

(No Model.)

W. E. ROACH.  
VENTILATOR.

No. 305,236.

Patented Sept. 16, 1884.

FIG. I.

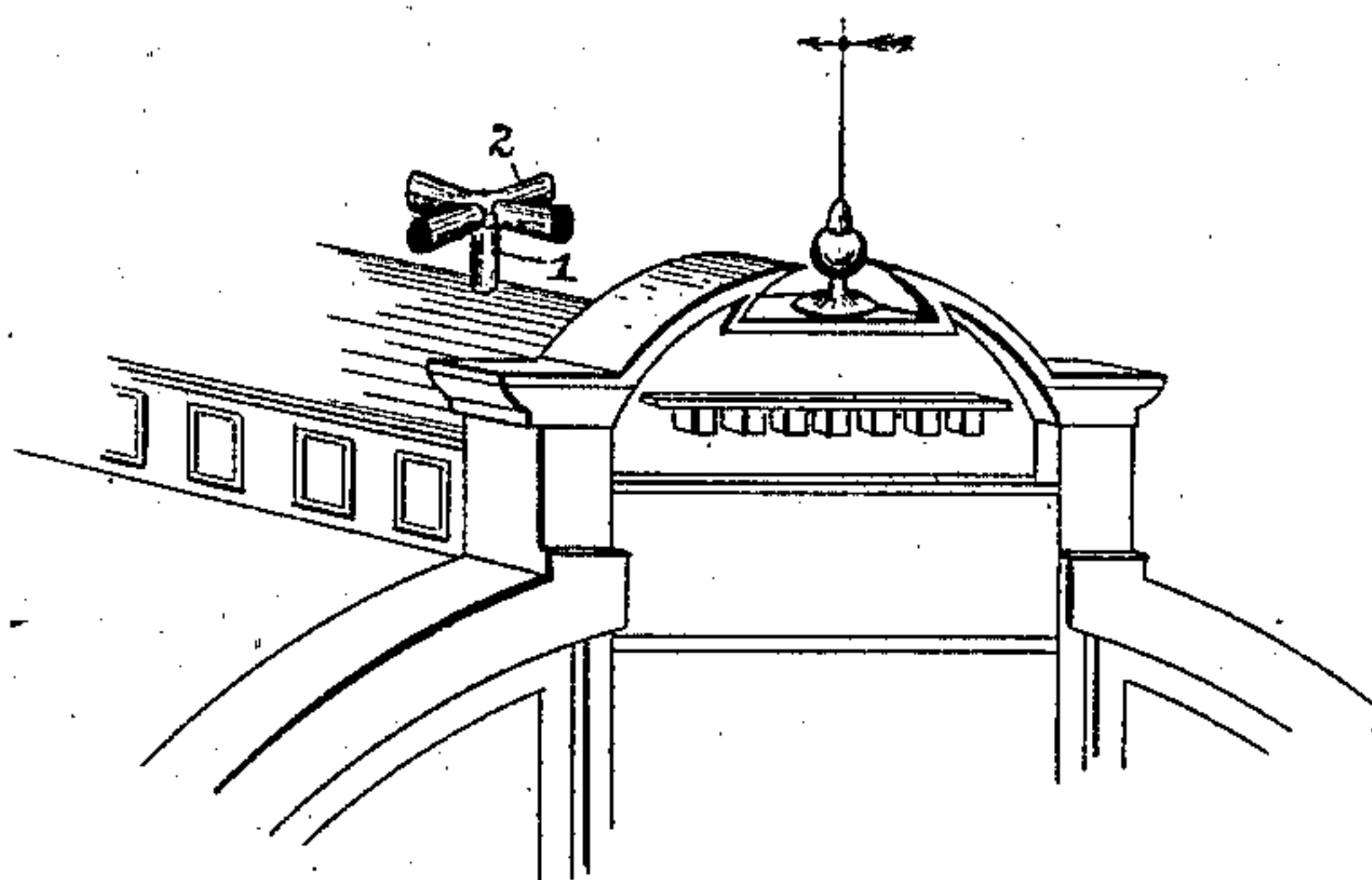


FIG. II.

