

(No Model.)

C. & J. PLAXTON.  
SECTIONAL BOILER.

No. 366,248.

Patented July 12, 1887.

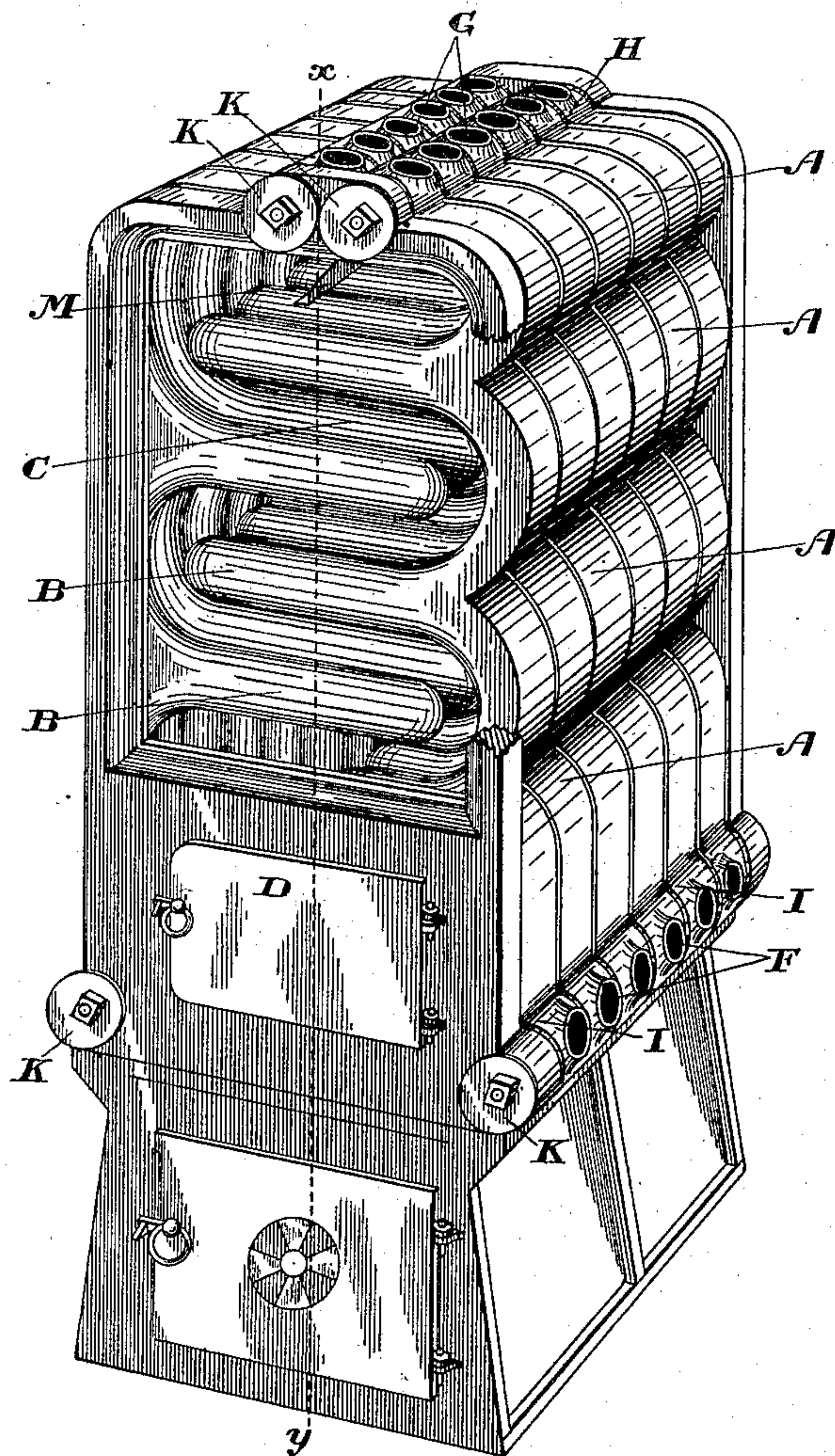


Fig. 1.

