(No Model.)

J. V. BEEKMAN.

STEAM GENERATOR.

No. 384,555. Patented June 12, 1888.

Fig. 1.

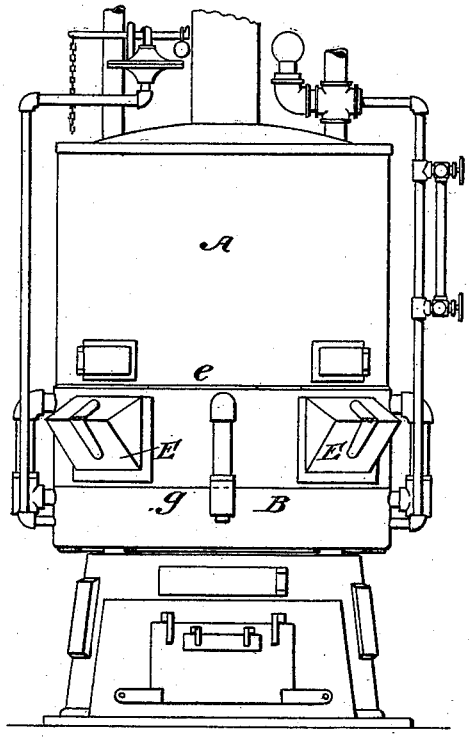


Fig. 2.

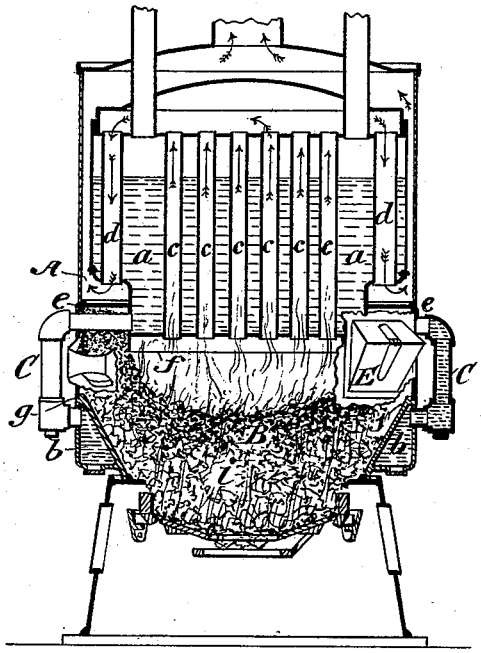


Fig. 3.

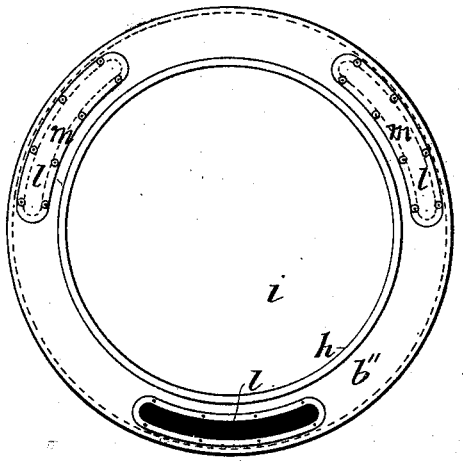
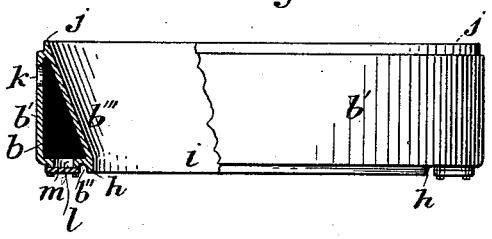


Fig. 4.



Witnesses
M. J. Roach.
H. A. Raban

Inventor.
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by Gifford & Brown
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UNITED STATES PATENT OFFICE.

JOHN V. BEEKMAN, OF BROOKLYN, ASSIGNOR TO THE LEDGERWOOD MANUFACTURING COMPANY, OF NEW YORK, N. Y.

STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 384,555, dated June 12, 1888.

Application filed October 31, 1887. Serial No. 253,912. (No model.)

To all whom it may concern:

Be it known that I, JOHN V. BEEKMAN, of Brooklyn, New York, have invented a new and useful Improvement in Steam-Generators, of which the following is a specification.

This invention relates to an improvement on the steam-generator described in Letters Patent No. 334,657, granted to Charles Gorton January 19, 1886; and it consists in constructing the fire-pot in two parts, the lower of which is cast with openings at the bottom and side and provision for attachment above and below.

In the drawings, Figure 1 represents a side view of the exterior of the steam-generator. Fig. 2 is central longitudinal section of the same. Fig. 3 is an inverted plan view of the fire-pot. Fig. 4 is a side view, partly in section, of the lower part of the fire-pot detached.

The general construction of the steam-generator is the same as that described in the patent already referred to, so that detailed description may be dispensed with. Suffice it to say that the generator contains an upper section, A, and a lower section, B, each having water-sections *a* and *b*, respectively, communicating with each other by circulating-tubes C, the upper section having a nest of flame-tubes, lettered *c*, and shorter outer return-tubes, *d*. The upper and lower sections are connected by a joint at *e*. The lower section is provided with the external fuel-pockets, E, so that the fuel may be introduced at the sides into a chamber which is separated from the fire-chamber by the flange *f*, and in which no combustion takes place. The construction shown in said patent was built of wrought metal, which was laborious and expensive. I divide section B into two parts, which meet on the line *g* just below the fuel-pockets. The upper part is constructed as heretofore; but the lower part, which is shown most clearly in Figs. 3 and 4, I will now describe. It is made of cast-iron.

b is the water-annulus surrounding the fire. It is formed by the cast-iron walls *b' b'' b'''*.

i is the central opening, below which is the grate, and which is surrounded by the downwardly-projecting flange *h*, to serve to center the contrivance on the support below.

j is a flange projecting upwardly from the top, which serves to center the upper part of the fire-pot.

k is the opening with which the tube C connects.

l l l are openings formed in the wall *b''* of the water-space *b*. These openings are essential for enabling the part of the fire-pot shown in Figs. 3 and 4 to be cast in one piece. In order to mold such a casting, sufficient access must be had to the space to be surrounded by the casting, which could not be obtained in the absence of these openings. These openings perform no function in the use of the apparatus, excepting it be to afford access to the water-space for cleaning. These openings are in use covered by water-tight caps *m*.

By the construction above described the part of the fire-pot shown in Figs. 3 and 4 may be cast in one piece complete, the openings *l l l* affording access to the water-space for that purpose. Thus its first cost is small. It is durable, and may be renewed without making it necessary to renew the other parts. It is also very readily connected with and disconnected from the other parts.

I claim—

A steam-generator composed of the sections A and B, the said section B constructed in two parts, having their junction immediately below the fuel-pockets, the lower part consisting of the cast-iron walls *b' b'' b'''*, inclosing the water-space *b*, and the flanges *h* and *j*, the said walls *b'* and *b''* being respectively provided with the openings *k* and *l*, substantially as described.

JNO. V. BEEKMAN.

Witnesses:
SMITH E. LANE,
WALTER L. PIERCE.

Correction in Letters Patent No. 384,555.

It is hereby certified that the name of the assignee in Letters Patent No. 384,555, granted June 12, 1888, upon the application of John V. Beekman, of Brooklyn, New York, for an improvement in "Steam Generators," was erroneously written and printed "Ledgerwood Manufacturing Company," of New York, N. Y., whereas said name should have been written and printed *Lidgerwood Manufacturing Company*, of New York, N. Y.; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 26th day of June, A. D. 1888.

[SEAL.]

D. L. HAWKINS,
Assistant Secretary of the Interior.

Countersigned:

BENTON J. HALL,
Commissioner of Patents.