Aug. 26, 1930. N. FORSSBLAD 1,774,136

COMBUSTION CHAMBER WALL FOR STEAM BOILERS

Filed Feb. 16, 1928

Fig. 1.

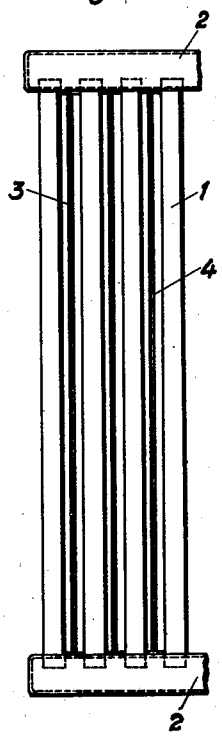


Fig. 2.

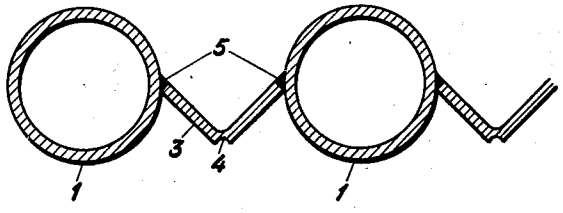
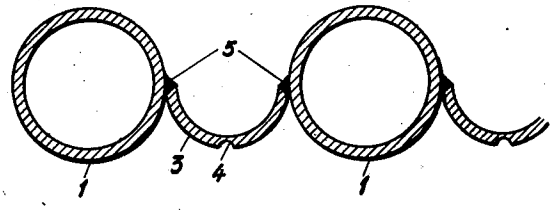


Fig. 3



Inventor:

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UNITED STATES PATENT OFFICE

NILS FORSSBLAD, OF STOCKHOLM, SWEDEN

COMBUSTION-CHAMBER WALL FOR STEAM BOILERS

Application filed February 16, 1928, Serial No. 254,857, and in Sweden February 26, 1927.

In steam boilers it is in certain cases advantageous to provide water-cooled walls around the combustion chamber, the cooling water therein preferably forming part of the circulating water content of the boiler. Hereby the temperature of the combustion chamber is lowered so as to improve the combustion conditions, and at the same time the wall of the combustion chamber forms an active heating surface.

My invention relates to a combustion chamber wall consisting of parallel water-cooled tubes, to which intermediary longitudinal iron pieces are welded so as to form an integral water-cooled wall. The particular novel feature lies in a certain particular shape of the intermediary iron pieces. For facilitating an expansion they are formed with a curved or angular cross section. Further, they have preferably recesses in the material whereby the latter is weakened and the pieces are made more resilient when the wall of the combustion chamber is expanded. Such recesses have also the advantage that an exchange of tubes is facilitated, as it is easily possible to cut through, by means of a welding flame, the iron pieces on both sides of a damaged tube and then remove the latter from the combustion chamber wall and replace it by a new one.

In the accompanying drawings, Fig. 1 shows an external view of a piece of the wall of a combustion chamber according to my invention, while Figs. 2 and 3 show sectional views of two different modifications thereof drawn to a larger scale.

Referring to the drawing, 1 represents the tubes which for instance at their ends are secured by rolling into headers 2 in the usual manner. 3 represents intermediary iron strips, which may for instance be angular in section, as shown in Fig. 2, or smoothly curved, as in Fig. 3. They are preferably provided with longitudinal recesses 4 for the purposes already stated. The welding joints between the tubes and intermediary strips are designated by 5.

I claim as my invention:

1. A combustion chamber wall for steam boilers, consisting of substantially parallel tubes adapted to be water-cooled and intermediary iron pieces secured between said tubes by molecular joints so as to leave the major part of the outer surface of said tubes free but filling the space therebetween, said pieces having a bent cross-section in their free portion between the tubes.

2. A combustion chamber wall for steam boilers, consisting of substantially parallel tubes adapted to be water-cooled and intermediary iron pieces secured to said tubes by molecular joints and filling the space therebetween, said pieces having a bent cross-section in their free portion between the tubes and reductions in said cross-section forming recesses parallel to the tubes.

In testimony whereof I have signed my name to this specification.

NILS FORSSBLAD.