several portions collectively or with each other, as may be hereinafter shown and described.

In the drawings, Figures 1 and 2 represent
45 consecutively a horizontal and vertical section of a boiler embodying my improvements.

Similar letters of reference designate like parts in both the figures.

A designates the fire-box; B, the grate.

50 C designates the inner suspended circular

water-leg, provided with vertical corrugated sides.

D designates the outer circular water-leg, provided with vertical corrugated sides forming the main cylindrical body of the boiler. 55 The outer shell of this water-leg is continued up some distance to form an upper water and steam space. The inner corrugated shell of the outer water-leg and the outer corrugated shell of the inner circular water-leg are joined 60 by the flue or tube sheet *h*, and the inner shell of the inner circular water-leg is continued up the same height as the outer corrugated shell portion, and the two are joined by an upper tube or flue sheet, *k*, between which and *h* the 65 flues *l* extend, opening communication between the furnace and the outer flue-connections.

E and F are annular flues, extending down and up without the boiler.

G is the outer wall of the boiler construction, 70 and incloses the flue F, to carry the products of combustion up and through the chamber L, and thence out, as shown by the arrows, through the flue M.

K is the steam-chamber, connected with the 75 steam-space of boiler proper by tubes *c c*.

J is the self-feeding magazine, passing through the upper independent steam-chamber, K, and down through the upper water and steam chamber of the boiler and the inner 80 circular water-leg, C.

For the purpose of a more direct draft, a damper, N, set concentric with and operating about the circular partition between the flues E and F, opens the holes *e e*, to permit the pro- 85 ducts of combustion to pass directly through and out, instead of passing down through F and up through E.

Dividing-plates *g g* are located within both inner and outer water-legs, to assist the circu- 90 lation of water within. *a* represents the furnace-door; *b*, the ash-pit door; *d*, a water-gage.

P designates the connecting water-ways between the outer and inner water-legs, D and C, 95 of the boiler.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a steam-boiler consisting of two annular water-chambers having the sides corrugated, connected, and arranged 100

substantially as shown and described, the independent steam-drum K, the concentric damper N, attached thereto, and the flues I, F, E, L, and M, whereby the movements of
5 the products of combustion are controlled, substantially as shown and described.

2. In combination with a steam-boiler constructed substantially as shown and described, the independent steam-drum K, tubes c c, connecting the boiler with the steam-drum, the
10 central self-feeding magazine, J, flues I, damper N, upper portions of flues E and F, and the flues L and M, substantially as and for purposes specified.

15 3. A steam-boiler constructed substantially as shown and described, in combination with the flues I, F, E, L, and M, and the concentric damper N, the whole constructed and arranged

for joint operation, substantially as shown and described.

4. In combination with a steam-boiler, substantially as shown and described, the independent steam-chamber K, the steam-connecting tubes c, the flues I, the damper N, the
20 holes e, and the uptakes or flues L and M, whereby the products of combustion are caused to impinge against the bottom plate of the steam-chamber K, pass upward about the cylindrical sides of the same, and thence over
25 the top plate to the flue, substantially as shown and described. 30

ELISHA D. MORE.

Witnesses:

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