

No. 696,773.

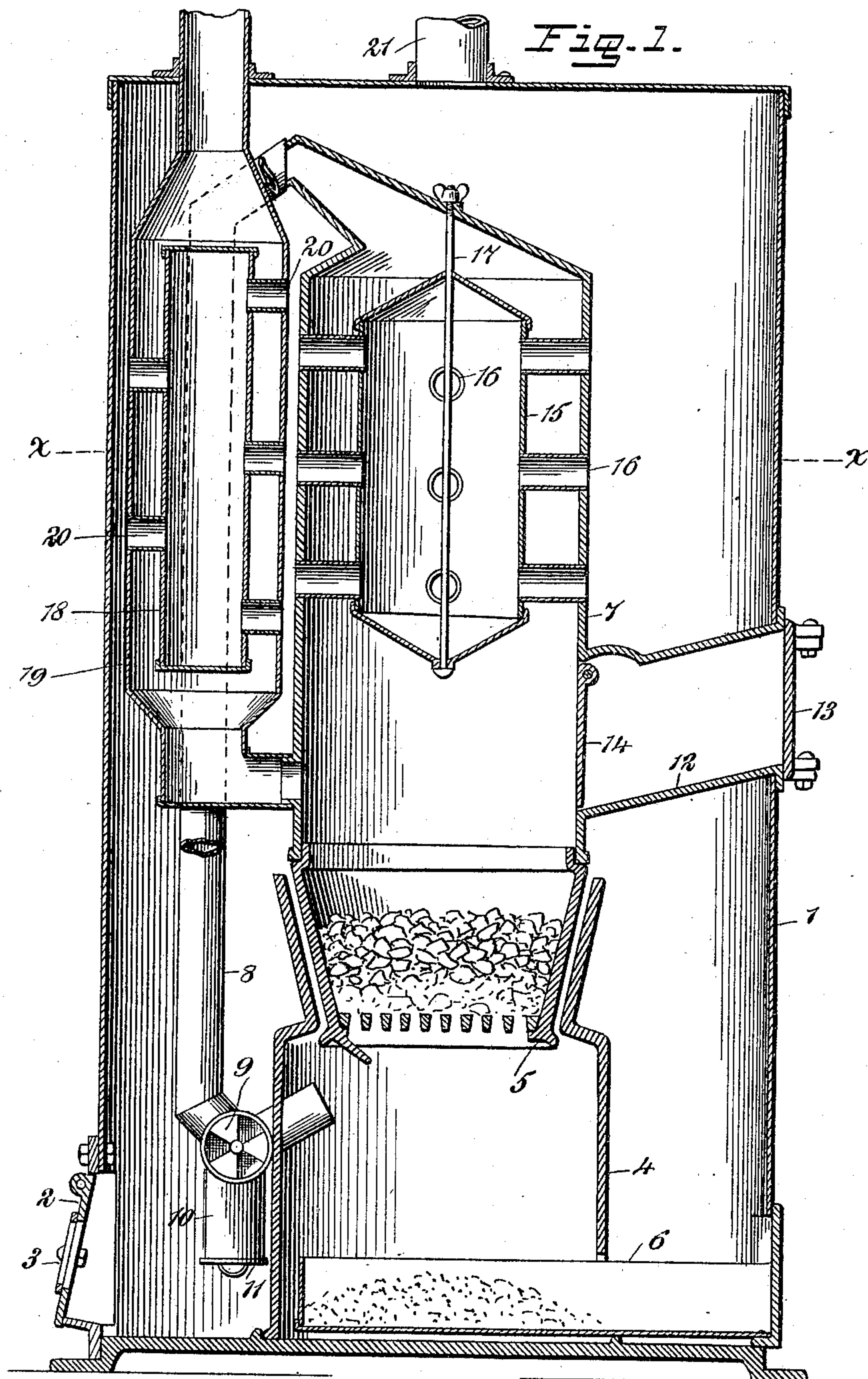
Patented Apr. 1, 1902.

