

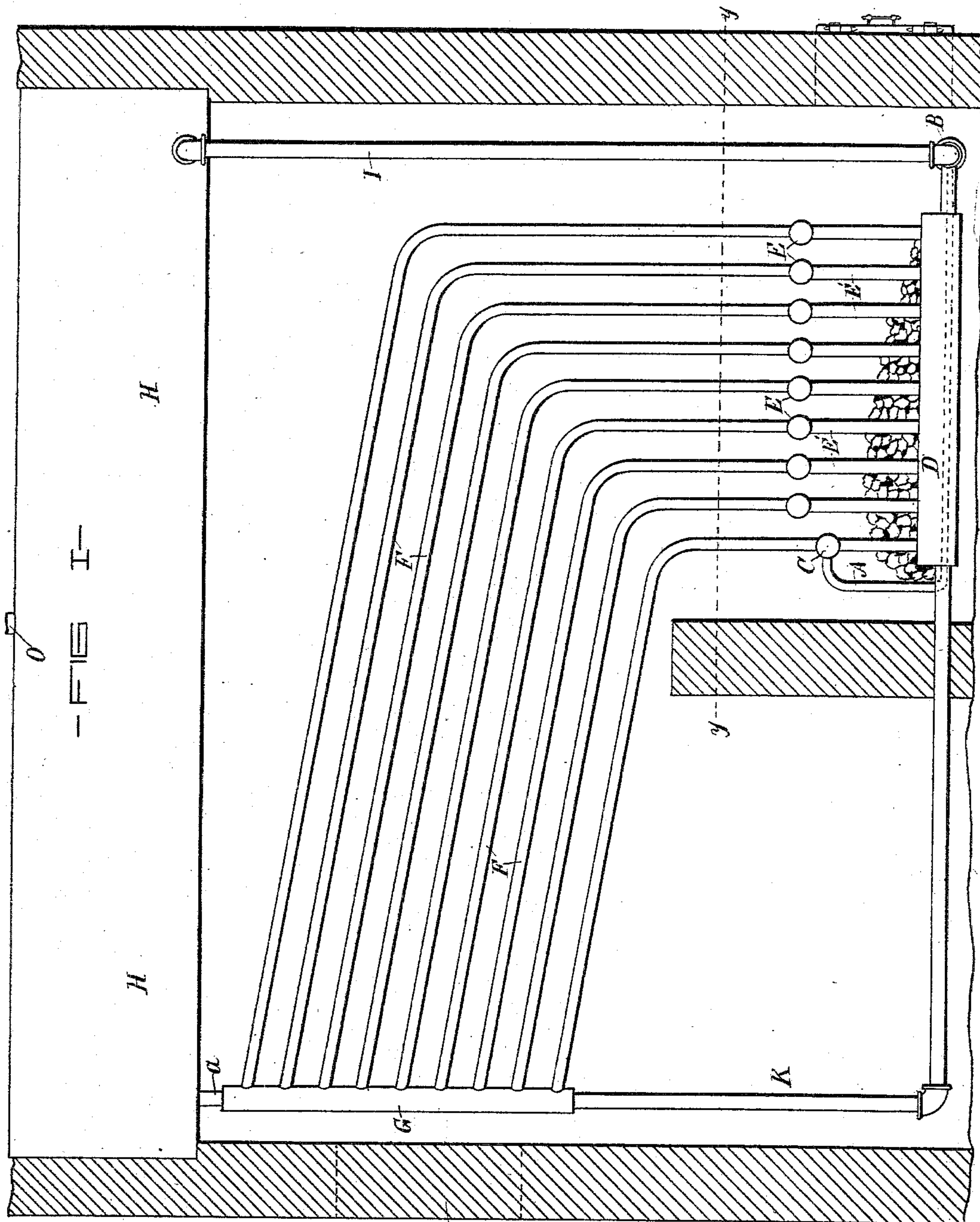
(No Model.)

3 Sheets—Sheet 1.

W. H. HUTCHINS.
SECTIONAL STEAM BOILER.

No. 288,178.

Patented Nov. 6, 1883.



