

(No Model.)

J. R. DE REMER.
BOILER TUBE OR FLUE.

No. 573,646.

Patented Dec. 22, 1896.

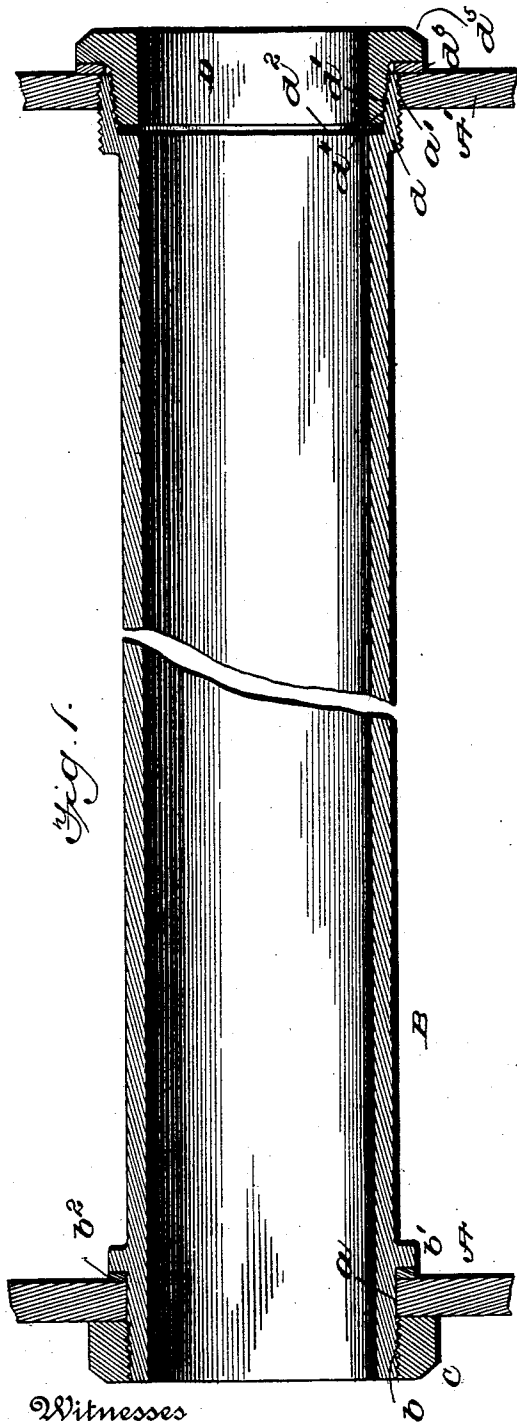
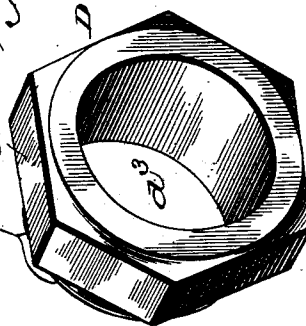


Fig. 1.

Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JARED RUSSEL DE REMER, OF GLENWOOD SPRINGS, COLORADO, ASSIGNOR
OF ONE-HALF TO C. W. DURAND, OF SAME PLACE.

BOILER TUBE OR FLUE.

SPECIFICATION forming part of Letters Patent No. 573,646, dated December 22, 1896.

Application filed April 17, 1896. Serial No. 587,929. (No model.)

To all whom it may concern:

Be it known that I, JARED RUSSEL DE REMER, of Glenwood Springs, in the county of Garfield and State of Colorado, have invented
5 certain new and useful Improvements in Boiler Tubes or Flues; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

This invention contemplates certain new and useful improvements in boiler tubes or flues, and has for its object the production of simple, highly-efficient, and inexpensive
15 means for securing the tubes or flues to the boiler-sheets, whereby the same can be quickly and thoroughly tightened and leakage prevented. One end of each flue is provided with an exterior thread and a collar,
20 which, with a surrounding gasket, is drawn tight against one of the boiler-sheets by a nut on the threaded end of the flue. The other end of the flue is exteriorly threaded and located within a threaded opening of the other
25 boiler-sheet, where it is securely held by a plug having a thread and an outer flange, which fits against the end of the flue and the face of the boiler-sheet when screwed "home."

