

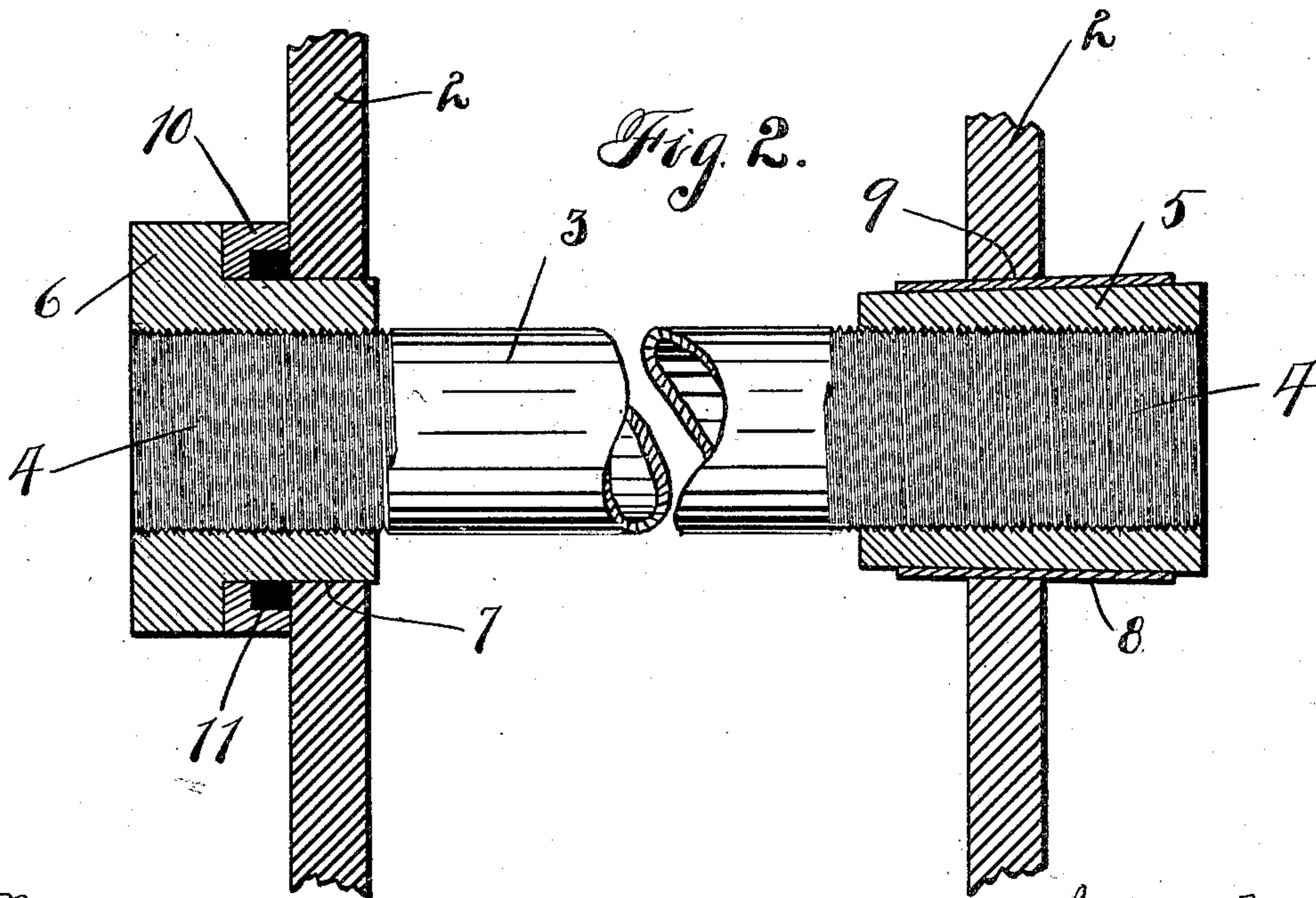
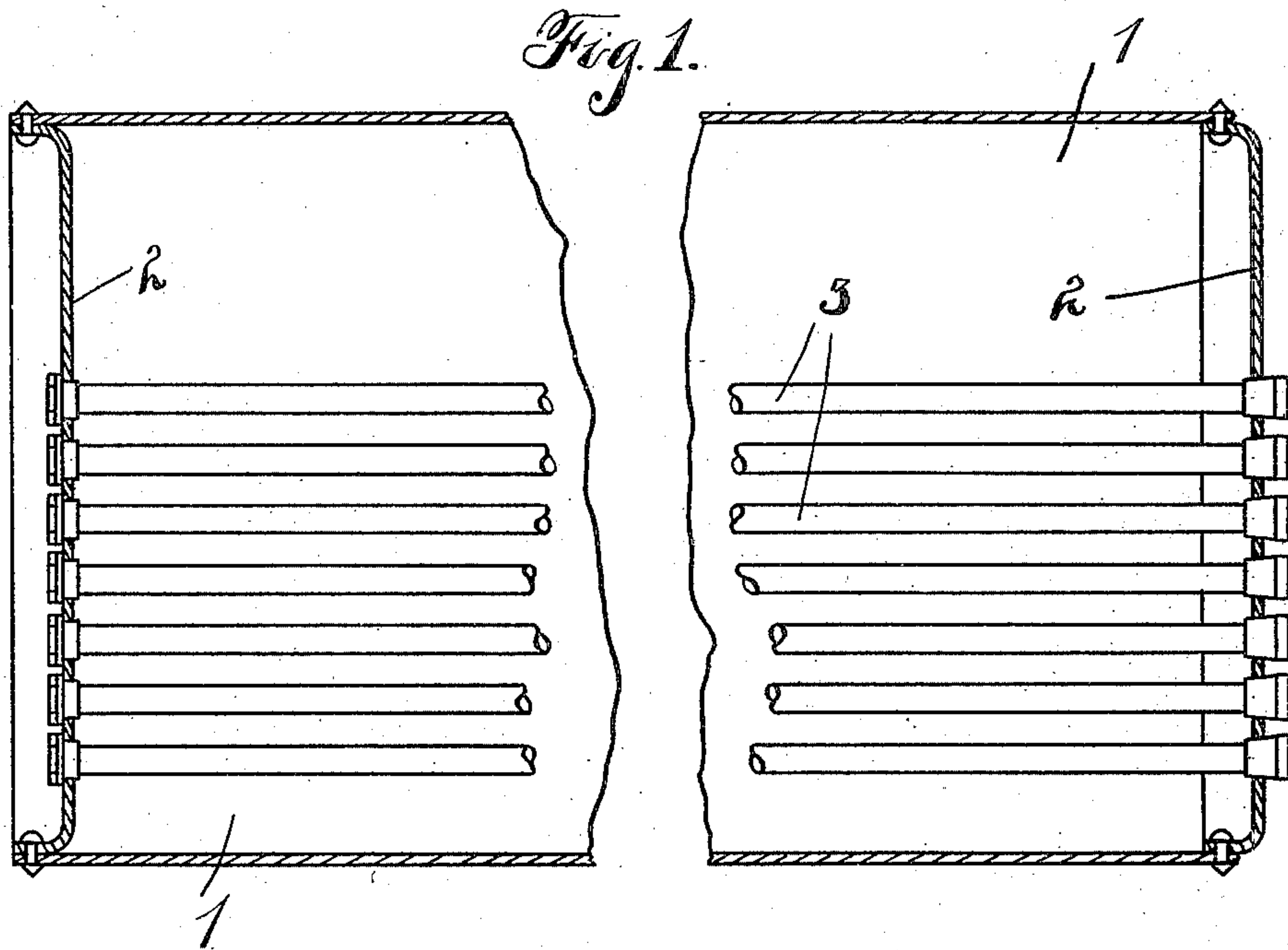
No. 696,421.

