

(No Model.)

H. ADAMS.

SMOKE CONSUMING FURNACE.

No. 364,745.

Patented June 14, 1887.

Fig. 1.

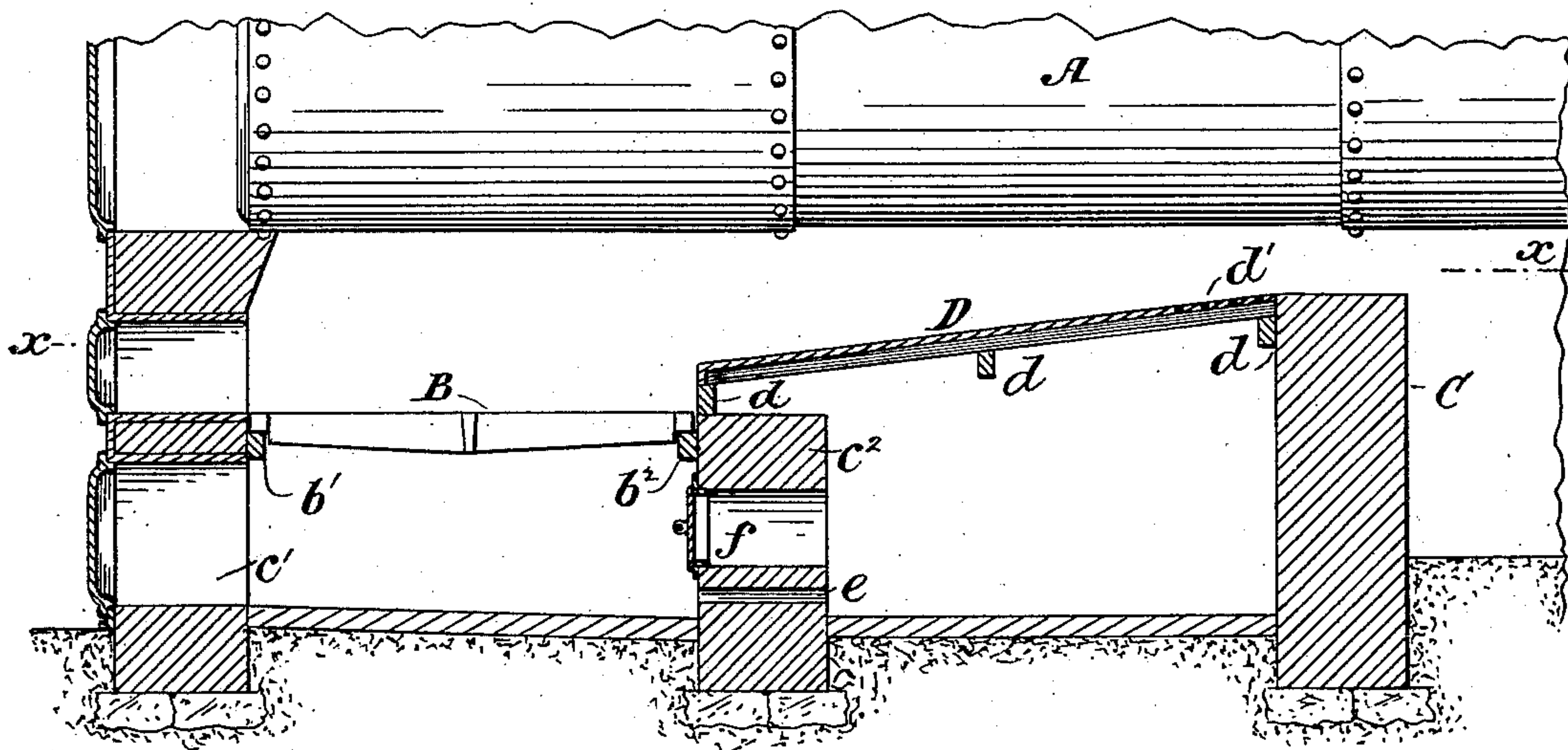
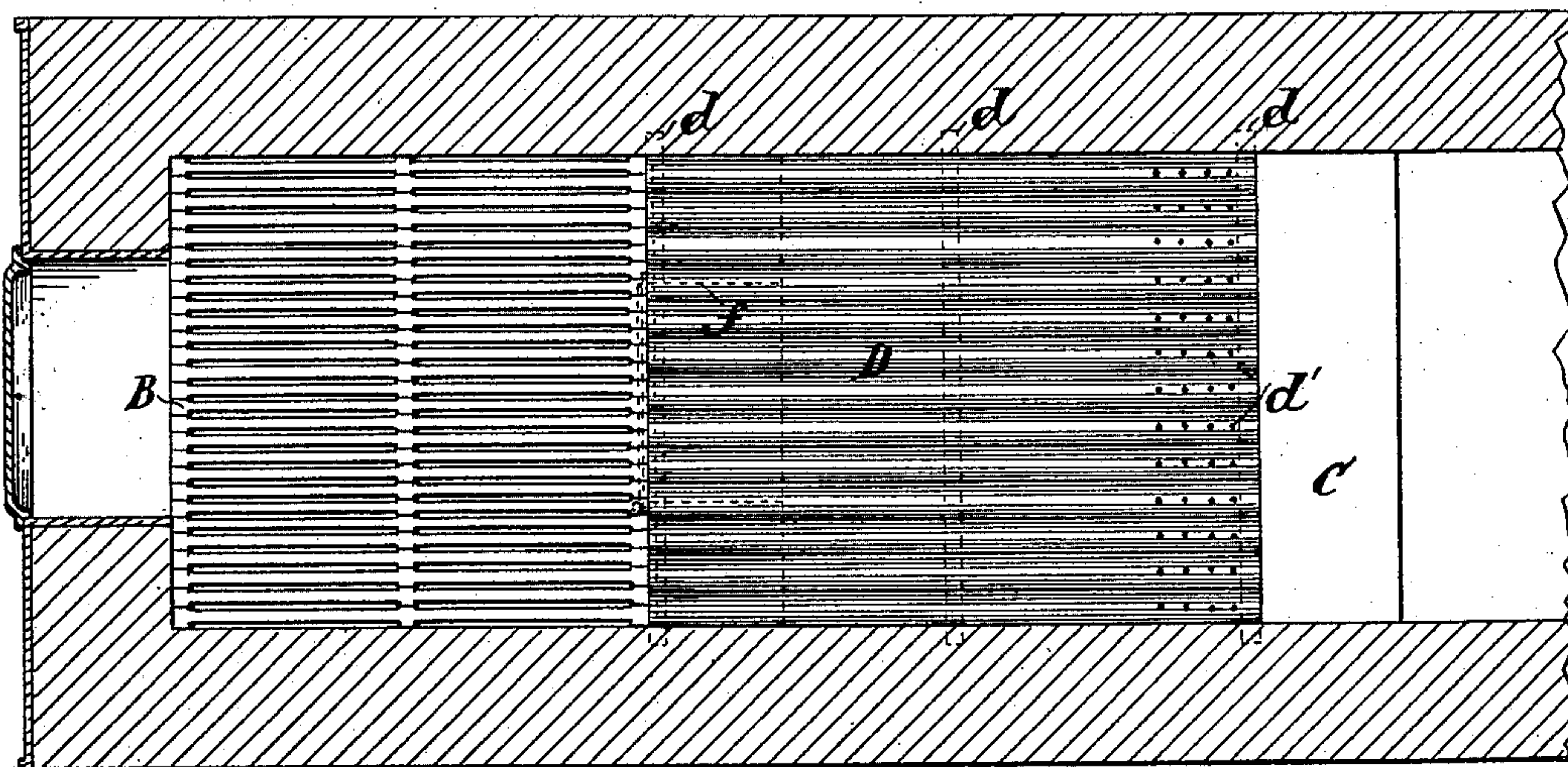