The invention will be hereinafter fully set
30 forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view with parts broken away. Fig. 2 is a view in per-
35 spective of the binding-nut.

Referring to the drawings, A and A' designate the boiler-sheets, the former being the exhaust or outlet end and the latter the fire-
40 box back. In each boiler-sheet are opposite coincident openings to accommodate the series of tubes or flues employed in a boiler of this character. The opening *a* of sheet A is smaller in diameter than the opposite open-
45 ing *a'* of sheet A'.

B designates a tube or flue supported at its ends by the two boiler-sheets. The rear end of this flue is exteriorly threaded at *b*, and a short distance inward from said thread is a circumferential flange or collar *b'*, between
50 which and the inner face of sheet A is designed to fit a circular gasket *b²*. A nut C is

designed to engage the thread *b* and bear against the outer face of sheet A, thereby firmly drawing the collar and gasket tight against the inner face of said sheet. The
55 forward end of flue B has a circular offset or enlargement *d*, which is exteriorly threaded to correspond with the threaded opening *a'* of sheet A', in which it is designed to fit. The inner surface of this offset is tapered and
60 threaded, as at *d'*, said thread and taper extending inward to a shoulder *d²*.

D is a circular screw-plug having a central opening *d³*, corresponding to the bore of the
65 flue or tube. The outer surface of this plug is tapered and threaded, as at *d⁴*, to correspond with the inner threaded taper *d'* of the flue with which it is designed to engage. The plug in being screwed home will force out-
70 ward the enlarged end of the flue, binding the threads thereof into the threads of the opening *a'* in such manner that the flue is then securely attached to both boiler-sheets. The outer end of plug D is flanged, as at *d⁵*,
75 and said flange is designed to hold or bind a circular gasket *d⁶* firmly against the end of the flue and the outer face of the boiler-sheet.

From what has been said it will be seen that I have provided extremely simple means for
80 securing the tubes or flues of a boiler to the sheets of the latter. In practice the rear end of the flue is first inserted through the opening *a'* of sheet A', the collar on said end being free to pass through said opening, and upon
85 screwing home the nut C said end will be firmly held against the rear boiler-sheet *a*. As soon as the plug D is screwed home the threaded offset or enlargement is firmly bound in the hole in the front boiler-sheet. In this
90 way the flue is securely held, and the gaskets at each end effectually prevent any leakage.

I claim as my invention—

1. In a boiler having its end sheets provided with opposite holes or openings, a flue or tube having at one end an outer collar, a nut for
95 binding said collar against one of said sheets, said flue also having an exteriorly-threaded offset or enlargement at its other end, provided with an inner shoulder and a plug fitted in said offset or enlargement for forcing the
100 latter against the walls of the opening in the other end sheet, substantially as set forth.

2. In a boiler having its end sheets provided with opposite holes or openings, one of which is threaded, a flue or tube exteriorly threaded at one end and having an adjoining circumferential collar, a nut on said end for binding said collar against the inner face of one end sheet, the other end of said flue having an exteriorly-threaded offset or enlargement provided with an inner threaded taper, and a tapered plug having an outer thread designed to engage said inner threaded taper of said flue, said offset or enlargement being adapted to fit in the threaded opening of said end sheet, substantially as set forth.
3. The combination with the boiler-sheets having two opposite holes or openings, one of which is threaded, of a flue having at one end

an outer thread and collar, and at the other end an exteriorly-threaded offset or enlargement having an inner shoulder, the inner surface of said offset or enlargement being tapered and threaded, a plug having an exteriorly-threaded taper designed to engage said inner threaded taper of said offset and also provided with a flange, and a nut on the other threaded end of said flue, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JARED RUSSEL DE REMER.

Witnesses:

JOHN T. SHUMATE,
C. L. TODD.