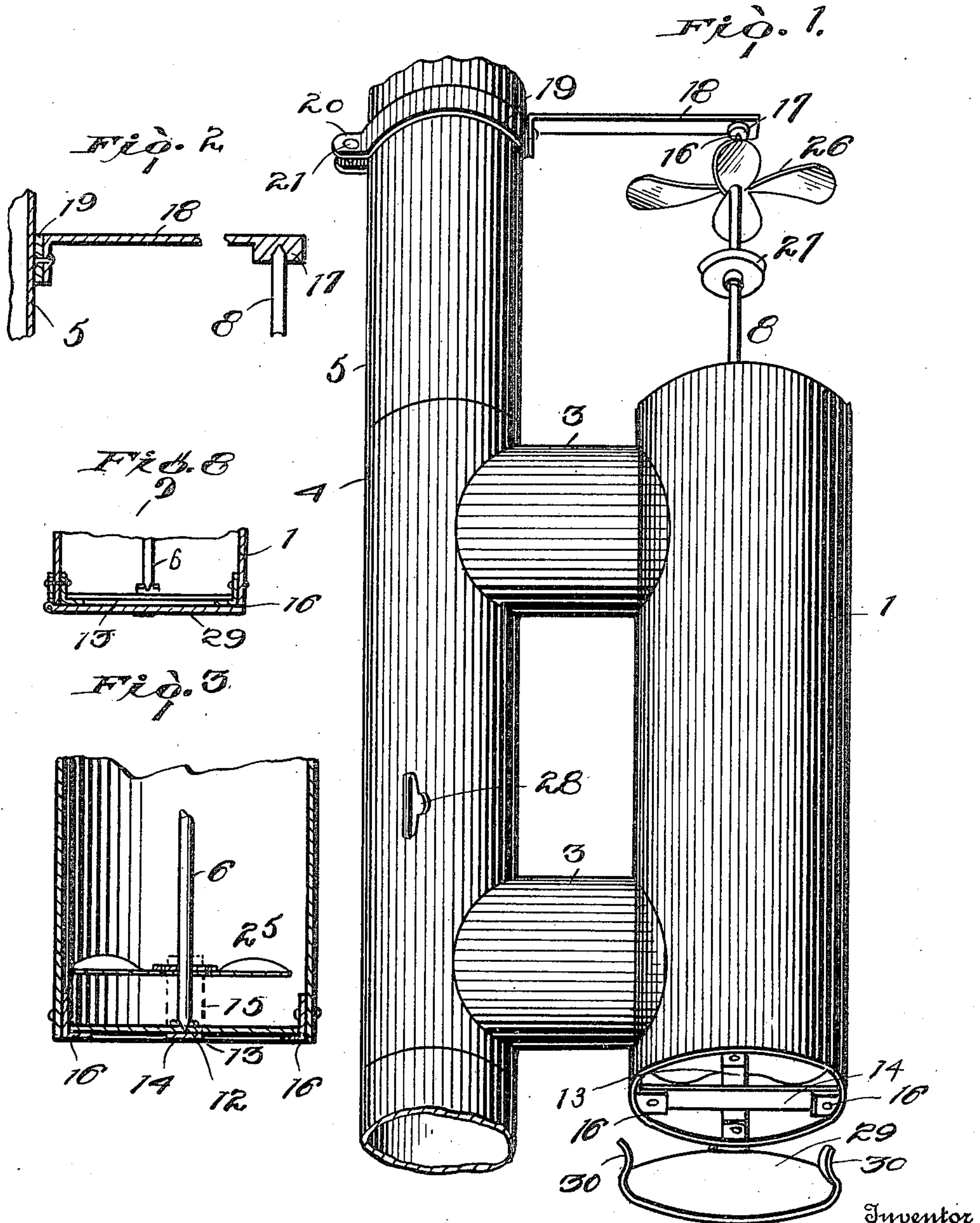


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 COMBINED VENTILATOR AND HEATING APPARATUS.
 APPLICATION FILED JULY 28, 1910.

994,057.

Patented May 30, 1911.
 2 SHEETS—SHEET 1.



William T. Claycomb.

