

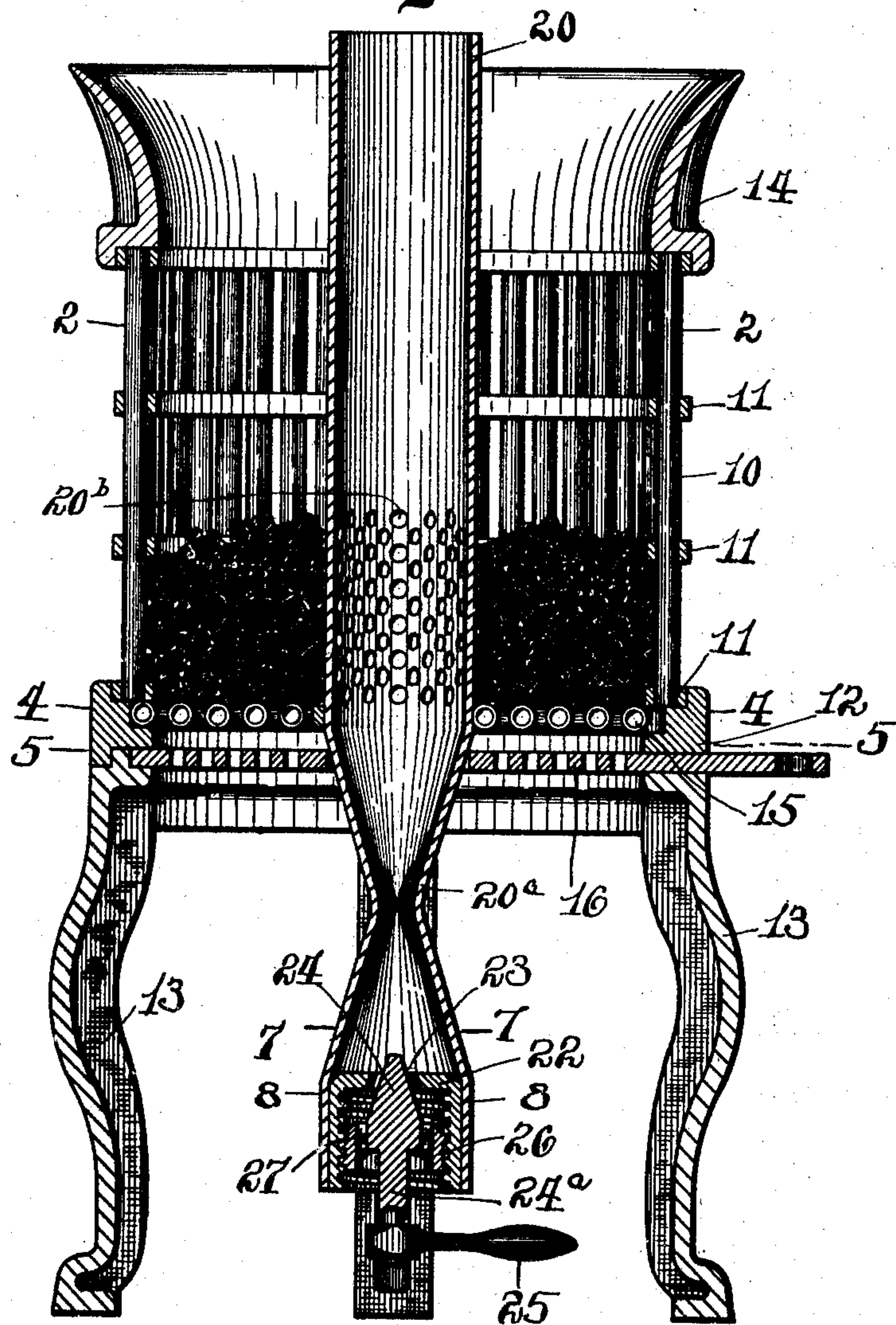
No. 850,260.

PATENTED APR. 16, 1907.

