

(No Model.)

J. KELLY.
BOILER FLUE ATTACHMENT.

No. 373,237.

Patented Nov. 15, 1887.

Fig: 1.

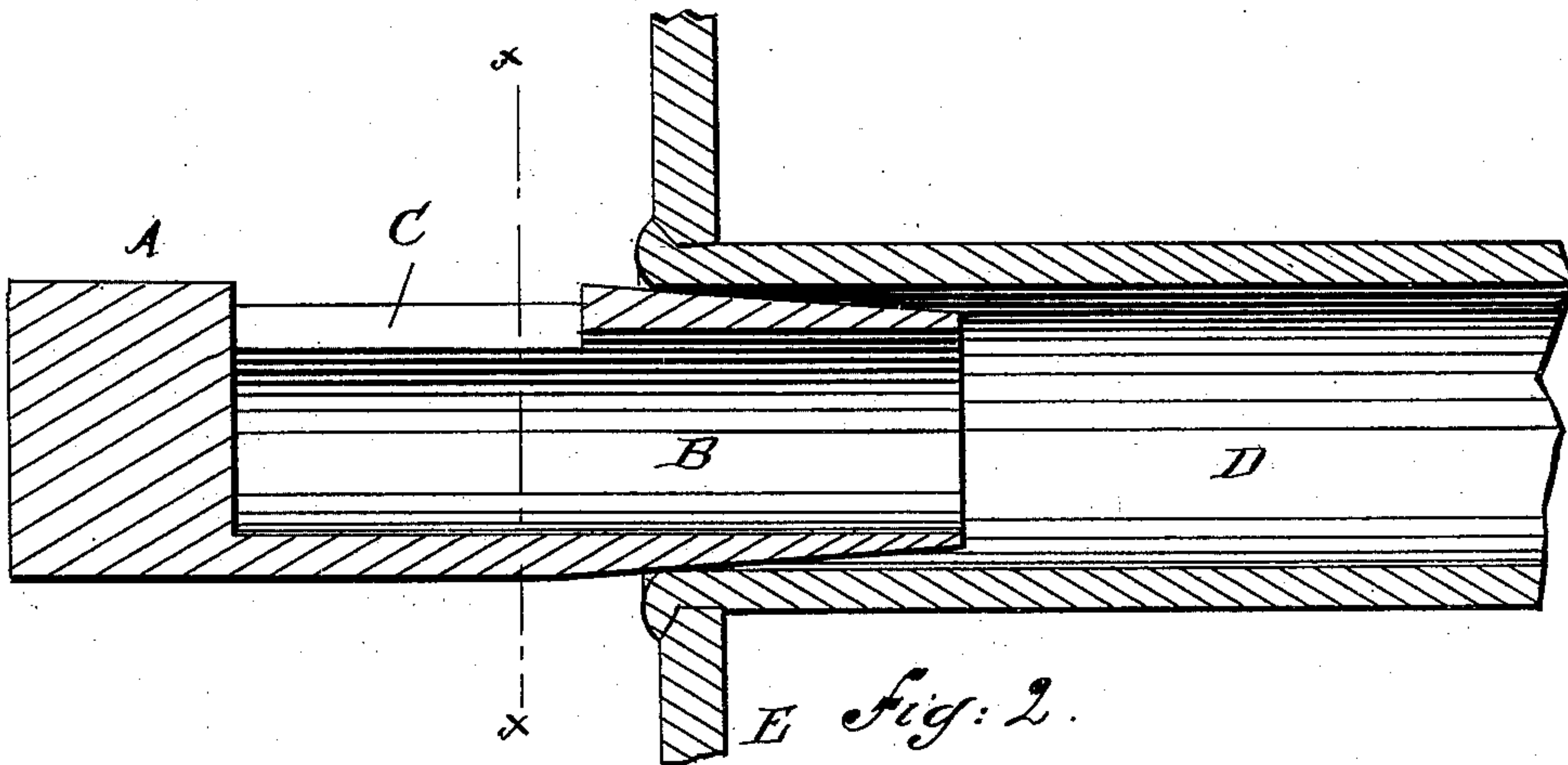


Fig: 2.

