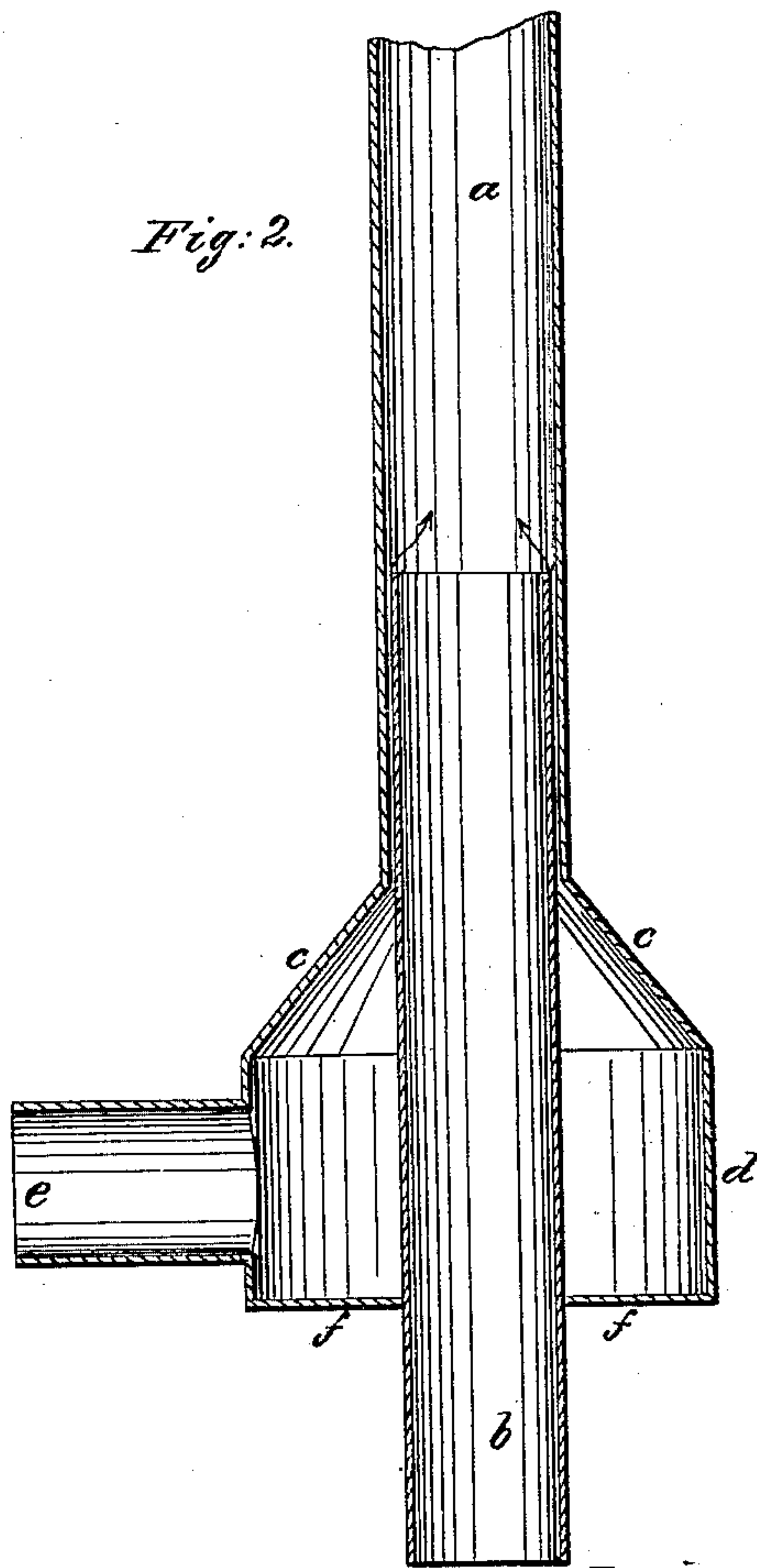
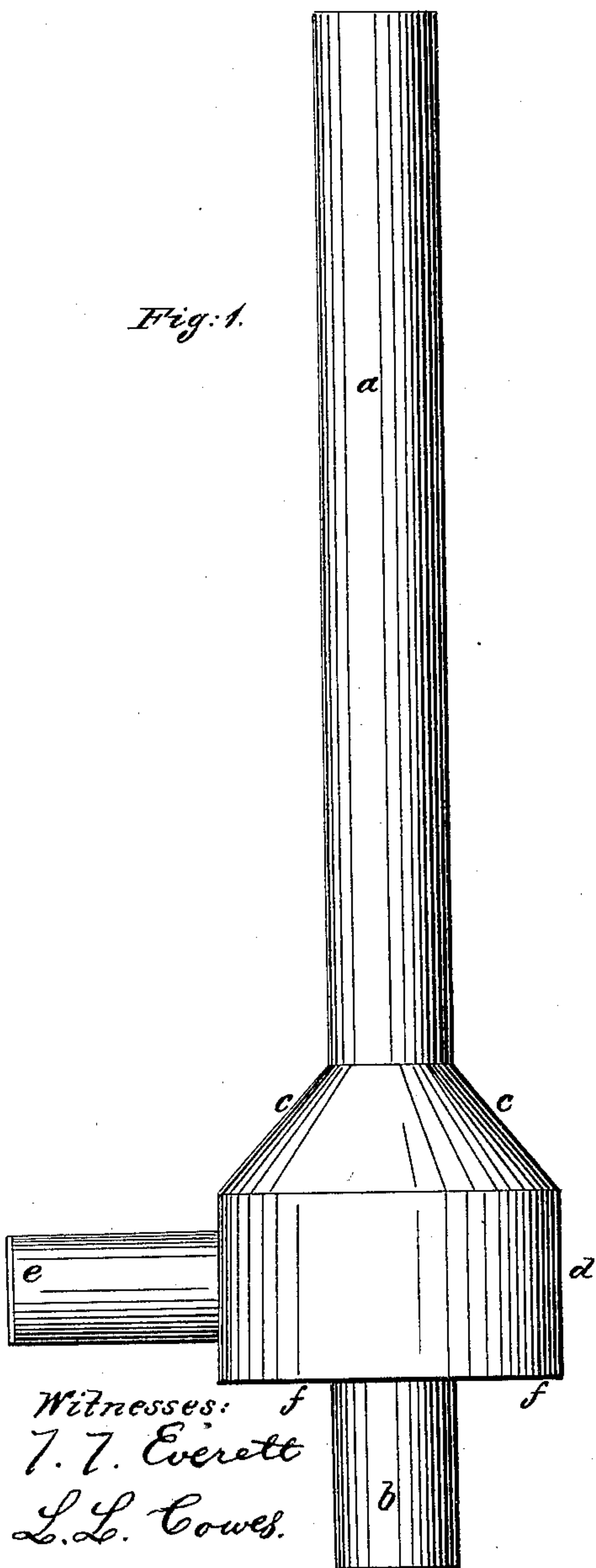


