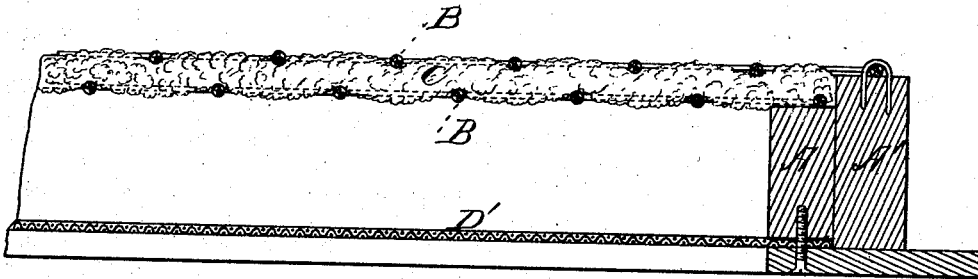
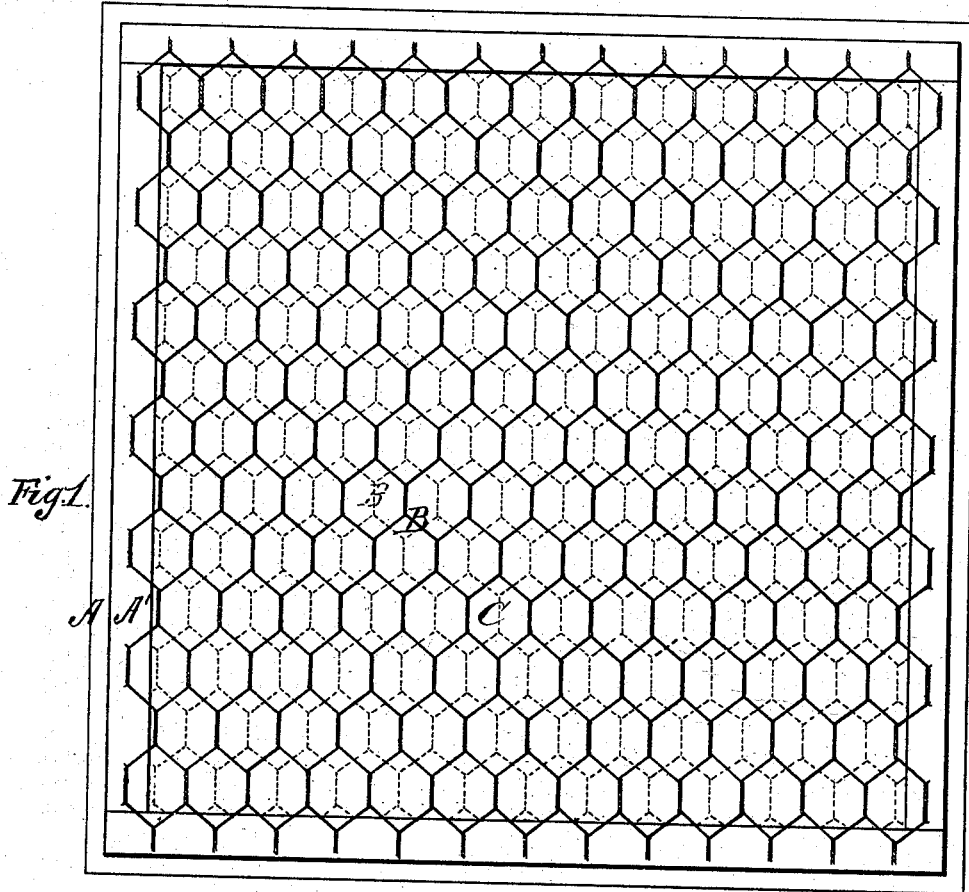


R. C. LUDLOW.  
Atmospheric Filter.

No. 198,637.

Patented Dec. 25, 1877.



WITNESSES  
*Villette Anderson,*  
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ATTORNEY

# UNITED STATES PATENT OFFICE.

RICHARD C. LUDLOW, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN ATMOSPHERIC FILTERS.

Specification forming part of Letters Patent No. **198,637**, dated December 25, 1877; application filed November 17, 1877.

*To all whom it may concern:*

Be it known that I, RICHARD C. LUDLOW, of St. Louis, in the county of St. Louis and State of Missouri, have invented a new and valuable Improvement in Atmospheric Filters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of my improved filter, and Fig. 2 is a cross-section thereof.

This invention has relation to improvements in atmospheric filters.

In regions where bituminous coal is used the atmosphere is saturated with imperceptible particles of soot, which, when admitted to dwellings and other buildings, is deposited on walls, furniture, and other objects, to their great injury and disfigurement.

The object of my invention is to free the atmosphere of all material impurities, and deliver it perfectly pure to the cold-air ducts of hot-air furnaces, so that when heated it may pass out of the flues and be distributed without the injurious effects above stated.

The nature of the invention consists in two frames, fastened together face to face, each provided with a coarse-meshed wire-netting on their contiguous faces, between which is placed a layer of cotton-wool or other analogous substance, the said frame being designed to be placed in an air duct or chamber, as will be hereinafter more fully described.

In the annexed drawings, the letters A A' designate two frames, of any desired size, form, or material, having stretched across them a wire-netting of a coarse mesh, preferably, lettered B. These frames are designed to be laid face to face, or to be slipped the

one within the other, and then secured removably together. Between the netting is placed a layer, C, of cotton-wool or other suitable material, of sufficient thickness to arrest the particles of soot or dust in the air, and to allow air to pass through freely. These frames are placed in a cold-air chamber or duct, and effectually exclude foreign matter from the hot-air chamber of a furnace or other heater.

Being protected from the direct contact of the wind and weather in the said chamber or duct, the filter thus formed is perfectly effective of the object sought to be produced; but when the filter is or must be placed upon the exterior of a building, I prefer to place a sheet of fine gauze, D', (wire preferably,) on the exterior face of the frame, which is exposed to the weather. This serves to arrest the coarser particles, thereby lessening the frequency of the necessity of changing the cotton, and, in great measure, to break the force of the wind, which, being unimpeded, would force the soot into and through the cotton to some extent.

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

1. The air-filter consisting of the filtering-layer of cotton fiber between the supporting and confining sheets of net-work, substantially as specified.

2. The combination, with the sheets of net-work B B and an interposed layer of cotton-wool, of a sheet of net-work, of a fine mesh, exterior to the sheets B B, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

RICHARD C. LUDLOW.

Witnesses:

O. P. SAYLOR,  
EDW. WELSH.