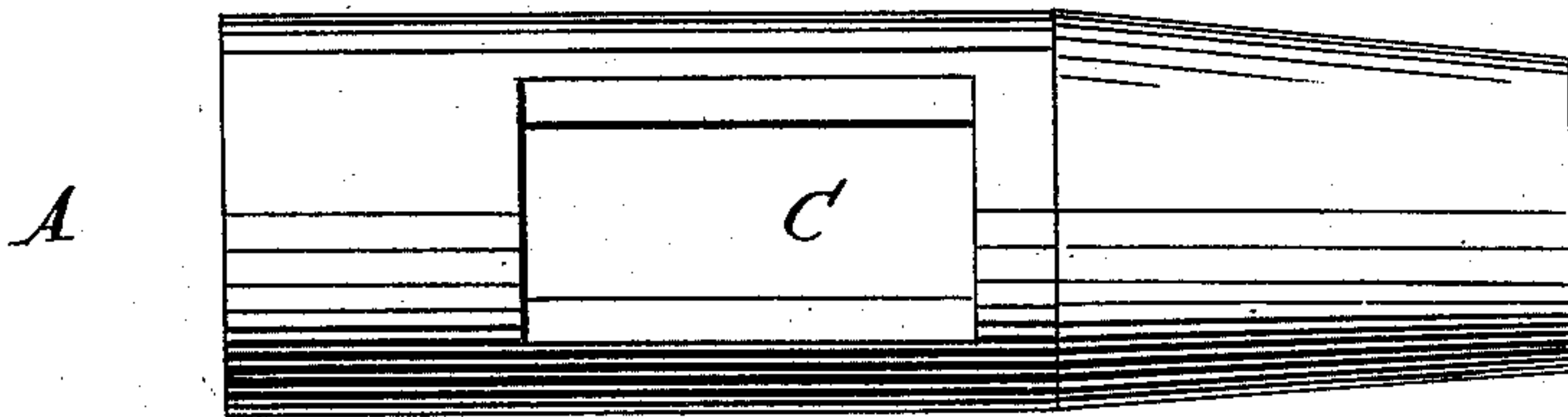
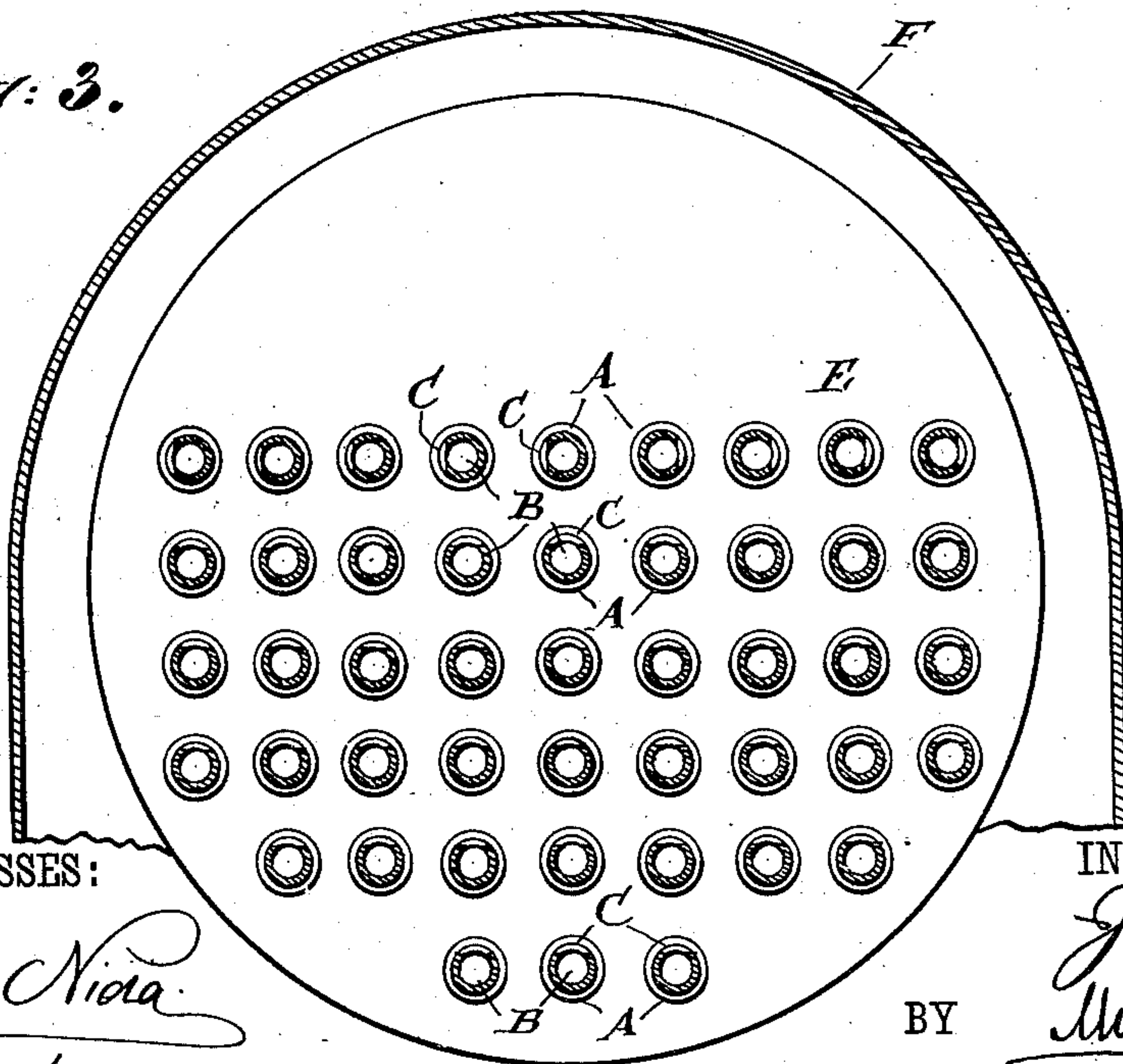