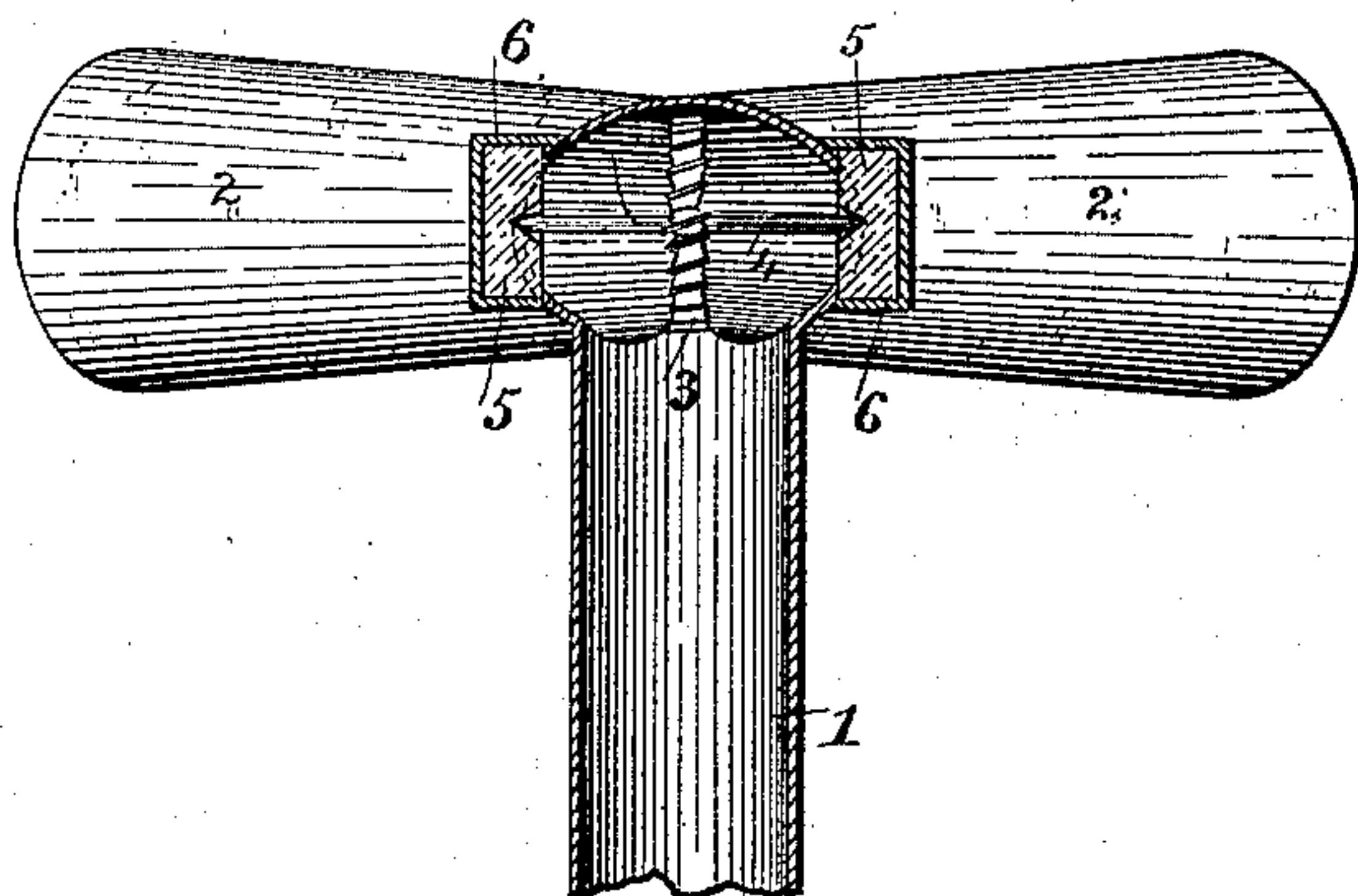
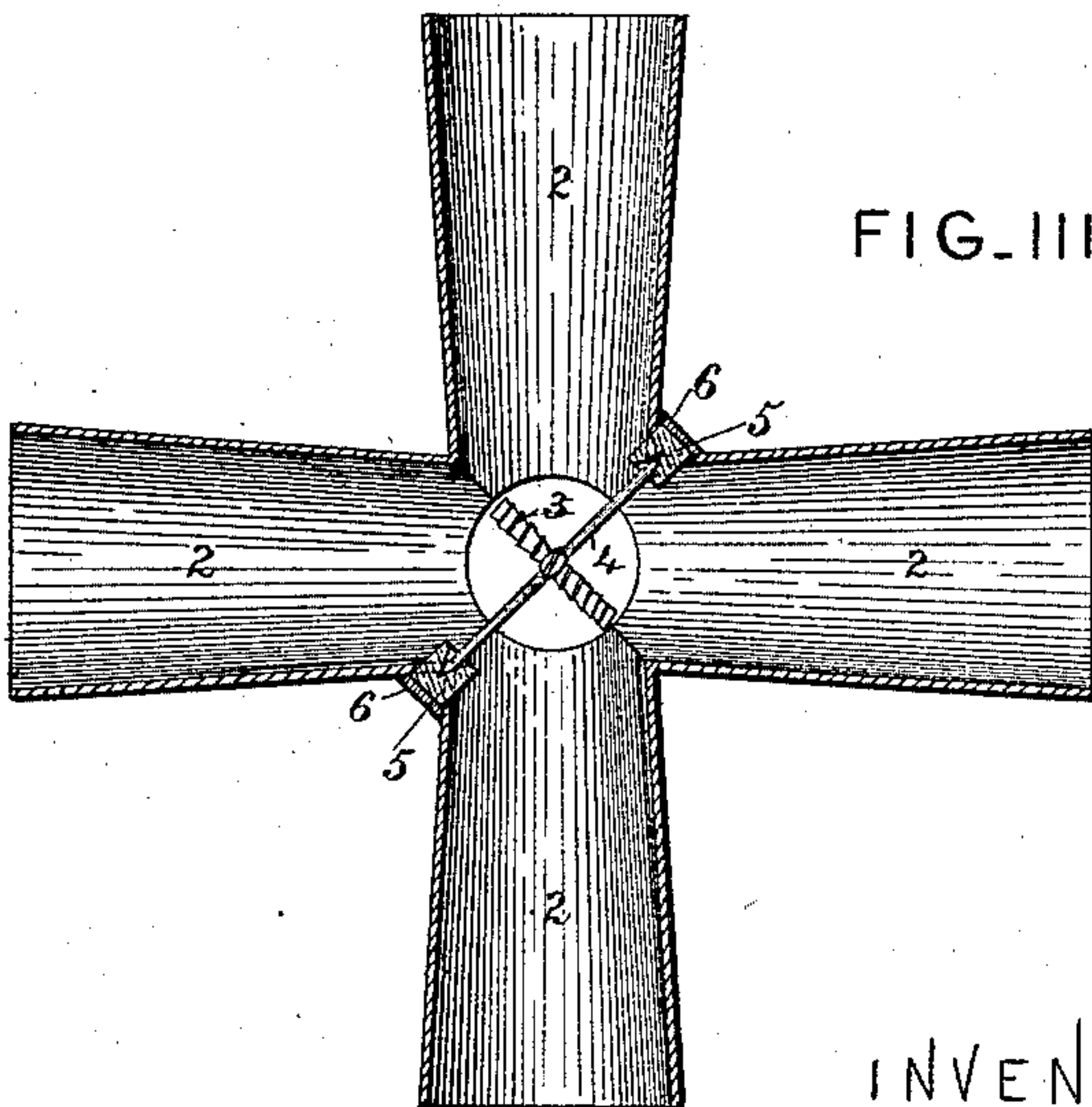


