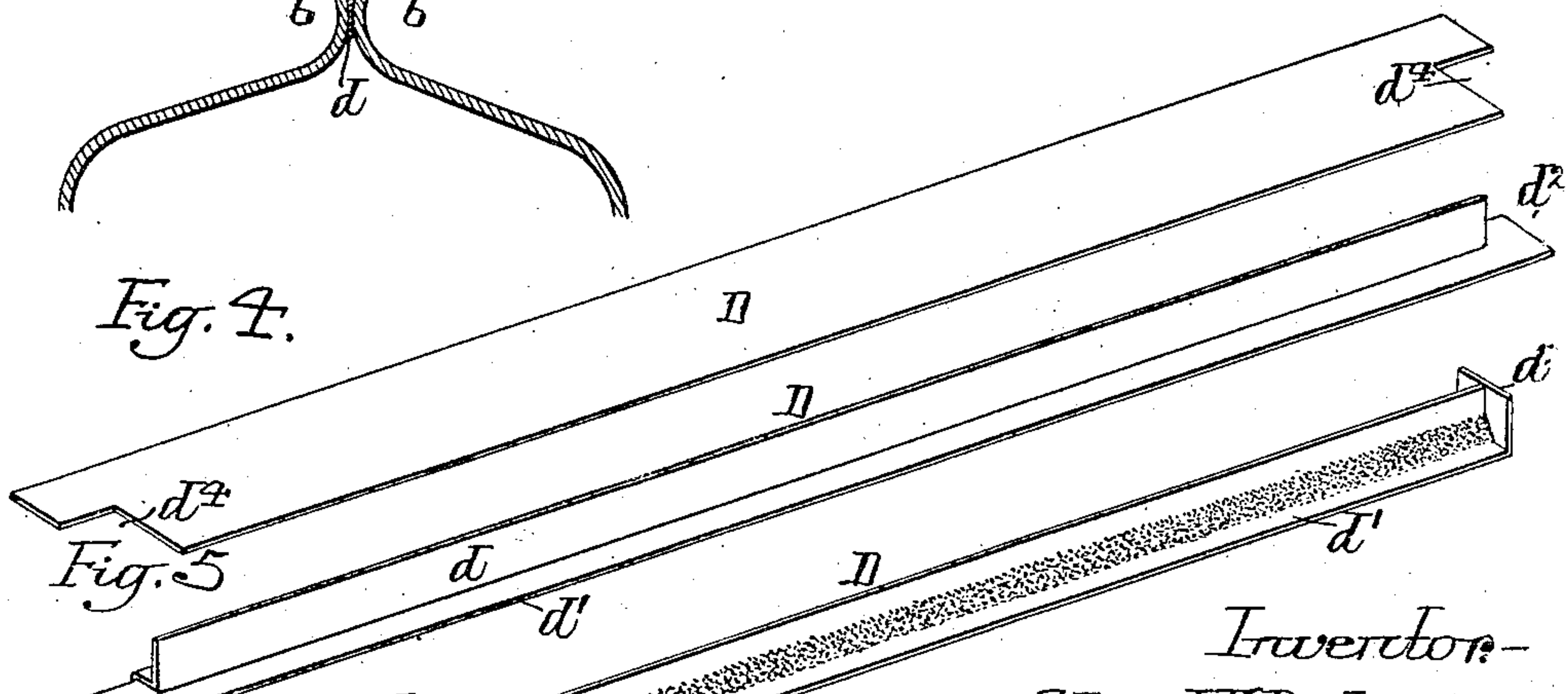
