

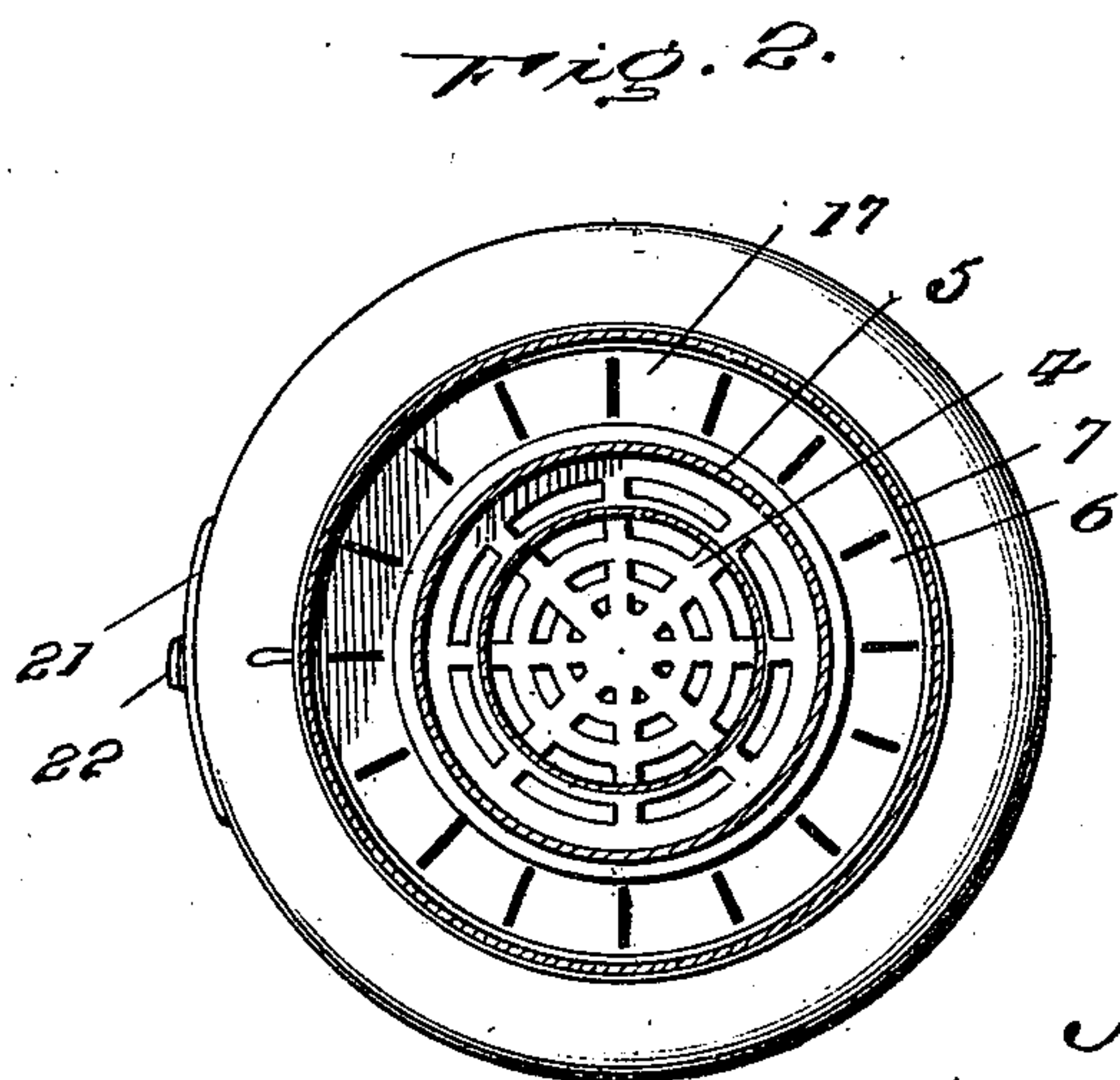
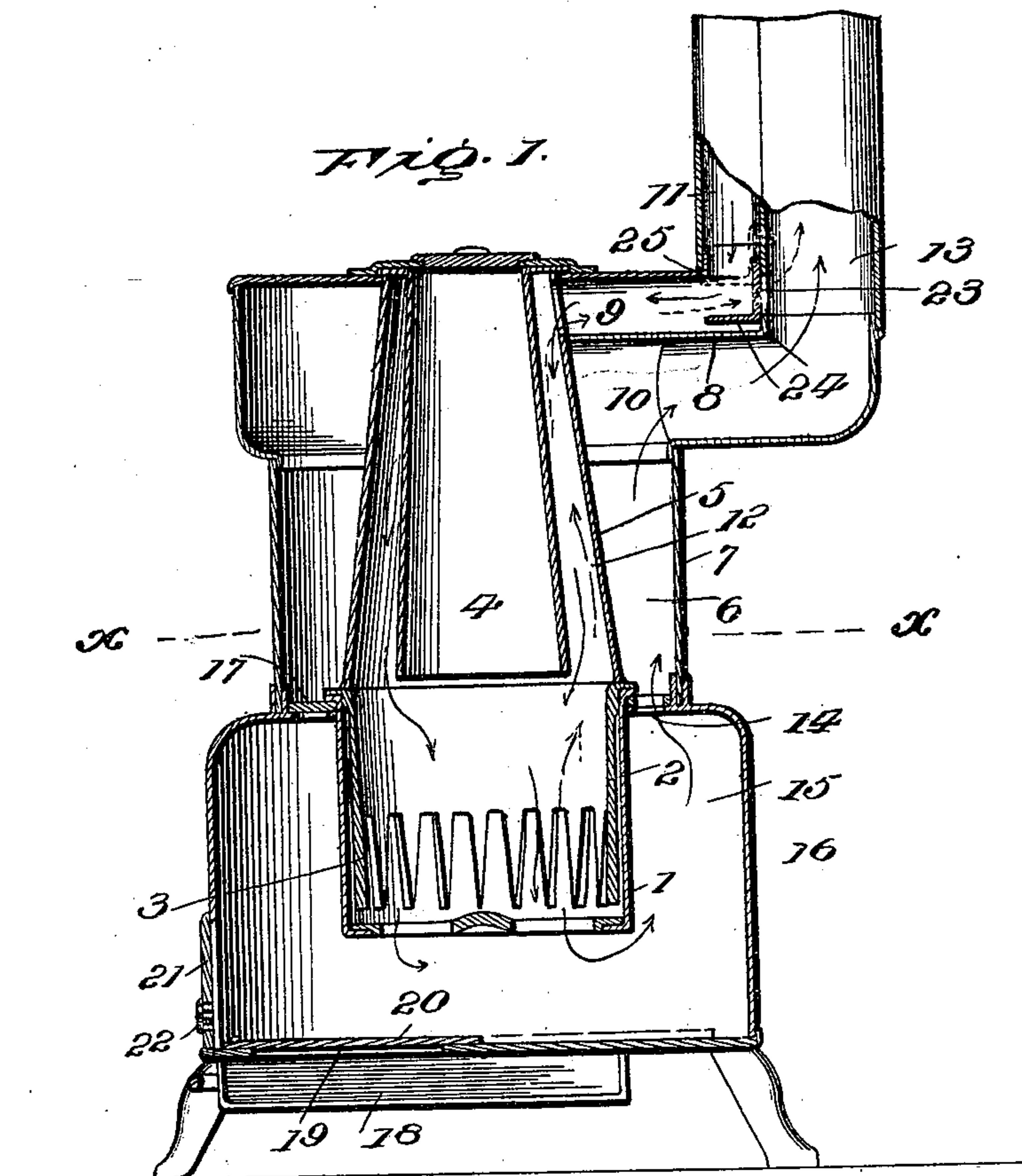
No. 665,436.

