

N. W. PRATT.  
Sectional-Boilers.

No. 216,887.

Patented June 24, 1879.

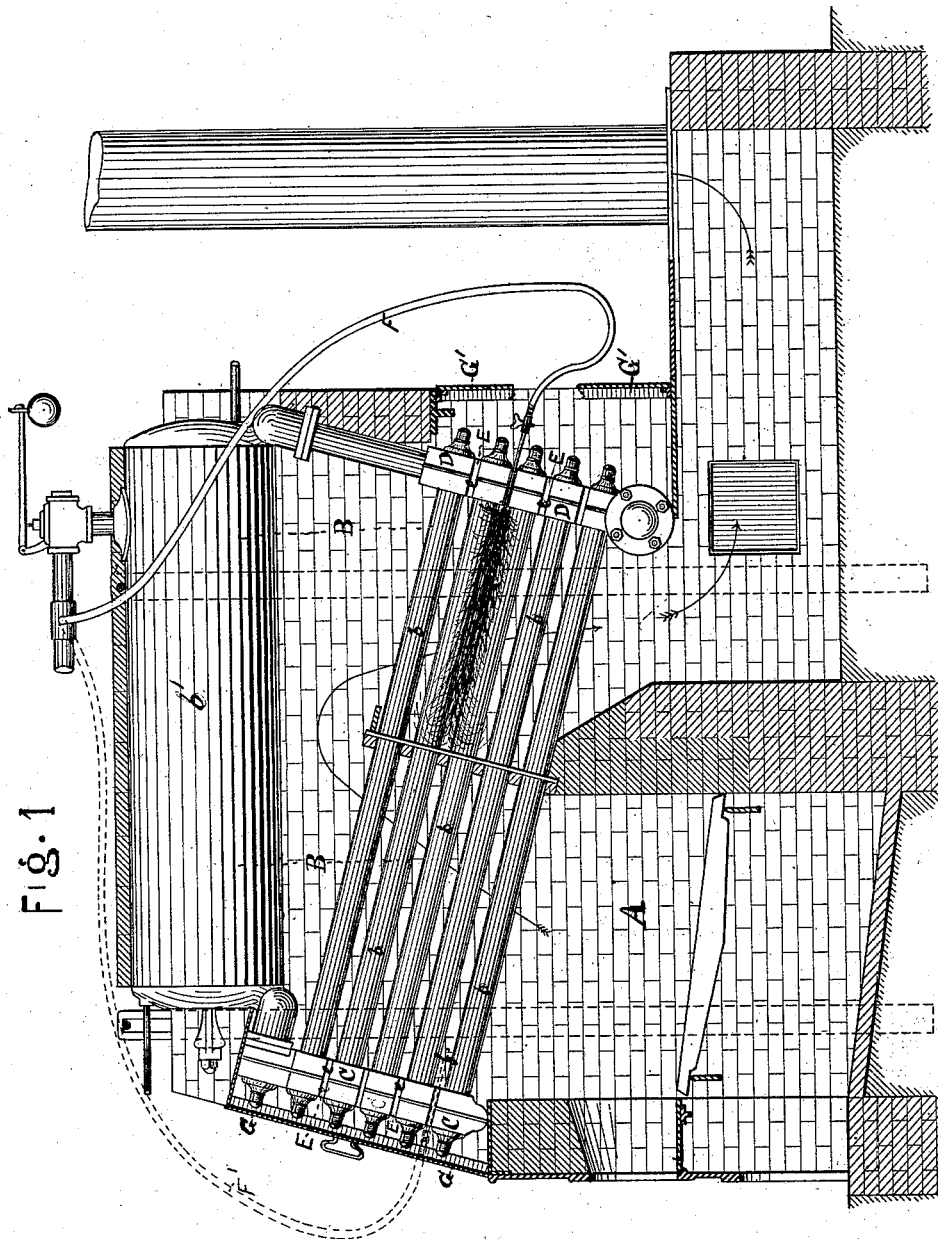


Fig. 1

—WITNESSES:—

*Wm. Bond.*  
*H. F. Barnes.*

—INVENTOR:—

*Nathaniel W. Pratt*  
*by his attorney*  
*James D. Stetson.*

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FIG. 2

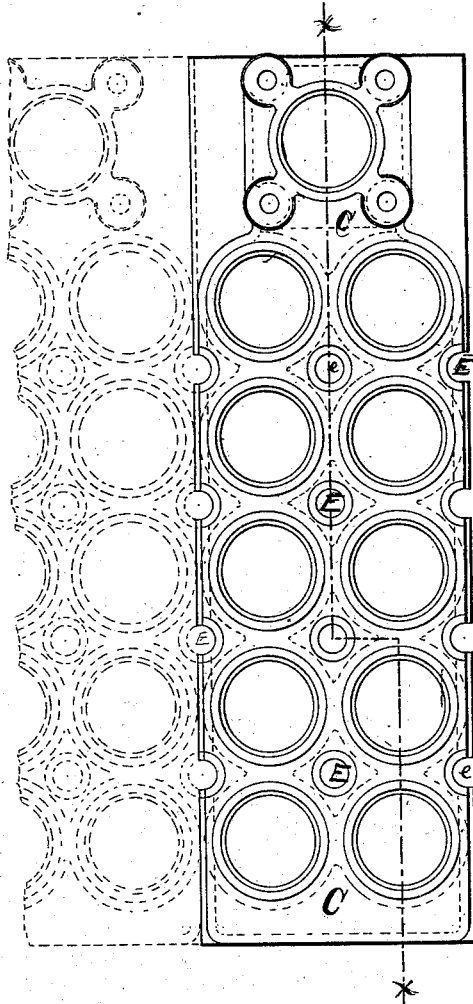
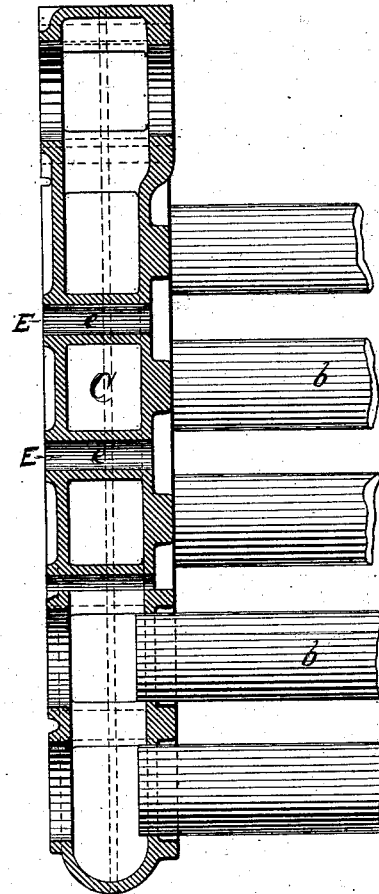


FIG. 3



— WITNESSES: —  
*W. Bond.*  
*H. L. Bruns.*

— INVENTOR: —  
*Nathaniel W. Pratt*  
*by his attorney*  
*Thomas D. Stetson*

# UNITED STATES PATENT OFFICE.

NATHANIEL W. PRATT, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE H. BABCOCK, OF PLAINFIELD, N. J., AND STEPHEN WILCOX, OF BROOKLYN, N. Y.

## IMPROVEMENT IN SECTIONAL BOILERS.

Specification forming part of Letters Patent No. **216,887**, dated June 24, 1879; application filed August 5, 1878.

*To all whom it may concern:*

Be it known that I, NATHANIEL W. PRATT, of the city, county, and State of New York, have invented certain new and useful Improvements in Sectional Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to improvements in sectional boilers; and it consists in forming the sectional up-manifolds and manifold connecting the sectional tubes with the drum with a series of tubular stays, so arranged and constructed that a jet of steam may be inserted through the tubular openings in such stays, in position to clean off the carboniferous and other deposits left on the sectional tubes of the boiler from time to time by the products of combustion passing between and over the said tubes, without necessitating the removal or opening of any part of the furnace, brick-work, or fittings, except the front or rear cleaning-doors.

The following is what I consider the best means of carrying out the invention.

Figure 1 represents a side view of a sectional boiler, with its furnace, with my improvements applied thereto. Fig. 2 represents a front view of one of the up-manifolds of a tubular boiler constructed according to my invention. Fig. 3 represents a sectional view on the line *xx* of Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures.

A represents a furnace, in which is fitted a sectional boiler, B, the tubes of which are represented by *b b*, and the drum by *b'*. The tubes *b b* are connected at one end with the drum *b'* by means of the up-manifold C, and at the opposite end by the manifold D. The up-manifold C and manifold D are formed in sections, the edge of one being formed to overlap the edge of the next, as shown by Fig. 2, in which the full lines represent one section of an up-manifold, and the dotted lines a portion of another section of the up-manifold.