Witnesses
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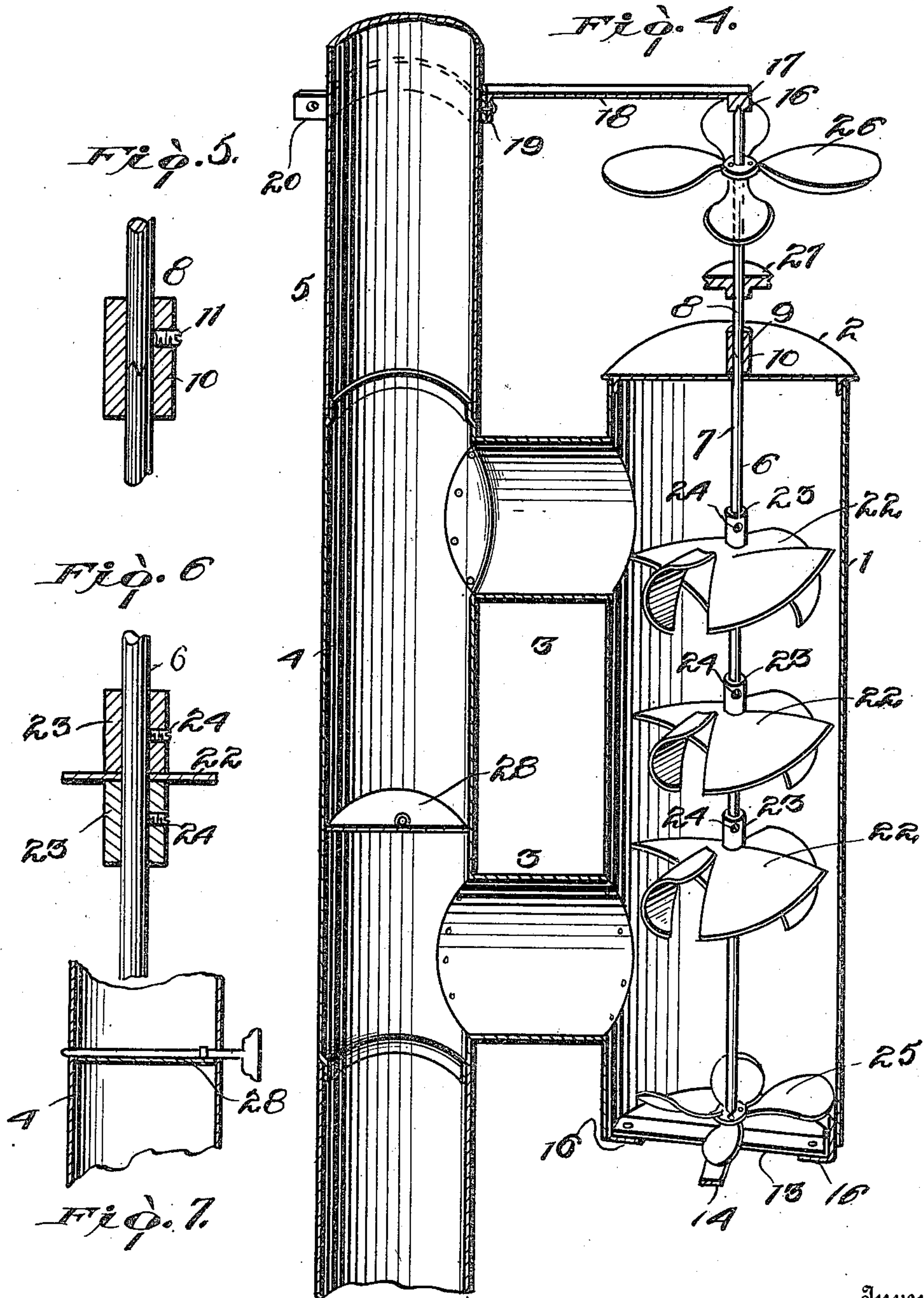
By *E. E. Crooman,*
 his Attorney.

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UNITED STATES PATENT OFFICE.

WILLIAM T. CLAYCOMB, OF OWENSBORO, KENTUCKY.

COMBINED VENTILATOR AND HEATING APPARATUS.

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Specification of Letters Patent.

Patented May 30, 1911.

Application filed July 28, 1910. Serial No. 574,305.

To all whom it may concern:

Be it known that I, WILLIAM T. CLAYCOMB, citizen of the United States, residing at Owensboro, in the county of Daviess and State of Kentucky, have invented certain new and useful Improvements in Combined Ventilator and Heating Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to ventilators, and has special reference to ventilating apparatus for reducing the temperature in an over-heated room.

The invention has for its object to provide a ventilating apparatus so constructed and arranged as to be operated by the heat passing through a stove pipe and thereby drawing the heat from a room in which said stove pipe is located.

The invention consists in a ventilating apparatus connected with a stove pipe and in details of construction thereof constructed and arranged as hereinafter set forth and claimed.