E. J. SELLEY.  
STOVE OR FURNACE.  
APPLICATION FILED OCT. 6, 1906.

2 SHEETS—SHEET 1.

**Fig.1**



**WITNESSES:**

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Frank L. Stubbs.  
M. J. O'Donnell

*INVENTOR.*

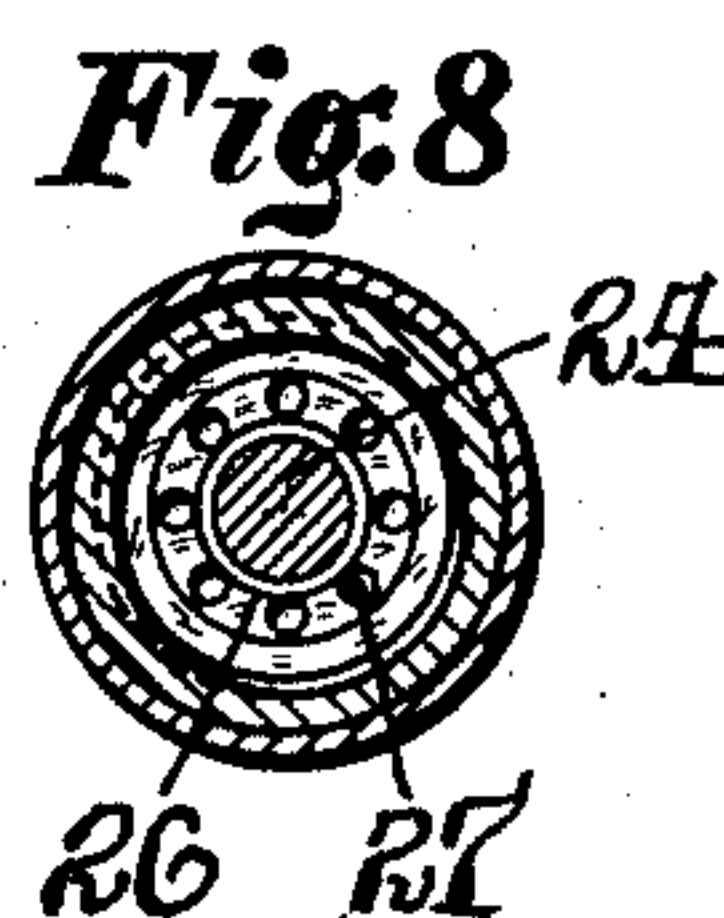