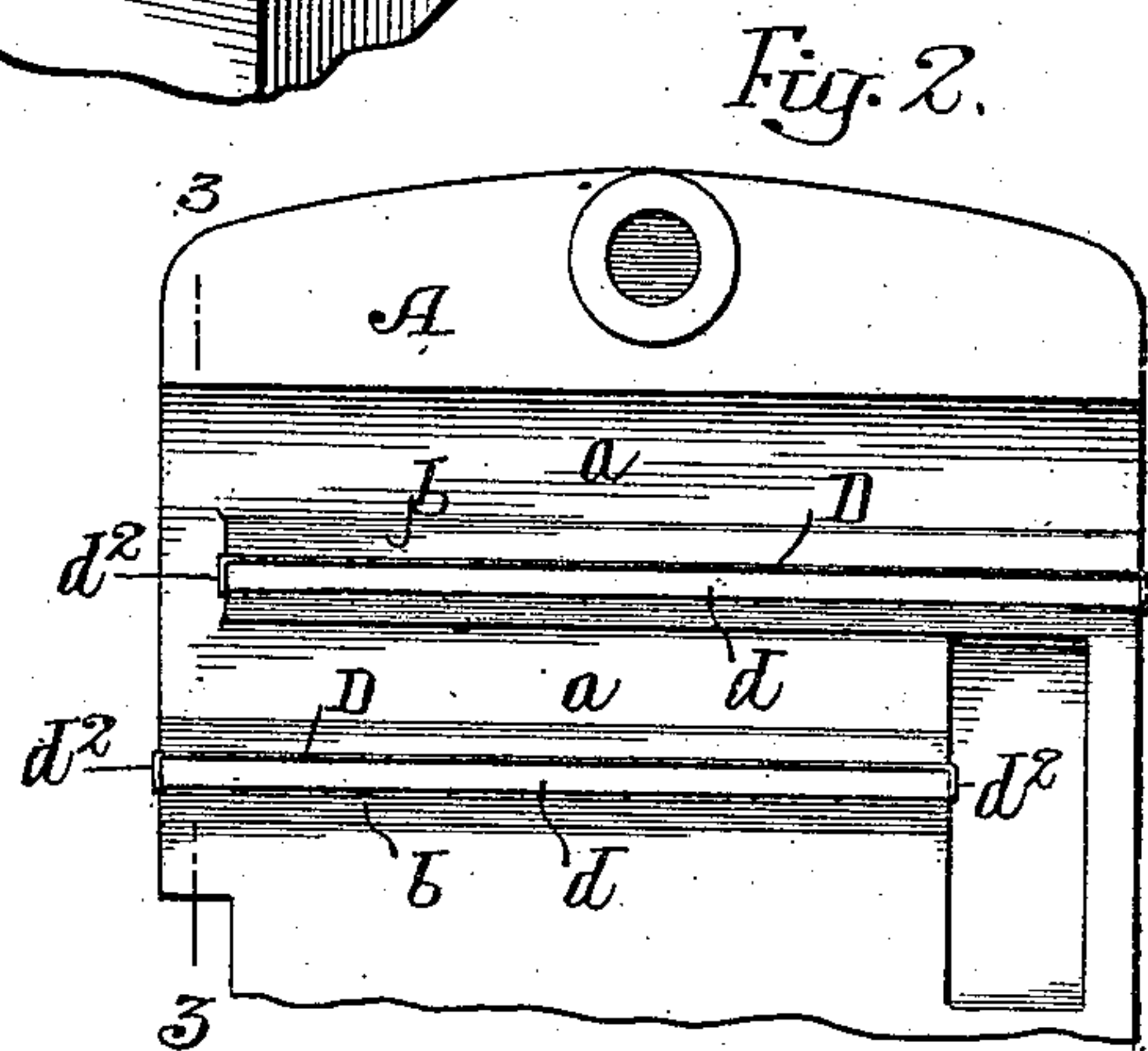