Fig. 2.



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SMOKE-CONSUMING FURNACE.

SPECIFICATION forming part of Letters Patent No. 364,745, dated June 14, 1887.

Application filed March 24, 1887. Serial No. 232,335. (No model.)

To all whom it may concern:

Be it known that I, HAWLEY ADAMS, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Smoke-Consuming Furnaces, of which the following is a specification.

My improvement is specially applicable to furnaces for steam boilers or generators.

I will describe the improvement in connection with the furnace of a steam boiler or generator, and then point out the novel features of the improvement in a claim.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a portion of a steam boiler or generator, of the furnace thereof, and of a certain combination of parts embodying my improvement. Fig. 2 is a horizontal section taken at the plane of the dotted line $x\ x$, Fig. 1.

Similar letters of reference designate corresponding parts in both figures.

A designates the shell of the steam boiler or generator. It may be of cylindric form of any approved type.

B designates the furnace which is used with such steam boiler or generator. The grate-bars may be of any desired kind, and supported by bearers in the usual or any other desirable manner. I have shown supporting-bearers $b' b^2$, affixed one to the inner or rear surface of the front wall, c' , of the furnace, and the other to the forward surface of the rear wall, c^2 , of the furnace.

The front wall of the furnace is provided with the usual opening and door to afford provision for the introduction of fuel. Below the grate-bars is an ash-pit, as usual, and in the front wall there is an opening covered by a door and communicating with the ash-pit.

C designates a wall extending transversely of the steam boiler or generator below the shell A of the same. It, however, extends up to within a short distance of this shell. It is located at a considerable distance rearward of the rear wall, c^2 , of the furnace. Between the rear wall, c^2 , of the furnace and the wall C an inclined wall, D, extends. This inclined wall may advantageously be made of a number of plates of iron corrugated longitudinally. It may be made of tiles, if desirable. It will be so formed at the forward end as to have a straight or level edge at the under surface, closing the upwardly-extending corrugations and thereby providing for the passage of air between it and the rear

wall, c^2 , of the furnace. This inclined wall inclines upwardly from the rear of the furnace to the wall C. It may be supported upon any number of cross-bars d , sustained by the masonry of the steam boiler or generator.

Near the wall C the inclined wall D has numerous perforations d' . The wall c^2 of the furnace is provided with a passage, or a number of passages, e , through which air may pass from that part of the furnace which is below the grate-bars to the space bounded by the side walls of the masonry of the steam boiler or generator, the rear wall, c^2 , of the furnace, the wall C, and the inclined wall D. From this space the air so admitted can escape through the perforations d' .

The products of combustion will pass from the furnace through that space between the side walls of the masonry which is bounded on the lower side by the inclined wall D and above by the shell A. Owing to the inclination of the wall D, the products of combustion in passing through this space will be deflected close to the shell A, and just before passing over the wall C, which constitutes the bridge-wall of the furnace, has incorporated with it numerous jets of air issuing from the perforation d' of said wall D. In this way the combustion will be perfected and smoke and gas will be consumed. The wall D also forms a serviceable radiating-surface.

I have shown the space which is between the side walls of the masonry and the walls c^2 C D as rendered accessible for the purpose of cleaning or for any other purpose, by providing the wall c^2 with an opening, f , fitted at the forward end with a door.

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

In a steam boiler or generator, the combination, with the rear wall of the furnace, of a wall arranged rearward thereof and extending somewhat higher than it, and an inclined wall extending between the two walls named, made of longitudinally-corrugated bars, and provided with perforations near the rear end, and a passage or passages extending through the rear wall of the furnace, so as to admit of the passage of air through the same, substantially as specified.

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