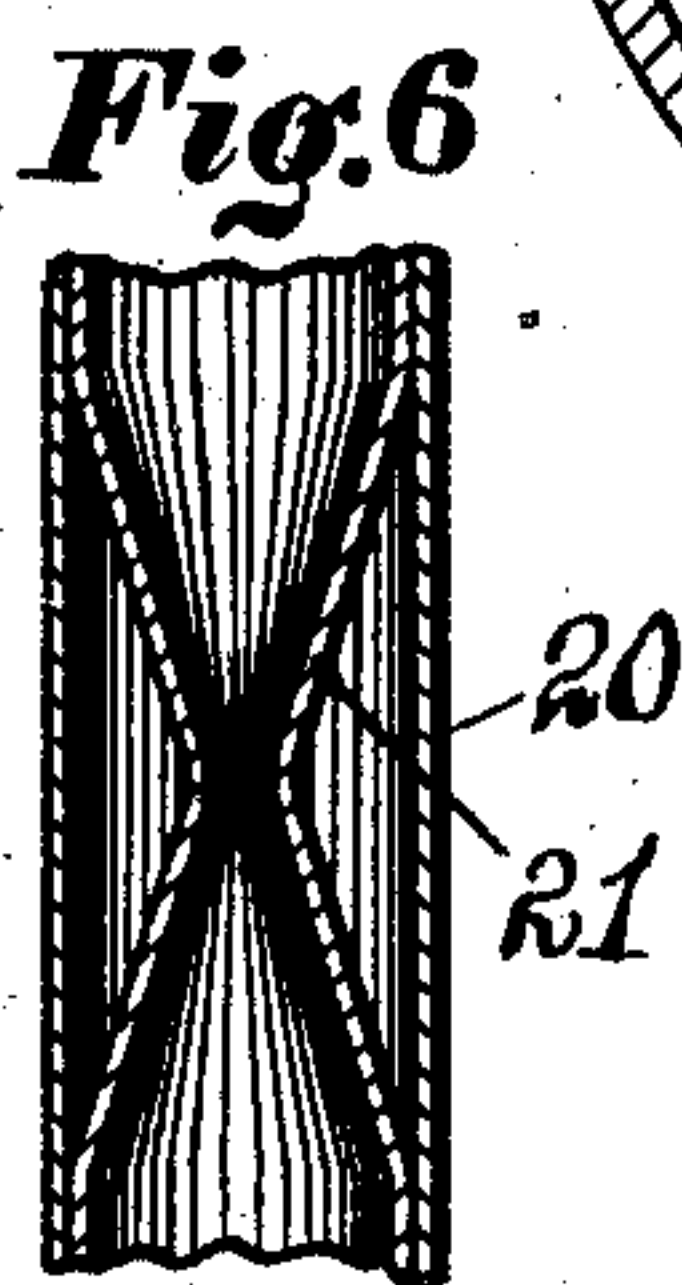
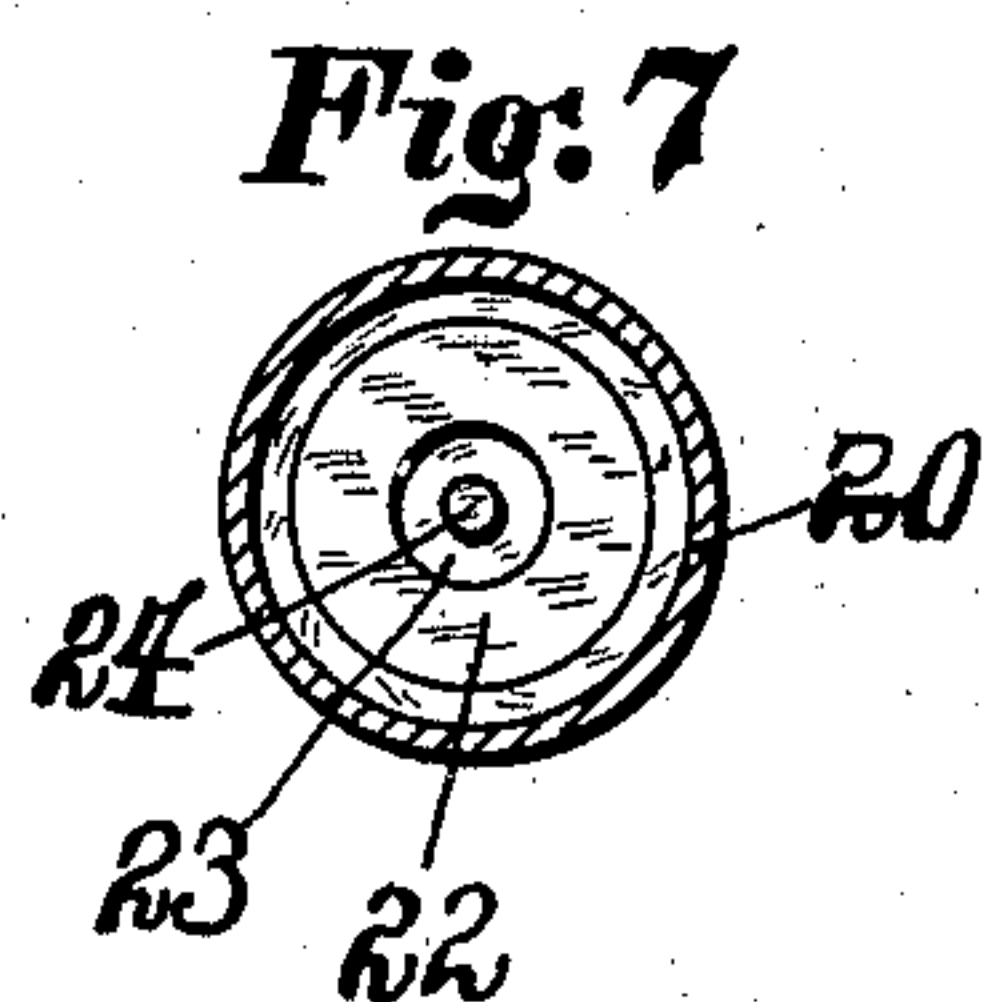
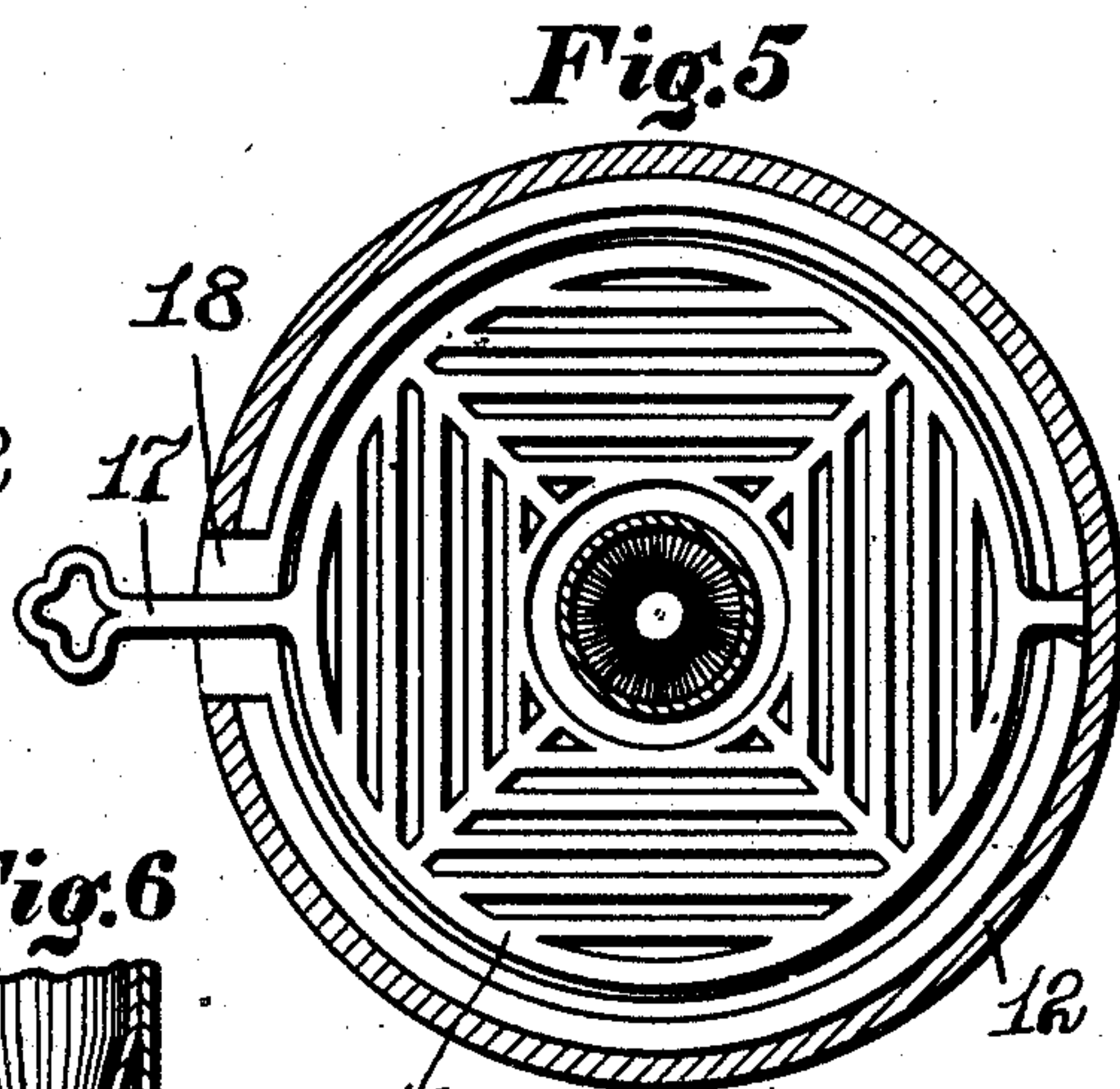