—WITNESSES—

Danl. Fisher
Edward J. Diggs

—INVENTOR—

William H. Hutchins
by G. H. A. Howard
Atty-

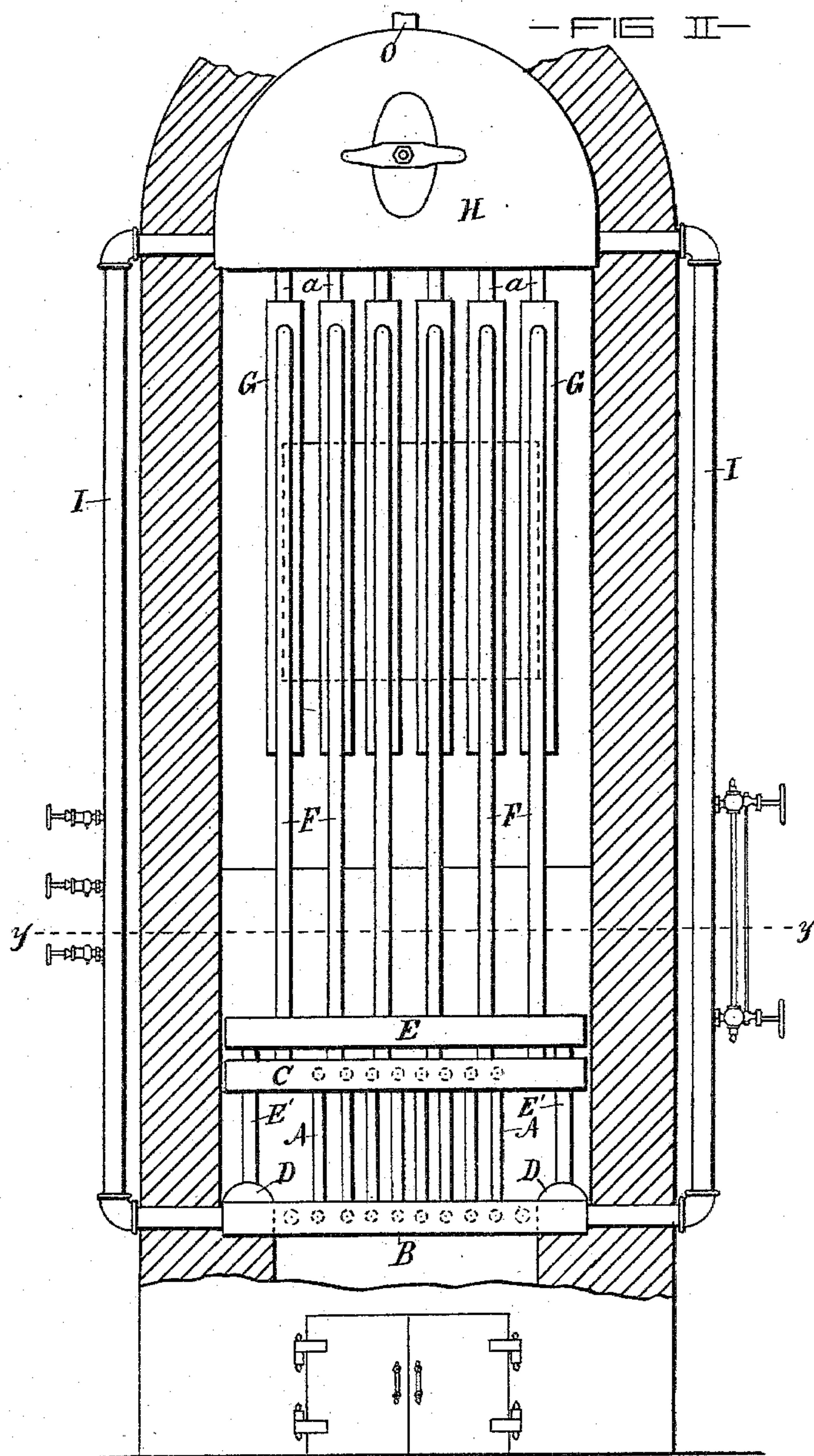
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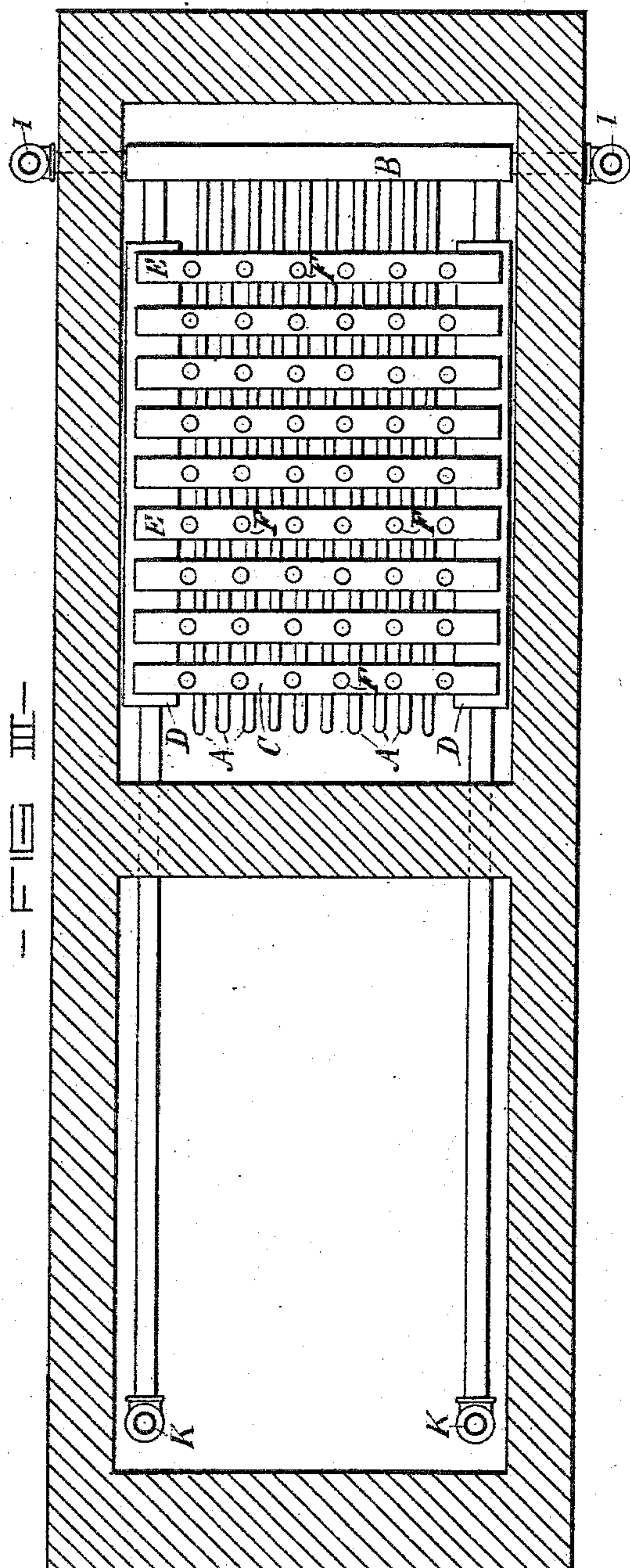
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UNITED STATES PATENT OFFICE.

