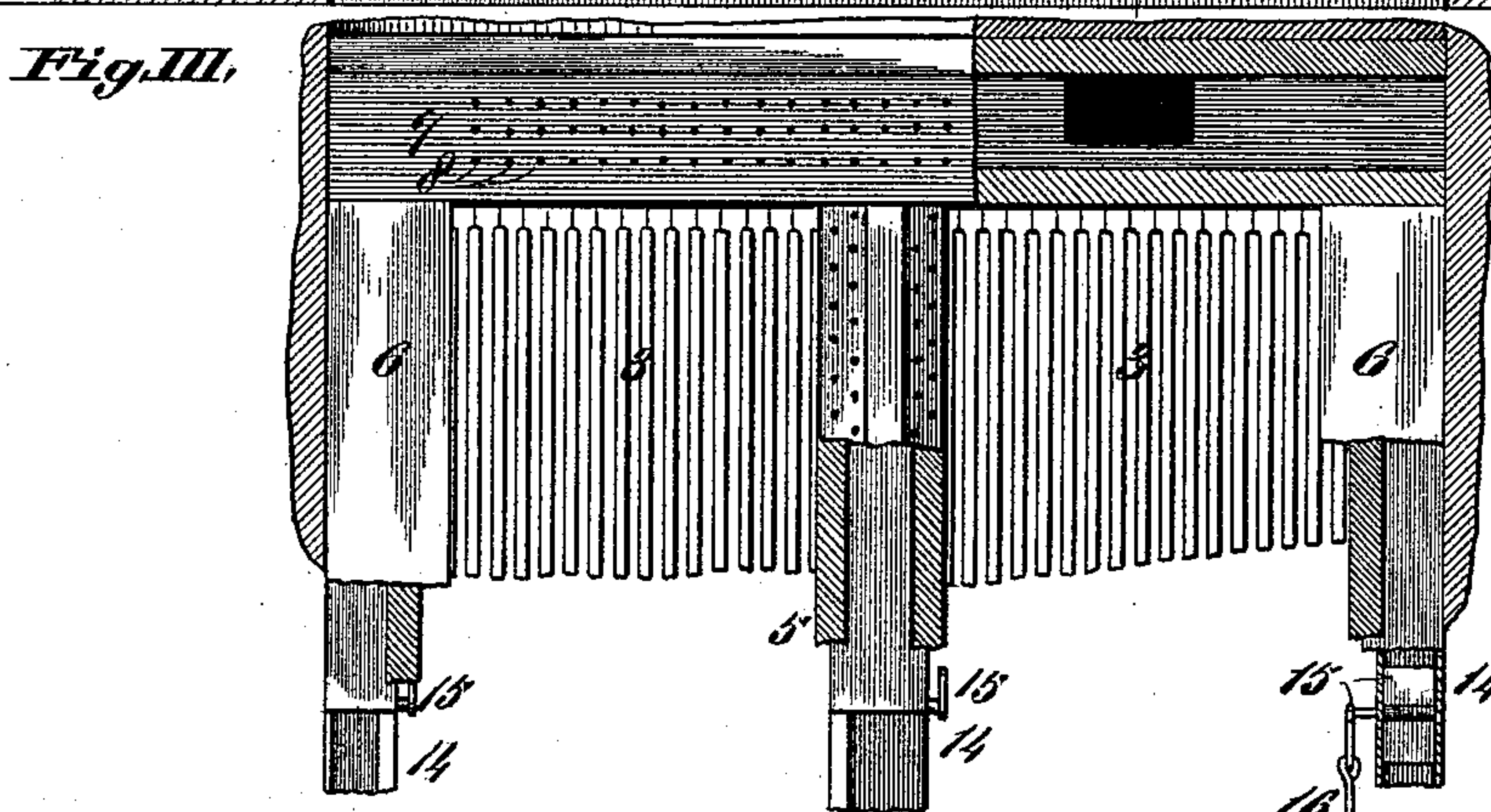
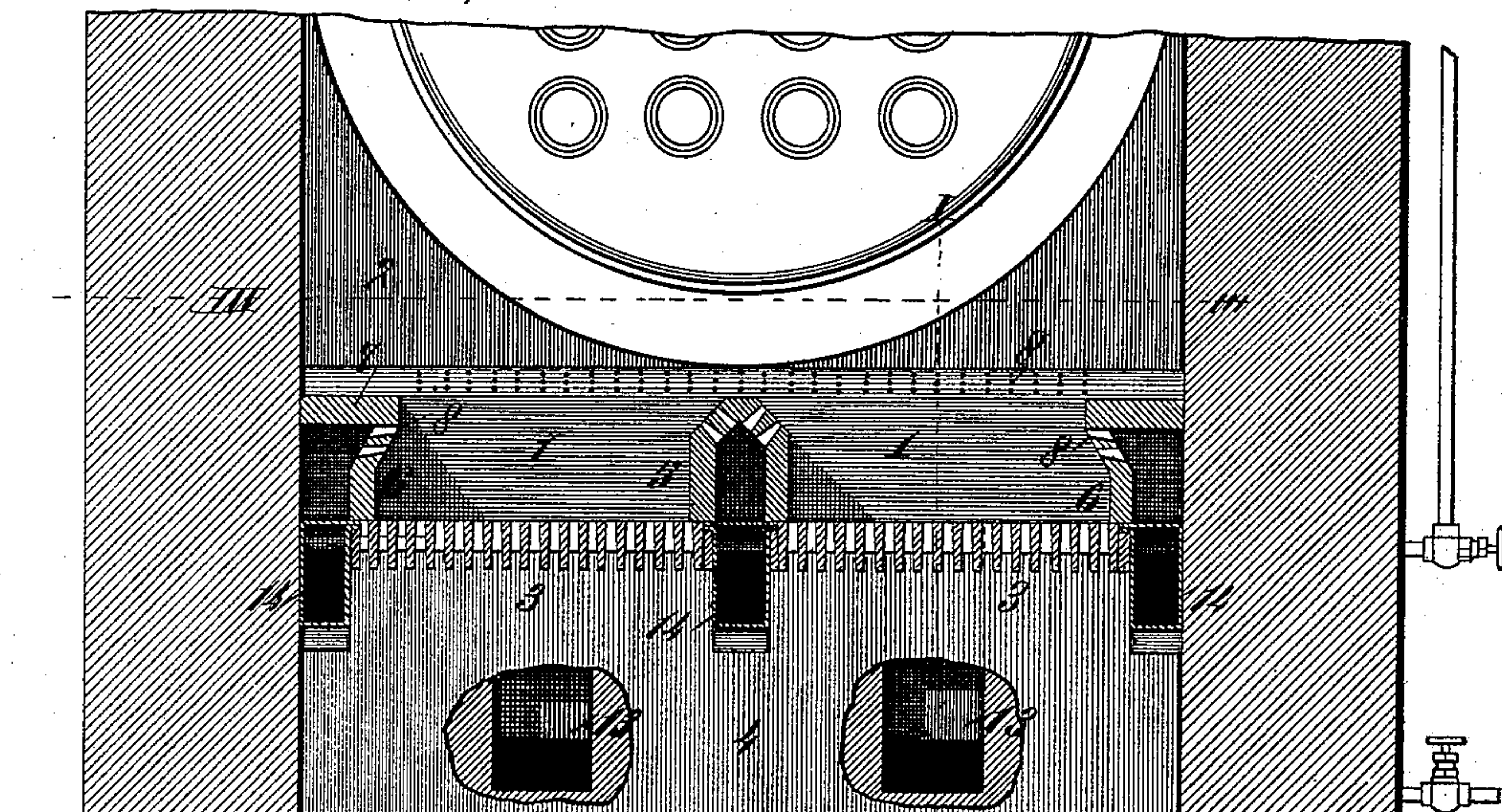