Referring to the accompanying drawings, Figure 1 is a view in elevation of a ventilating apparatus constructed in accordance with this invention, shown as connected with a stove pipe. Fig. 2 is a detail view, partly in section, of a portion of a stove pipe and a shaft for driving the ventilating apparatus. Fig. 3 is a detail view in vertical section of the lower end of the ventilating apparatus. Fig. 4 is a view in elevation and vertical section of the apparatus shown in Fig. 1. Fig. 5 is an enlarged detail view of a portion of the driving shaft of the ventilating apparatus. Fig. 6 is a large detail view, partly in section, of a portion of the ventilating apparatus. Fig. 7 is a detail view in vertical section of a portion of the stove pipe and its damper. Fig. 8 is a detail view in vertical section showing the lower end of the cylinder 1 closed.

In carrying out this invention the ventilating apparatus consists of a vertical cylinder 1 having at its upper end a detachable cover 2; and projecting from one side of the cylinder and adjacent to its upper and lower end are lateral tubes or flues 3 which are connected with and open into a detachable section 4 of a vertical stove pipe 5. Mounted in the cylinder 1 and projecting through the cover 2 in its upper end is a driving shaft 6 formed in two sections 7

and 8 detachably connected together above the cover 2 by means of a suitable joint, as for example, a V shaped joint 9 which detachably connects the two sections of the shaft and is clamped by means of a sleeve 10 and a set screw 11 bearing against the driving shaft. The lower end of the shaft 6 is formed with a tapering point 12 which rests in a socket in a suitable support in the lower open end of the cylinder 1, and as here shown preferably consisting of a cross bar 13 resting on a cross bar 14, the ends of said cross bars resting upon and being secured to L shaped brackets 16 depending from and secured to the lower end of cylinder 1. The upper end of the shaft 6 rests in a socket 17 on the end of a horizontal metal strip 18 secured at its inner end to a detachable clamp ring 19 having lips 20 connected together by a screw 21 by means of which the ring 19 may be firmly clamped to the stove pipe 5. Mounted at intervals on the driving shaft 6 are a number of motor propellers 22 which are slidably mounted thereon and are adjustable at different distances apart from each other by means of sleeves 23 located on the shaft 6 on each side of each of said propellers and screwed in place by means of a set-screw 24, each sleeve 23 having a set screw 24 which binds against shaft 6. In the lower end of cylinder 1 mounted on the lower end of shaft 6 is a suction propeller 25 employed to draw air up into the cylinder 1 and on the shaft 6 adjacent to its upper end is a fan 26 adapted by its movement to drive the air downward.

It will be seen that by means of the apparatus, as hereinbefore described, the gaseous products of combustion ascending the stove pipe 5 will be carried through the lower lateral flue or tube 3 into the lower end of the cylinder 1, a damper 28 in the flue pipe having been closed to divert the ascending gases through the lower lateral flue or tube 3 into the lower end of the cylinder 1. The passage of the gases into the lower end of the cylinder 1 acts upon the propellers 22 to rotate same and therefore the driving shaft 6, the gases in their ascent passing out through the upper lateral flue or tube 3 and into and through the stove pipe 5. The shaft 6 being driven by the propellers 22 will cause the fan 25 to be rotated and thereby suck the air from the room in which the apparatus is located up through the cylinder 1

and out into the stove pipe. The fan 26 also being driven by the shaft 6 will cause the hot air in the room in which the apparatus is located to be driven downward thereby aiding the fan 25 and causing the hot air in the room to be drawn up into cylinder 1 and out of the same into the stove pipe.

If desired the grooved pulley 27 may be mounted on the upper part of the shaft 6 and connected by an endless belt with another shaft in the room to drive another fan. By having shaft 6 formed in two sections the ventilating apparatus may be removed from the stove pipe, the ventilating apparatus being connected as described with section 4 of the stove pipe, which may be removed and the stove pipe section substituted for section 4.

It will be seen that by means of this invention a room may be thoroughly ventilated by having the hot air drawn out of the same and into the stove pipe in the room, the gaseous products of combustion passing up through the stove pipe serving to operate the ventilating apparatus.

When the ventilating apparatus is not desired for use, by leaving flue 28 open in the stove pipe the gases will directly pass up and through the stove pipe without affecting the ventilating apparatus.

The foregoing described apparatus may also be used as a heater as well as a ventilating apparatus, and for this purpose the lower end of the cylinder 1 is provided with a hinged door of any suitable construction, and, as here shown, in Figs. 1 and 8, consisting of a door 29 hinged to one side of the lower end of the cylinder 1 and adapted to be held in closed position by any suitable means, as, for example, by means of the spring clips 30, which, when the door is closed, clasp the side of the cylinder 1.

