

O. GUILLEAUME.
WATER TUBE BOILER.
APPLICATION FILED AUG. 31, 1909.

1,011,190.

Patented Dec. 12, 1911.

Fig:1

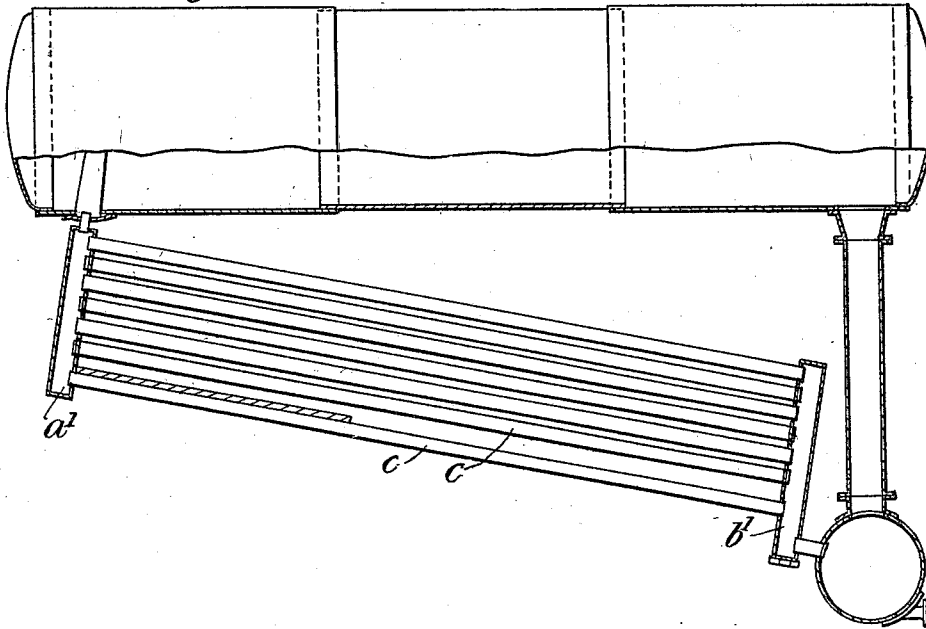
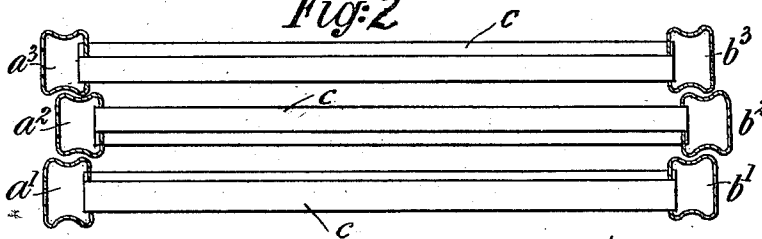


Fig:2



WITNESSES
H. H. Knight
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BY HIS ATTORNEYS
[Signature]

UNITED STATES PATENT OFFICE.

OTTO GUILLEAUME, OF NEUSTADT-ON-THE-HARDT, GERMANY.

WATER-TUBE BOILER.

1,011,190.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed August 31, 1909. Serial No. 515,519.

To all whom it may concern:

Be it known that I, OTTO GUILLEAUME, a subject of the Emperor of Germany, residing at Neustadt-on-the-Hardt, Germany, have invented a new and useful Water-Tube Boiler, of which the following is a specification.

This invention relates to a header water tube boiler having straight divided or sectional headers, the sides of which are rounded on their vertical edges and concave between such rounded edges.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of my improved water tube boiler, and Fig. 2 is a sectional plan of the sectional headers and tubes drawn to a larger scale than Fig. 1.

a^1, a^2, a^3 , are straight divided or sectional headers used to form the front of the boiler, and b^1, b^2 and b^3 are the rear sectional headers.

According to the present invention the sides of the divided or sectional headers are rounded along their vertical edges and concave between such rounded edges throughout the whole of their height, and such rounded edges and grooves are so proportioned as to enable one rounded edge of each adjacent divided or sectional header to fit snugly within the concave part of the adjacent sectional header, somewhat similar to inter-fitting teeth. This results in the horizontal distance between the tubes c being reduced to a minimum while retaining the same heating surface as in other forms of boiler. The tube walls of the divided or sectional headers are made sufficiently thick to enable the

water tubes to be securely fixed therein. The joints also remain readily accessible and the spaces between the separate headers can be easily and effectively closed. No resistance is offered to the circulating water or rising mixture of steam and water, and in the event of any slight inequalities arising of longitudinal expansion of adjacent divided headers, this new form and arrangement will allow relative movement thereof.

What I claim is:

1. A header water tube boiler comprising a plurality of headers connected in pairs by water tubes, each header being formed with longitudinal concavities in its side faces, and the paired headers being arranged in parallel relation with the longitudinal edges of one header snugly fitting the concavities of adjacent headers.

2. A header water tube boiler comprising a plurality of headers connected in pairs by a series of staggered water tubes, each header being formed with rounded longitudinal edges and longitudinal cavities in its side faces, said paired headers being arranged in parallel groups with their rounded longitudinal edges snugly fitting the longitudinal cavities of adjacent headers and the alternate headers of a group being arranged in the same plane while the other headers of the same group are arranged in a parallel plane.

In witness whereof I have hereunto set my hand in presence of two witnesses.

OTTO GUILLEAUME.

Witnesses:

HEINRICH SPAHLER,
KARL JACOB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."