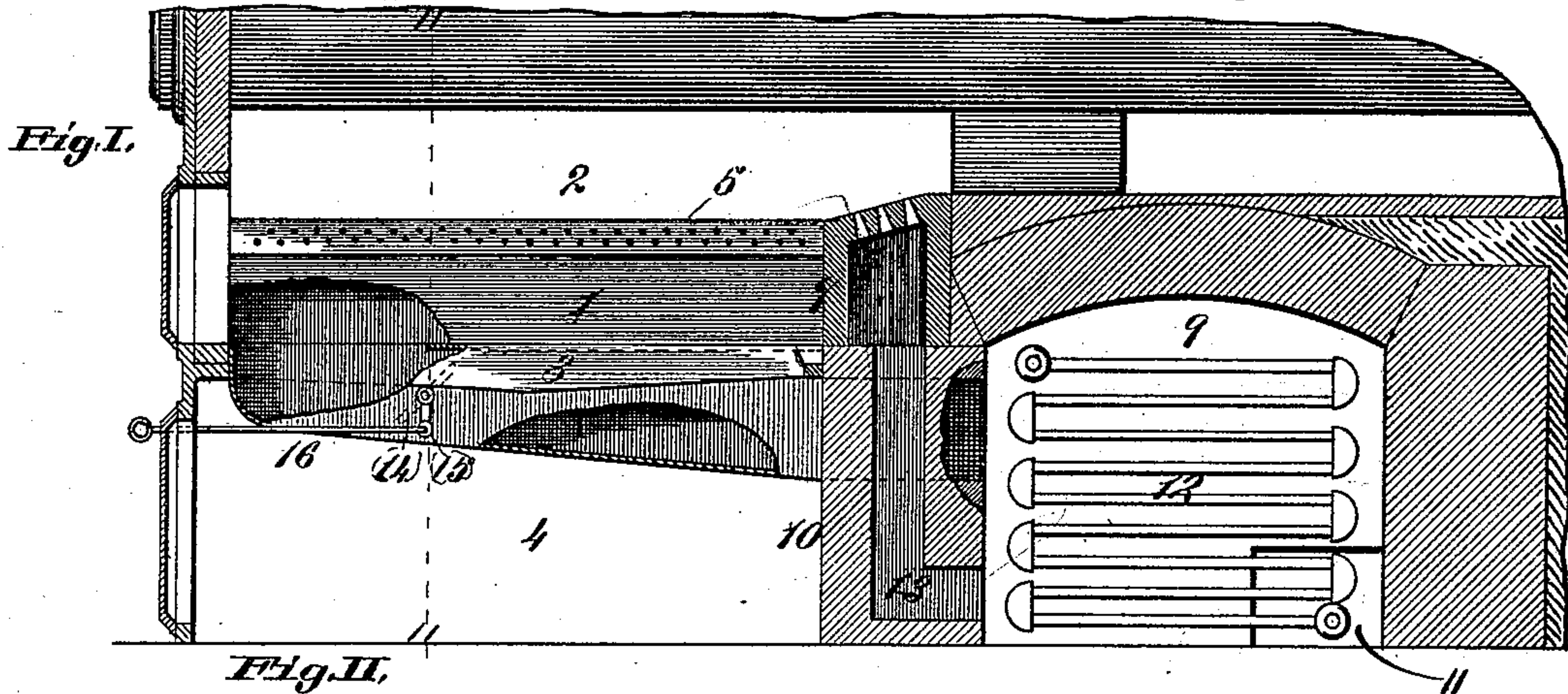


