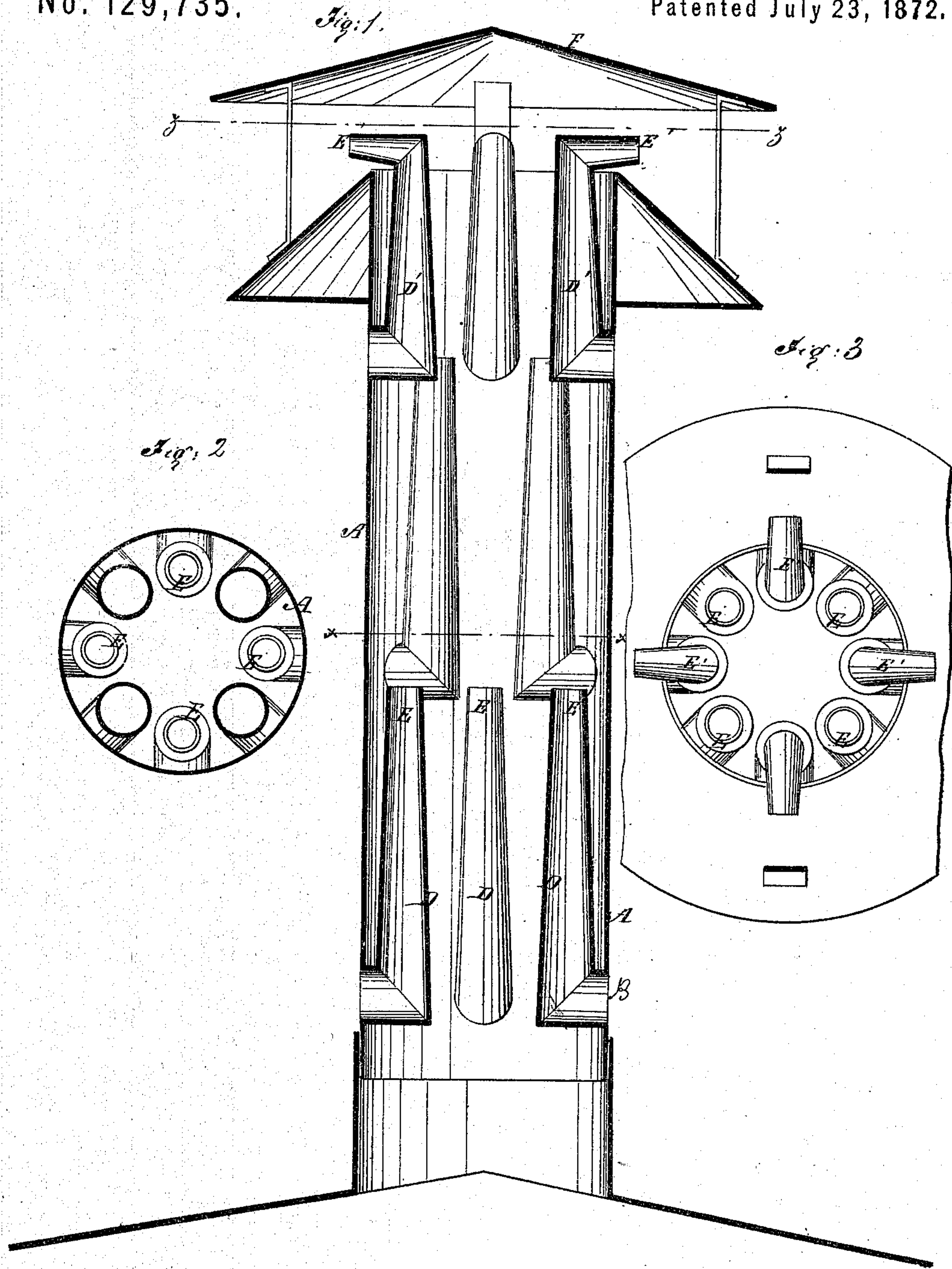


J. H. KARNAN.
Ventilator.

No. 129,735.

Patented July 23, 1872.



Witnesses:

Chas. Nida
H. A. Graham

Inventor:

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PER

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UNITED STATES PATENT OFFICE.

JOHN H. KARNAN, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. 129,735, dated July 23, 1872.

Specification describing a new and Improved Ventilator, invented by JOHN H. KARNAN, of Cambridgeport, in the county of Middlesex and State of Massachusetts.

My invention consists of a combination of pipes with the exhaust-pipe of a ventilator in such manner that the wind or part of it blowing against the side of the said exhaust-pipe will be conducted into it and discharged up and through nozzles, also outwardly over the top of the said exhaust-pipe, in such manner as to increase the draught to a very great extent.

My said ventilator is applicable to all kinds of buildings, ships, &c., and to chimney or smoke flues of any kind.

Figure 1 is a sectional elevation of my improved ventilator. Fig. 2 is a horizontal section on the line *x x* of Fig. 1, and Fig. 3 is a horizontal section on the line *z z*.

A represents an exhaust tube or flue of any kind, which I propose to provide with large holes B through the sides, and with pipes D inside of it, to receive the air blowing in at said holes, and conduct it upward through nozzles E to make blasts for increasing the draught of the exhaust pipe or flue from below. The

said pipes may be arranged in any order relatively to each other, but I prefer to arrange them so that the air will be discharged between the series next above those below.

I also propose to have the pipes D' at the top, with nozzles E' extended over the top of the exhaust-pipe, as shown, or in any equivalent manner for further promoting the draught.

The exhaust pipe or flue may have any kind of cap F or not, as preferred.

I have found by practical experiment that the application of these blasts of the external atmosphere improves the draught very much.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of pipes D E with the exhaust-pipe of a ventilator or a flue, substantially as specified.

2. The combination of pipes D' E' with the exhaust-pipe of a ventilator or flue, substantially as specified.

JOHN H. KARNAN.

Witnesses:

FRED. K. NOYES,
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