When the door 29 is not closed it may be held out of the way by being swung up against the side of the cylinder 1, and held there by any suitable fastening.

When it is not desired to extract the heat from the room, the lower end of the cylinder 1 is closed by the door 29 thereby causing the cylinder 1 to serve as a drum heater. In connection therewith, the heat at the top of the room is thrown downward by means of the rotary fan 26 which is operated by the heat passing through the cylinder 1 and acting on the fan mechanism in said cylinder. In this way the heat disseminated from the heater 1 is distributed about the room.

It will thus be seen that by means of this apparatus the heat may be either drawn out of the room through the cylinder 1 or may be retained in the room by closing the lower end of the cylinder 1. In this way the room may be kept at an even temperature.

By this means the apparatus may be used in a cold as well as a hot climate.

Having described the invention I claim:—

1. In a ventilating apparatus of the character described, a stove pipe, a vertical cylinder closed at its upper end and open at its lower end, lateral air passage-ways between said stove pipe and said cylinder, a damper in said stove pipe between said lateral air passage ways, a rotary fan mechanism located in said cylinder and operated by the gaseous products of combustion, and a fan located in the lower open end of the cylinder and operated by said fan mechanism for drawing air up through said cylinder.

2. In a ventilating apparatus of the character described, a stove pipe, a vertical cylinder closed at its top end and open at its bottom end, lateral air passage ways adjacent to the upper and lower ends of said cylinder and connecting it with said stove pipe, a damper located in said stove pipe between said lateral air passage ways, a vertical rotary shaft mounted and projecting through the top of said cylinder, a number of propeller fans mounted on said shaft in said cylinder, a suction fan mounted on the lower end of said shaft located in the lower open end of the vertical cylinder below the lower lateral air passage, and a fan mounted on the upper end of said driving shaft above said cylinder.

3. In a ventilating apparatus of the character described, a stove pipe, a vertical cylinder closed at its upper end and open at its lower end, lateral pipes connecting said cylinder adjacent to its top and bottom with said stove pipe, a damper in said stove pipe between said lateral pipes, a vertical shaft mounted in said cylinder, a suction fan on the lower end of said shaft and located in the lower open end of the vertical cylinder below the lower lateral pipe, and a number of propeller fans adjustably mounted on said shaft in said cylinder.

4. In a ventilating apparatus of the character described, a stove pipe, a cylinder closed at its upper end and open at the lower end, a pipe located adjacent to each end of said cylinder and connecting it with said stove pipe, a damper in said stove pipe between said connecting pipes, a shaft mounted in said cylinder, a suction fan on the lower end of said shaft and located between the lower open end of the cylinder and the lower connecting pipe, a number of propeller fans slidably mounted on said shaft and clamping sleeves on said shaft for holding said propeller fans said propeller fans being operated by the gaseous products of combustion.

5. In a ventilating apparatus of the character described, a stove pipe, a cylinder having a detachable cover at its upper end and open at the lower end, a pipe located adjacent to each end of said cylinder and connecting it with said stove pipe, a damper in

said stove pipe between said connecting pipes, a rotary shaft mounted in said cylinder and projecting from the closed end of the same and formed of detachable sections, 5 one of said sections being outside of said cylinder, a number of propeller fans mounted on said shaft in said cylinder and operated by the gaseous products of combustion, a suction fan mounted on the lower end of 10 said shaft between the lower open end of the cylinder and the lower connecting pipe, and a rotary fan mounted on the upper end of said shaft outside of said cylinder.

6. In a ventilating apparatus of the character described, a stove pipe, a cylinder having a detachable cover at its upper end and open at the lower end, a pipe adjacent to each end of said cylinder and connecting it with a section of the stove pipe, a damper 20 located in the stove pipe between said con-

necting pipes, a rotary shaft mounted in said cylinder and projecting through the upper end of the same and formed in sections detachably clamped together, one of said sections being outside of said cylinder, 25 a bracket having a detachable clamping ring screwed to said stove pipe, the upper end of said rotary shaft resting in said bracket arm, a number of propeller fans on said rotary shaft in said cylinder and operated 30 by the gaseous products of combustion, a suction fan on the lower end of said shaft in said cylinder, and a fan mounted on the upper end of said shaft above said cylinder.

In testimony whereof I hereunto affix my 35 signature in presence of two witnesses.

WILLIAM T. CLAYCOMB.

Witnesses:

C. W. HUDSON,
J. B. BUGBY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
