

A. P. DOEN & J. C. C. MILLER.  
 Preventing Incrustation in Steam-Boilers.  
 No. 213,498.                      Patented Mar. 25, 1879.

Fig. 1.

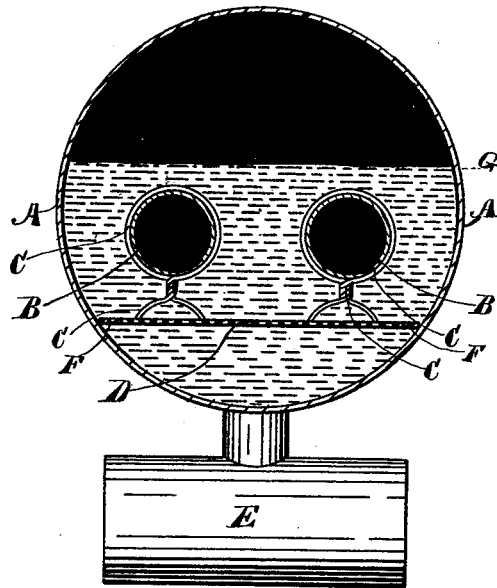
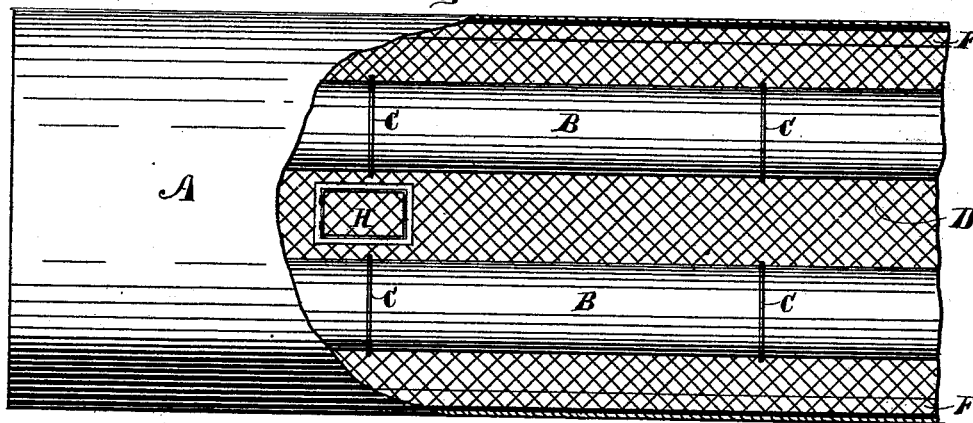


Fig. 2.



WITNESSES;

*E. C. Harris,*  
*George Bennett.*

INVENTORS,

*John C. Calhoun Miller*  
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*by Chas. O. Marsh*  
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# UNITED STATES PATENT OFFICE.

ALEXANDER P. DOEN AND JOHN C. C. MILLER, OF EVANSVILLE, INDIANA.

## IMPROVEMENT IN PREVENTING INCRUSTATIONS IN STEAM-BOILERS.

Specification forming part of Letters Patent No. **213,498**, dated March 25, 1879; application filed July 16, 1878.

*To all whom it may concern:*

Be it known that we, ALEXANDER P. DOEN and JOHN C. CALHOUN MILLER, of Evansville, Indiana, have invented a new and useful Improvement for Preventing Incrustations in Steam-Boilers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The object of our invention is to prevent the formation of incrustations and sediment inside of boilers on the bottom part of their shells; and it consists of a screen formed of wire-cloth with open meshes, or of a piece of sheet metal perforated with holes, and stretched horizontally the entire length and width of the boiler under the flues and above the bottom of the boiler, where incrustations and sediment are the most troublesome and dangerous. This screen may be provided with a trap-door or other suitable opening near the broom-hole in the boiler, through which the scales can be taken out when desirable.

Figure 1 is an end view of a transverse section of the shell of a boiler having our screen. Fig. 2 is a view of our screen exposed by tearing away a part of the upper portion of the shell of the boiler.

A is the shell of the boiler; B, the flues; C, the wires around the flues, and twisted together underneath, and the strands then separated, stretched in opposite directions in a line passing across the boiler, and then attached to the screen. The screen hangs from

the flues by these wires. The wire screen is stretched upon the frame F, which bears upon and against the sides of the boiler. E is the mud-drum; D, the screen; G, the water-line; H, the trap-door.

During the time that the engine is in motion the scales and incrustations form wholly about the flues, and in the ordinary boiler as soon as the engine stops they settle to the bottom and remain there, forming the hard cake or crust, which is the cause of boilers burning out at the bottom immediately over the fire.

By means of our improvement the screen underneath the flues catches this falling sediment, and prevents it from reaching the bottom of the boiler, which, in consequence, is kept clean and free from incrustation and scales.

We claim as our invention—

The wire screen D, stretched upon the frame F, suspended from the flues by the wires C, and resting against and upon the shell of the boiler under the flues, all constructed and arranged as shown, and for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALEXANDER P. DOEN.  
JOHN C. CALHOUN MILLER.

Witnesses:

THOMAS SCANTLIN,  
CHAS. F. MARTIN.