F. GREAVES

VENTILATING CAPS FOR PIPES, CHIMNEYS, &c.

No. 181,936. Patented Sept. 5, 1876.

Fig. 1.

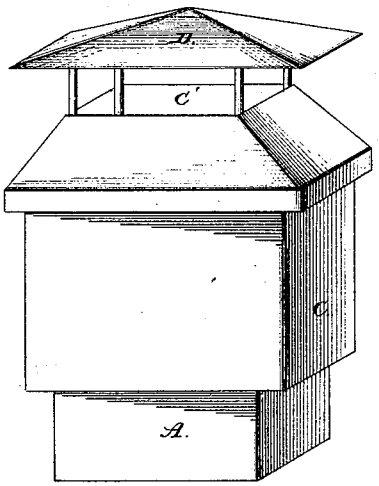


Fig. 2.

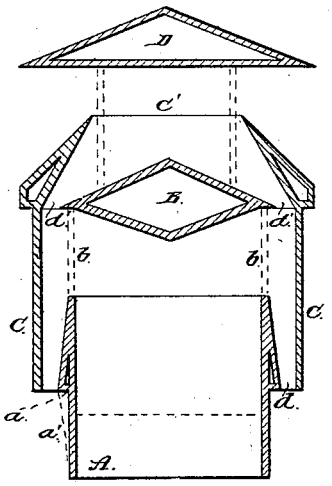


Fig. 3.

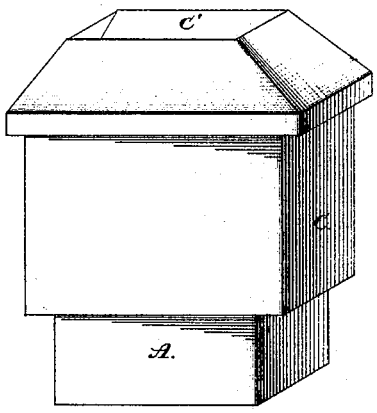
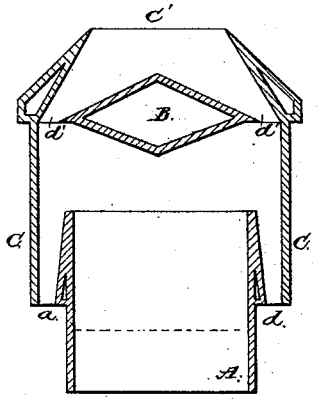


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK GREAVES, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN VENTILATING-CAPS FOR PIPES, CHIMNEYS, &c.

Specification forming part of Letters Patent No. **181,936**, dated September 5, 1876; application filed November 12, 1873.

To all whom it may concern:

Be it known that I, FRANK GREAVES, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ventilator-Caps for Flues, Pipes, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, and of its mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and making a part of this specification.

The nature of my invention consists in the production of an improved ventilator cap or head for flues and pipes or chimneys, which will secure a constant upward draft through such flue, pipe, &c., and prevent either upward or downward currents of air passing into and down such flue or pipe, to thereby interfere with or overcome the draft, and which can be used with complete success on flues or pipes standing by the side of, or terminating below the top of, walls, &c., and near their base.

Figure 1 is a perspective view of my improved ventilator-cap with its secondary top, and Fig. 2 is a vertical cross-section of the same. Fig. 3 is a perspective view of the same cap with the secondary top removed, and Fig. 4 is a vertical cross-section of the same.

A is a tube, which is put over or fitted tightly upon the flue or pipe, and which should project some little distance—say, four to five inches—above the top, in the case of an eight-inch flue or pipe. Covering such tube is a shield or deflecting-cap, B, which is supported by standards *b b* so as to be about four inches above the top of such tube, and which is somewhat larger than the open end of the tube, so as to project a little beyond it on every side, and the under side of such shield inclining downward toward the center, so as to deflect the current of air toward the side openings. Around the upper portion of the tube A there is also fixed a projecting rim, *a*, extending from such tube about one inch, which inclines toward the top of such tube, as shown in the drawings, and which may also extend downward, as shown by the dotted line *a'*, Fig. 2. Inclosing the tube A is another and larger one, C, leaving an open space between the two of from three to four inches, which extends downward some four or five inches below the top of the inner tube, and also extends upward in a straight line to about the line of the periphery or edge of the deflecting-cap B, when it contracts inward or toward the center, and extends in such direction far enough to make its mouth C′ about the same size as the inner tube A. In the case of a downward current or blast of air, the contracted mouth C′ limits the quantity of air that can enter, and the deflecting-cap B, being larger than the top of the tube A, not only prevents such a blast entering into and passing down the flue or pipe, but, in fact, causes such downward current to increase the draft of the flue, as the air passes down and out of the opening *d*, carrying the smoke, &c., down with it through such opening. Any upward current or blast of air outside of the flue is forced by means of the rim *a* against the side of the outer tube C, which thus passes up and out of the opening *d'*, and is prevented being thrown down into the tube A by reason of the overreaching deflecting-cap B.

To secure good practical results, the inner tube A should be substantially as large as the flue or pipe over or upon which it is placed, so as to offer no hinderance to the free passage upward of the products of combustion; and experience has shown that such tube best performs its office when its sides are parallel. The mouth C′ of the outer tube C should also be substantially as large as the tube A, so as to permit unobstructed and free discharge of the products of combustion and air without any tendency to backward movements of the same. The shield or cap B should also project over the sides of the tube A only sufficiently far to prevent any downward current or blast entering such tube A, and the particular construction, as described, of the under side of such cap, so as to have no cavity or open space under it in or by which there can be any eddying or back action of the air or products of combustion, and so as to deflect outward the upward current, is also regarded as highly advantageous and essential to the full satisfactory action of the device.

When the ventilator is to be used in positions where the natural draft is interfered with by cross-currents or eddies of air, as near high

walls, or when the flue opens or terminates near the bottom of such a wall, I make use of a secondary cap, D, which is placed a little distance above the mouth C′, and which has a breadth about the same as the diameter or horizontal width of the outer tube C. Such secondary cap more effectually prevents any downward current interfering with or overcoming the draft, and has been proved by actual experiment to overcome the injurious effects produced by such walls, creating or causing downward and cross currents of air, which, in most cases, seriously interfere with, if they do not practically render useless, ordinary ventilating-caps.

What I claim is—

1. The inner tube A, outer or overlapping tube C, and deflecting-cap B, with rim projecting over the end of the tube A, combined with the angular deflector *a*, substantially as described.

2. The tube A, and overlapping tube C, cap D, and deflecting-cap B, with projecting rim, combined with the angular deflector *a*, substantially as described.

F. GREAVES.

Witnesses:
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