

P. B. & L. J. HECKLER.
FURNACE.
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913,496.

Patented Feb. 23, 1909.

Fig. 1.

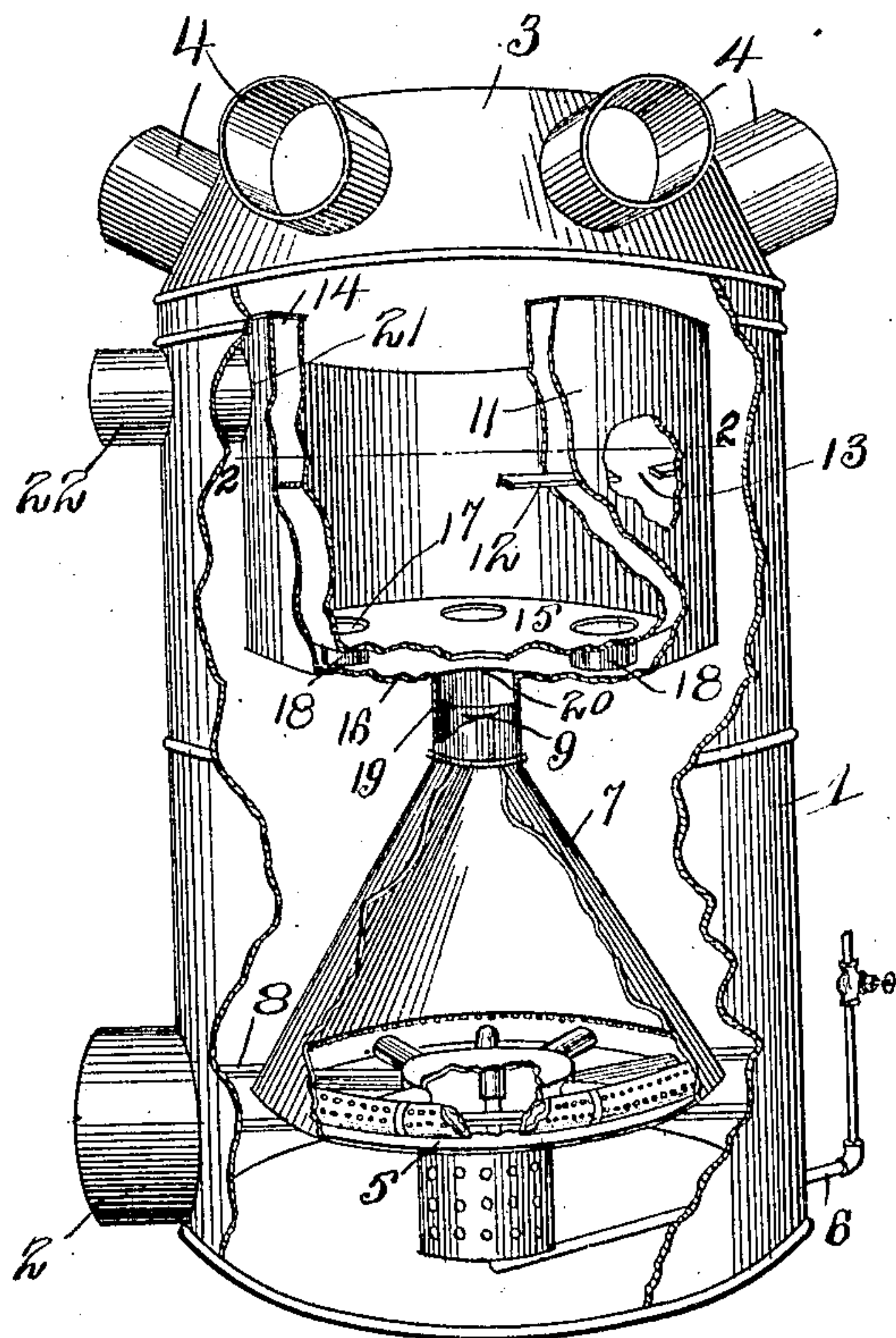
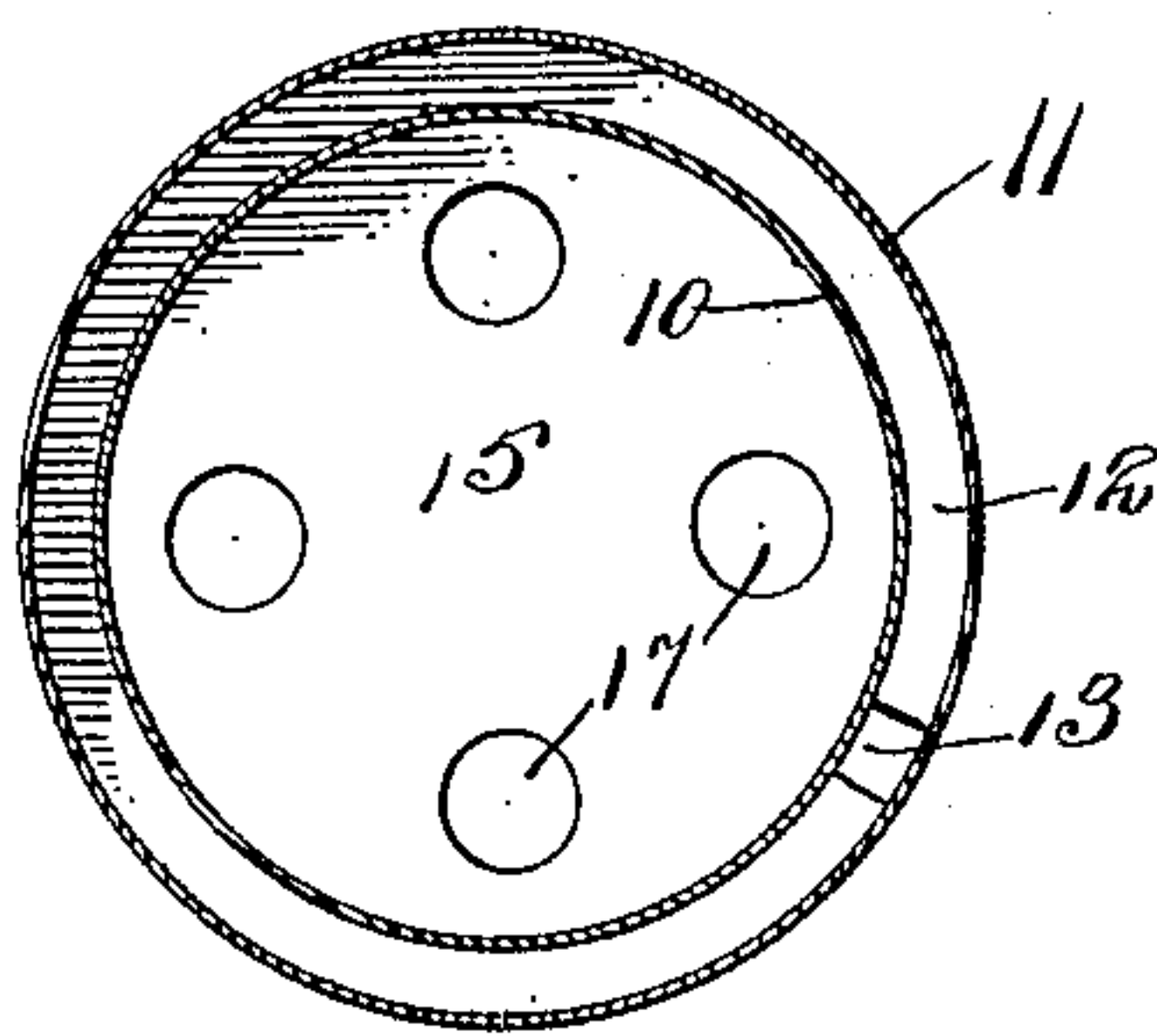


