

MICHAEL SMART.
Improvement in Steam Boilers.

No. 123,845.

Patented Feb. 20, 1872.

Fig. 1.

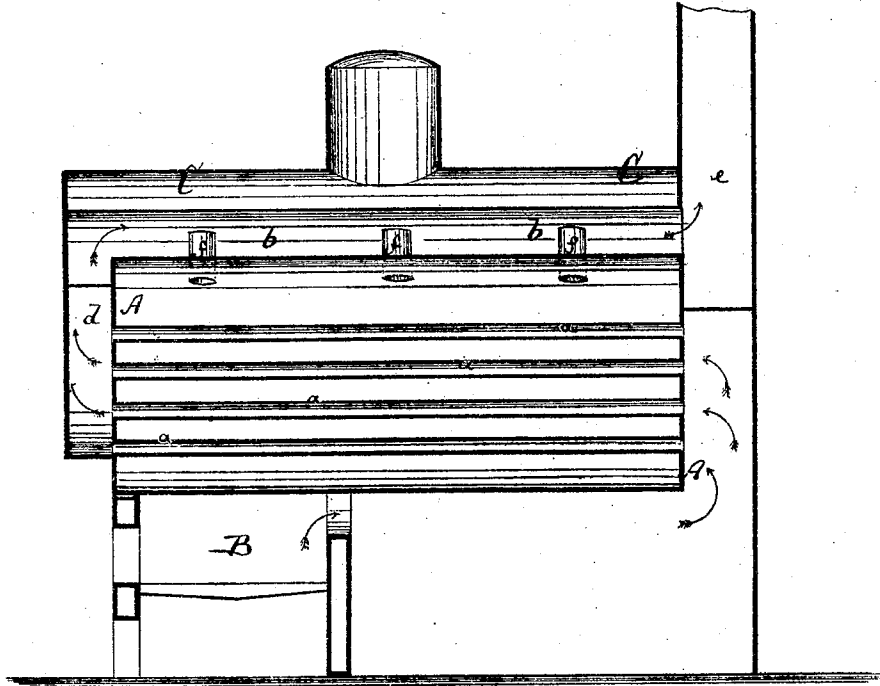
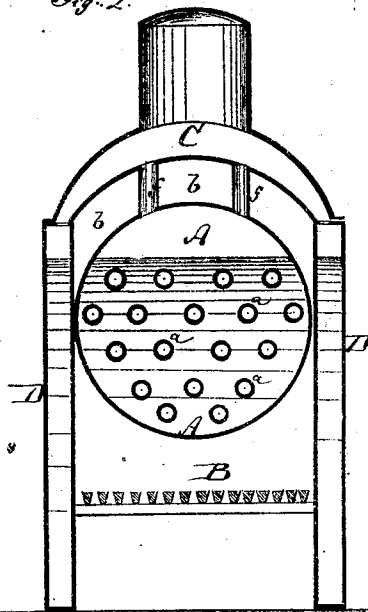


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

MICHAEL SMART, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-BOILERS.

Specification forming part of Letters Patent No. 123,845, dated February 20, 1872.

Specification describing a new and Improved Steam-Boiler, invented by MICHAEL SMART, of the city, county, and State of New York.

Figure 1 represents a vertical longitudinal section of my improved steam-boiler. Fig. 2 is a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to an improvement in steam-boilers whereby the steam is quickly separated from the water, and the danger of explosion greatly reduced, while at the same time the heat of combustion is more fully utilized than in other boilers. My invention consists principally in the application of a steam-arch or vessel above the cylindrical body of the boiler, and in its connection with the latter in such manner that a smoke-passage is formed between the two.

A in the drawing represents a cylindrical steam-boiler, of suitable size, provided with longitudinal horizontal flues *a a*, which traverse it, and supported above the fire-place B, as shown. C is a hollow arch or concavo-convex cross-section, as in Fig. 2, placed above the boiler A, and connected with it by means of pipes, in such manner that circulation of the liquids contained in both may be thoroughly effected. A horizontal smoke-passage, *b*,

is formed between the boiler A and arch C, communicating with a smoke-chamber, *d*, formed in front of *a*, and with the chimney *e* in rear. The arch C is supported by and connected with the hollow sides D D that inclose the fire-place and communicate with the feed-water supply. The products of combustion pass from the fire-place backward under the boiler A, then forward through the flues *a* into the chamber *d*, and back again through the passage *b* into the chimney *e*. The arch C, being above the boiler, receives the steam from the same as rapidly as created, and relieves the boiler proper, therefore, of considerable pressure. The final passage of the products of combustion under the arch C renders the latter a sort of superheater, whenever desired—that is to say, whenever the heat is brought to the necessary height.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the steam-arch C with the boiler A and connecting-pipes *ff*, as and for the purpose specified.

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Witnesses:

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