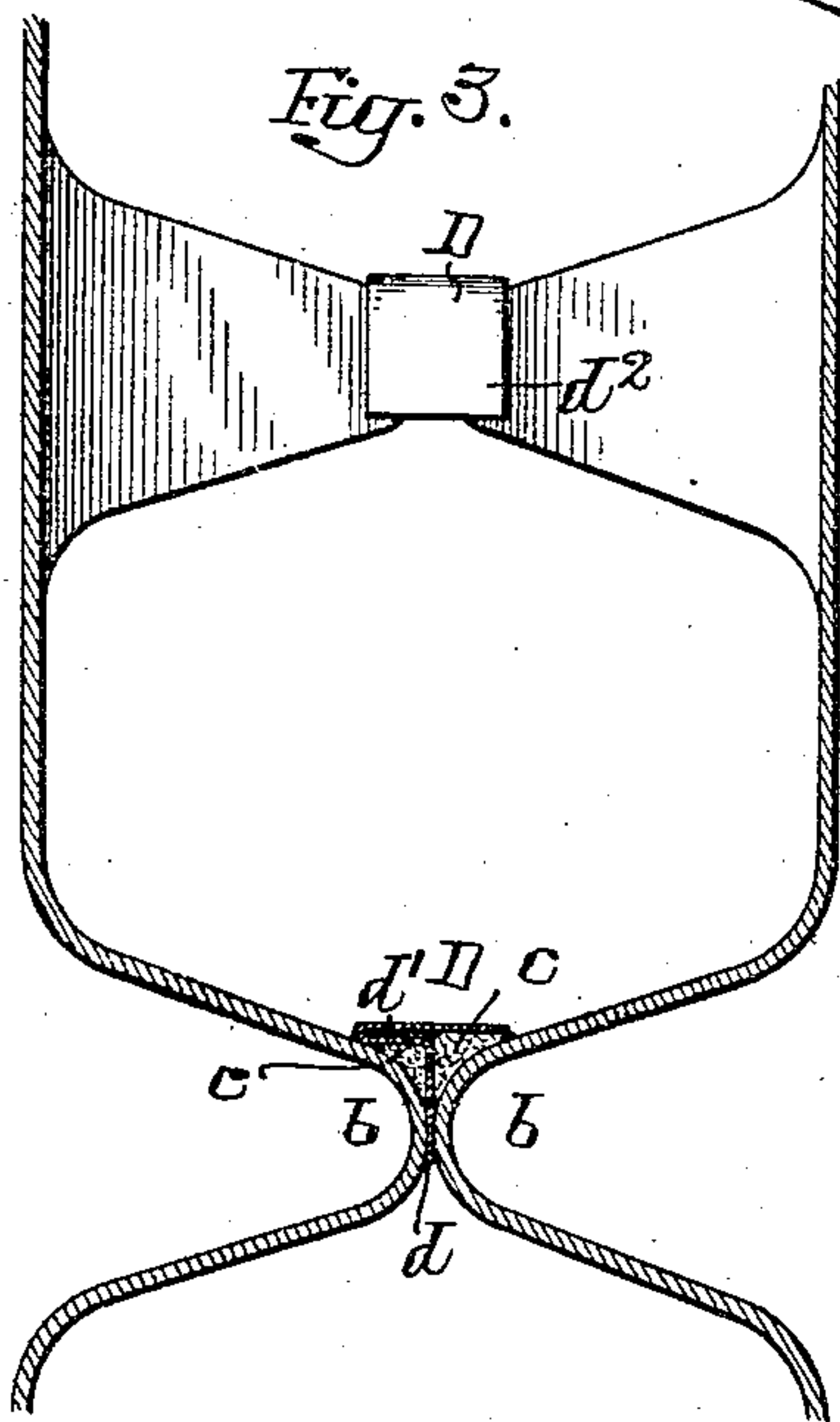