(No Model.)

L. J. TRECY.  
SMOKE CONSUMING FURNACE.

No. 498,197.

Patented May 23, 1893.



Attest,  
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Attys



# UNITED STATES PATENT OFFICE.

LAURENCE J. TRECY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF FIVE-EIGHTHS  
TO THEODORE ALBES AND AUGUST M. BLINKE, OF SAME PLACE.

## SMOKE-CONSUMING FURNACE.

SPECIFICATION forming part of Letters Patent No. 498,197, dated May 23, 1893.

Application filed January 23, 1893. Serial No. 459,355. (No model.)

*To all whom it may concern:*

Be it known that I, LAURENCE J. TRECY, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Smoke-Consuming Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in furnaces, the object being to improve the combustion, to prevent smoke and save fuel.

My invention consists in features of novelty hereinafter fully described and pointed out in the claim.

Figure I is vertical, longitudinal section of my furnace, taken on line I—I, Fig. II. Fig. II is a vertical, transverse section, taken on line II—II, Fig. I. Fig. III is a detail, horizontal section, taken on line III—III, Fig. II, parts being broken away.

Referring to the drawings, 1 represents the fire-box, 2 the combustion chamber, 3 the grate and 4 the ash-pit of the furnace. The fire-box is preferably formed with a central box or partition 5, which divides it into two parts, as shown in Fig. II. This box is made hollow to form an air chamber.

6 are boxes arranged at the sides of the fire-box and 7 a box arranged at the back of the fire-box. The boxes 6 and 7 are also made hollow to form air chambers. These boxes are all made of fire clay, so as to withstand the heat and they are perforated, as shown at 8, to permit air to escape from the chambers into the fire-box, to provide for thorough combustion.

9 is an air chamber located behind the

bridge wall 10 of the furnace, into which air enters through an opening 11. Within the chamber 9 is a steam coil 12 connecting with the boiler to heat the air in the chamber.

13 is a flue connecting the chamber 9 with the box 7 to supply the air that escapes through the perforations 8 of this box.

14 are flues which extend from the chamber 9 to the forward ends of the boxes 5 and 6, as shown in Fig. I, and which supply the air that escapes through the perforations 8 of these boxes. The flues 14 are respectively arranged at the upper corners of the ash-pit and beneath the box 5, as shown in Fig. II.

15 are valves in the flues 14 to control the passage of air. They have rods 16 which extend out through the front plate of the boiler and by which the valves are moved. The perforated boxes provide for a uniform admission of air over the fire which results in a very thorough combustion of the fuel, and by heating the air in the chamber 9 it is discharged into the fire-box in a highly heated condition, for it is further heated while passing through the flues 13 and 14.

I claim as my invention—

In a furnace, the combination of the perforated hollow boxes, arranged in the fire-box, the chamber arranged behind the bridge wall of the furnace, a steam coil arranged in said chamber, and connected with the boiler, and the flues 13 and 14 connecting said chamber with said boxes; substantially as and for the purpose set forth.

LAURENCE J. TRECY.

In presence of—

E. S. KNIGHT,

ALBERT M. EBERSOLE.