W. M. THOMAS & L. VAN SCOYOC
HEATER.

(Application filed Oct. 7, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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William M. Thomas
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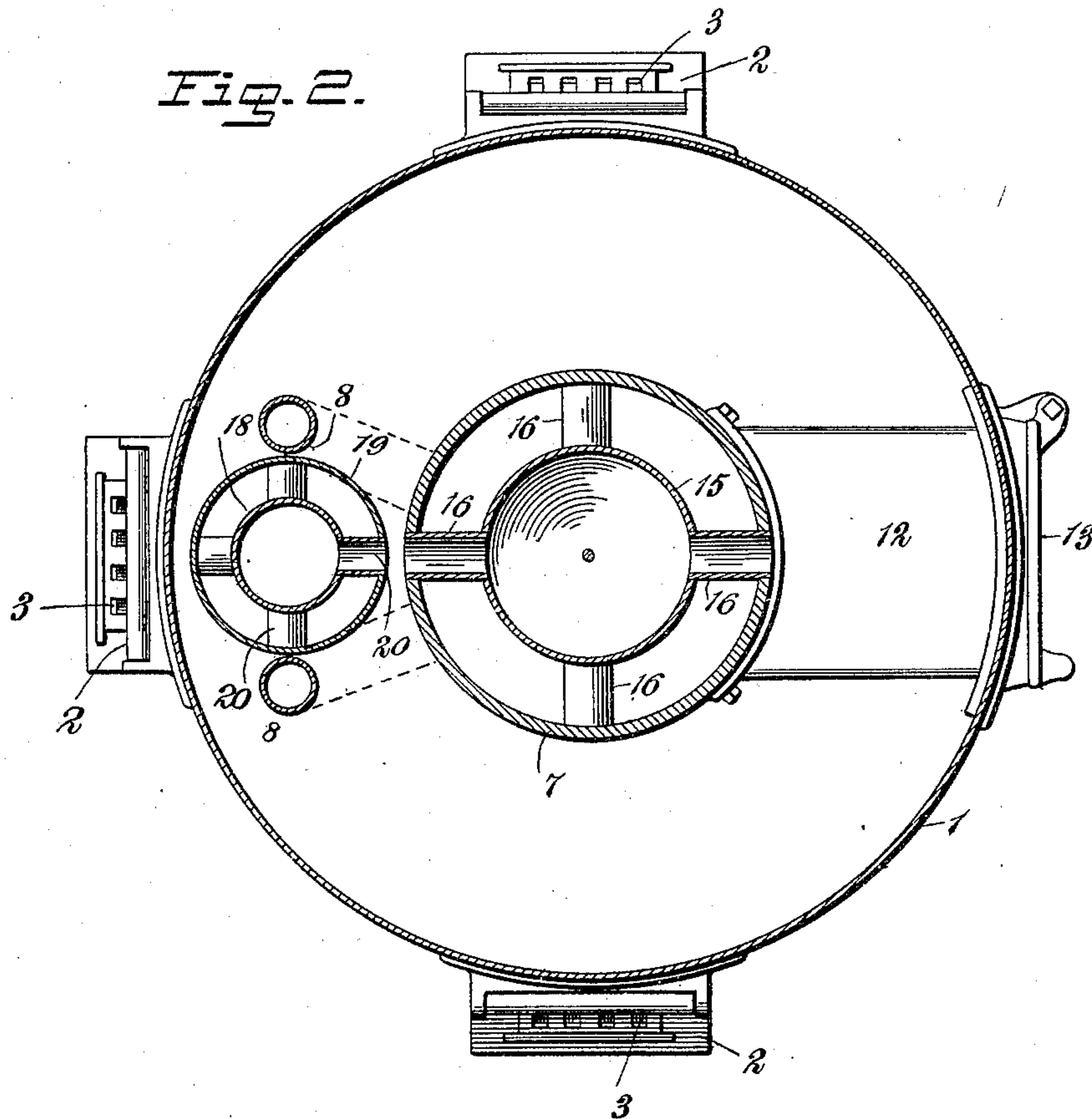
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UNITED STATES PATENT OFFICE.

WILLIAM M. THOMAS AND LEROY VAN SCOYOC, OF LOUISVILLE, NEBRASKA.

HEATER.

SPECIFICATION forming part of Letters Patent No. 696,773, dated April 1, 1902.

Application filed October 7, 1901. Serial No. 77,803. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM M. THOMAS and LEROY VAN SCOYOC, citizens of the United States, and residents of Louisville, in the county of Cass and State of Nebraska, have invented a new and Improved Heater, of which the following is a full, clear, and exact description.

This invention relates to improvements in heaters in which hot air is used as a heating medium; and the object is to provide a heater adapted to receive a large amount of air to be heated and having a large area of radiating surface, thus providing for a great heat with an economical use of coal or other fuel.

We will describe a heater embodying our invention and then point out the novel features in the appended claims.