Fig: 3.



WITNESSES:

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BOILER-FLUE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 373,237, dated November 15, 1887.

Application filed April 13, 1887. Serial No. 234,603. (No model.)

To all whom it may concern:

Be it known that I, JOHN KELLY, of Blake, in the county of Emery and Territory of Utah, have invented a new and Improved Boiler-Flue Attachment, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved boiler-flue attachment which prevents dust, sparks, or unconsumed portions of the fuel from entering the flues.

The invention consists in a plug secured to each flue at its front end, and having a central recess and a top or side opening.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of my improvement attached to a boiler-tube. Fig. 2 is a plan view of my improvement; and Fig. 3 is a vertical cross section of my improvement on the line *xx* of Fig. 1, and showing the improvement applied to a boiler.

Heretofore the dust, cinders, and parts of unconsumed fuel were drawn by the draft of the boiler in and through the boiler-flues, thus clogging the flues and wasting part of the fuel. With my improvement, presently to be described, I prevent the clogging of the flues and permit a full combustion of all the fuel.

The improvement consists in a plug, A, preferably slightly tapered at one end and provided with a central recess, B, from which leads an opening, C, through the wall of the plug A, formed by the recess B.

A plug, A, is driven with its tapering end into the front end of each flue D of the boiler E, so that the opening C remains outside of each flue D, the said opening being turned to the sides in the top row of flues D and upward in the following rows of flues, as shown in Fig. 3. Now it will be seen that the heating-chamber communicates with the flues D by the openings C, and the dust and cinders from

the flue cannot pass into the flues E, as the dust and cinders are first thrown up against the crown-sheet F, and on being downwardly deflected strike the top row of plugs A and fall again into the fuel. The next rows of plugs A have their opening C turned upward, and the cinders cannot be drawn into these openings after striking the top plugs, as the latter form a cover for the next lower ones, and these again form a cover for the openings C of the following lower rows.

The opening C in each plug A is generally made of about the same area as the cross-section of a flue, A, so as to permit as much heat to pass into flues as in the ordinary way. Now it will further be seen that by using the plugs A, I change the direction of the draft, thus preventing the fire in the fire-box from being lifted and broken by the exhaust of the locomotive-engine as it occurs at present, as the hot air is drawn from the top of the fire-box, instead of being drawn directly through the grate-bars and the fire.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The boiler-flue attachment consisting of the plug having in it a central recess or bore and a lateral opening communicating with said bore or recess, substantially as and for the purpose set forth.

2. In a boiler-flue attachment, the combination, with the flues, of the series of plugs, each having a central recess or bore, and a lateral opening communicating with said recess or bore, the top series of plugs having their openings presented laterally, while the other series of plugs have their openings presented upwardly, substantially as and for the purpose set forth.

JOHN KELLY.

Witnesses:

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JOHN EGAN.