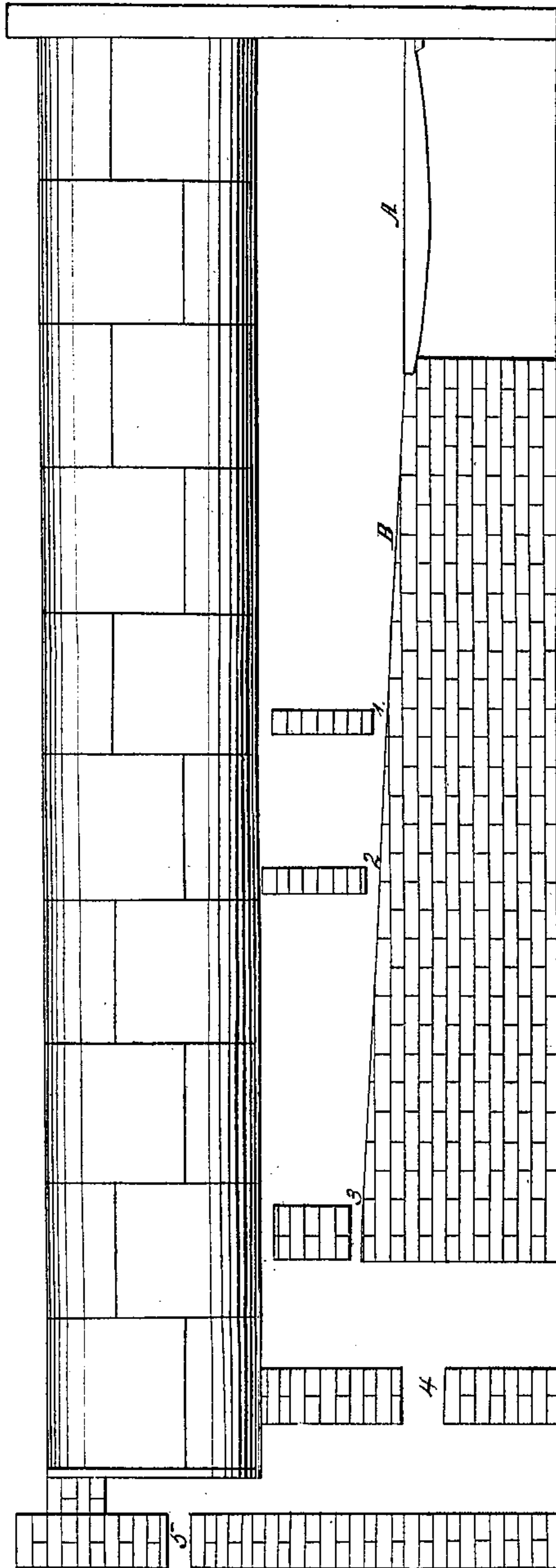


*H.F. & L.A. Gossin,  
Steam-Boiler Furnace,*

*N<sup>o</sup> 13,983,*

*Patented Dec. 25, 1855.*



# UNITED STATES PATENT OFFICE.

HENRY F. GOSSIN AND LOUIS A. GOSSIN, OF HIBADEAUX, LOUISIANA.

## STEAM-BOILER FURNACE.

Specification of Letters Patent No. 13,983, dated December 25, 1855.

*To all whom it may concern:*

Be it known that we, HENRY F. GOSSIN and LOUIS A. GOSSIN, of Hibadeaux, in the parish of Lafourche and State of Louisiana, have discovered and invented a new and useful Improvement in Steam-Boiler Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which represents a longitudinal section of the furnace of a cylinder-boiler, (the boiler itself being shown in elevation,) which furnace embraces our improvements.

Between the boiler and the fire bed A, and floor B of the furnace the space is from three to five feet instead of the narrow space of a few inches which is left in the ordinary furnaces now in use for this kind of boilers.

Two walls are erected one near the middle of the boiler or boilers represented in the drawing by the figure (1) and the other at about a distance of four feet from the end of the boiler represented by the figure (3). In each of these walls at the surface of the fire bed or floor of the furnace openings of alternate bricks or small arches are left. These walls are built up to within an inch or an inch and a half of the boilers having an open space of that breadth between the walls and boiler. In the rear of these two walls and at the distance of two feet or two feet and a half from them are erected two other walls represented in the drawing by the figures (2) and (4). These walls have also arches at the surface of the fire bed or floor of the furnace but are built entirely up to the boiler, and support it.

At the end of the boiler is another wall having an opening represented by the figure (5) by which the draft is regulated.

By leaving the large open space between the fire bed or floor of the furnace and the boiler and dividing this into smaller passages above and below by the walls (1) and (3) the cold air will by reason of its greater gravity pass through the lower passages, and the heated air by reason of its levity will ascend and pass through the passages above immediately under the boilers.

The walls (2) and (4) which closing the whole space between the boiler and the floor of the furnace except the arches at the floor of the furnace have the effect of retaining the heat near the boilers and of bringing together the two currents of air passing through the lower and upper passages at the walls (1) and (3) and thus causing a more thorough combustion by bringing in contact with each other the combustible gases and the atmospheric air necessary for the support of the combustion.

The effect of our improvement is to create or generate a much larger quantity of steam with the same quantity of fuel.

What we claim as our invention and desire to secure by Letters Patent is—

Constructing the flues of boiler furnaces with cross walls or diaphragms perforated with passages substantially in the manner and for the purpose herein described.

H. F. GOSSIN.  
LOUIS A. GOSSIN.

Witnesses:

JAMES WITHE,  
SL. WOOD.