(No Model.)

2 Sheets—Sheet 1.

W. SELLERS.

STEAM GENERATOR.

No. 342,544. Patented May 25, 1886.

FIG. 1.

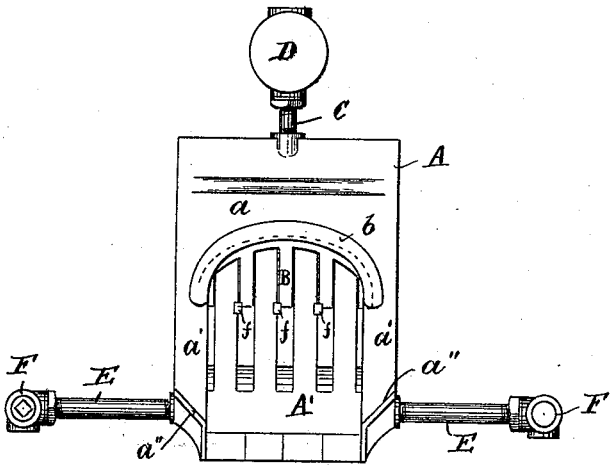


FIG. 2.

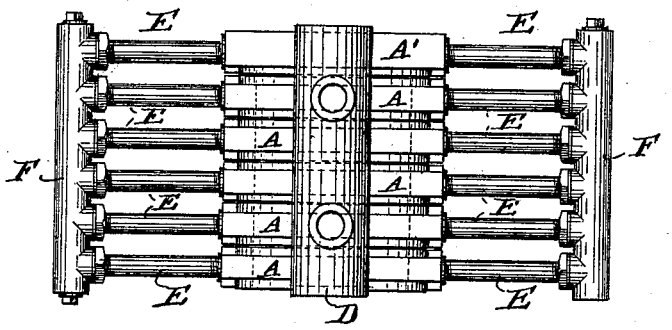


FIG. 3.

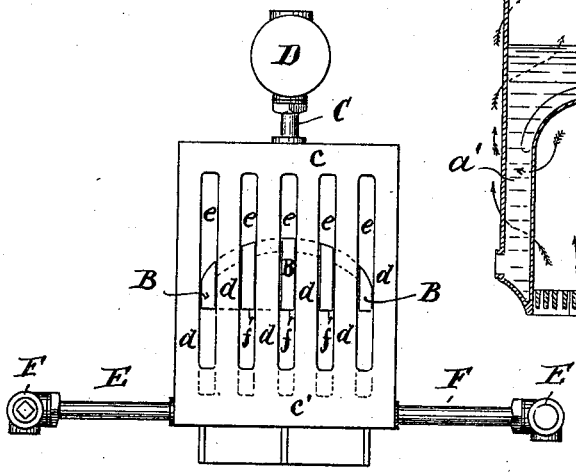
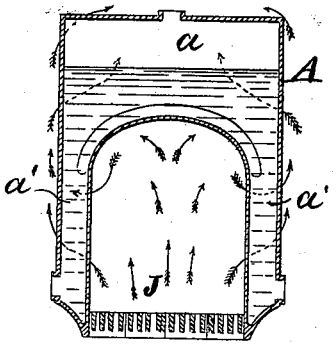


FIG. 4.



Witnesses.

E. Blanta.

Wm. A. Wheeler

Inventor.

Wm. Sellers.

by J. H. Adams

Attorney.

(No Model.) 2 Sheets—Sheet 2.

W. SELLERS.

STEAM GENERATOR.

No. 342,544. Patented May 25, 1886.

FIG. 5.

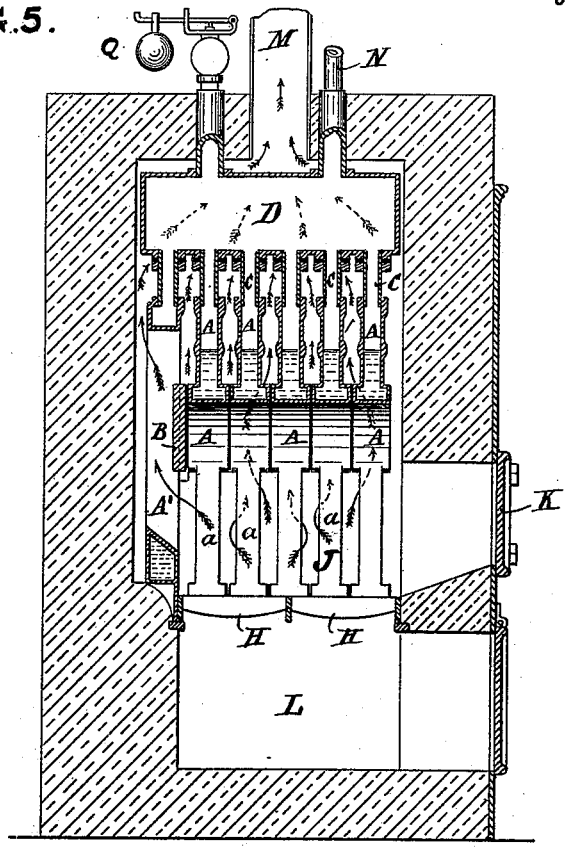
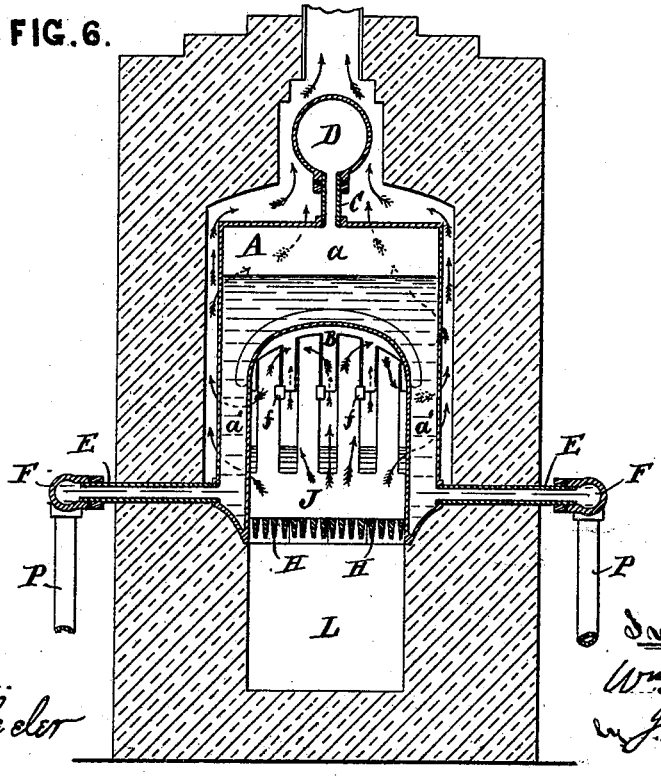


