

J. H. RICHARDSON.
Chimney Cowl.

No. 139,080.

Patented May 20, 1873.

Fig. 1

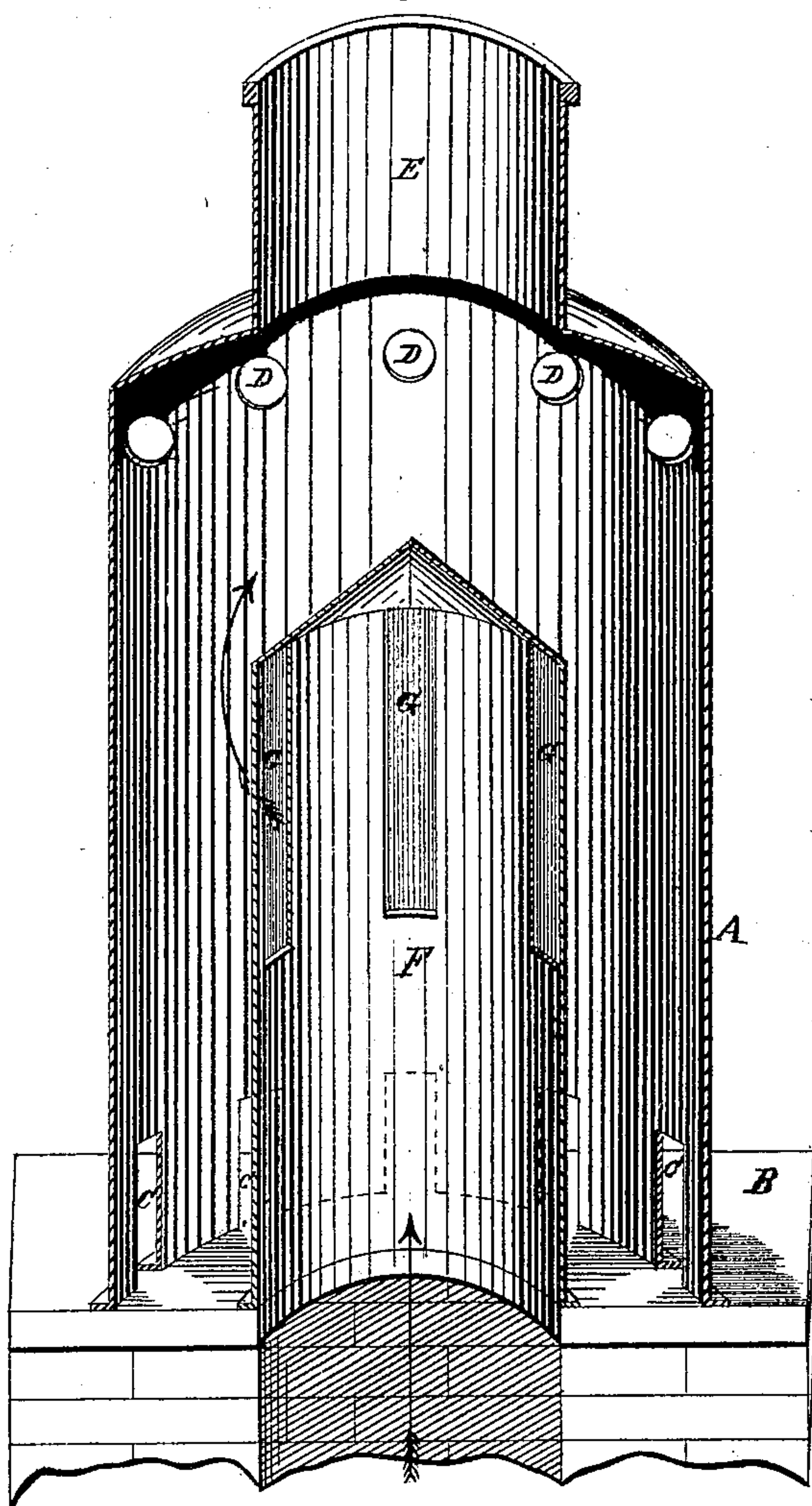
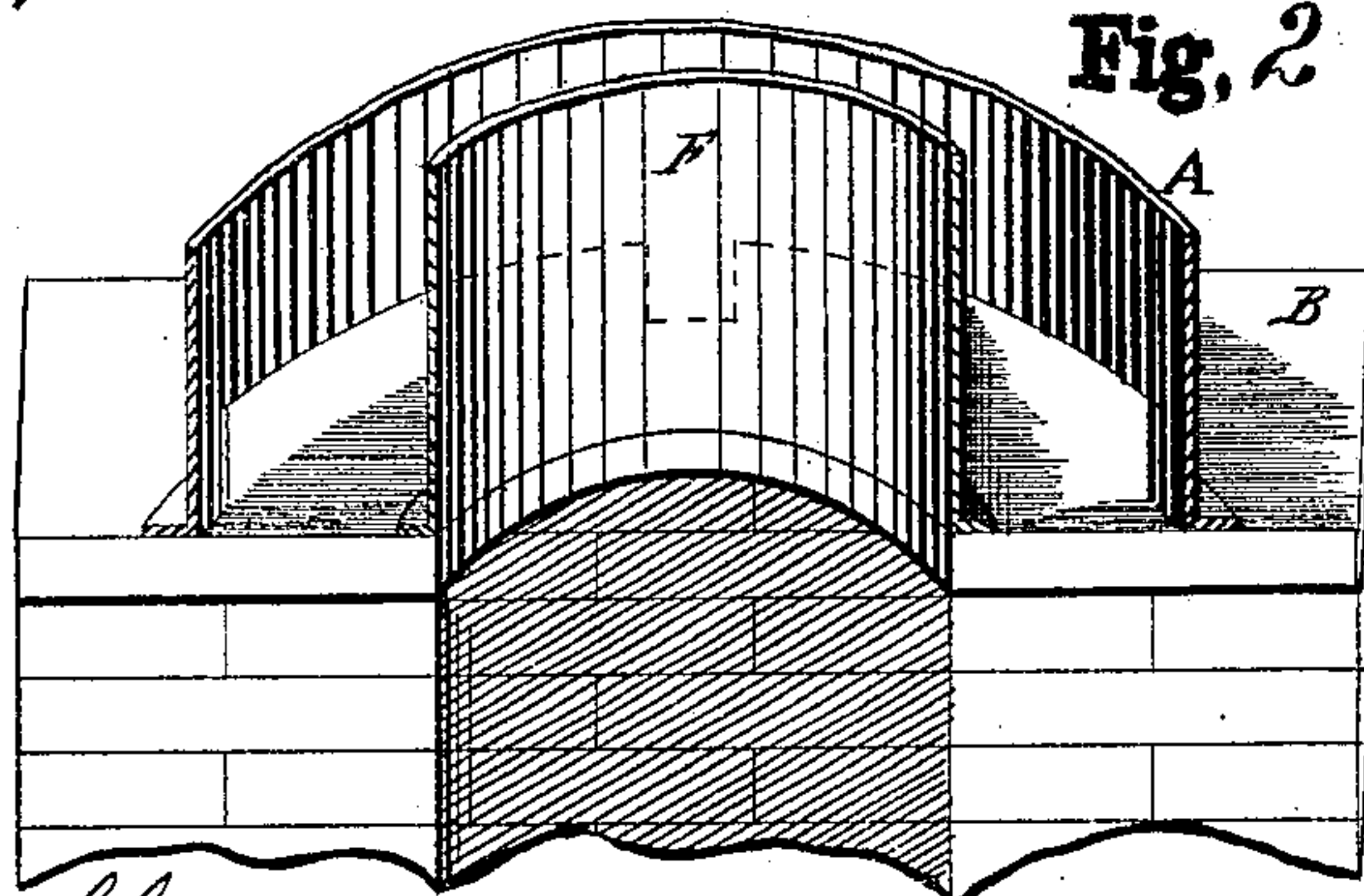


Fig. 2



WITNESSES.

