

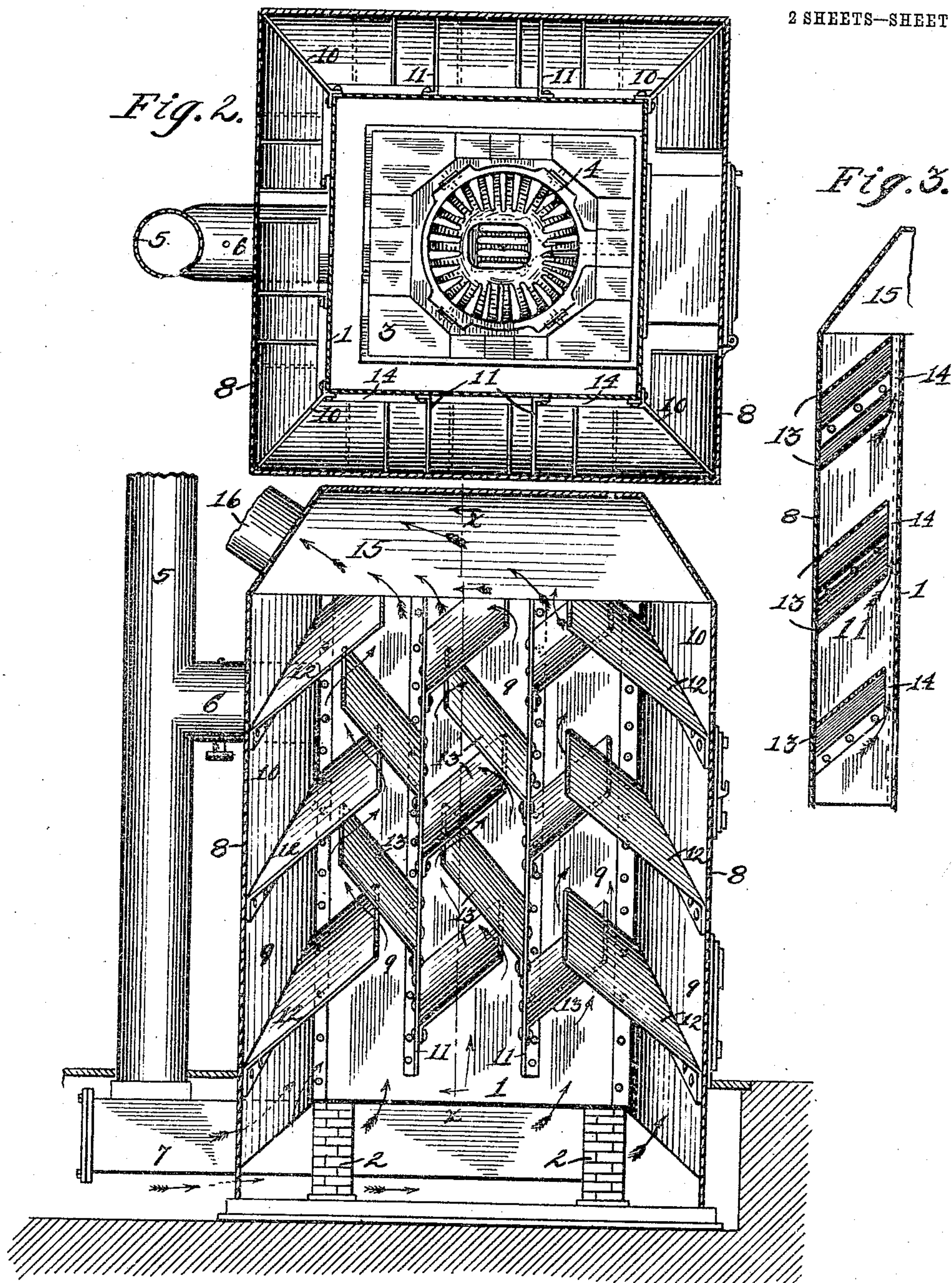
L. B. PIPER.  
FURNACE.

APPLICATION FILED SEPT. 30, 1909.

955,199.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.