Patented Jan. 8, 1901.

J. W. HEUER.
HEATING STOVE.

(Application filed Mar. 9, 1900.)

(No Model.)



Inventor

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HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 665,436, dated January 8, 1901.

Application filed March 9, 1900. Serial No. 8,040. (No model.)

To all whom it may concern:

Be it known that I, JOHANN WILLIAM HEUER, a citizen of the United States, residing at Dixon, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Heating-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to heating-stoves, the chief objects being to secure a combustion of gaseous products, hence economy in the consumption of fuel; to purify the room in which the heater is located by drawing off the foul and vitiated air from the upper portion of the room; to secure uniformity or an equalization of the temperature of an apartment without producing harmful drafts, and, lastly, to provide novel means for securing a direct draft through the stove either in a downward or an upward direction, as required to attain the desired end.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of a heating-stove constructed in accordance with and embodying the essential features of the invention, the dotted lines showing an adjusted position of the cut-off in the ash-pit and the damper in the induction-pipe. Fig. 2 is a horizontal section on the line X X of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in both views of the drawings by the same reference characters.

The body of the heater may be of any cross-sectional outline and of any make and design, and, as shown, its upper portion is of less diametrical extent than the base-plate. The fire-pot is composed of an outer wall 1 and an inner wall 2, spaced apart a short distance, the outer wall 1 being solid and imperforate

throughout its superficial extent and the inner wall 2 having its upper portion imperforate and its lower portion composed of a series of tapering fingers 3, which project to within a short distance of the lower edge of the wall 1. In order to secure the best results in the downdraft and in the combustion of the gaseous products, it has been found necessary to construct the fire-pot in the manner specified, the imperforate wall 1 causing the gases to travel downward through the major part of the fire, during which travel the particles are consumed.

The heater illustrated is of the self-feeding type, the magazine 4 being suspended from an opening in the top of the stove in any approved way. A shell or casing 5 encircles the magazine 4 and is concentric therewith and extends from the top edge of the fire-pot and connects at its end with the top of the stove, the latter joint being of such a character as to prevent the escape of any gas into the room. The lower end of the magazine 4 terminates a short distance above the plane of the joint formed between the shell 5 and fire-pot, so as to provide ample passage for the draft in either direction. A space 6 is formed between the shell 5 and the outer wall 7 of the stove and is divided at one side, near its upper end, by means of a horizontal partition 8 into compartments 9 and 10, the former being in communication with the induction-pipe 11 and the space 12, formed between the magazine 4 and shell 5, and the latter compartment being in communication with the space 6 and the eduction or smoke pipe 13.