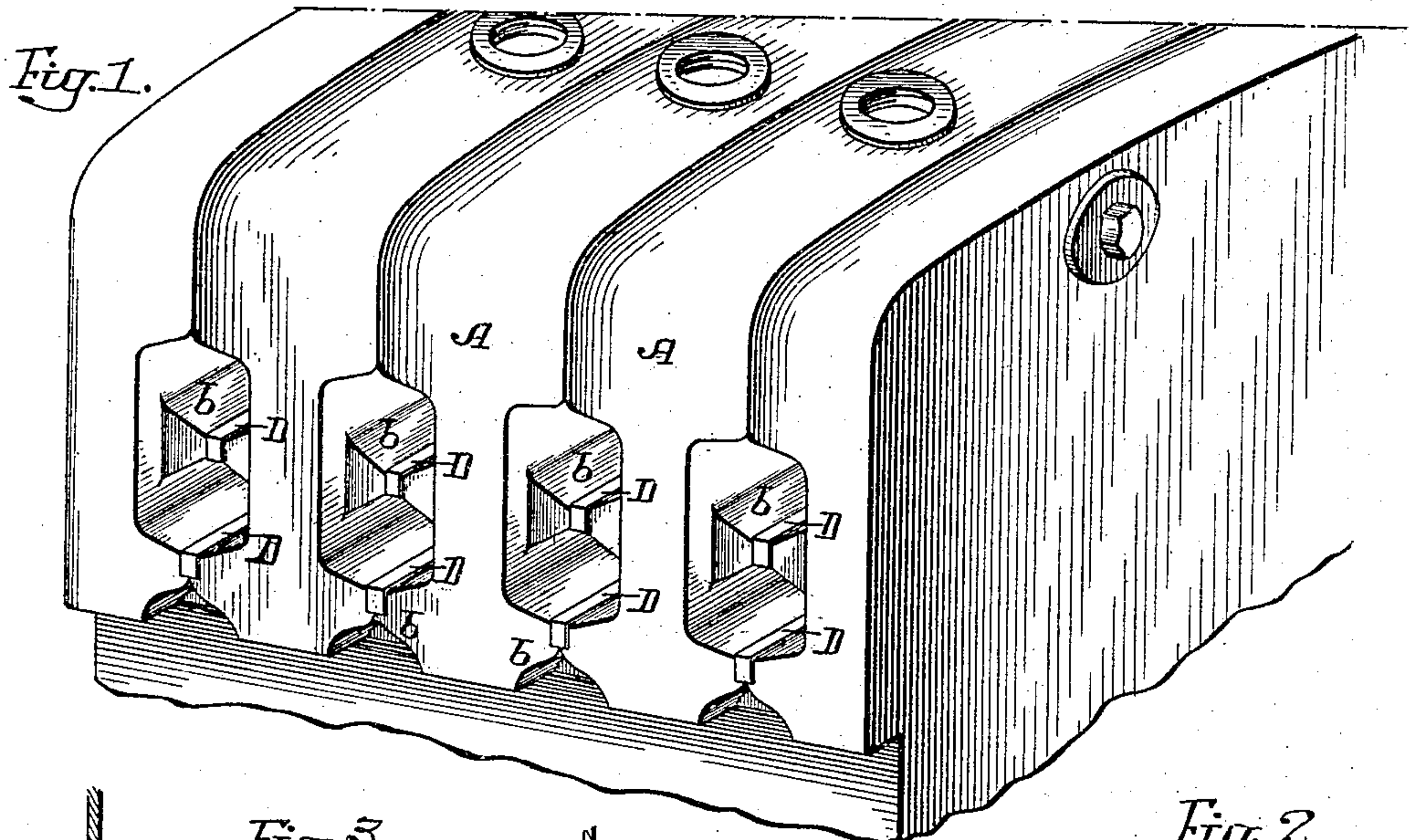