The front and rear plates of the sections of the up-manifold C and manifold D are connected by means of tubular stays E, arranged centrally, as shown, between the rows of tubes *b*.

The object of forming the stays E tubular is to allow of a passage, *e*, therethrough, for the purpose of inserting the nozzle of a hose or steam-pipe, as shown by full lines in Fig. 1, where the nozzle *f* is shown inserted through one of the tubular stays E of the manifold D, for the purpose of cleaning off the boiler-tubes *b*. The dotted lines *F'* in the same figure represent the same tube F, with its nozzle *f* inserted through the opening *e* of one of the tubular stays E of the manifold C.

In the drawings, Figs. 2 and 3, I have shown detail views of one section and part of another section of the up-manifold; and as the construction of the manifold in so far as regards my invention is identical with the up-manifold, I have not thought it necessary to show detailed views of it separately.

G represents the front, and G' the rear, plate or door giving access to the interior of the apparatus, which are of the ordinary construction, and form no part of this invention. These plates G and G' will be removed whenever it is desired to clean the boiler-tubes, and replaced so soon as this object is attained.

Modifications of my invention may be made within wide limits by any competent mechanic.

In place of forming the front, rear, and side plates and the tubular stays of the up-manifold and manifold cast in one piece, they may be separately cast or formed, and suitably connected together.

I am aware that hollow stays are in themselves old, and that the use of a stream of water or steam has been long used to clean boilers. Such, broadly, I do not claim.

I claim as my invention—

A sectional boiler constructed with an up-manifold, C, and manifold D, provided with a series of tubular stays, E, adapted to receive the end of a hose or steam-pipe, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand this 30th day of July, 1878, in the presence of two subscribing witnesses.

NAT. W. PRATT.

Witnesses:

CHAS. L. MOLLER,  
CHAS. C. STETSON.