Isaac R. Oakford.
David Hardie

INVENTOR.

Joseph H. Richardson

UNITED STATES PATENT OFFICE.

JOSEPH H. RICHARDSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
OF ONE-HALF HIS RIGHT TO DAVID HARDIE, OF SAME PLACE.

IMPROVEMENT IN CHIMNEY-COWLS.

Specification forming part of Letters Patent No. **139,080**, dated May 20, 1873; application filed
September 30, 1872.

To all whom it may concern:

Be it known that I, JOSEPH H. RICHARDSON, of the city and county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Ventilators, of which the following is a specification:

The object of my invention is to provide a ventilator of a cheap and simple construction, to be applied to chimneys, flues, or funnels, for effectually removing smoke or noxious gases or vapors wherever confined. The construction of the ventilator is such that its efficiency is not impaired either by the state of the weather or direction of the wind, it operating under all circumstances to produce a perfect upward current in the chimney or flue to draw off the smoke or foul air.

Figure 1 is a vertical section of my improvement in ventilators. Figure 2 is a sectional view of the lower portion of the ventilator, showing a modification of the same.

The outer cylinder or casing A is secured (when applied to a chimney) to a base piece, B, and is provided at the lower end with a series of rectangular-shaped openings, C C C, and near the upper end with a series of circular openings, D D D. The upper end of it is arched over and is provided with a vertical tube or neck, E, which communicates with the interior of the cylinder and forms a discharge-passage for the ascending smoke and gases. A second cylinder, F, of smaller dimensions, with the upper end closed and provided with a series of rectangular-shaped openings, G G G, is placed within the cylinder A with the lower end resting upon the base-piece B. This cylinder opens directly into the flue, and through it the smoke and gases pass before they make their final exit.

The modification represented in Fig. 2 consists in dispensing with the openings C C C, and supporting the cylinder A upon feet a certain distance above the base-piece B, thus forming an open space for the passage of air, to answer the same purpose as shown in Fig. 1.

The wind, striking the outside of the cylinder at right angles, passes through the openings C C C, at the bottom, and ascends the interior of the cylinder to the opening E, at

the top. These currents of rapidly-moving air, which surround the inner cylinder F, tend to force or create an upward current within it, and to draw off the smoke and gases through the openings G G G; in the case of baffling or contrary winds, the air passes out through the circular openings D D D as well as the upper opening E. The upper end of the inner cylinder is closed so as to exclude rain or snow, and in case of a downward draft to prevent the air passing down the flue. In this case, the wind entering the upper opening E, or the openings D D D, impinges on the hood of the inner cylinder and passes downward parallel with the sides of the cylinders and out through the openings C C C. The air moving in this direction will have the same tendency to draw the smoke or gases from the flue as when ascending.

The operation of the ventilator is not embarrassed by the direction or velocity of the wind, or the situation of a chimney or funnel; no matter in what direction the wind may enter the ventilator, it will surround and move parallel with the sides of the inner cylinder, thereby creating a perfect upward draft within the flue. This is accomplished by the air ascending or descending perpendicularly within the cylinder or casing A; in either case it tends to draw the smoke and rarified air through the openings G G.

The cylinders A and F, composing the ventilator, may be made of sheet or cast iron, or of any suitable material; and they may be adapted for use on shipboard, railway cars, and for ventilating mines, the size varying according to the purpose for which they are to be used.

What I claim as my invention is—

The combination of the outer cylinder A, provided with the openings C, D, and E, with the inner cylinder F, closed at the upper end, and provided with openings G G, adapted to operate substantially in the manner as herein shown and described.

JOSEPH H. RICHARDSON.

Witnesses:

DAVID HARDIE,

ISAAC R. OAKFORD.