A. E. PFAHLER.  
 FLUE STRIP FOR BOILER AND OTHER FURNACES.  
 APPLICATION FILED AUG. 6, 1909.

945,590.

Patented Jan. 4, 1910.



*Fig. 5.*  
*Fig. 6.*  
 Witnesses:  
 Titus H. Smith  
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 Alfred E. Pfahler  
 by his Attorneys:  
 J. H. H. H. H.



# UNITED STATES PATENT OFFICE.

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## FLUE-STRIP FOR BOILER AND OTHER FURNACES.

945,590.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed August 6, 1909. Serial No. 511,538.

*To all whom it may concern:*

Be it known that I, ALFRED E. PFAHLER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Flue-Strips for Boiler and other Furnaces, of which the following is a specification.

The main object of this invention is to provide a flue strip which will close the joint between abutting sections of a boiler or other furnace, so that the products of combustion will be directed in the proper path.

A further object is to so construct the flue strip that it will close the joint whether the parts are placed close together or comparatively far apart.

These objects I attain in the following manner, reference being had to the accompanying drawing, in which:—

Figure 1, is a perspective view of the upper portion of a boiler of the sectional type illustrating my invention; Fig. 2, is a side view of one of the sections showing the flue strips in position; Fig. 3, is an enlarged view on the line 3—3, Fig. 2; Figs. 4 and 5, are perspective views showing the method of making the strip from sheet metal; and Fig. 6, is an inverted view of the completed strip.

I have illustrated my invention in connection with a hot water or steam boiler used for house heating purposes made up of a series of cast metal sections A having flues *a, a* separated by ribs *b* projecting from the sides of the sections and when the several sections are assembled, as in Fig. 1, these ribs form the flues *a* for the passage of the products of combustion. The general practice has been, in this type of boiler, to make the ribs in such a manner that they will fit snugly against one another when the sections are assembled, but I find that this is difficult in some furnaces and the joint does not remain closed when the boiler is subjected to heat. Furthermore soot and partly consumed fuel will lodge upon the ribs and gain access to the space between the ribs, oftentimes forcing the sections apart. By my invention I completely close the space between the ribs so that it is impossible for soot or partly consumed fuel to gain access to the space, and I completely close the space so that all the products of

combustion must travel in the proper path through the flues *a, a*. The flue strips can be readily applied or removed when desired and the cleansing of the flues by a scraper or brush will not dislodge the flue strips.

D is the flue strip made of sheet metal, preferably as illustrated in Fig. 4, and bent into T-shape in cross section, as illustrated in Fig. 5. The web *d* extends between the two ribs *b, b* of the boiler sections and the head *d'* rests upon the ribs. Cement *c* is placed on each side of the web *d* so that when the flue strip is in position the cement will make a tight joint between the flue strip and the ribs.

I preferably turn down the ends *d<sup>2</sup>* of the flue strip, as illustrated in the drawing, and these portions of the flue strip extend over the ends of the ribs *b*, preventing any longitudinal movement of the flue strip, so that when a scraper or brush is applied to cleanse the flues the flue strip will not be dislodged.

When the flue strip is made as illustrated in Figs. 4, 5 and 6, the plate is first notched at *d<sup>4</sup>*, then the portion is bent over as illustrated in Fig. 5, and the web turned up. This allows a projection at each end which can be turned down as illustrated at *d<sup>2</sup>*.

When the strip is applied it is inverted, as in Fig. 6, and cement is placed on each side of the web, as illustrated in said figure, when it is turned over, placed in position and forced down so that the cement will embed itself on the ribs *b, b* and the ends *d<sup>2</sup>* will extend over each end of the ribs, holding the strip in position.

The flue strip may be made from a rolled bar instead of from a plate bent up as shown, without departing from the essential features of the invention.

I claim:—

1. The combination of a furnace having sections shaped to constitute a flue a portion of whose wall is formed by two members spaced apart; with a flue strip having a head and a web; the head resting on said spaced members, and the web extending between the members.

2. The combination of a furnace having sections provided with ribs and shaped to form a flue, said ribs being spaced apart; and a flue strip having a head and a web; the head resting upon the bottom of the flue and the web extending between the ribs

forming the flue; with cement placed on each side of the web and under the head.

3. The combination in a boiler furnace, of a series of sections placed side by side, said  
5 sections having ribs, the rib of one section extending in close proximity to the rib of another section and forming flues for the products of combustion, a flue strip having a head and a web, said web extending be-  
10 tween the ribs, and cement or other filling material mounted under the head and on each side of the web, the ends of the flue strip being turned down so as to extend over the ends of the boiler sections.

15 4. As a new article of manufacture a flue

strip of sheet metal bent to form an elongated structure of T-section having a head and a web; the web stopping short of the ends of the strip and said ends being bent at right angles to the head and web to form 20 stops to prevent longitudinal movement of said strip.

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

ALFRED E. PFAHLER.

Witnesses:

WM. E. SHUPE,

WM. A. BARR.