Patented Apr. 1, 1902.

J. F. DRAKE.
DETACHABLE BOILER FLUE.

(Application filed Mar. 26, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JULIAN F. DRAKE, OF HOLLY, MINNESOTA.

DETACHABLE BOILER-FLUE.

SPECIFICATION forming part of Letters Patent No. 696,421, dated April 1, 1902.

Application filed March 26, 1901. Serial No. 52,904. (No model.)

To all whom it may concern:

Be it known that I, JULIAN F. DRAKE, a citizen of the United States, residing at Holly, in the county of Murray and State of Minnesota, have invented certain new and useful Improvements in Detachable Boiler-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 appertains to make and use the same.

My invention has for its object to provide an improved means for detachably securing boiler-flues; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claim.

My invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a vertical section taken centrally through a boiler the flues of which are detachably secured in accordance with my invention; and Fig. 2 is an enlarged view with parts broken away and some parts in section, showing a flue and the means for detachably securing the same to the flue-sheets.

The numeral 1 indicates a boiler of ordinary construction having the flue-sheets 2.

The numeral 3 indicates the flues, the ends of which are screw-threaded, as shown at 4. On one end of each flue is screwed a sleeve 5, the outer surface of which is slightly tapered. On the other end of each flue is screwed a flanged clamping-collar 6, which quite loosely fits in an enlarged flue-passage 7 of the adjacent flue-sheet 2. The sleeve 5 is provided with a brass or copper sleeve-like jacket 8, which is also tapered. The said sleeve or jacket 8 fits in a slightly-tapering seat 9 in the adjacent flue-sheet 2. On the flanged collar 6, between the flue-sheet 2 and flange thereof, is loosely mounted a packing-ring 10, which is grooved and provided with an annular packing 11, of asbestos or similar material.

To remove a flue or to place one in working position, the flanged collar 6 should be removed, or said collar 6 may simply be loosened and the sleeves 5 then removed. When the said flanged collar 6 is screwed up so as

to tightly draw the tapered jacket 8 into the tapered seat in the flue-seat, a steam-tight joint is there formed, and the asbestos packing 11 is compressed so that it forms a steam-tight joint between the flue-sheet and its reduced portion of the said collar 6. With the loose packing-ring 10 the collar 6 may be turned to tighten up the flue-joints without turning the said ring and packing with respect to the adjacent flue-sheet. With the above construction the flues may be quickly and easily removed for the purposes of cleaning and may with equal ease and rapidity be replaced in working position. This, as is also evident, may be accomplished without damaging the flue or destroying the parts.

The reason for frequently removing the flues is, as is well known, to clean the same of scale, which forms on the outside thereof and thus destroys the heat-radiating capacity of the flues. In alkali districts it is frequently necessary to remove the flues of a threshing-engine boiler, for instance, once in six weeks, or even oftener.

As is evident, with the above construction the flues may be easily drawn from the boiler, even though covered with a thick scale, inasmuch as the flue-passages in the flue-sheets are materially larger than the said flues.

It will be of course understood that the invention above described is capable of considerable modification.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

In a boiler, the combination with a detachable flue, of a nut working with screw-threaded engagement on the outer end of said flue, and the clamping-ring 10 surrounding said flue between said nut and the flue-sheet, which clamping-ring is provided with the annular packing-ring 11 of relatively soft fireproof material, exposed for contact with the flue-sheet and with the part which it directly surrounds, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JULIAN F. DRAKE.

Witnesses:

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