Witnesses;  
C. E. Wessels.  
B. G. Richards

Fig. 1.

Inventor;  
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L. B. PIPER.

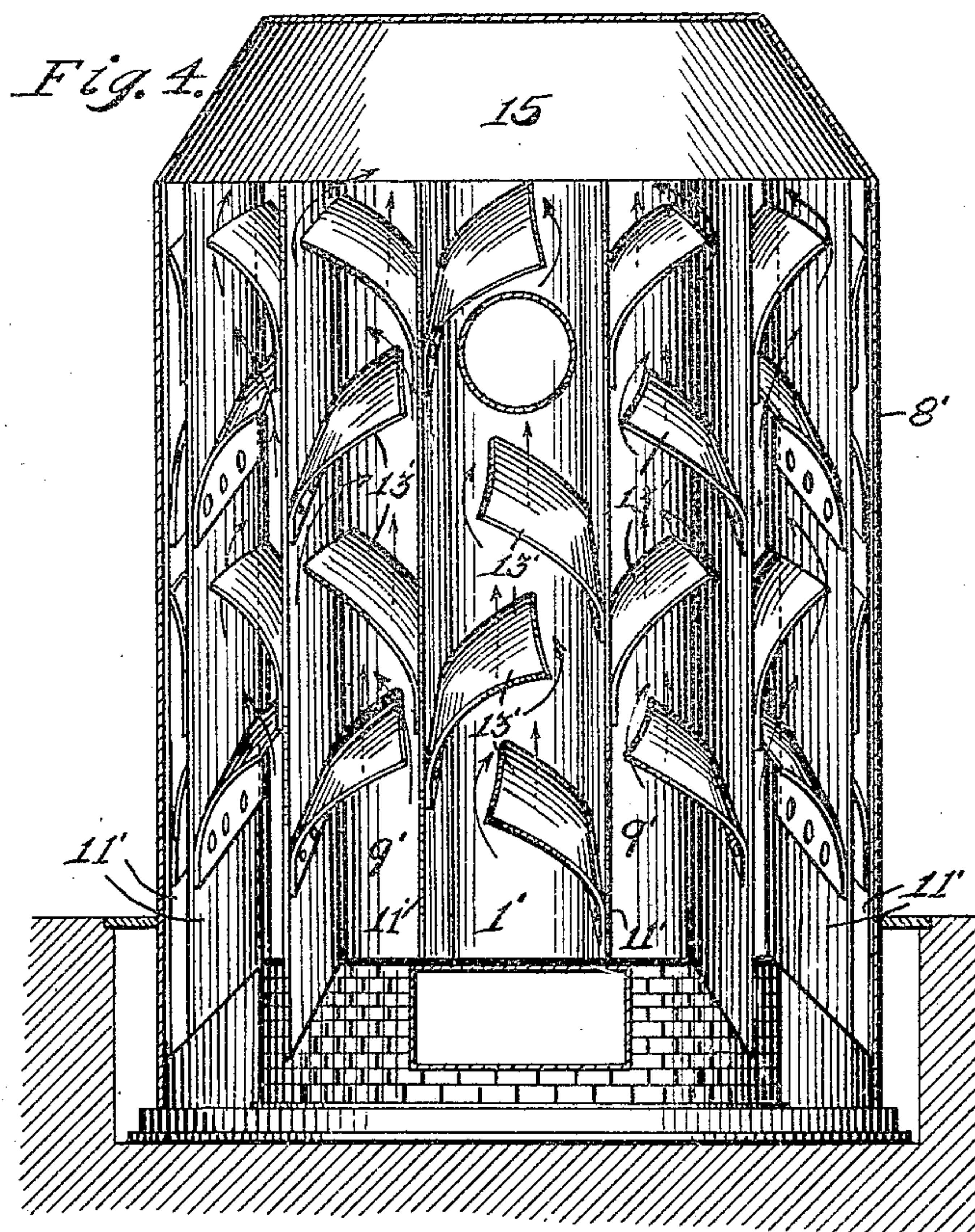
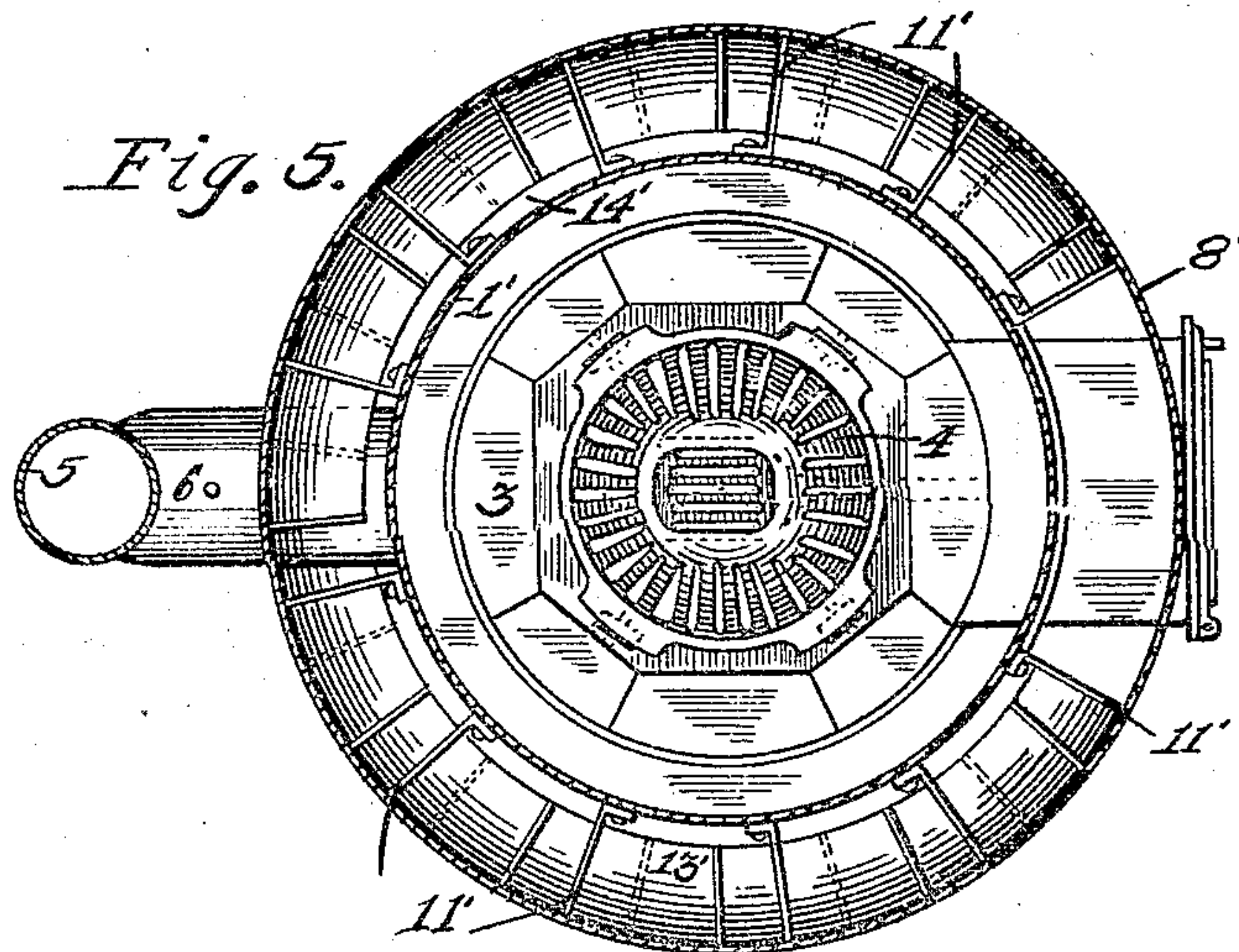
FURNACE.