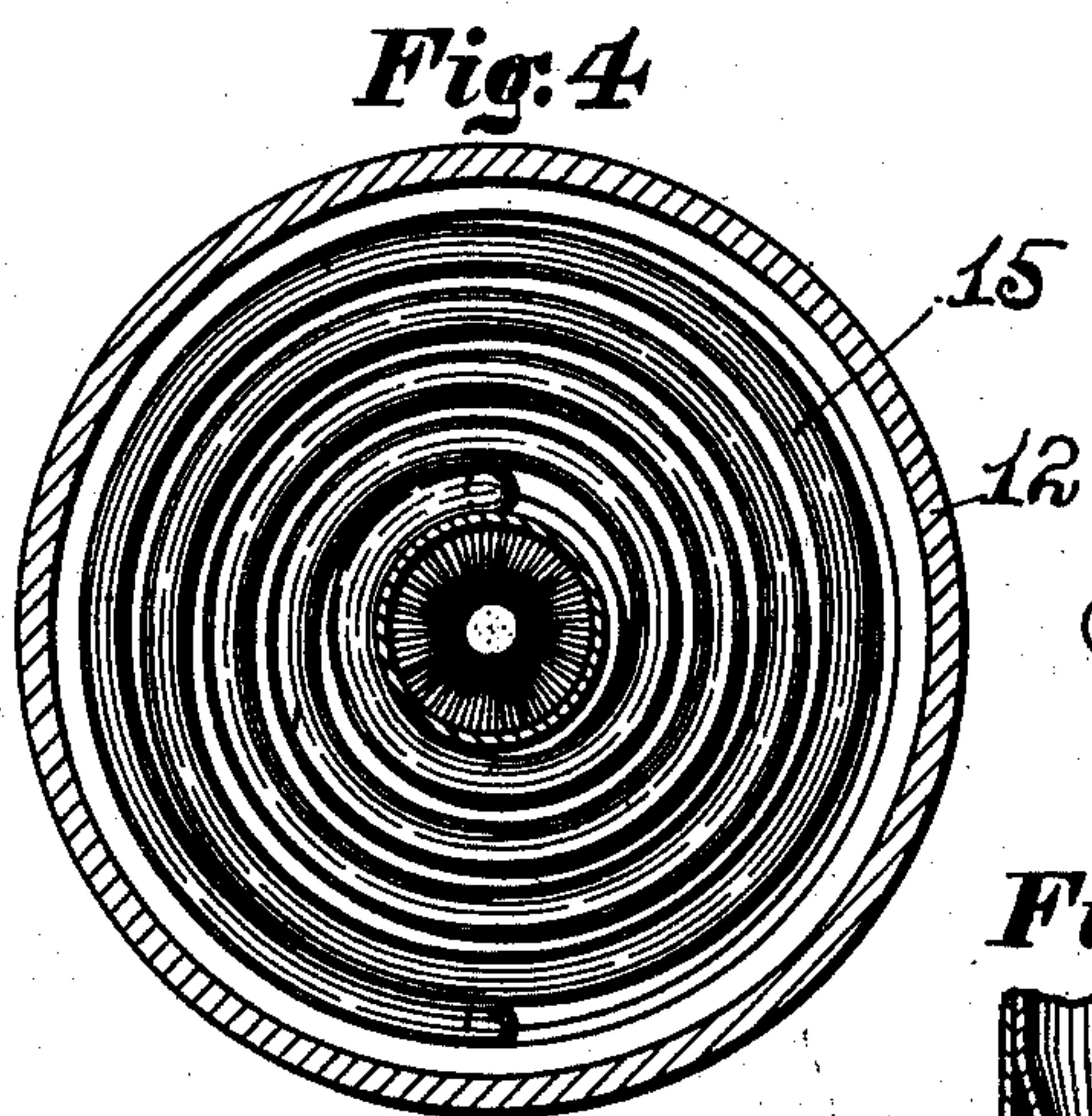
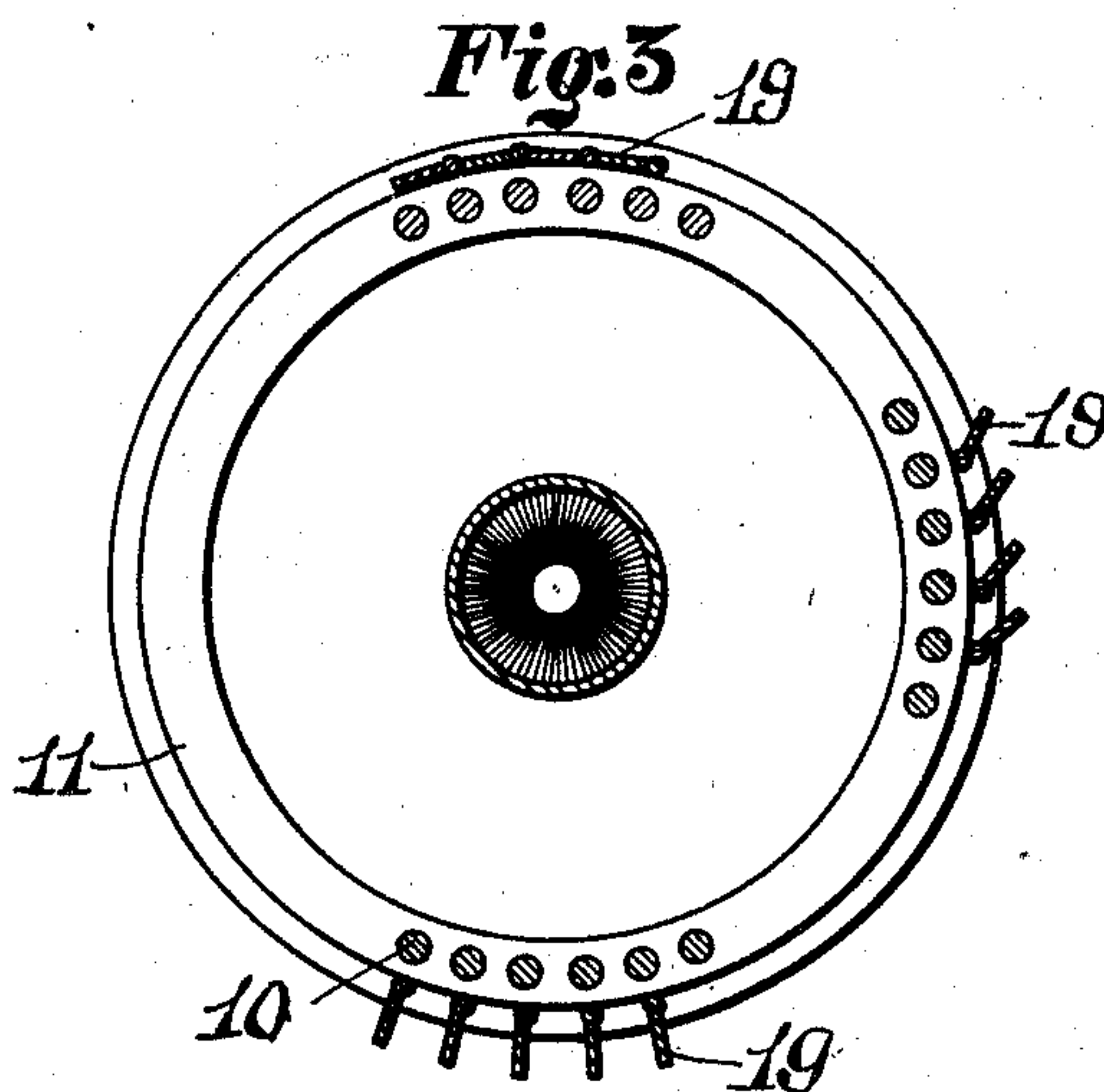
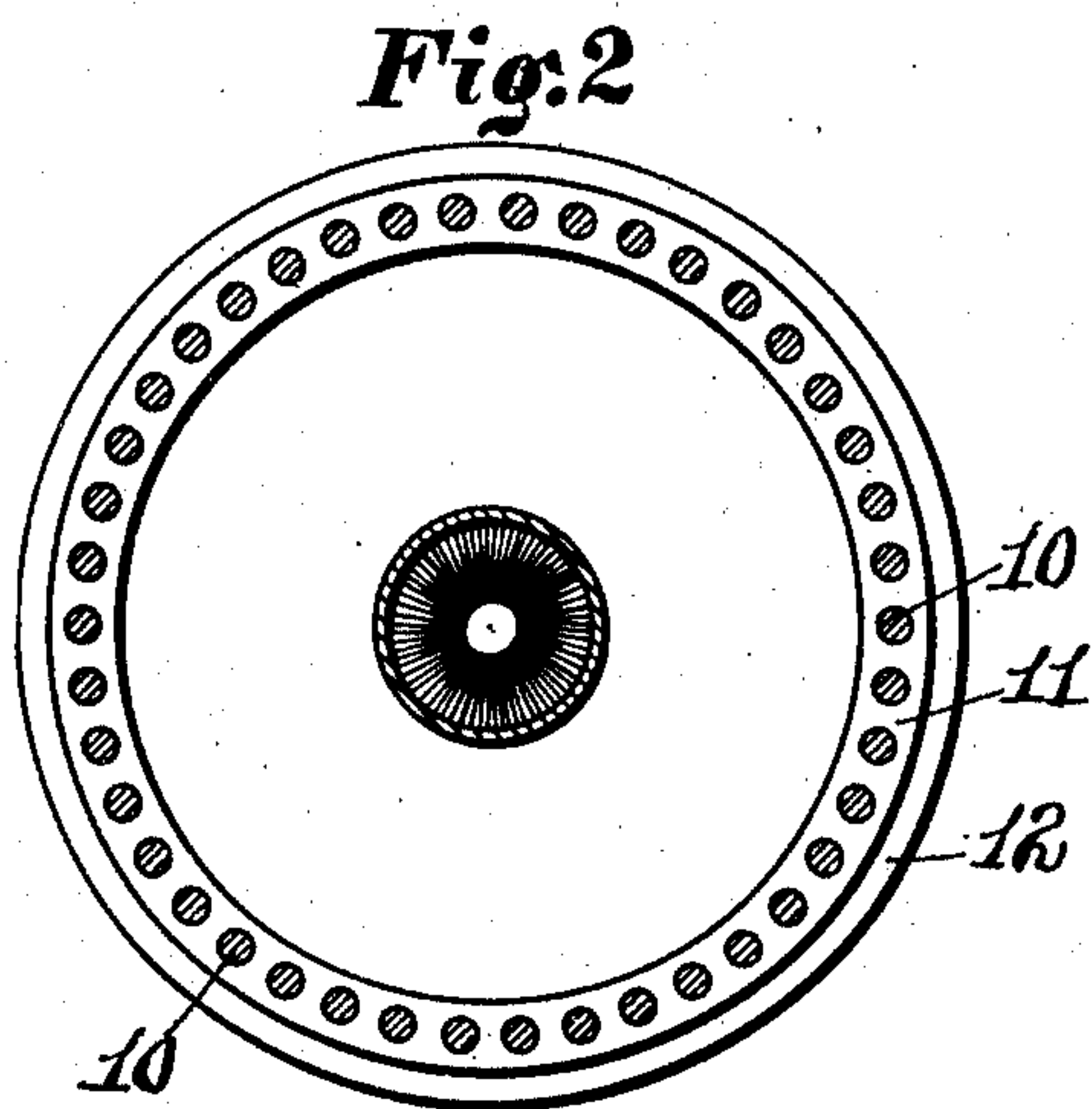
INVENTOR.  
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2 SHEETS—SHEET 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