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

PHILIP B. HECKLER AND LOUIS J. HECKLER, OF SHERADEN, PENNSYLVANIA.

FURNACE.

No. 913,496.

Specification of Letters Patent.

Patented Feb. 23, 1909.

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To all whom it may concern:

Be it known that we, PHILIP B. HECKLER and LOUIS J. HECKLER, citizens of the United States of America, residing at Sheraden, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Furnaces, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to hot air furnaces and its primary object is, to provide a furnace having an extended radiating surface to insure a thorough circulation of the incoming cold air and a consequent heating thereof before it reaches the outlets.

A further object of the invention is to provide a hot air furnace with a revoluble radiator to facilitate the connection therewith of the discharge flue pipe.

20 A further object of the invention is to improve the details of construction of this class of furnaces.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawing which forms a part of this specification, and its novel features will be defined in the appended claim.

25 In the drawing;—Figure 1 is a view in perspective of a furnace embodying the invention, the shell or casing and other parts of the structure being broken away to show the interior construction, and, Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

30 The reference numeral 1 designates the cylindrical shell or casing of the furnace provided at its base with a cold air inlet 2. The top 3 of the shell is of the usual tapering contour, and provided with radially disposed hot air outlets 4.

35 Within the base of the shell is arranged a gas burner 5 of any approved construction, connected to a gas supply pipe 6. A conical hood 7 fits over the burner 5, said hood resting on suitable cleats 8 secured to the walls of the furnace shell, and having a tubular outlet 9 at its apex.

40 The radiator comprises two cylindrical cup-shaped members 10 and 11, one arranged within the other and the inner of said members being of such diameter and such height with respect to the outer of said members as to form a heating space. Interposed between the body portion of said members is a partition 12 which divides the heating space.

45 The partition 12 is formed with an opening 13 for the passage of the products of com-

bustion from the upper to the lower portion of the heating space. The partition 12 also constitutes a brace for the body portions of said members so as to retain them apart. 60 The heating space between said members is closed at its top through the medium of a flat ring 14 which is formed integral with the top of the body portion of each of the members. The bottom of the inner member is indicated by the reference character 15 and that of the outer member by the reference character 16, the same bottom being provided with openings 17, the openings in the bottom 15 alining with the openings in the bottom 16 70 and said alining openings are connected by short pipes 18.

Depending centrally from the bottom 16 of the outer member of the radiator is a pipe 19 which communicates with a central opening 20 in the said bottom 16, and also fits upon the pipe 9 of the conical hood 7, the fitting between the pipe 19 and 9 being in the form of a slip joint and by such manner of connecting the pipes 19 and 9 together it 80 permits of the radiator being turned to bring its discharge flue opening 21 into alinement with the flue pipe 22 for connecting the flue 21 with the flue in the wall of a building.

The shell 1 of the furnace is adapted to be 85 provided with an opening at any desired point to receive the flue pipe 22.

The operation of the furnace constructed as thus described will be readily understood. The products of combustion are confined by 90 the hood 7 and pass therefrom through the pipes 9 and 19 into the heating space formed between the two members of the radiator circulating within said space being baffled by the partition 12, and finally escaping through 95 the opening 13, and the upper portion of the space between the radiator shells to the discharge flue 22. Cold air entering through the pipe 2 first circulates around the conical hood, and then around the outer member of 100 the radiator and through the pipes 17 to the interior of the outer member, finally passing out after being thus thoroughly heated, through the pipes 4, leading to the apartments to be heated. 105

It will be observed that the improved construction affords an extended area of heating surface over which the incoming air passes before it reaches the distributing hot air pipes, and hence a thorough heating of the 110 air is insured.

As the discharge flues in buildings are fre-

quently located at points where the back of a furnace cannot be conveniently connected therewith, the adjustability of the radiator to adapt its flue opening to be alined with
5 the discharge flue at any point is a feature of importance.

Having fully described our invention what we claim as new and desire to secure by Letters Patent, is;—

10 In a hot-air furnace, the combination with the shell thereof, of a burner arranged at the bottom of the shell, transversely extending supports for said burner, a conical shaped hood arranged over the burner and provided
15 with a vertically-extending discharge pipe at the apex thereof, an air inlet at the bottom of the shell, a radiator arranged within the shell in close proximity to the top thereof and embodying two cylindrical cup shaped mem-
20 bers, one arranged within the other, said inner member of such diameter and of such height with respect to said outer member as to form a heating space between the two members, a flat circular partition arranged
25 in the vertical portion of said heating space

approximately centrally the ends of said partition being spaced from each other whereby communication is established between the upper and lower part of the vertical portion of the heating space, means for closing the
30 upper end of the vertical portion of the heating space, and slip joint connection between the hood and the radiator, said connection establishing communication between the interior of the hood and the heating space,
35 means extending through the bottoms of said members for establishing communication between the interior of the inner member and the space below the bottom of the outer member, means for establishing com-
40 munication between the heating space and the atmosphere, and a series of distributing pipes projecting from the top of said shell.

In testimony whereof we affix our signatures in the presence of two witnesses.

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