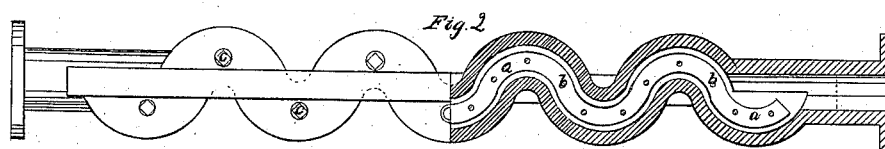
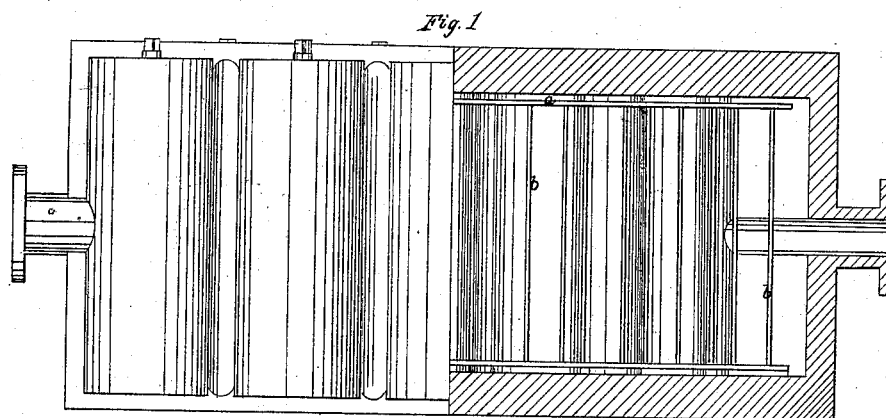


*C. C. Parsons,*  
*Steam-Boiler Superheater.*  
*N<sup>o</sup> 54,590. Patented May 8, 1866.*



*Witnesses.*  
*M. W. Frothingham*  
*T. Jones*

*Inventor*  
*C. C. Parsons*  
*by his Atty W. B. Lowrey*

# UNITED STATES PATENT OFFICE.

C. C. PARSONS, OF BOSTON, MASSACHUSETTS.

IMPROVED METHOD OF CONSTRUCTING CAST-IRON APPARATUS FOR SUPERHEATING STEAM.

Specification forming part of Letters Patent No. 54,590, dated May 8, 1866.

*To all whom it may concern:*

Be it known that I, C. C. PARSONS, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Superheater; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In superheaters cast in one piece it is desirable to make the steam-passage between the superheating surfaces not only sinuose, but very thin, and in such superheaters the passage can only be made by casting upon a core. To reduce this core to the least thickness possible I make use of a grid or frame which has two functions, one being the stiffening of the core so as to make it keep its place in the mold and to enable it to bear handling in the foundry, and the other being to subdivide and mingle the body of steam passing through the superheater, the frame remaining in the casting after the coating of core-sand has been removed therefrom, and acting to retard and thoroughly mix the body of steam flowing through the superheater, causing each particle of steam to touch the hot surfaces of the casting before escaping therefrom.

My invention consists in a superheater cast around a grid or frame, which, after serving its purpose with relation to the core, remains within the casting and serves to operate on the current of steam, as before stated.

Figure 1 of the drawings represents, half in plan and half in horizontal section, one of my improved superheaters, which is also shown

in Fig. 2, half inside elevation and half in vertical section.

Through one of the nozzles or pipes, shown as cast integral with the body of the superheater, ordinary steam is made to enter the apparatus, from which it is discharged at the other end thereof through a similar pipe and in a superheated condition.

The core around which my superheater is cast is supported partly by prints projecting from the ends of the pipes just referred to and partly by chaplets set in the mold, the thin core being stiffened by a metal frame, of which *a a* are the side pieces and *b b* the cross pieces. This frame is left within the casting which is formed around it, the frame being in every way smaller than the core, so that when seized through the nozzles the core can be shaken and broken up and all of it, except its frame, discharged through the nozzles. The frame remaining within the casting serves to break up or disturb the stratum of steam passing through the superheater, and thus serves a useful purpose beyond its use as a support to and a stiffener of the core. Small holes like those shown as filled with screw-plugs *c c* may be made and used to facilitate the disintegration and removal of the core.

I claim—

A steam-superheater having a construction substantially as described.

In witness whereof I have hereunto set my hand this 18th day of December, A. D. 1865.

C. C. PARSONS.

Witnesses:

J. B. CROSBY,  
FRANCIS GOULD.