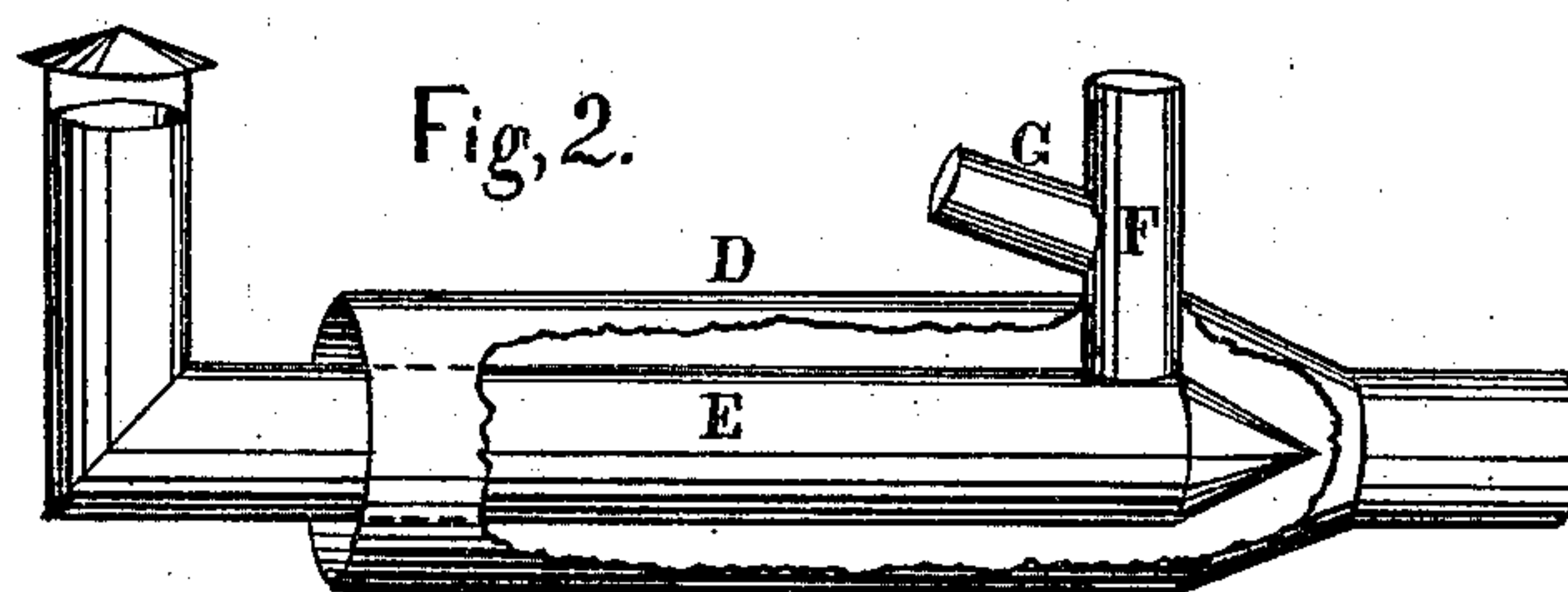
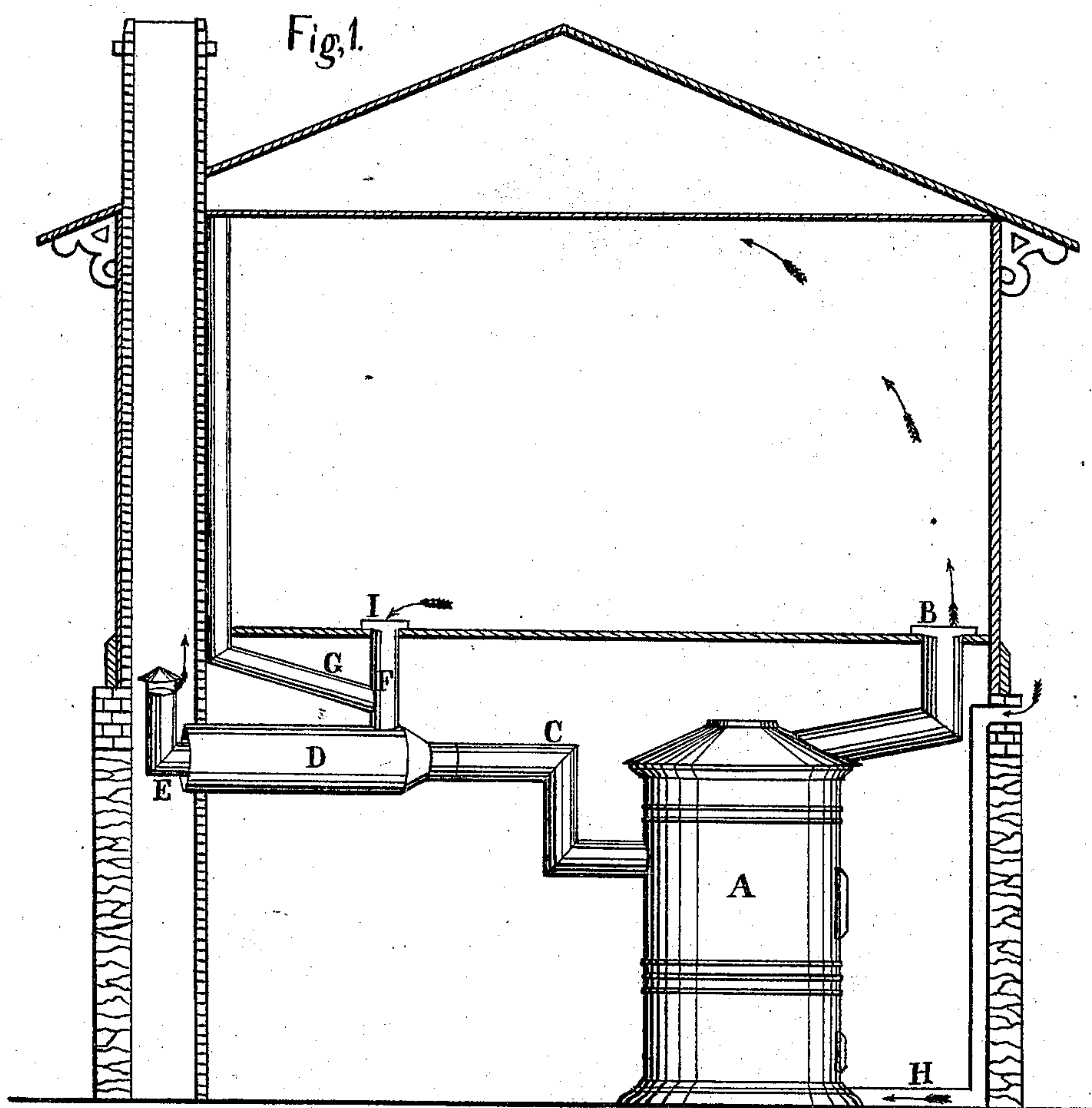


