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D. D. SHIERK.
BOILER CONSTRUCTION.
APPLICATION FILED OCT. 6, 1911.

Patented Oct. 22, 1912.

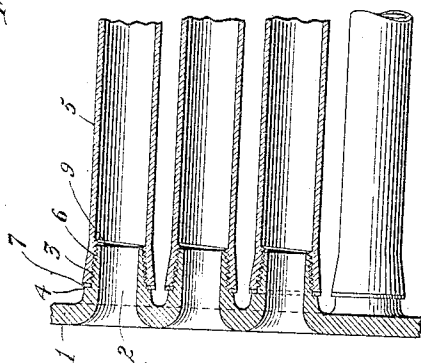
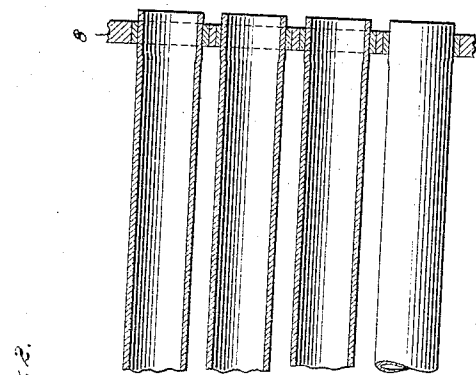
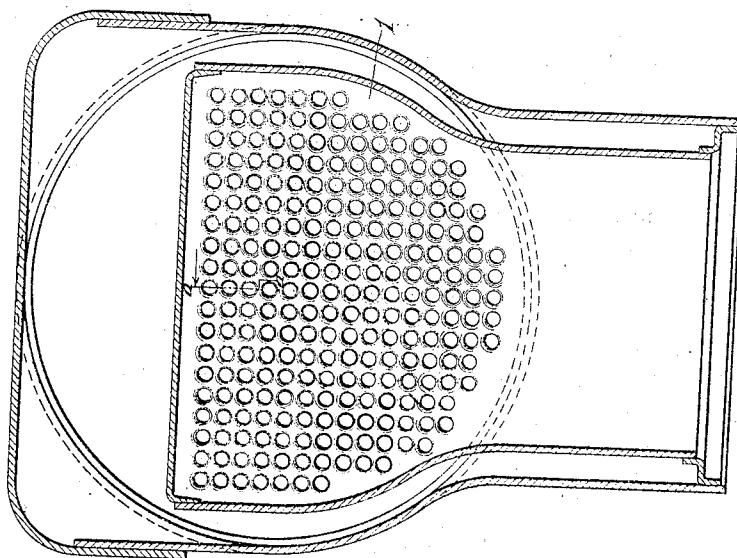


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

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BOILER CONSTRUCTION.

1,042,044.

Specification of Letters Patent.

Patented Oct. 22, 1912.

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To all whom it may concern:

Be it known that I, DEARELL D. SHIERK, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Boiler Construction, of which the following is a specification.

The object of this invention is to overcome the objection to the ordinary construction of flue boilers, in which the flues connected to the back flue sheet, are burned out and leak, this often leading to great damage. I overcome these objections by expanding the back flue sheet inward forming a flange to which the flue is connected, thereby removing the joint from the fire.

In the accompanying drawings. Figure 1 is a transverse section through the fire box of a locomotive boiler showing the back flue sheet and the flue openings. Fig. 2 is a section on line *a a* Fig. 1.

The boiler shown in Fig. 1, with the exception of the connection of the flues with the back flue sheet is of the ordinary locomotive construction and is illustrated to show the location of my improvements.

The rear flue sheet 1 of the boiler is formed with an inwardly extending flange or nipple 2 expanded from the metal forming the flue sheet and is provided with external screw-threads 3. A shoulder 4 is formed at the base of the screw-threads.

A flue 5 has one end provided with internal screw-threads 6. The flue is threaded over and upon the flange or nipple 2 and is turned hard against a washer 7 placed against the shoulder 4 thereby forming a water tight joint. The flue 5 is inserted through an opening in the head flue sheet 8 and is rolled in the usual manner.

Heretofore boiler flues have been beaded

against the outer face of the rear flue sheet in order to make a tight joint. The heat coming in contact with the end of the flue at this point would soon expand the bead from the flue sheet and cause a leak. The flue would be beaded again and again until the material for forming the bead was destroyed or the flue sheet rendered worthless. It is a known fact that a flue, a short distance from the rear flue sheet was as good as new, therefore it has been the common usage to cut off the burned end of the flue and weld on a section to take the place of the burned section.

My improvements enable me to locate the joint 9 between the flange and the flue some distance along the direction of the flue so as to remove it from the action of the fierce heat generated in the fire box, and by so doing, the flue will never burn out.

As the flange 2 is formed from the material of the rear flue sheet there is no joint which is subjected to the fire, therefore the flange will last as long as the flue sheet.

I claim as my invention.

In a boiler, the combination with a flue sheet having an inturned integral nipple that is externally threaded, and has an external annular shoulder at the end of the threads, of a flue having one end internally threaded and screwed upon the nipple, and a packing gasket surrounding the nipple and interposed between the shoulder and the adjacent end of the flue.

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

DEARELL D. SHIERK.

Witnesses:

A. O. BEHEL,
E. D. E. N. BEHEL.

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