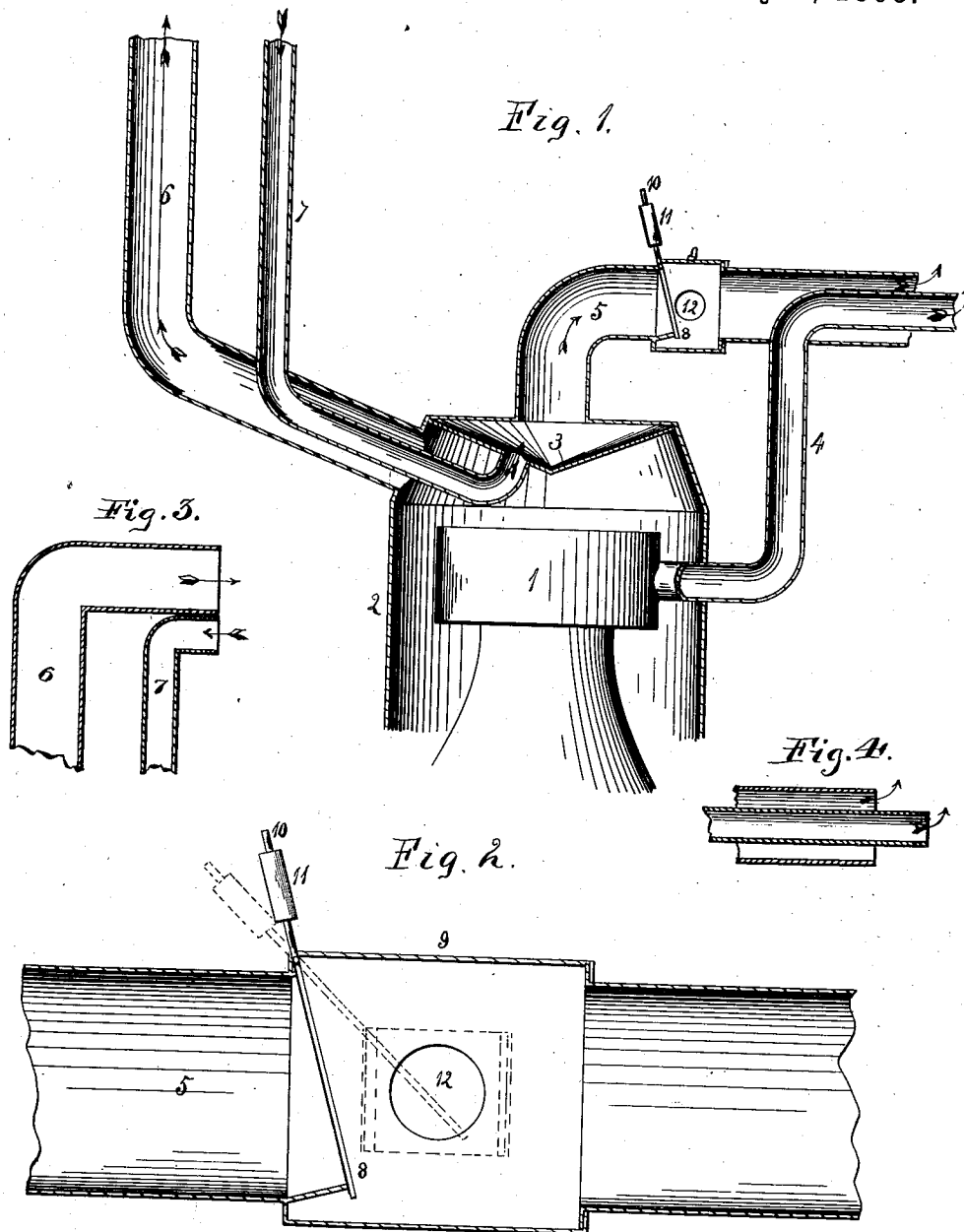


(No Model.)

W. F. McGUIRE & F. B. McKENNEY.
VENTILATING APPARATUS.

No. 538,976.

Patented May 7, 1895.