A. NIEL.

Apparatus for Increasing the Draft of Chimneys.

No. 22,570.

Patented Jan'y 11, 1859.



# UNITED STATES PATENT OFFICE.

ANTOINE NIEL, OF BROOKLYN, NEW YORK.

## APPARATUS FOR INCREASING DRAFT OF CHIMNEYS.

Specification of Letters Patent No. 22,570, dated January 11, 1859.

*To all whom it may concern:*

Be it known that I, ANTOINE NIEL, of the city of Brooklyn, in the State of New York, have invented a new and useful Improvement in Apparatus for Improving the Draft of Chimneys; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters and marks thereon.

Of the drawings forming part of this specification Figure 1 is a perspective view of my apparatus, and Fig. 2 a vertical longitudinal section thereof.

This apparatus consists of an exterior tube or cylinder (*a*) and an interior tube or cylinder (*b*). The tube (*a*), as is shown by the drawings, near its lower end has a conical expansion (*c*) which is connected to a cylindrical terminating piece (*d*). Into the part (*d*) is inserted a side tube (*e*). The end of the part (*d*) is closed as marked at (*f*), with the exception of the central part, where a circular opening exists for the passage of the tube (*b*). The tube (*b*), as will be perceived, extends upward into the tube (*a*) only a short distance beyond the conical portion of (*a*). There is some difference in the diameter of the two tubes, (*a*) being somewhat larger than (*b*) and, as is shown by the drawing, Fig. 2, an annular space is thus formed between the two tubes or cylinders. Tube (*b*) extends beyond the bottom or end (*f*) of tube (*a*). In use this extension of (*b*) becomes the continuation of the chimney or smoke pipe,—the chimney being contracted or so filled up by any common means between its sides and the pipe (*b*) as to make air tight whatever space there would be between the two.

The principle upon which this apparatus is constructed is well known. It is upon the established law of pneumatics that, a current of air moving in any direction through a bounded channel will attract within its current and carry along other currents of, or otherwise quiescent, air about it. Thus when the tube or cylinder (*b*) is made the continuation of the chimney or smoke pipe and the side tube (*e*) of the cylinder (*a*) is in the direction to receive a current of air, the current will be through (*e*) up the annular

space, indicated in the Fig. 2 of the drawings by red arrows, and up (*a*) to the atmosphere. This current will cause a current through (*b*) and thereby produce an efficient draft.

In many instances this apparatus can be placed permanently on the chimney, as in cases where the chimney is only effected by winds coming from some one direction, or when the chimney or smoke pipe is attached to a body in motion, but generally pipe (*a*) and its extensions must be so arranged as to be turned, by a vane, as is common in draft regulators, around tube or cylinder (*b*), the latter being fixed or rigid. It is evident, however, that both pipes or cylinders may be so arranged that they will be turned together, cylinder (*b*) being the pivot cylinder, and the operation of the apparatus be as here set out.

It will be noticed that the outer tube (*a*) extends some distance above the inner tube (*b*), and that the annular space between the two tubes above the conical part of (*a*) is quite contracted as compared with the space between the two tubes at (*d*). The expansion of the tube (*a*) at (*c*) and (*d*) makes a chamber into which the air enters freely, and as it can not as readily pass up through the contracted annular space a degree of compression ensues and thus therefrom results an increased draft.

Having thus fully and clearly described the construction and operation of my invention, what I claim as new and desire to secure by Letters Patent is,

The arrangement of the exterior tube, having the expanded conical and cylindrical portions constituting the chamber of compression, and the contracted annular space between the two tubes above the conical part of the tube (*c*), with the inner tube, the two tubes bearing the relation to each other as herein set forth and forming an apparatus for improving the draft of chimneys as described.

This specification signed this 9<sup>th</sup> day of December, 1858.

ANTOINE NIEL.

Witnesses:

L. L. COUES,  
T. T. EVERETT.