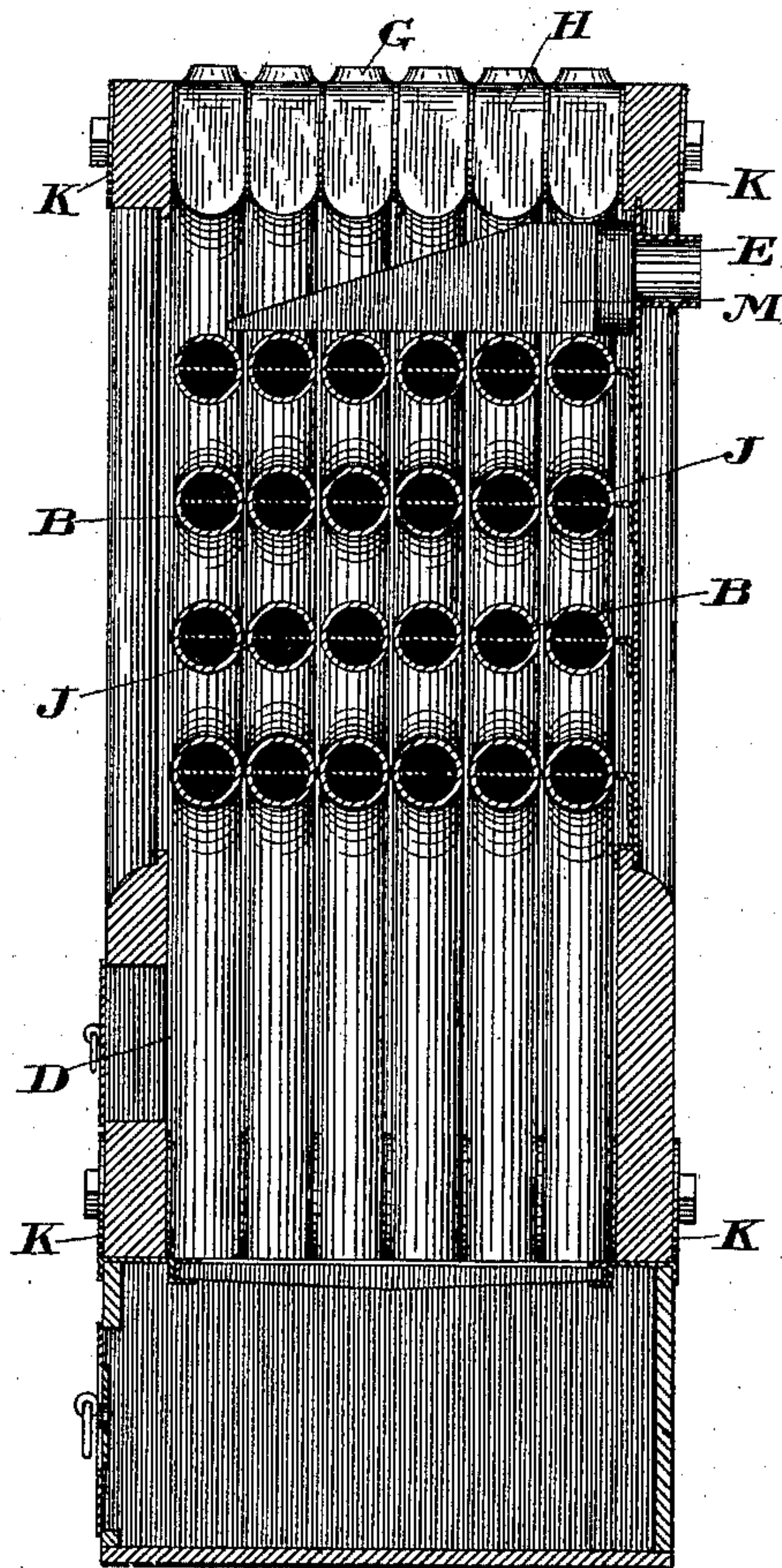


Fig. 2.