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

Figure 1 is a sectional elevation of a heater embodying our invention, and Fig. 2 is a section on the line *xx* of Fig. 1.

The heater comprises an outer casing or drum 1, having a series of openings at its bottom provided with doors 2, and in these doors are dampers or draft-regulators 3. A cylinder 4 extends upward from the bottom of the drum 1, and supported at the upper portion of this cylinder is the fire-pot 5, while the ash-pan 6, in the form of a drawer, is movable into and out of the lower portion of the cylinder. Supported on the fire-pot is a drum 7, closed at its top, excepting that it has a flue or pipe 8 leading from the top downward and entering the cylinder 4 below the grate in the fire-pot, and in the lower portion of this pipe is a valve or air-controlling damper 9, through which cold air is designed to pass, and below this damper 9 the pipe has a projection 10, provided with a removable bottom 11, so that upon removing said bottom soot and other heavy matter may be readily cleaned from the pipe. A coal-chute 12 leads through the wall of the outer drum 1 and into the inner drum 7. The outer end of this chute is provided with a door 13, while the inner end is provided with an outwardly-swinging trap 14.

Supported within the drum 7 is a smaller

or interior drum 15, which is entirely closed to communication with the interior of the drum 7, but it communicates with the space between the drums 7 and 1 through several tubes 16, which lead from the inner drum through the wall of the drum 7. These tubes 16 serve mainly to support the interior drum 15; but the drum may be supported further by means of a rod 17, extended through said inner drum 15 and connecting with the top wall of the drum 7. A cylinder 18 is arranged within the enlarged portion of a take-up or smoke-pipe 19, which communicates at its lower end with the lower portion of the drum 7, slightly above the fire-pot. This cylinder 18 communicates with the interior of the outer drum 1 through tubes 20, which extend from said jacket through the wall of the smoke-pipe, as clearly indicated in the drawings. If desired, a pipe 21 may lead from the drum 1 to an upper room for the purpose of heating the same. It will be noted that the pipe 8 is double or has portions on opposite sides of the smoke-pipe 19.

In operation the cold air entering the openings at the bottom of the outer drum will pass through the damper 9 and discharge into the fire-pot. This air will circulate through the drum 7 with a portion of the smoke, while a portion of the air with a certain amount of smoke will pass through the smoke-pipe 19. Warm air surrounding the drum 7 will pass through the tubes 16 into the cylinder or drum 15, and warm air will also pass through the tubes 20 into the cylinder 18. The air and smoke passing through the drum 7 will move downward through the pipe 8 and again discharge into the lower portion of the fire-pot, and during this discharge it will have mixed with it a new supply of atmospheric air or oxygen, thus causing a part of otherwise wasted combustibles to be used. By this great circulation of air the lower portion of the heater will become thoroughly heated, and thus heat the lower stratum of air in a room which is usually cool.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A heater, comprising an outer drum, a fire-pot supported within the drum, an inner

drum supported on the fire-pot, a drum or cylinder supported in said inner drum and having tube communications with the outer drum, and a pipe leading from the first-named inner drum and discharging underneath the fire-pot, substantially as specified.

2. A heater, comprising an outer drum, a fire-pot arranged therein, an inner drum supported on the fire-pot, a pipe leading from the upper portion of said inner drum to the under side of the fire-pot, a jacket, a smoke-pipe surrounding the jacket and communicating with the interior of the said inner drum at its lower portion, and tube communications between said jacket and the outer drum, substantially as specified.

3. A heater, comprising an outer drum, a cylinder extended upward from the bottom thereof, a fire-pot arranged in said cylinder, a drum supported on the fire-pot, a pipe leading from said drum into said cylinder and below the fire-pot, a damper or valve in the lower portion of said pipe, and a plurality of dam-

pers at the lower portion of the outer drum, substantially as specified.

4. A heater, comprising an outer drum, a fire-pot arranged in the outer drum, an inner drum, a chute leading through the wall of the outer drum and into the inner drum, a swinging trap at the inner end of said chute, a cylinder arranged within said inner drum and having communication with the space between the inner and outer drums, a pipe leading from the upper end of the inner drum to the lower portion of the fire-pot, a jacket, a smoke-pipe surrounding the jacket, and tubes leading from said jacket through the wall of the smoke-pipe, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM M. THOMAS.
LEROY VAN SCOYOC.

Witnesses:

GEO. H. WOOD,
PERCY W. AGNEW.