APPLICATION FILED SEPT. 30, 1909.

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2 SHEETS—SHEET 2.



Witnesses:

C. E. Wells.

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# UNITED STATES PATENT OFFICE.

LOUIS B. PIPER, OF CHICAGO, ILLINOIS.

FURNACE.

955,199.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed September 30, 1909. Serial No. 520,396.

*To all whom it may concern:*

Be it known that I, LOUIS B. PIPER, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Furnaces, of which the following is a specification.

My invention relates to improvements in furnaces and has for its object the production of a furnace of improved construction and operation.

My invention consists in the combination and arrangement of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a vertical section of a furnace embodying my invention, Fig. 2, a horizontal section of Fig. 1, Fig. 3, a partial section on line  $x-x$  of Fig. 1, Fig. 4, a vertical section of a modified form of construction, and Fig. 5, a horizontal section of Fig. 4.

As illustrated in Figs. 1, 2 and 3 the preferred form of construction comprises a square interior radiator chamber 1 supported on suitable supports 2 and provided with the usual fire pot 3 and grate 4. Suitable draft flues 5, 6 and 7 are provided for radiator chamber 1 the operation of which will be readily understood by those skilled in the art. Surrounding radiator chamber 1 is an exterior square casing 8 which incloses an air space 9 around said radiator chamber. Diagonal vertical partitions 10 are secured to chamber 1 at each corner and vertical partitions 11 are secured to the sides of said radiator chamber between said diagonal partitions as shown. To the partitions 10, upwardly and inwardly inclined baffle plates 12 are secured, and similar baffle plates 13 are secured to partitions 11 to alternate with partitions 12 and with each other as shown. A space 14 is left between the inner edges of baffle plates 12 and 13 for the upward passage of air adjacent the walls of chamber 1. A suitable air dome 15 is formed over chamber 1 and one or more furnace pipes 16 are designed to lead therefrom to the registers. By this construction it will be observed that air will be drawn into the chamber 9 and follow an upward tortuous path through baffle plates 12 and 13 into air dome 15 whence it will pass to register pipes 16. In its passage through chamber 9 the

air will be retarded and thoroughly heated by the action of the baffle plates 12 and 13, the upward and inward inclination of which constantly tends to cause said air to pass through spaces 14 adjacent the outer walls of radiator chamber 1 which, of course, are the hottest available portions of the furnace.

In the form of construction illustrated in Figs. 4 and 5 the radiator chamber 1' and casing 8' are made cylindrical in form, and radiating vertical partitions 11' are provided in air chamber 9'. Upwardly and inwardly inclined baffle plates 13' are secured to partitions 11' with their inner edges located at a short distance from chamber 1' so as to leave air passage 14' adjacent thereto.

While I have illustrated and described the preferred construction for carrying my invention into effect this is capable of variation or modification without departing from the spirit of my invention. I, therefore, do not wish to be limited to the exact details of construction set forth but wish to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a furnace, the combination of an interior radiator chamber; an exterior casing surrounding said radiator chamber and spaced therefrom; upright partitions in the space between said radiator chamber and said casing; and alternating baffle plates on said partitions, the said baffle plates being given an upward and inward inclination, substantially as described.

2. In a furnace, the combination of an interior radiator chamber; an exterior casing surrounding said radiator chamber and spaced therefrom; upright partitions in the space between said radiator chamber and said casing; and alternating baffle plates on said partitions, the baffle plates being given an upward and inward inclination, and of such width as to leave a space between their inner edges and said radiator chamber, substantially as described.

3. In a furnace, the combination of a square interior radiator chamber; a square exterior casing surrounding said radiator chamber and spaced therefrom; diagonal vertical partitions secured to said radiator chamber at each corner; vertical partitions secured to the sides of said radiator cham-

ber; and alternating baffle plates on said partitions, the said baffle plates being given an upward and inward inclination, substantially as described.

- 5 4. In a furnace, the combination of a square interior radiator chamber; a square exterior casing surrounding said radiator chamber and spaced therefrom; diagonal vertical partitions secured to the sides of  
10 said radiator chamber; and alternating baffle plates on said partitions, the said baffle plates being given an upward and in-

ward inclination, and of such width as to leave a space between their inner edges and said radiator chamber, substantially as de- 15 scribed.

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

LOUIS B. PIPER.

Witnesses:

HELEN F. LILLIS,  
JOSHUA R. H. POTTS.