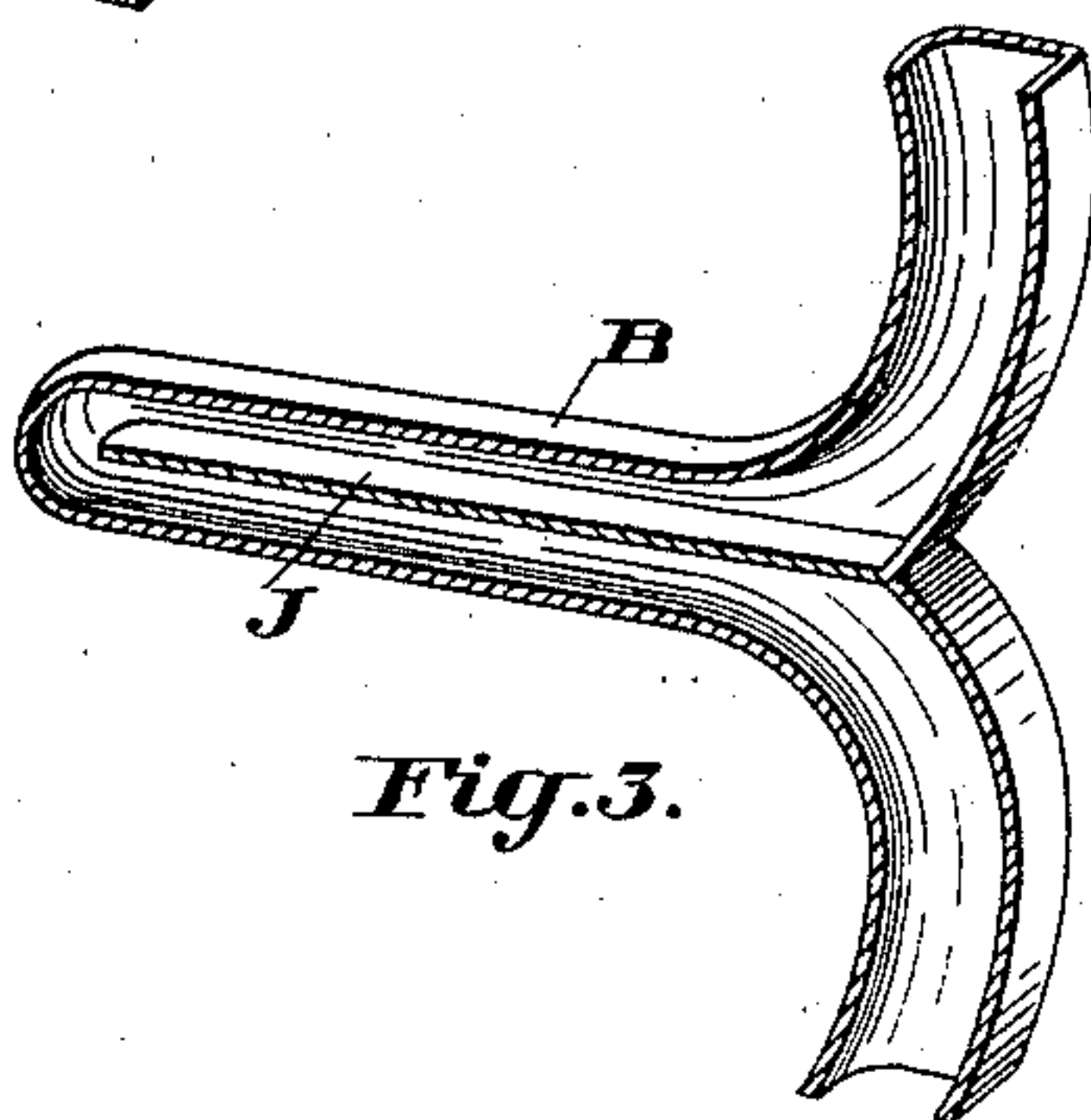


Fig. 3.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## SECTIONAL BOILER.

SPECIFICATION forming part of Letters Patent No. 366,248, dated July 12, 1887.

Application filed May 14, 1887. Serial No. 238,248. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES PLAXTON, of the city of Winnipeg, in the county of Selkirk, in the Province of Manitoba, Canada, plumber, and JOHN PLAXTON, of the town of Barrie, in the county of Simcoe, in the Province of Ontario, Canada, plumber, have jointly invented certain new and useful Improvements in Hot-Water Sectional Boilers, of which the following is a specification.

