

(No Model.)

N. W. PRATT.  
STEAM GENERATOR.

No. 565,029.

Patented Aug. 4, 1896.

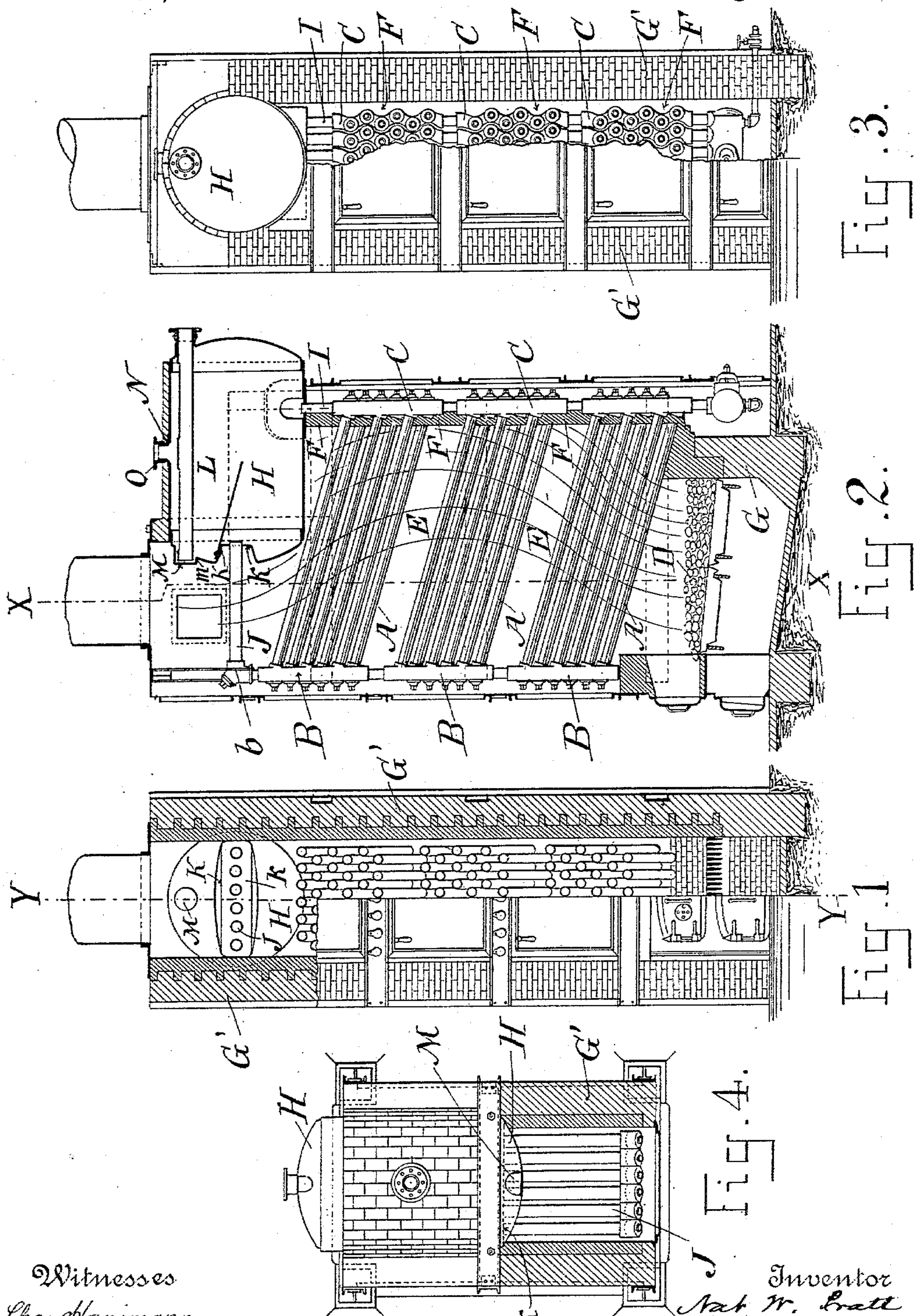


Fig. 3.

Fig. 2.

Fig. 1.

Fig. 4.

Witnesses  
Chas. Hanemann,  
Edw. Salisbury Jones.

Inventor  
Nat. W. Pratt  
By *Chas. M. Dorner* Attorney



# UNITED STATES PATENT OFFICE.

NAT W. PRATT, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE BABCOCK & WILCOX COMPANY, OF NEW YORK, N. Y.

## STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 565,029, dated August 4, 1896.

Application filed November 23, 1895. Serial No. 569,892. (No model.)

*To all whom it may concern:*

Be it known that I, NAT W. PRATT, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Steam-Generators, of which the following is a specification.

The invention consists in protecting the rear header of a sectional steam-boiler from burning out by means of a baffle-plate of masonry or other suitable material, which is located between said header and the combustion-chamber of the generator.

It also consists in providing the convex front head of the steam and water drum with an integral countersunk portion which extends across said head and furnishes a right-angular flat bearing for the tubes that connect the drum with the front headers of the sectional boiler, whereby the bending of said tubes to secure such a bearing upon a rounded surface is avoided; and it further consists in providing such drumhead with a struck-up integral shoulder to support one end of the steam-pipe in the drum, and in furnishing the body of the drum with a struck-up integral neck to receive the steam-pipe connection, all as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents the improved sectional steam-generator and its setting in partial front elevation and in partial vertical transverse section on line X X of Fig. 2. Fig. 2 shows a vertical longitudinal section of the same on line Y Y of Fig. 1. Fig. 3 represents a rear elevation of the same with a portion of the setting removed, showing a rear view of the sectional boiler and of the baffle-plate. Fig. 4 represents a top view of the steam and water drum and a top view of the front portion of the sectional boiler, a part of the setting being removed in order that the boiler may be seen.

A A A denote groups of generating water-tubes which compose the sectional boiler, and are connected at the front end to a vertical header B and at the rear end to a vertical header C.

D denotes the furnace of the generator, and E the combustion-chamber above the same.

In generators as ordinarily constructed the

rear header is unprotected from the flames and heated gases which rise through the combustion-chamber, and are driven into contact with said header by the course of the draft. Said header, therefore, burns out after awhile and another has to be substituted at considerable expense and loss of time. In order to avoid this disagreeable result, I construct a baffle-plate F, of masonry or other suitable material, in front of the rear header C, between it and the combustion-chamber, the said plate surrounding the tubes of the boiler, as particularly shown in Fig. 2. This baffle-plate may be supported upon the bridge-wall G and be tied into the side walls G' of the setting. The rising flames and heated gases, instead of impinging upon the header, therefore, will be kept from contact therewith by the baffle-plate, which isolates the header from the combustion-chamber and preserves the header against being burned out or damaged by the heat.

H denotes the steam and water drum, which is of wrought metal, surmounts the generating water-tubes, and is connected to the rear header by pipes I and to an extension b of the front header by a horizontal row of pipes J. The front of this drum is convex in shape, being a portion of the surface of a sphere, and in connecting the pipes J to such curved front they have been bent at their inner ends, at considerable expense, so as to produce a right-angular bearing between them and the drum-head. The object of this portion of my invention is to avoid such bending of the pipes, and this I secure by countersinking the head horizontally at K, so as to produce a flat face  $\frac{1}{2}$  integral with the head, which extends across the head, as shown in Fig. 1, and will be at right angles to the longitudinal axes of the straight pipes J, as shown in Fig. 4.

To furnish a support for the interior end of the surface-pipe L without using an applied bracket or ledge constitutes another feature of the invention, and such a support I secure by forming a bulge M on the front head, so as to provide a shoulder m, upon which said pipe end can rest.

The remaining feature of the invention consists in forming upon the upper surface of the cylindrical body of the drum a struck-up in-



tegral neck N for the reception of the flanged steam-pipe connection O, which enables said steam-pipe connection to be applied more easily and with a more perfect joint, besides  
5 lessening the expense of construction.

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

1. In a sectional steam-generator, having a series of water-tubes connected to front and  
10 rear headers, a baffle-plate surrounding said tubes and located within the combustion-chamber at the front of the rear header, whereby the header is isolated from the chamber and protected from the intense heat of  
15 the impinging gases, substantially as set forth.

2. In a steam-generator, a steam and water drum having a convex head provided with an integral, countersunk portion extending across the head and having a flat face, *k*, whereby a straight line of tubes may be connected thereto, substantially as set forth. 20

3. In a steam-generator, a steam and water drum having its head provided with a struck-up recess having a shoulder, *m*, integral with the head, for supporting the interior end of a  
25 steam-pipe, substantially as set forth.

NAT W. PRATT.

Witnesses:

CHAS. W. FORBES,  
WALTER MACENTIE.