

T. W. BRACHER.  
VENTILATORS FOR WINDOWS.

No. 195,335.

Patented Sept. 18, 1877.

Fig. 1

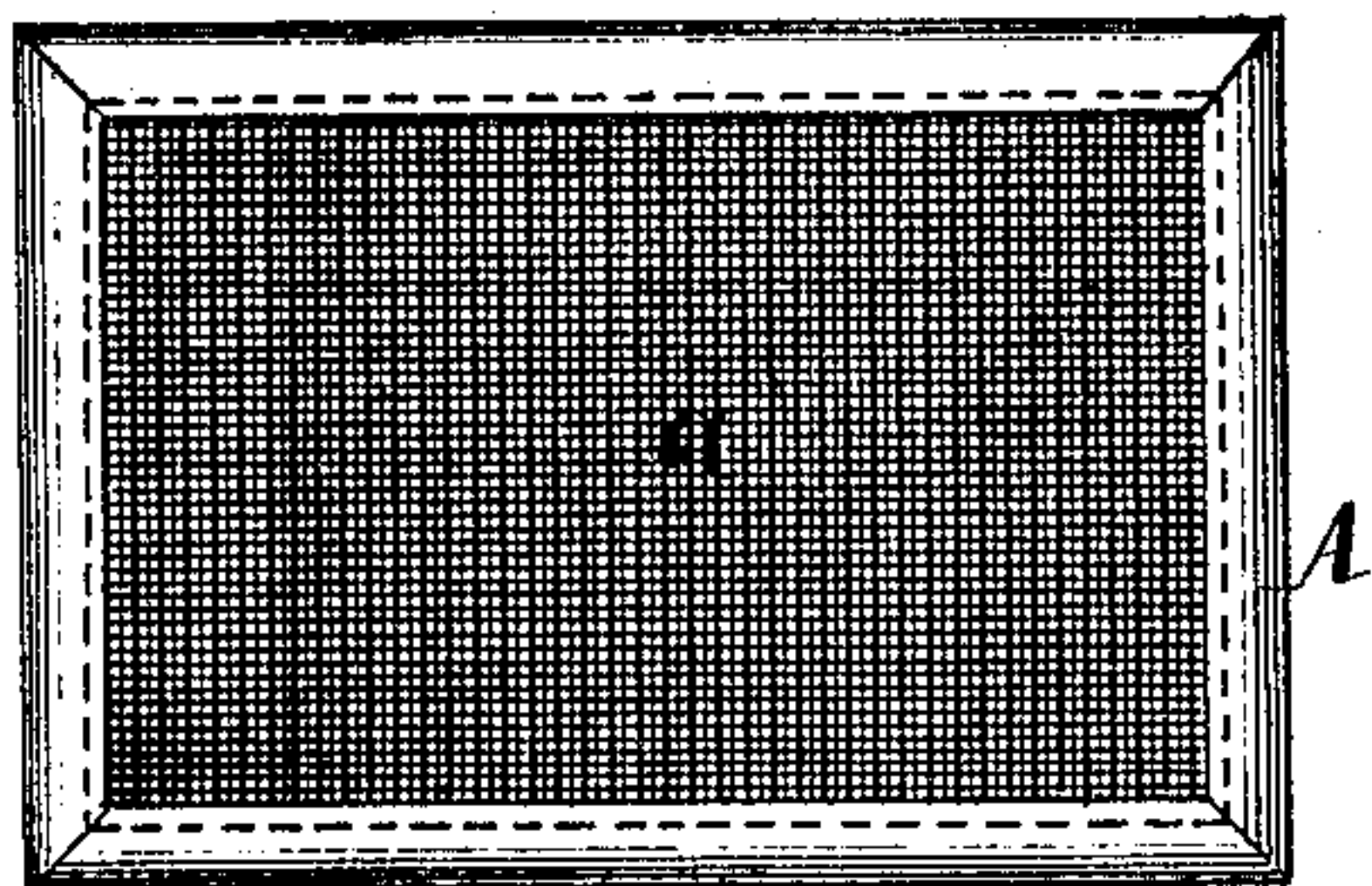


Fig. 2.