H. CHILDS.
VENTILATOR.

No. 177,689.

Patented May 23, 1876.



WITNESSES,

Christian M. Nestell
Fred T. Spencer

INVENTOR.

Henry Childs
Per Chas L. Spencer
Atty.

UNITED STATES PATENT OFFICE.

HENRY CHILDS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO HIMSELF
AND JOSEPH T. SNOW, OF SAME PLACE.

IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. 177,689, dated May 23, 1876; application filed
November 1, 1875.

To all whom it may concern:

Be it known that I, HENRY CHILDS, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Ventilators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, in which—

Figure 1 represents a sectional view of a building with my improved ventilator applied therein, and as attached to a furnace. Fig. 2 represents my improvement having a portion of the outside pipe removed, showing the inside chamber-tube.

My invention relates to ventilating buildings, whereby the temperature is rendered more even, removing the impure and cold air from the lower part of the room, and causing a general circulation of fresh air throughout the entire apartment, which is very beneficial to comfort and health. It consists in constructing a chamber or tube to be suspended inside of the smoke-pipe of any fire-pot or fuel-consuming stove, and so arranged with the flue of a chimney that the impure air which passes through said tube may be conducted off with the smoke.

In the accompanying drawing, A, Fig. 1, represents a furnace for heating buildings, having the inlet or duct pipe H connected at the bottom, through which the cold air from outside is conducted into the casing, wherein it is heated, and ascends through the top pipe and hot-air register B into the room the ordinary way.

C represents the smoke-pipe, to the end of which, near the chimney, is connected a larger pipe, D, having a chamber or tube, E, suspended longitudinally therein, Fig. 2. The inside of said tube is made tight and pointed, similar to a cone. The opposite end extends a short distance outside of pipe D, and is turned up or formed as an elbow, so as to stand perpendicular or upright about midway in the flue of the chimney, Fig. 1. The upper end of said elbow is left open and provided with a cap or protector, which is connected a suitable distance above said end to prevent

the soot or dirt of the chimney from falling into and closing the aperture. Near the cone to the inside end of the tube E is connected a ventilating-pipe, F, said pipe extending to the cold-air register I of the lower room, represented in Fig. 1.

In constructing the chamber or tube I use copper, preferring that metal to iron, it being a better conductor of heat, and much more durable.

G is a ventilating-pipe connected to pipe F and terminating at the top of the room to represent as leading to a register in the second story of a building, or, if desired, it may be arranged to an adjoining room on the first floor.

Pipe D may be made and fitted as a jacket upon the outside of the end of smoke-pipe C, and set to extend into the chimney-flue, having ventilating-pipes connected thereto similar in construction to the tube E. The smoke and heat from the fire-pot of the furnace passing through said smoke-pipe into the chimney, the air in the surrounding jacket D becomes rarefied, and the same result would be attained as with the tube E suspended inside of an enlarged pipe, D. This being a mechanical equivalent, I shall not describe it more minutely.

By actual experiment it has been demonstrated, with the use of my improvement as attached to a stove or furnace, the temperature of a room may be more perfectly equalized throughout, as the hot air from the register B being the lightest, it ascends to the top of the room, represented by arrows. At the same time the cold air from the lower part of the room passes off through the register I into the tube E, and makes its exit into the chimney-flue. By this arrangement a constant circulation of warm and pure air throughout the entire apartment is attained.

In the operation of my improved ventilator the smoke and heat from the fire-pot of the furnace, passing through the enlarged pipe D and around the tube E, renders said tube hot, by which the air inside becomes rarefied and takes its exit through the upright elbow in the chimney-flue, in which operation the products of combustion, passing in rapid currents

along the sides of the siphon, largely assist. A draft is thus formed, whereby the cold air of the apartment is made to pass in the register I through pipe F into the aforesaid tube E, and there it becomes heated and rarefied, and passes out, as before described. Thus a continuous current is created by the rarefaction of the circulating air coming from the lower part of the room and passing through the hot tube E to the chimney-flue, and ascending with the smoke.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

The combination, with the pipe D and chimney-flue, of the tube E, closed at one end and opening into the chimney-flue, and at a higher point, and the ventilating-pipes leading from the lower part of the room or rooms into said tube, whereby the cold and impure air is drawn from the room or rooms near the floor thereof and passed directly up the chimney-flue.

HENRY CHILDS.

Witnesses:

JOSEPH T. SNOW,
CHARLES L. SPENCER.