

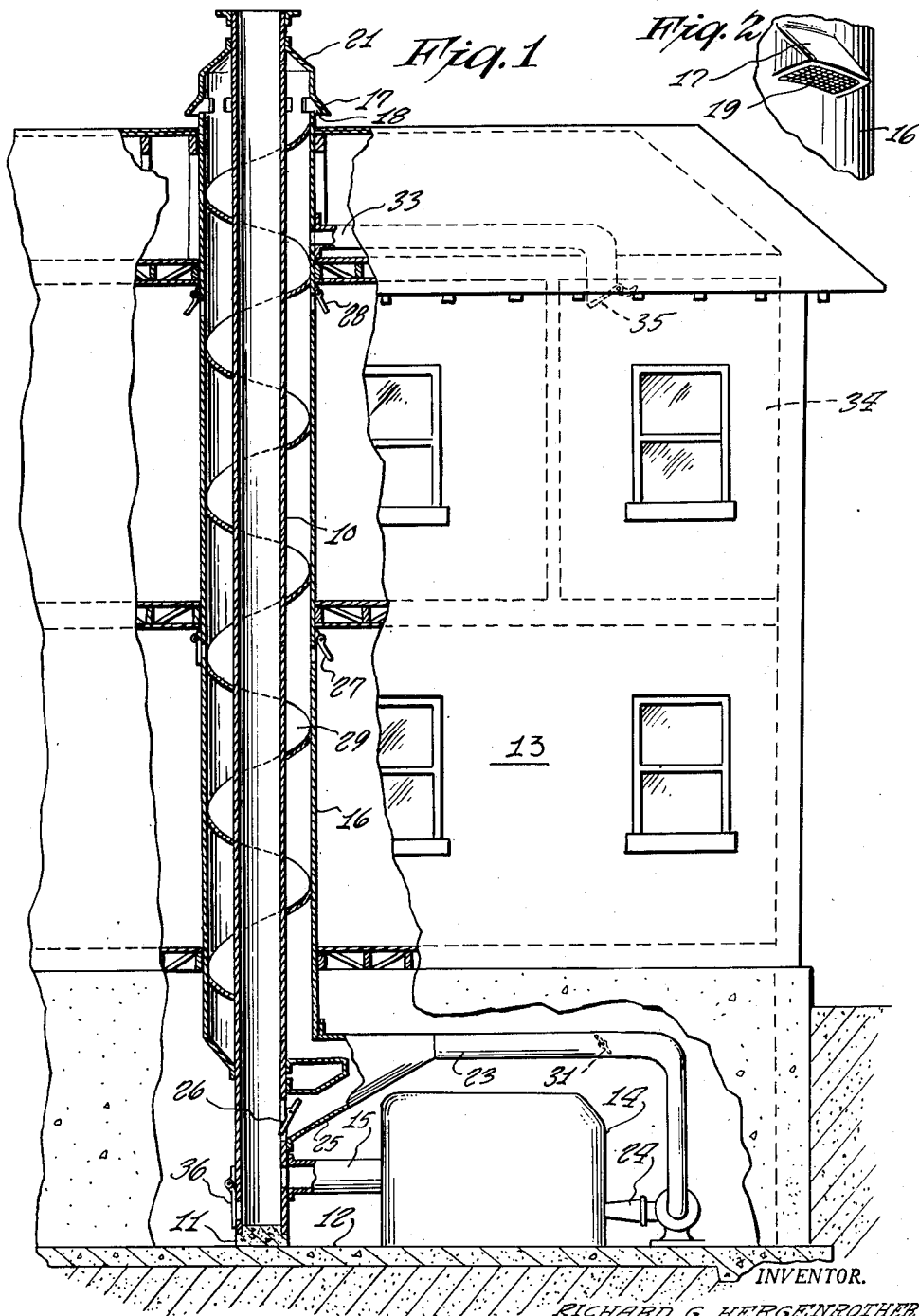
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VENTILATING CHIMNEY

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VENTILATING CHIMNEY

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1. Claim. (Cl. 98-46)

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This invention relates to a ventilating chimney. It is an object of the present invention to provide a ventilating chimney which is of lighter weight than the usual brick construction and requires no special footing and can be prefabricated and quickly erected on the premises by the simple joining of two or more sections.