An annular partition 14 is located at the lower end of the space 6 and separates it from the space 15, inclosed by the base portion 16 of the stove. This partition 14 is formed at regular intervals with slots or draft-openings, which are adapted to be controlled by a damper 17, corresponding in construction to the partition 14, said damper having openings corresponding in position and size with the openings of the partition 14. This damper 17 is adapted to be moved from the outside of the stove, so as to close the openings in the partition 14 to a greater or less extent or to entirely cut off communication between the spaces 6 and 15.

An ash-pan 18 is suspended from the bot-

tom plate of the stove and is slidable in ways applied thereto and has communication with the ash-pit by means of an opening 19, formed in the bottom of the stove adjacent to its front side, said opening being closed by means of a slide 20, movable in guides applied to the top side of the bottom plate. When it is required to remove the ashes and cinders from the ash-pit, the slide 20 is moved rearward, as shown by the dotted lines, thereby uncovering the opening 19, when by a proper manipulation of a poker or like instrument the ashes may be caused to drop into the ash-pan through the opening 19, and after the ash-pit has been cleared the slide 20 is drawn forward to cover the opening 19. The ash-pan can now be removed to dump the ashes in a suitable receptacle or place of deposit. Access is had to the ash-pit and space 15 by means of the door 21, and this door is provided in its lower portion with a damper 22, of any approved construction, by means of which direct draft may be controlled in the manner well understood.

The pipes 11 and 13 may be fitted to the parts 9 and 10 of the heater in any convenient way and are of different diameters, the smoke-pipe 13 being of larger cross-sectional area than the induction-pipe 11. The smoke-pipe connects with the chimney or flue in the usual manner, and the induction-pipe 11 extends to a suitable height in the room containing the heater, so as to draw off the impure air and supply the same to the fire. The pipes 11 and 13 communicate at their lower ends, as shown at 23, and this opening is controlled by means of a damper 24 of substantially L form, the vertical member adapted to close against the opening 23 and the horizontal member adapted to close the lower end of the induction-pipe 11 and its juncture with the compartment 9, as shown at 25. This damper 24 is adapted to be moved from the outside of the stove in any convenient manner.

In operation and when the dampers 22 and 24 are closed the draft through the stove will be as follows and as indicated by the full arrows, namely: The air entering the upper end of the pipe 11 passes downward therethrough into the compartment 9, thence through the space 12 into the fire-pot, through the fire into the space 15, thence upward into the space 6, through the damper-controlled partition 14, and thence through the compartment 10, making its exit through the pipe 13. This draft can be modified by regulating the dampers 17 and 24, as will be readily comprehended. Upon moving the damper 24 so as to close the lower end of the induction-pipe 11 and closing the damper 17 and opening the damper 22 the draft will be direct, as indicated by the dotted arrows—that is, entering the space 15 it will pass through the fire-pot, space 12, compartment 9, and through opening 23 into the

pipe 13. Upon moving the damper 24 so as to partly uncover the opening 23 the intensity of the downdraft through the stove is modified. The disposition of the parts is such that an uncovering of the opening 23 results in reducing the space at the inner or outer end of the induction-pipe 11 proportionate to the extent of the opening 23 disclosed. Hence the volume and intensity of the downdraft can be regulated to meet varying conditions.

Having thus described the invention, what is claimed as new is—

1. In combination, a fire-pot, and two passages in communication therewith, one at the top and the other at the bottom thereof, the passage communicating with the top of the fire-pot being open to the atmosphere and said passages being in communication with an exit-flue, of a damper adapted when in one position to close the passage which communicates with the atmosphere, and when in the other position to close the communication between the said passage and the exit-flue.

2. In combination, a fire-pot, two concentric annular passages in communication therewith, one at the top and the other at the bottom thereof, an induction-pipe in communication at its upper end with the atmosphere and at its lower end with the upper portion of the inner annular passage, and a smoke-pipe connecting with the upper end of the outer annular passage and having communication with the said inner annular passage, of a damper adapted when in one position to cut off communication between the induction-pipe and the inner annular passage, and when in the other position to close the communication between the said passage and the smoke-pipe, substantially as described.

3. In combination, a fire-pot, two concentric annular passages in communication therewith, one at the top and the other at the bottom thereof, a damper-controlled opening in communication with the lower portion of the outer annular passage below the fire-pot, an annular damper about midway of the outer annular passage, an induction-pipe in communication with the atmosphere and with the upper portion of the inner annular passage, and a smoke-pipe connecting with the upper portion of the outer annular passage and having communication with the said inner annular passage, of a damper adapted when in one position to cut off communication between the induction-pipe and the inner annular passage, and when in the other position to close the communication between the said passage and the smoke-pipe, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

J. WILLIAM HEUER. [L. S.]

Witnesses:

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FRITZ CLAUSEN.