WILLIAM H. HUTCHINS, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO ALVA HUBBARD, OF SAME PLACE.

SECTIONAL STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 288,178, dated November 6, 1883.

Application filed June 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HUTCHINS, of the city of Baltimore and State of Maryland, have invented certain Improvements in Sectional Steam-Boilers, of which the following is a specification.

This invention relates to certain improvements in a sectional tubular boiler, especially adapted for heating purposes; and it consists in the combination and arrangement of the various parts, as will hereinafter fully appear.

In the drawings forming a part hereof, Figure I is a side elevation of the improved boiler with a portion of the brick-work removed; Fig. II, a front elevation of the same with the front wall removed. Fig. III is a sectional plan taken on the dotted line *xx*, Fig. I.

Similar letters of reference indicate similar parts in all the views.

A A are the grate-bars, which consist of pipes or tubes, and they are connected at their front end to and by a manifold, B, and at their rear end turned up and back and attached to a second manifold, C. (See Fig. I.)

D D are manifolds located exteriorly of the grate-bars and extending parallel therewith, and they are connected to manifolds E, which extend transversely of the boiler by means of pipes E'.

F F are pipes leading from the manifolds E, and the one, C, to others, G, which are vertical and situated at the rear end of the boiler, and the latter are united with a steam-drum, H, by nipples *a*. The front end of the drum H is connected to the manifold B by means of pipes I, and the rear end of the drum to the manifold D by the pipes K. The pipes F before referred to rise from the manifolds E in a vertical direction, and are then bent and extended back to the manifolds G in an inclined direction.

The water-level is represented by the dotted line *yy*.

Fuel is distributed over the grate-bars A and below the manifolds C and E, and the products of combustion pass among the pipes F and escape through the opening L in the brick-work to a chimney or flue.

The boiler is provided with the ordinary fire and ash-pit doors.

Steam for heating or other purposes is taken from the drum H through the pipe O.

It will be seen that the boiler holds very little water, and that the water is contained in pipes which are directly in contact with the fire and heated products of combustion. Consequently steam is very rapidly generated. Further, it will be seen that steam, wherever generated, has direct access to the steam-drum.

I claim as my invention--

1. In a sectional tubular boiler, the grate-bars thereof formed of pipes, connected at their ends by means of manifolds, and united to other manifolds placed exteriorly of and at the sides of the grate-bars, combined with a series of cross-manifolds located over the grate-bars, and pipes extending from them through the fire-chamber to the steam-drum, substantially as specified.

2. In a sectional tubular boiler, the grate-bars thereof formed of pipes, and connected at their front and rear ends to manifolds, the rear ones of which are elevated above those in front and the whole united to other manifolds placed exteriorly of the grate-bars, combined with a series of cross-manifolds located over the grate-bars, and pipes extending from them through the fire-chamber to the steam-drum, substantially as specified.

WILLIAM H. HUTCHINS.

Witnesses:

EDW. J. DIGGS,
WM. T. HOWARD.