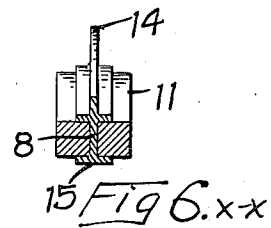
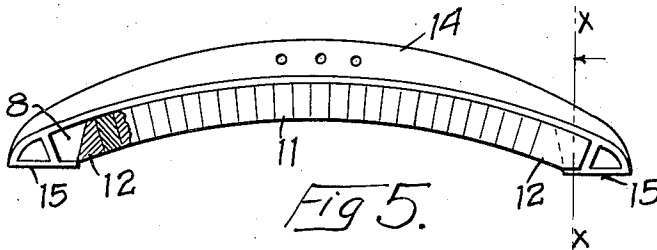
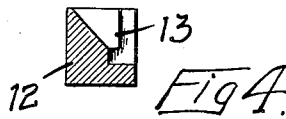
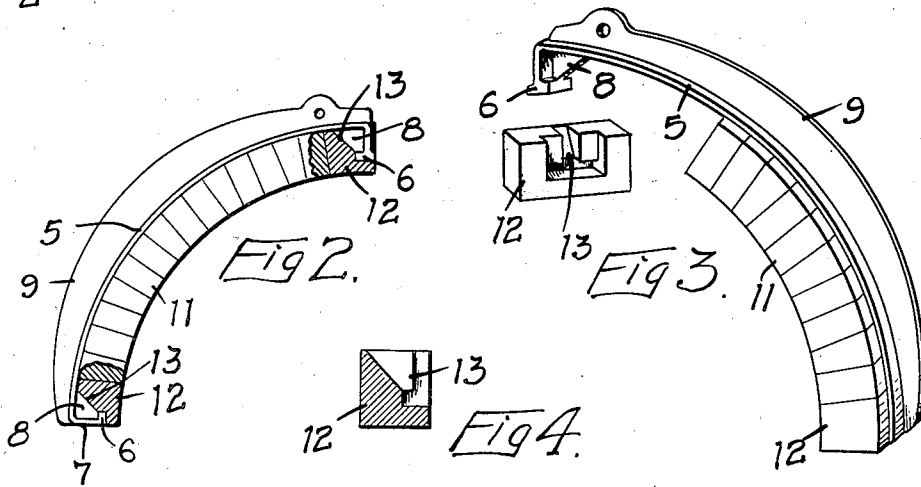
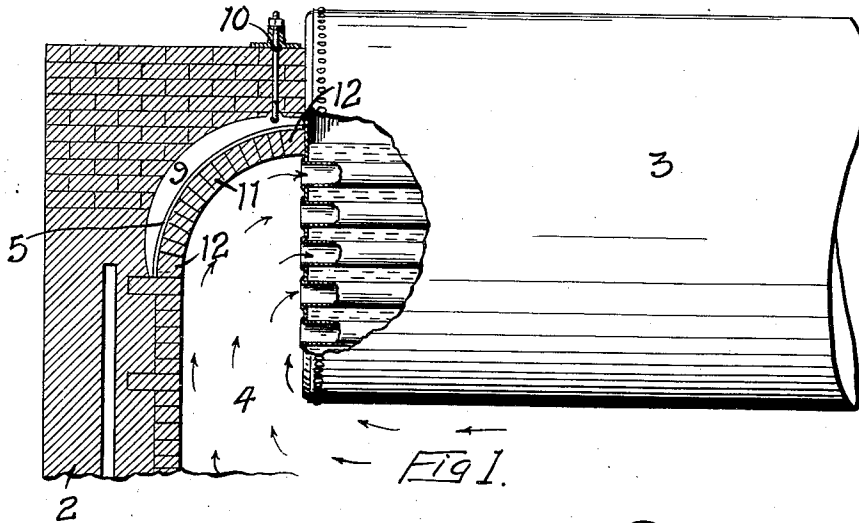


E. W. ASHENDEN.
RIB FOR BOILER ARCHES.
APPLICATION FILED APR. 15, 1909.

931,834.

Patented Aug. 24, 1909.



WITNESSES
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RIB FOR BOILER-ARCHES.

931,834.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed April 15, 1909. Serial No. 490,021.

To all whom it may concern:

Be it known that I, ERNEST W. ASHENDEN, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful
5 Improvements in Ribs for Boiler-Arches, of which the following is a specification.

In the construction of a boiler arch, it has been customary to provide metallic ribs having a considerable portion of their surface
10 exposed to the flames and hot gases, which soon burn out the metal and necessitate expensive repairs.

The object of my invention is to provide a rib of this character of special construction,
15 having means for thoroughly protecting the metal and thereby greatly prolonging the life of the arch.

My invention consists generally in a metallic rib, all as constructed and specified in
20 the claims:

In the accompanying drawings, forming part of this specification, Figure 1 is a sectional view of the rear portion of a boiler and setting, illustrating the application of
25 my invention thereto, Fig. 2 is a detail view, illustrating the manner of facing the metallic rib with fire brick. Fig. 3 is a perspective view, illustrating the construction of the rib with several of the fire bricks removed.
30 Fig. 4 is a detail, sectional view of one of the fire brick, Fig. 5 illustrates a modified construction of the rib, Fig. 6 is a sectional view on the line X—X of Fig. 5.

In the drawing, 2 represents the boiler setting, 3 the boiler and 4 a portion of the combustion chamber.

5 is a curved rib having inwardly turned ends 6, with flat faces 7 and webs 8 in the angle formed between said ends and the rib.

9 is a web or flange extending lengthwise of the rib on the outer face thereof. The lower end of the rib is seated in the wall 2 and its upper end is suspended on the hook
40 10. Fire brick 11 are set under the rib, the bricks 12 at the ends having recesses 13 therein to receive the webs 8 and thoroughly inclose and protect the metal at the point

where the bends are made to form the flat faces 7. After these end blocks are put in place, the middle key brick is inserted and
50 the bricks are all thereby securely locked at the ends of the rib and the metal is thoroughly protected from the heat of the flame and the hot gases. The webs 8 will have the effect of strengthening the ends of the
55 rib at the point where the greatest strain will fall thereon.

In Fig. 5, a rib 14 is provided having a curve of less degree and flat seats 15 at each end to rest in the brick setting, the protecting fire brick being substantially the same as those shown in the other figures.

I claim as my invention:—

1. The combination, with a boiler setting, of a horizontal tubular boiler, a combustion
65 chamber being formed beneath said boiler and at the end thereof, said combustion chamber having an arch comprising curved ribs seated at one end in the said setting and bearing at their opposite ends on the boiler
70 flue sheet, and said ribs having inwardly turned ends with seats formed thereon, and webs in the angles formed by said ends, and fire brick fitted between said ends and forming the top of the arch and separating said
75 ribs from the flame and hot gases, substantially as described.

2. A rib for a boiler arch, curved from end to end and having a longitudinal web on its outer face and inwardly turned ends,
80 and webs formed in the angle between said ends and rib, and fire brick contacting with the inner face of said rib and arranged between said ends, and the end fire brick having recesses to receive the webs formed in
85 the angle of said ends, and said fire brick covering and protecting the inner face of said rib, substantially as described.

In witness whereof, I have hereunto set my hand this 1st day of April, 1909.

ERNEST W. ASHENDEN.

Witnesses:

J. A. BYINGTON,
RICHARD PAUL.