FIG. 6.



Witnesses.
S. Bianta.
Wm. A. Wheeler

Inventor.
Wm. Sellers
by J. H. Adams
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM SELLERS, OF HAVERHILL, MASSACHUSETTS.

STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 342,544, dated May 25, 1886.

Application filed January 11, 1886. Serial No. 188,156. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SELLERS, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Steam-Generators, of which the following is a specification.

My invention relates to certain improvements in steam-generators, whereby I gain a very large amount of heating-surface, and in which steam will be evolved with a small quantity of fuel.

My invention consists of a generator composed of several independent sections each communicating with a steam-drum, the fire-place being in the center of the sections, so that the flames and heat can pass between and around each and every section and the steam-drum. The several sections communicate with each other by means of pipes leading from the lower sides to side chambers, to one of which the feed-water is admitted, and the return being made to both the said side or circulating chambers.

Referring to the accompanying drawings, Figure 1 is a front elevation of a steam-generator embodying my invention. Fig. 2 is a plan or top view of the same. Fig. 3 is a rear elevation. Fig. 4 is a vertical section taken through one of the sections. Fig. 5 is a longitudinal vertical section of the generator as set in brick-work, and Fig. 6 is a transverse vertical section of the same.

A A represent saddle-shaped sections that form the sides and top of the fire-chamber, *a* being the body, and *a' a'* the water-legs.

A', Fig. 1, shows the rear section.

Each of the sections A are made wider at their base than the water-legs *a'*, the projecting part *a''* being inclined, so as to cause the fuel that may be thrown thereon to slide toward the grate.

The sections A are provided with projections *b* at the crown, so that the sections will be wider at this part and thus hold a large quantity of water, in order that the flames may come more directly in contact with this portion of the section, and at the same time to close the spaces between the sections, so as to arrest a great part of the heat that passes to the chimney, and thereby causing the heat to circulate around the sections.

The rear section, A', is provided with an upper and lower chamber, *c c'*, connected together by a series of vertical passages, *d*. The spaces *e* between the chambers *d* are inclined inward at their lower ends toward the fire-chamber, so that any fuel that may be thrown thereon will slide off upon the grate.

B is a deflecting bridge-plate supported upon lugs *f*, cast on the vertical passages or chambers *d* of the rear section, A', so as to prevent the heat from escaping to the chimney before it has properly circulated around the sections.

On the upper ends of each of the sections A A' is fitted a short pipe, C, that communicates with a steam-chamber, D, provided with suitable openings for the attachment of the steam-supply pipe and safety-valve.

On each side of the sections A A' are connected pipes E, that communicate with the side or circulating chambers F, to one of which the water-supply pipe is connected, and the return is made to both.

When the generator is set in place, I prefer to leave but a small space between it and the brick-work, say about one inch. (See Figs. 5 and 6.) G represents the brick-work; H, the grate; J, the combustion-chamber; K, the door to same. L is the ash-pit, M the chimney, N the steam-supply pipe, P the return-pipes, and Q the safety-valve. Water is admitted at one end of one of side or circulating chambers F, from which it passes through the pipes E to the sections A A', in which the steam is generated that passes through the pipes C to the steam-chamber D, and thence through the pipe N to the place to be heated, and is returned through pipes P to the circulating-chambers F. The products of combustion ascend and strike against the crown, and are then deflected downward and pass around each and every one of the sections A A' to pipes C and steam-chamber D, and then to chimney M.

The space between the sections at the crown is closed so as to prevent the products of combustion from passing directly upward and compelling them to pass around the sections,

as indicated by the arrows, thus causing every portion of the surface of the sections to be exposed to the action of the heat, and, as each section contains but a narrow column of water, very little fuel is required to generate steam.

What I claim as my invention is—

1. A steam-generator composed of a series of saddle-shaped sections, A, and a rear section, A′, each section communicating at each side by means of pipes E with circulating-chambers F, and each section communicating by pipes C with steam-chambers D at the upper portion, as shown and described.

2. In a steam-generator, the combination, with the sections A, of the projecting bases *a′* and the projections *b* at the crown, in connection with suitable circulating-pipes, substantially as and for the purpose set forth.

3. The combination, with the saddle-shaped sections A and suitable circulating-pipes, of the rear section, A′, the upper and lower horizontal chambers, *c c′*, and the vertical passages *d*, the latter connecting the chambers *c c′* together, as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM SELLERS.

Witnesses:
J. H. ADAMS,
E. PLANTA.