The object of the invention is to design a simply-constructed hot-water sectional boiler in which the water will flow to and fro through small compartments, each compartment arranged in the furnace and practically surrounded by the flames, so that it shall be quickly heated and extract to the fullest extent possible the heat of the flames; and it consists of a series of sections extending from the fire-pot to the top of the boiler, each section having a series of hollow projecting fingers extending across the furnace, a dividing-partition being placed in each finger, so as to separate the water flowing into the bottom side of the finger from the water flowing out of the top side of the said finger, the sections being arranged in pairs opposite to each other, the fingers of one section projecting between the fingers of its opposite mate, the whole being arranged and constructed substantially as hereinafter more particularly explained.

Figure 1 is a perspective view of our improved furnace with one of the sides removed to expose the interior arrangement of the fingers. Fig. 2 is a vertical cross-section through the line  $x y$  of Fig. 1. Fig. 3 is a sectional detail of one of the sections.

In the drawings, A represents a series of hollow vertical sections, each section being provided with a hollow finger, B, projecting across the furnace, as indicated.

It will be noticed that the hollow sections A are arranged in pairs opposite to each other, the fingers of one section extending between the fingers of the opposite section, forming a zigzag flue, C, extending from the fire-pot D to the top of the boiler, where the smoke-flue E is located. Consequently the flames and heated gases ascending from the fire-pot D practically surround each of the hollow fingers

B, and as each of these fingers contains but a small body of water the effect of the flames is immediate and effectual.

Each of the sections A may have an independent inlet-pipe, F, and an independent outlet-pipe, G, but, if desired, chambers at H and I may be formed, so as to connect all the sections A together at their top and bottom, it being merely necessary to form suitable joints between each section. The water which enters the inlet-pipe F passes up through each section A, but in doing so must flow through each of the fingers B belonging to its respective section, a partition, J, being placed in each finger B for the purpose of separating the water entering the finger from the water flowing back out from it.

A boiler constructed of sections formed in the manner described will be very cheap to produce, as there is practically no fitting required, the number of sections required being arranged and secured together by the front and back plates, K, which are secured together by suitable bolts extending from one plate to the other.

It will be seen that the size of the furnace may be increased or decreased, as required, by simply adding additional sections or removing such as are not wanted.

As the action of the flue C will naturally have a tendency to cause a stronger upward draft in the rear of the furnace, immediately below it we place a slanting partition, M, by which partition we cut off the flue immediately next to the rear section, and thereby equalize the draft through the entire furnace.

It will be noticed that the flues C may be readily cleaned by simply removing one of the plates, as shown in Fig. 1.

What we claim as our invention is—

1. A hot-water boiler composed of a series of hollow sections, A, having horizontally-projecting hollow fingers B formed on each section, which sections are arranged in pairs opposite to each other, so that the fingers of one section shall project between the fingers of the section opposite to it, forming a zigzag flue, C, substantially as and for the purpose specified.

2. The combination, with a furnace, of a

hollow vertical section, A, having horizontally-projecting hollow fingers B, with a dividing-partition, J, placed in each finger, with a vertical passage above and below said partition, an inlet-pipe, F, and an outlet-pipe, G, for the purpose of admitting water to circulate through the said hollow sections and fingers, substantially as described.

3. A hot-water boiler composed of a series of hollow sections, A, having horizontally-projecting hollow fingers B formed on each section, which sections are arranged in pairs opposite to each other, so that the fingers of one section shall project between the fingers of the section opposite to it, forming a zigzag flue, C, in combination with a slanting partition,

M, arranged substantially as and for the purpose specified.

Winnipeg, Manitoba, Canada.

Signed by the said CHARLES PLAXTON, this 20th day of April, 1887.

CHARLES PLAXTON.

In presence of—

ROBERT S. MOSS,

EDUARD F. CODD.

Barrie, Ontario, Canada.

Signed by the said JOHN PLAXTON, this 28th day of March, 1887.

JOHN PLAXTON.

In presence of—

J. T. LENNOX,

JNO. O. McNAB.