EDWIN J. SELLEY, OF NEW YORK, N. Y.

## STOVE OR FURNACE.

No. 850,260.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed October 6, 1906. Serial No. 337,827.

*To all whom it may concern:*

Be it known that I, EDWIN J. SELLEY, of the city, county, and State of New York, have invented a new and Improved Stove or Furnace, of which the following is a full, clear, and exact description.

My invention relates to improvements in stoves or furnaces which burn coal; and the object of my invention is to produce a structure of simple design which is very much more efficient than the ordinary coal-burning stove or furnace, for the reason that it has an independent burner or mixing-chamber for gas thrown off by the coal and for the coal itself, or rather for the carbon.

My invention is further intended to produce a structure which is comparatively inexpensive, which will produce a great deal of heat from a given quantity of fuel, and which can be advantageously used to generate steam or heat water, particularly so as the water-heating means serves the further purpose of supporting the fuel-body. In this way I economize space and material as well as fuel and am able to make my heating-coil do double work, as will hereafter appear.

A further object of my invention is to arrange the draft of the gas-burning part of the device so that it can be made practically a forced draft, if desired, and so that the right admixture of air with the gas can easily be made.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section of a stove or heater embodying my invention. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a similar section, but showing only a portion of rods forming the heater or stove sides and illustrating a shutter-like means for inclosing the sides. Fig. 4 is a cross-section on the line 4 4 of Fig. 1. Fig. 5 is a cross-section on the line 5 5 of Fig. 1. Fig. 6 is a detail of a modified means for regulating the air-intake. Fig. 7 is a cross-section on the line 7 7 of Fig. 1. Fig. 8 is a cross-section on the line 8 8 of Fig. 1.

The heating device, which, as stated, can be either a stove or furnace, has a fire-box

formed of the vertical rods 10, which are spaced and strengthened by the rings 11, through which the rods extend, thus producing a slat-like or cage-like structure, and at the bottom the fire-box is supported on a base-ring 12, which can be mounted on legs 13 or can be supported in any convenient way which will permit the ingress of air, and at the top the fire-box has a suitable casting 14 in the form of a ring, into and through which the coal can be shoveled to the fire-box.

The coal body is supported on a coil of pipe 15, which can have any usual water connections for circulation purposes, and as the members of the coil are spaced apart slightly the coil serves the purpose of a grate in supporting the fuel, and as it is in actual contact with a body of live coals it will be quickly and efficiently heated. This is especially true because of the lower grate 16, which is located just below the pipe-coil, and the finer particles will settle through the coil upon the grate 16, so that the coil will be actually embedded in coals to a certain extent.

The grate 16 can be of any approved construction, and it has a handle 17 extending through an opening 18 in the ring 12, so that it can be conveniently shaken.

In Fig. 3 I have shown a means for inclosing the fire-box; but in this structure I have shown only a portion of the rods 10 and a corresponding number of narrow shutters 19, which are pivoted on the outer sides of the fire-box, and these can be closed, as at the top in Fig. 3, partly open, as at the right-hand of the same figure, or open wide, as shown in the bottom of the same figure. In this way I can admit more or less air, as required, to the sides of the fire-box, and so regulate the draft and the amount of heat radiated.

