

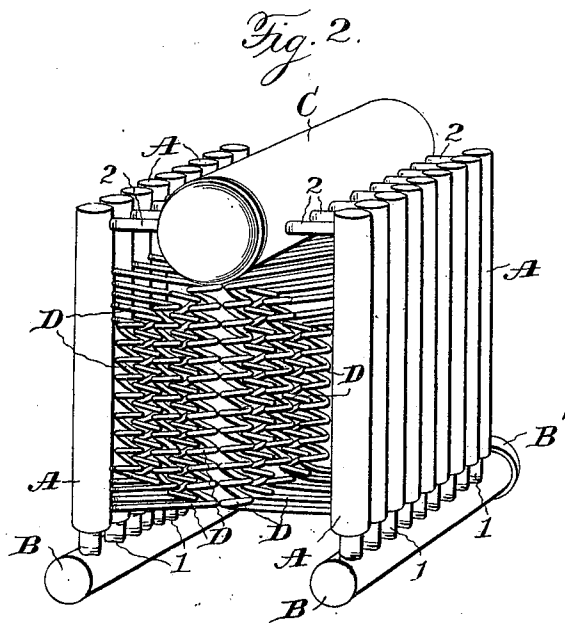
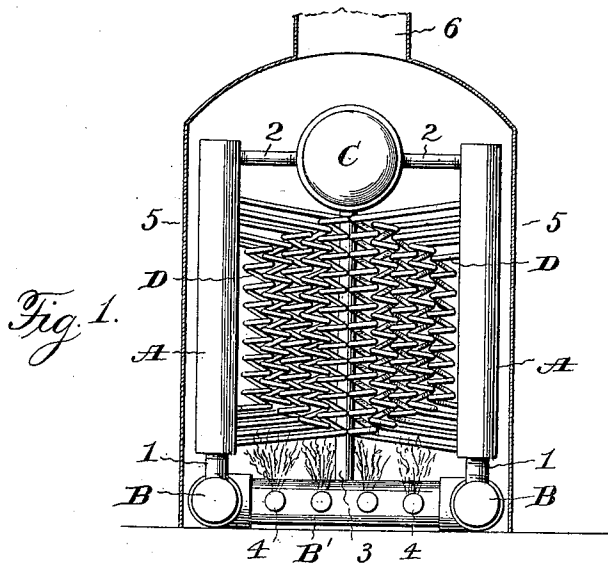
No. 653,360.

Patented July 10, 1900.

G. OFELDT.
STEAM BOILER.

(Application filed May 1, 1900.)

(No Model.)



WITNESSES
James Hutchinson
G. F. Downing

INVENTOR
G. Ofeldt
By S. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

GEORGE OFELDT, OF NEW YORK, N. Y.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 653,360, dated July 10, 1900.

Application filed May 1, 1900. Serial No. 15,089. (No model.)

To all whom it may concern:

Be it known that I, GEORGE OFELDT, of New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in steam-boilers, and more particularly to water-tube boilers, one object of the invention being to so construct a boiler as to economize space and at the same time secure a maximum heating-surface.

A further object is to construct the apparatus in such manner that it shall be complete in every respect as a steam-generator and be easy to repair without interfering with the working of parts of the apparatus which do not need repairing.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating the application of my invention in a furnace. Fig. 2 is a perspective view of the boiler.

A A represent two series of headers connected at their lower ends with parallel sections B B of a mud-drum by means of nipples 1 or in any other desired manner, said sections B of the mud-drum being connected at one end by a transverse section B'. Each header of each series is connected at its upper end with a dry-steam dome C, disposed between the series of headers by means of nipples 2 or in any other suitable manner. To permit the escape of any water which might find its way to the dry-steam dome, a pipe 3 is provided and connected at its respective ends with the dry-steam dome and the mud-drum.

With each header the respective ends of several coils D are independently connected, and these coils are disposed parallel with the header with which they are connected and parallel with each other. The coils connected with one header extend inwardly and meet

the inner coil of the series connected with the diametrically-opposite header in the center of the apparatus directly under the dry-steam dome. The several coils constituting the series of coils connected with one header are arranged to interlock, and to accomplish this the coils of the series of coils are wound right and left handed alternately. By means of this arrangement much space is economized and at the same time a vast surface is exposed to the heat and products of combustion arising from the furnace, which in the drawings is shown to burn liquid fuel by means of burners 4, although it is evident that a grate may be provided if it is desired to burn solid fuel. The boiler will of course be inclosed in a shell or furnace-casing 5, provided with the usual smoke-outlet 6 at its top.

By the arrangement of coils hereinbefore described I am enabled not only to secure an extended heating-surface, but the coils so arranged constitute a successful and effective baffle for the heat and products of combustion, thus further enhancing the efficiency of the apparatus.

One header, with its series of coils and mud-drum and steam-dome connections, would operate as a boiler; but by constructing the apparatus of a number of headers and associated coils each constituting a section of the complete apparatus, all having a common water-level and connected to a common mud-drum and a common dry-steam dome, I am enabled to use as many of such sections as I may desire, according to the horse-power or heating-surface required in any particular case.

Should one of the sections of the apparatus need repairing, such can be readily accomplished without interfering with the operation of the remaining sections of the apparatus.

My improvements are simple, but have proven in actual practice to be effectual and important.

Slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details shown and described.

Having fully described my invention, what

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

1. In a water-tube boiler, the combination with a header, of a series of coils, each attached at its respective ends thereto and the convolutions of each coil interlocking with the convolutions of the adjacent coils.

2. In a water-tube boiler, the combination with a header, of a series of interlocking coils, each attached at its respective ends thereto, said coils being wound alternately right and left handed.

3. The combination with a mud-drum and a dry-steam dome, of a header communicating at its respective ends with said drum and dome, and a series of interlocking coils extending laterally from the header between the mud-drum and steam-dome, the respective ends of each coil connected with said header.

4. The combination with a series of head-

ers, a mud-drum common to all the headers and a dry-steam dome common to all the headers, of a series of interlocking coils connected independently with each header.

5. The combination with two series of headers and a dry-steam dome between said headers and common to all of them, of a series of interlocking coils connected independently with each header, the coils of one series of headers extending toward the coils of the other series of headers under the steam-dome and forming a baffle.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE OFELDT.

Witnesses:

GEO. W. VAN EPS,
M. J. VON DOHLEN.