Feb. 3, 1931. T. E. MURRAY 1,791,064

BOILER STRUCTURE

Original Filed May 31, 1923

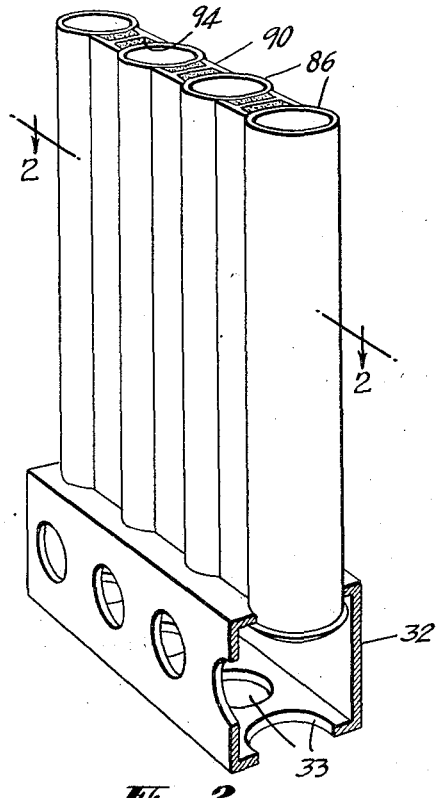


Fig. 1.

Fig. 2.

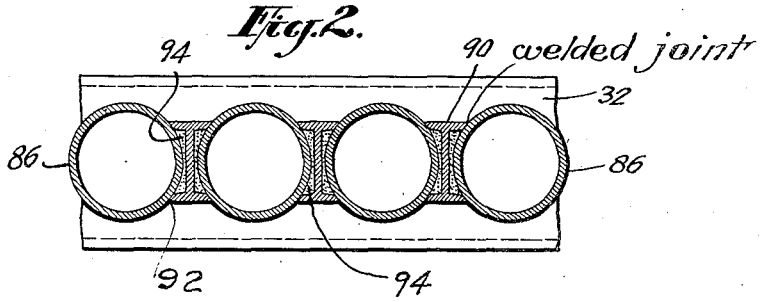
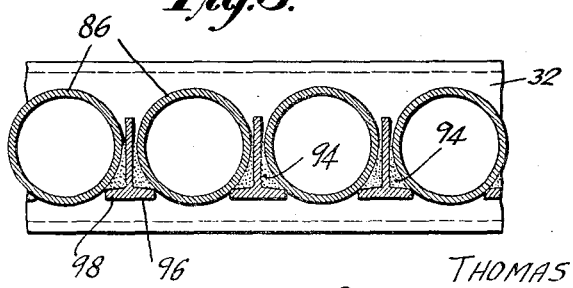


Fig. 3.



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UNITED STATES PATENT OFFICE

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BOILER STRUCTURE

Original application filed May 31, 1923, Serial No. 642,427. Divided and this application filed June 24, 1924. Serial No. 721,977. Renewed November 13, 1928.

This invention relates to the construction of boiler walls and is a division of my copending application Serial No. 642,427. An embodiment of the invention is illustrated in the accompanying drawings in which:

Fig. 1 is a sectional perspective illustrating a portion of a boiler wall;

Fig. 2 is a horizontal section on line 2—2 of Fig. 1;

Fig. 3 is a section similar to Fig. 2 but showing a slightly modified construction.

The improved boiler wall as shown comprises a plurality of pipes 86 arranged alongside of one another with short spaces between them, the pipes being secured in suitable openings formed in a box-like hollow header 32. The joint between the pipes 86 and the header 32 can conveniently be made water-tight by rolling or expanding the end of the pipe which projects into the header 32. The header 32 is provided with a series of openings 33 for the insertion of a suitable expanding tool and these openings are closed by suitable plates or screw plugs. The short spaces between the adjacent upright pipes forming the boiler wall are closed or made gas-tight by the insertion of I-beams 90, the edges 92 of whose flanges may be welded to the walls of the upright pipes. The interstices between the webs of the beams and the walls of the pipes are preferably filled with heat insulating material such as indicated at 94.

In Fig. 3 I have shown a slight variant of the previously described arrangement wherein T-beams 96 are inserted between the pipes 86 thus forming a comparatively smooth wall on one side, the flanges or plates 98 being arc welded or otherwise secured to the pipes.

With the construction of Fig. 2, either side of the wall can be exposed toward the fire or hot gases circulating through the boiler. With the construction of Fig. 3, it is preferable to expose the T plates or flanges of the beams to the fire in order to present the comparatively smooth flat surface.

Though I have described with great particularity details of the specific embodiments of the invention illustrated, it is not to be construed that I am limited thereto as various modifications may be made by those skilled in the art without departing from the invention as defined in the appended claims.

What I claim is:—

1. A boiler wall comprising a series of hollow uprights spaced apart from one another and rolled metal I-beams having the edges of their flanges welded to said uprights.

2. A boiler wall comprising a series of hollow uprights spaced apart from one another and rolled metal I-beams having their webs disposed transversely of the plane of said uprights and having their flanges secured to said uprights.

3. A boiler wall comprising a series of hollow uprights spaced apart from one another and flanged rolled metal beams having their webs disposed transversely of the plane of said uprights, said beams being secured to said uprights.

4. A boiler wall comprising a series of hollow uprights spaced apart from one another and flanged rolled metal beams having their webs disposed transversely of the plane of said uprights, said beams having the edges of their flanges welded to said uprights.

5. A boiler wall comprising a series of hollow uprights spaced apart from one another and metal members between said uprights, said metal members extending from top to bottom of said uprights and having web portions disposed transversely of the plane of said uprights and having flange portions disposed approximately parallel to the plane of said uprights and secured thereto.

6. A boiler wall comprising a series of hollow uprights spaced apart from one another

and metal members between said uprights, said metal members extending from top to bottom of said uprights and having web portions disposed transversely of the plane of said uprights and having flange portions disposed approximately parallel to the plane of said uprights and secured thereto and insulating material filling the substantially triangular spaces bounded by the uprights and the webs and flanges of said members.

In witness whereof, I have hereunto signed my name.

THOMAS E. MURRAY.