

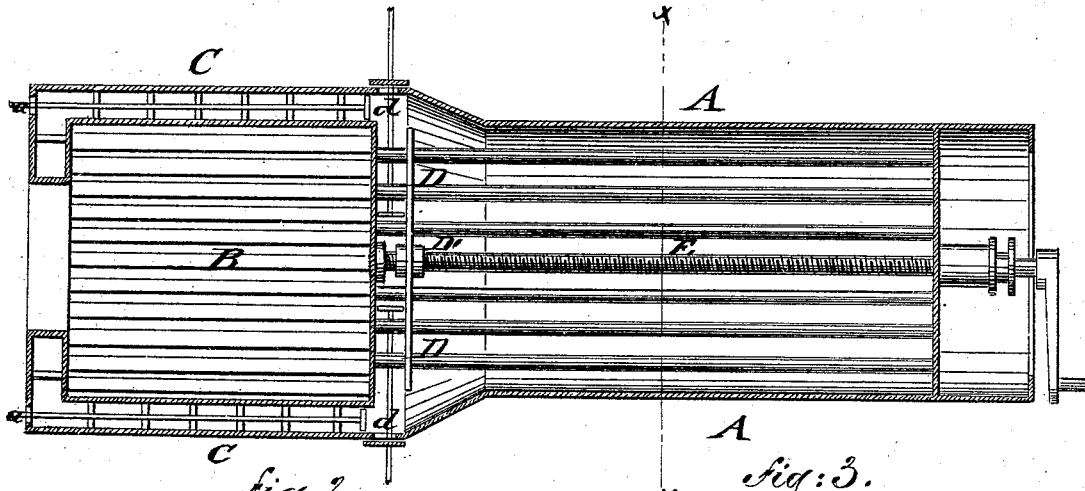
C. J. CRONIN.

SCALE-SCRAPER FOR STEAM-BOILERS.

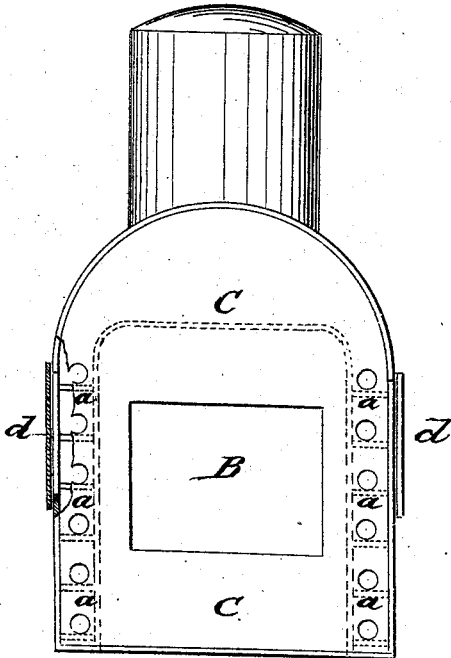
No. 184,346.

Patented Nov. 14, 1876.

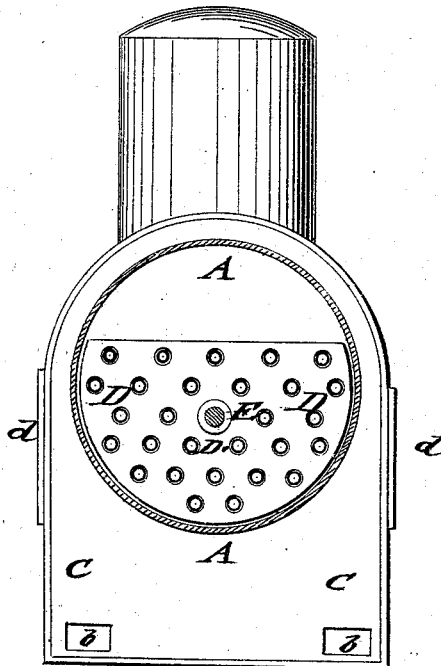
*Fig: 1.*



*Fig: 2.*



*Fig: 3.*



WITNESSES:

*Chas. Nott*  
*John Goodrich*

INVENTOR:

*C. J. Cronin*  
BY *Wm. H. [Signature]*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

CORNELIUS J. CRONIN, OF BARNHART'S MILLS, PENNSYLVANIA.

## IMPROVEMENT IN SCALE-SCRAPERS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **184,346**, dated November 14, 1876; application filed July 31, 1876.

*To all whom it may concern:*

Be it known that I, CORNELIUS J. CRONIN, of Barnhart's Mills, in the county of Butler, and State of Pennsylvania, have invented a new and Improved Steam-Boiler, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a horizontal section of my improved steam-boiler; and Figs 2 and 3 are, respectively, an end view and a vertical transverse section of the same on the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has reference to improved devices for preventing the formation of scale in steam-boilers, in perfectly reliable manner, by mechanical means, as hereinafter described.

In the drawing, A represents a tubular boiler of the usual construction, and B the fire-box, that is surrounded at the sides and top with a straight and arched boiler-section, C. This boiler section or shell, inclosing the fire-box, is constructed with a series of holes, *a*, near the sides of the front wall, so arranged that the scraper may be introduced to the inside of the side wall at any height up to the water-level, and the side walls and stay-bolts then be readily cleaned by working the scraper. The holes *a* are closed by tightly-fitting screw-plugs when the boiler is in use.

The bottom of the front section C is cleaned

by the customary hand-holes *b* at the front or rear wall, which are closed tightly by steam-tight plates.

The inside of the rear wall is reached by means of a side opening, *d*, of sufficient length to allow the scraping device to be introduced horizontally between the flues and clear the parts of the rear wall between the same. The opening *d* is closed by a tightly-fitting plate attached by stud-bolts.

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

1. A boiler-shell, C, having a vertical slot or opening, *d*, on the outer shell of one or both sides of the fire-box and adjacent to the tube-sheet, for the purpose of ready admission thereto, whereby they may be cleaned of sediment, substantially as described.

2. A tubular boiler, having a fire-box, whose shell C is provided with a vertical row of holes, *a*, near the edge of each side, and placed intermediately with respect to the stay-bolts, for the purpose of cleaning the sediment from the sides of walls and from the stay-bolts.

CORNELIUS J. CRONIN.

Witnesses:

PAUL GOEPEL,  
C. SEDGWICK.