Witnesses:
J. A. Davenport.
E. Behel.

Inventors:
William F. McGuire
Frank B. McKenney
By A. O. Behel
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. MCGUIRE AND FRANK B. MCKENNEY, OF ROCKFORD, ILLINOIS,
ASSIGNORS OF ONE-THIRD TO JOHN L. CLARK, OF SAME PLACE.

VENTILATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 538,976, dated May 7, 1895.

Application filed May 24, 1893. Renewed October 20, 1894. Serial No. 526,484. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. MCGUIRE and FRANK B. MCKENNEY, citizens of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Ventilating Apparatus, of which the following is a specification.

The object of this invention is to ventilate the rooms heated by a hot air furnace, by creating an escape for the cold and foul air which occupies a space near the floor, and conveying such cold and foul air to the furnace and thence to the chimney or cold air shaft.

The further object of this invention is to produce a check valve for the ventilating apparatus in order to prevent the backward draft of air into the rooms.

In the accompanying drawings, Figure 1 is a vertical section through the ventilating apparatus. Fig. 2 is a vertical section through the check-valve. Fig. 3 is a section of the connection of the pipes 6 and 7 with the room. Fig. 4 shows the connection of the pipe 3 and 4 with the chimney.

The furnace 1, in this instance is of a well known construction. Around this furnace is located a jacket 2, in the upper portion of which is located a V-shaped partition 3.

A smoke pipe 4, communicates with the furnace and with a chimney. From the top of the upper compartment extends a pipe 5, which surrounds the smoke pipe 4, the two communicating with the chimney.

From the upper portion of the casing radiate pipes 6, conveying heat to the room, and ventilating pipes 7, extend parallel with the heat conveying pipes until near the furnace where they pass inside the latter pipes and communicate with the compartment in the top of the casing.

In the pipe 5, before the smoke pipe enters it is located a check-valve preventing the backward draft of air to the rooms and consists of a valve 8, having a hinged or pivotal connection with the casing 9. A rod 10, is connected to the valve and a weight 11, is made adjustable along the rod. The sides of the casing are provided with openings, which are covered with mica 12.

Cold air is taken in at the bottom of the furnace, which after circulating around the furnace ascends the pipes 6, to the room, and

after circulating around the room until it becomes cold, will descend the pipe 7, and enter the compartment in the top of the casing, and from thence passes to the chimney or cold air shaft by means of the pipe 5.

The pipe 7, is located on a lower level in the room than the pipe 6, and as the check valve prevents the admission of air from the chimney into the compartment in the top of the casing the air must be supplied from the room, and as the air in the compartment becomes heated it will escape to the chimney creating a circulation of air, drawing the cold and foul air from the room, which is replaced by pure heated air ascending the pipe 6. By extending the pipe 7, a portion of its length within the heat conducting pipe 6, it will assist in heating the cold air on its passage to the chimney, and the air will be further heated by the smoke pipe extending a portion of its length inside of the ventilating pipe on the chimney side of the furnace.

Owing to the valve being nearly balanced, should the air blow down the chimney the valve would instantly close, preventing the admission of air to the room. It is often the case that rooms are not properly heated by hot air, owing to the fact that such rooms are kept closed, preventing the escape of the cooled air, and consequently circulation, but by our arrangement, we get a complete circulation as by means of our ventilating pipe the cooled air is carried away allowing the admission of heated air to take its place.

It is evident that a series of ventilating and air conducting pipes may be connected with the heating drum and outer casing.

We claim as our invention—

In a ventilating apparatus, a heating apparatus having a closed chamber in its upper portion, a ventilating pipe connected with the room and chamber, a heat conducting pipe surrounding the ventilating pipe, a pipe leading from the chamber to the chimney or cold air shaft, a smoke pipe located inside of the last mentioned pipe, and a valve located in the pipe leading from the chamber, preventing the admission of air to the room through the ventilating pipe.

WILLIAM F. MCGUIRE.
FRANK B. MCKENNEY.

Witnesses:

A. O. BEHEL,
E. BEHEL.