An important feature of the invention is the stack 20, which extends vertically through the fire-box and well below it to insure a powerful draft, and has means for admitting air at the bottom and has also numerous perforations 20<sup>b</sup> opposite the fuel-bed through which the gas can pass, and so the gas will be burning in the stack while the carbon is burning in the coal mass. To get the best results, means must be employed for regulating the admission of air to the stack, and I have found that by reducing the stack at a point below the heater-body, as shown at 20<sup>a</sup>, thus producing a double-funnel effect or the effect of opposed frustums of cones with their



smaller ends together, the air-draft is greatly increased, and in fact can be made very strong. A similar effect can be had by leaving the stack 20 full size and putting reducing-plates 21 within it, as shown in Fig. 6. The particular structure set forth is all right; but it will work as well even if the smaller ends of the funnel portions of the stack are removed slightly from each other.

To still further regulate the air-intake, some sort of regulating means must be had at the lower end of the pipe 20, and I have shown a needle-valve arrangement which is substantially like that used in common forms of Bunsen burners, and in fact the stack and its accessories constitute in reality a large Bunsen. The regulating means shown comprises in part a shell 22, which is fitted into the lower end of the stack 20 and is internally screw-threaded, the said shell having an opening 23 through the top, which opening can be regulated by a needle-valve 24, which extends into it. The needle-valve 24 has its stem 24<sup>a</sup> connected to a handle 25, which is mounted in a sleeve-nut 26, which fits in the thread of the shell 22, and which has numerous air-openings 27. (See Figs. 1 and 8.) Thus by regulating the needle-valve the amount of air admitted to the tube or stack 20 can be nicely controlled, and the construction of the stack or tube above the valve causes the air to be sucked in very fast, after which it mixes with the gas passing through the openings 20<sup>b</sup> and is burned in the upper part of the stack or tube 20, which serves as a mixing-chamber.

From the foregoing description it will be readily seen that the design which I have shown is not very material, that the essential thing is to have a cage-like fire-box with what is practically a Bunsen tube extending vertically through it and with means for regulating the air-intake and also for using the fuel-support as a water-heater. It will be of course clearly understood that the stove or furnace or heater which I have shown and described can be adapted for many purposes, either as a heater of some specific thing or as a heat-radiator.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A stove or furnace comprising a fire-box having a Bunsen tube or stack extending vertically through it, said stack having means for admitting gas from the fire-box and being reduced in diameter below the fire-box.

2. A stove or furnace comprising a fire-box and a vertical stack opened at both ends and perforated to admit gas from the fire-box, said stack being contracted intermediate its ends, the said contraction being beneath the fire-box and a controlling-valve located at one end of the stack.

3. A stove or furnace comprising a fire-box, a stack opened at both ends extending vertically through the fire-box and provided with perforations to receive gas from the fire-box, said stack being contracted intermediate its length, said contraction being beneath the fire-box.

4. A stove or furnace comprising a fire-box having a tube or stack extending vertically through it with gas-openings through the stack and within the fire-box, said stack having a restricted air-passage below the fire-box and means for regulating the admission of air.

5. A structure such as described comprising a fire-box, having skeleton sides, shutters carried by the sides a stack extending vertically through it with gas-openings communicating with the fire-box, a pipe-coil forming the bottom of the fire-box, and means for regulating the flow of air into the stack.

6. A structure such as described comprising a skeleton-like fire-box having a Bunsen stack extending vertically through it and receiving its gas-supply from the fire-box, a pipe-coil forming the bottom of the fire-box, and a grate below the pipe-coil.

7. The combination with a fire-box adapted to contain coal, of a Bunsen stack extending through the fire-box, said stack receiving its gas-supply from the fuel in the fire-box being contracted intermediate its ends said contraction being beneath the fire-box.

8. A structure such as described comprising a skeleton-like fire-box having a Bunsen stack extending vertically through it, and to a point well below the fire-box, and receiving its gas-supply from the fire-box, said stack being contracted intermediate its ends said contraction being beneath the fire-box.

9. A structure such as described comprising a fire-box to contain coal, a Bunsen stack extending vertically through the fire-box and to a point well below it, the said stack having means for admitting gas from the fire-box, a pipe-coil forming the bottom of the fire-box, and a grate below the pipe-coil.

EDWIN J. SELLEY.

Witnesses:

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HENRY C. LEE.