FIG. III.



ATTEST-

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# UNITED STATES PATENT OFFICE.

WILLIAM E. ROACH, OF WASHINGTON, DISTRICT OF COLUMBIA.

## VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 305,236, dated September 16, 1884.

Application filed March 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. ROACH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

The subject of my invention is a ventilating device applicable to buildings of all kinds, railway-cars, mines, and other places requiring ventilation.

It consists, essentially, of a shaft or flue connected above with a number of horizontal flues presented in different directions, and inclosing or containing in their common center a wind-wheel arranged obliquely in such a manner as to derive rotation from the wind entering at either of the horizontal flues, and by centrifugal action to cause an induced current through the vertical shaft with which the horizontal flues connect, the air rising through the vertical flue of the shaft being discharged through one or more of the horizontal flues.

In the accompanying drawings, Figure I is a perspective view of a ventilator, illustrating my invention. Fig. II is a vertical section of the same, on a larger scale, on the line II II, Fig. III. Fig. III is a horizontal section on the line III III, Fig. II.

1 represents a vertical flue connecting below with any apartment to be ventilated and above with horizontal flues 2, preferably consisting of two flue-pipes with flaring ends crossing one another at right angles, and in free communication at their common center with the vertical flue 1, which they surmount.

3 represents a wind-wheel mounted on a horizontal shaft, 4, and located directly over the axis or center of the vertical flue 1, this shaft being in or near the horizontal plane of the crossed horizontal flues 2.

A convenient mode of mounting the wind-wheel 3 consists in having it permanently fixed to its shaft 4, the latter consisting of a steel rod passing into or through simple glass

boxes 5, suitably set in the angles of the horizontal flues 2. The extremities of the shaft 4 may be inclosed by their boxes, as illustrated in Figs. II and III, or they may be supported in any other suitable or well-known manner, by means of which the wind-wheel 3 may be set in either direction to bring it in the required position over the center of the vertical flue 1.

The boxes in which the shaft 4 runs are protected from the weather by caps 6, which may be permanently soldered or made removable, as preferred.

From the above description, with reference to the drawings, it will be apparent that wind in any direction will pass into one or two of the openings of the horizontal flues 2, so as to be carried obliquely against one or the other face of the wind-wheel 3, imparting rapid rotation to the wheel, which produces an active upward current through the vertical flue 1 to supply the air, which is driven through two or more of the horizontal flues by the rotation of the wind-wheel.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A ventilator consisting of conducting-flue 1, surmounted by horizontal flues 2, and a wind-wheel, 3, contained therein, substantially as herein described.

2. The combination of the vertical flue 1, horizontal flues 2, and obliquely-arranged wind-wheel 3, substantially as and for the purposes set forth.

3. The combination of vertical flue 1, crossed horizontal flues 2, and a wind-wheel, 3, located at the common center of the crossed horizontal flues, substantially as and for the purposes set forth.

WM. E. ROACH.

Witnesses:

OCTAVIUS KNIGHT,  
L. M. HOPKINS.