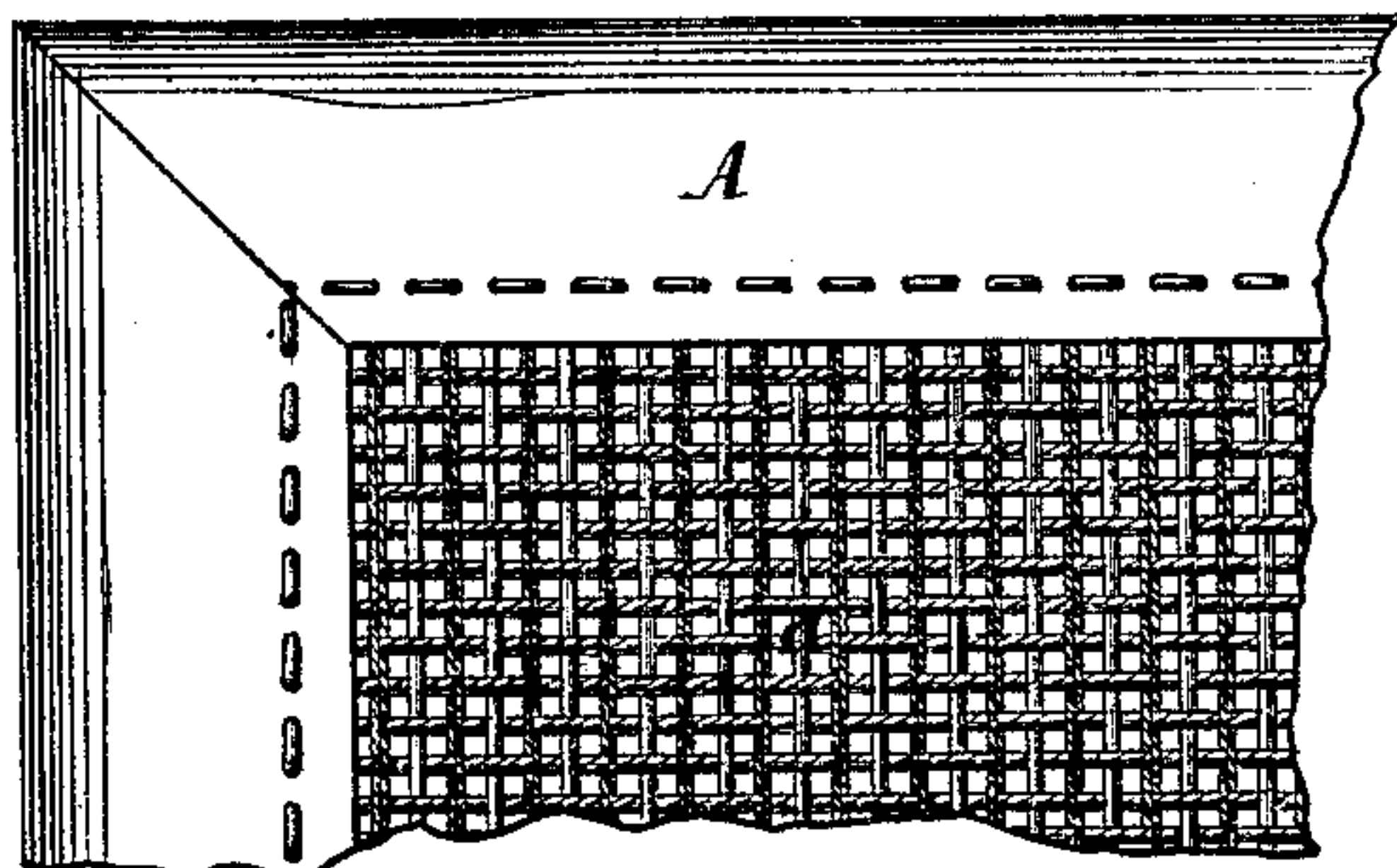


Fig. 3.



Witnesses.

Otto Aufeland  
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by

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# UNITED STATES PATENT OFFICE.

THOMAS W. BRACHER, OF NEW YORK, N. Y.

## IMPROVEMENT IN VENTILATORS FOR WINDOWS.

Specification forming part of Letters Patent No. **195,335**, dated September 18, 1877; application filed March 14, 1877.

*To all whom it may concern:*

Be it known that I, THOMAS W. BRACHER, of the city, county, and State of New York, have invented a new and useful Improvement in Ventilators for Windows and other openings, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a face view of my ventilator. Fig. 2 is a similar view of a portion, on a larger scale than the previous figure. Fig. 3 is a transverse section of the same.

Similar letters indicate corresponding parts.

This invention consists in a frame containing a ventilating-sheet woven of a warp of metallic wires, and of filling-threads of cotton or other fibrous material, said metallic wires being good conductors of heat, so that when the frame is placed in a window or other opening leading from the interior of a room into the open air the changes in the currents of air from the interior to the exterior, and vice versa, are promoted, and, at the same time, by the fibrous filling-threads, the dust and other impurities, and also the moisture contained in the external air, are prevented from entering the room.

It is a common practice to use for ventilating purposes, particularly in railroad-cars, frames which fit the window-frames when the sash is raised. Such ventilators do not exclude fine dust, and for this reason they are objectionable. In order to obviate this difficulty two sheets have been used, between which is placed a layer of loose cotton. This device excludes dust and moisture; but the cotton readily becomes displaced, and its proper effect is lost. These disadvantages I have overcome by the ventilator which I have described in my Patent No. 178,103, dated March 30, 1876, and which is composed of a frame containing a sheet of textile material, and supporting sheet of wire-gauze or perforated sheet metal.

My present invention is intended to simplify the construction of this ventilator and to increase its effect.

In the drawing, the letter A designates a frame, which is made of sheet metal or any other suitable material, either rigid or flexible; and in this frame I firmly secure a sheet, *a*, which is woven of a warp of metallic wires and of filling-threads of cotton or other fibrous material, so that in this single sheet are

combined the properties of a sheet of textile material and those of a supporting-sheet of wire-gauze or perforated sheet metal. It will be readily seen that by this combination the construction of my ventilator is cheapened and simplified.

But in using my new ventilator I also gain another great advantage, which will be apparent from the following observations: If my ventilator is fitted into a window the fibrous material prevents the entrance of dust or other impurities, while the pure air can freely pass through the meshes of the sheet; but in order to produce a good ventilation it is essential that the foul air from the interior of the room shall discharge, as well as that fresh air from the outside shall enter; or, in other words, that during certain periods a current of air shall pass from the outside in, and at other periods from inside out.

This object is attained by the combination of the metallic wires with the fibrous material. If the air from the outside passes in, these metallic wires are cooled off, and after awhile the internal air, coming in contact with these cold wires, begins to flow outward, and thereby the temperature of the wires is raised to that of the internal air. Then the outside air, in striking the warm wires, begins to flow in again, and by these means a constant change in the current is effected, and a perfect ventilation is produced.

I do not claim, in this application, anything shown and described in my Patent No. 178,103, my present invention being intended as an improvement on the ventilator described in that patent.

What I claim as new, and desire to secure by Letters Patent, is—

A ventilator for windows, composed of a frame, A, containing a sheet, *a*, woven of metallic wires and of threads of cotton or other fibrous material, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 12th day of March, 1877.

T. W. BRACHER. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.