It is another object of the present invention to improve the efficiency of a furnace by reducing the chimney and stack temperature and to provide positive adjustable ventilation at all times within the building regardless of whether the furnace is operating or not.

It is another object of the present invention to improve the effectiveness of weather stripping within the household since the air consumed in combustion is drawn mainly from openings above the roof and not through cracks around windows, or doors of the building.

Other objects of the present invention are to provide a ventilating chimney which is of simple construction, is inexpensive to manufacture, has a minimum number of parts, is compact, saves building time, is easy to assemble and is efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a vertical sectional view of the ventilating chimney embodying the features of the present invention.

Fig. 2 is a fragmentary perspective view showing the opening at the top of the ventilating chamber surrounding the chimney.

Referring now to the figures, 10 represents a chimney which is supported on a footing 11 on the basement floor 12 of a building structure 13. A furnace or boiler 14 is connected to the chimney 10 through a pipe section 15 so that the gases and smoke can be drained off and passed up the chimney. An automatic draft control damper 26 is installed to control the amount of draft in the case of automatically fired furnaces. A conventional clean out door 36 is installed at the bottom of the chimney to facilitate soot removal.

Surrounding the chimney 10 and about twice the diameter thereof is a ventilating tube 16 that has a plurality of outwardly struck portions 17 at the upper end providing for ventilating openings 18 that are screened, as indicated at 19, and are underneath the struck up portion so that there is little opportunity for rain water to enter the tube. The upper end of the tube is reduced in diameter, as indicated at 21, and tapered so

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as to be connected to the upper end of the chimney and to close off the ventilating passage.

The lower end of the ventilating tube 16 is connected by a pipe 23 with a burner 24 that enters the boiler 14. A bypass pipe 25 provides a passage leading from the lower end of the tube 16 for air to the lower end of the stack and past damper 26.

In operation, as the burner 24 starts, the air needed for combustion is drawn downwardly through the ventilating tube and through adjustable vents 27 and 28 in the rooms of the building structure 13. During the passage down the ventilating tube, the air will be given a spiral motion because of spiral baffle 29 disposed therein. This air, as it passes downwardly, is heated from contact with the chimney so that the temperature of the gases within the chimney is reduced. When the air reaches the bottom of the ventilating tube, it is drawn off through the pipe 23 directly into the burner 24 where it serves to mix with the fuel to support the combustion within the furnace or boiler 14.

At times when the furnace is not operated, the rooms are ventilated in the same manner, but the stale air rises up the ventilating tube and out of the roof openings 18 instead of being sucked down into the burner. In case of a back draft through the furnace, a check damper 31 is provided in the pipe 23. The conventional automatic draft control damper 26 is used to regulate the draft.

An additional room can be connected to the ventilating tube by a pipe 33 running through the attic to a room 34 and controlled by a damper 35.

It will be apparent that there has been provided a simple chimney structure that can be prefabricated and quickly erected on the basement floor which includes a ventilating tube whereby the chimney can be cooled as a result of the downward movement of air which supplies the burner. The stack temperature is thereby reduced and the efficiency of the heating plant is improved.

The ventilating chimney may also be used in connection with a hand fired furnace, in which case pipe 23 is cut off at any convenient length and check damper 31 is installed at the end of the pipe opening. Draft control damper 26 would not be necessary with this type of installation.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

Having thus set forth and disclosed the nature of my invention, what is claimed is:

A ventilating chimney construction comprising a chimney stack adapted to extend upwardly through a building structure and to be supported upon the basement floor, a ventilating tube surrounding the chimney stack, said ventilating tube adapted to extend above the building structure and having openings for the passage of air through the ventilating tube over the roof of the building, said ventilating tube being closed upon the chimney above the roof of the building and above the ventilating openings, said ventilating tube being open at the lower end and adapted for connection with a fuel burner, the said building structure having rooms disposed at different levels and vents leading from the said rooms to the said ventilating tube in order to draw additional air through the said vents from the said rooms, and a spiral plate extending about the chimney and within the

ventilating tube whereby to cause a spiral path for the flow of air through the ventilating tube.
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