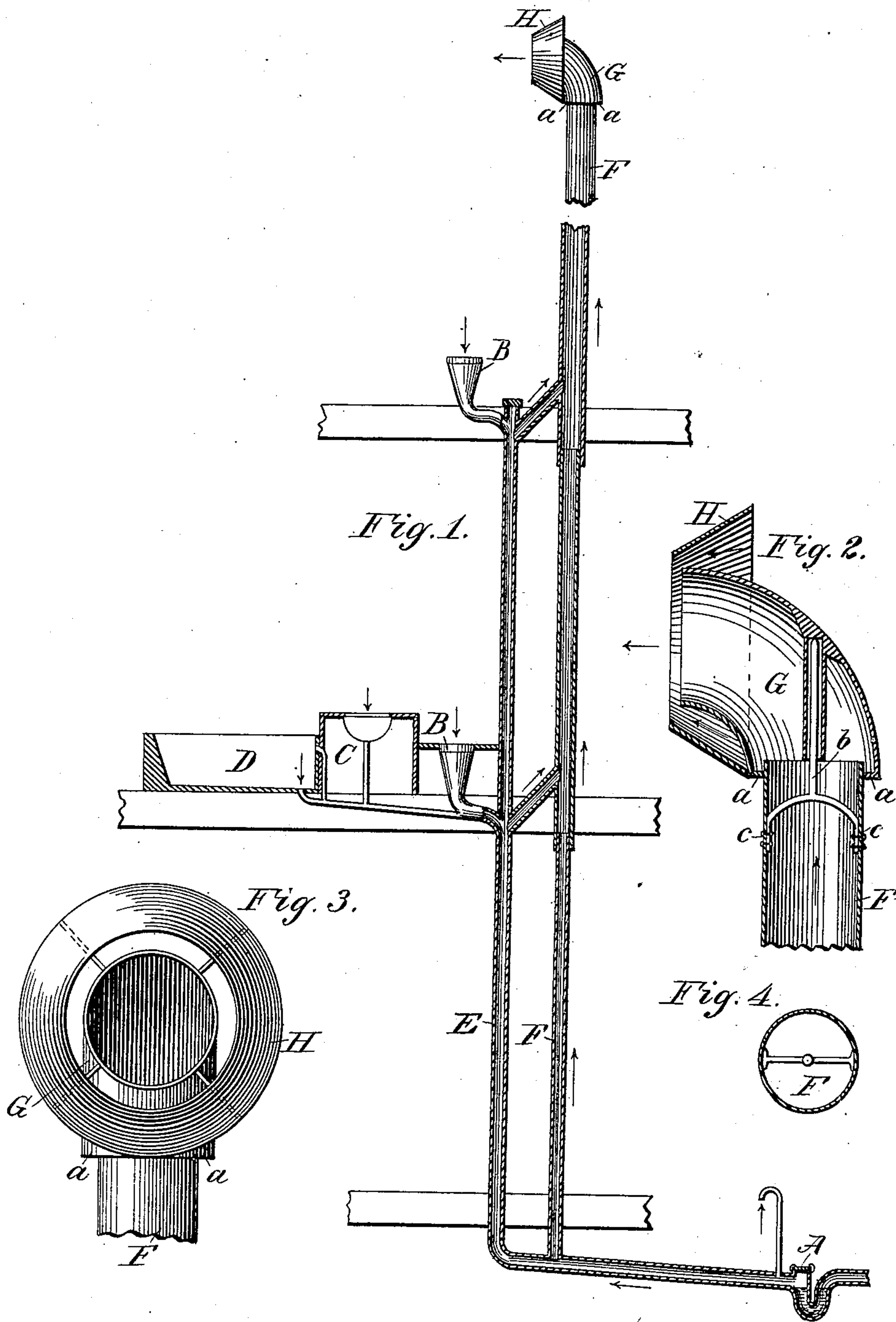


(No Model.)

J. COOPER.
VENTILATING PIPE AND COWL.

No. 266,433.

Patented Oct. 24, 1882.



Witnesses.

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VENTILATING PIPE AND COWL.

SPECIFICATION forming part of Letters Patent No. 266,433, dated October 24, 1882.

Application filed January 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN COOPER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Ventilating Pipe and Cowl for Water-Closets and other Sanitary Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section through my improved ventilating pipe and cowl, illustrating its application to a series of water-closets and sanitary apparatus in a building. Fig. 2 is an enlarged vertical section through the cowl and its concentrating-guard and the upper end of the ventilating-pipe, to which the cowl is secured. Fig. 3 is an end elevation of the cowl and its concentrating-guard. Fig. 4 is a horizontal section through the ventilating-pipe immediately below the cowl.

The object of my invention is to ventilate rooms containing water-closets and other sanitary apparatus, as well as to ventilate the apparatus itself, to avoid the emission or return of any deleterious gases arising from the presence or use of the said apparatus. It can be applied to closets or other sanitary apparatus with traps under each as well as to those where the intercepting trap is at the junction of the sewer and house-drain. Where sufficient height can be obtained all traps but the intercepting trap A, Fig. 1, can be dispensed with, as shown in the drawings. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

A represents the intercepting-trap. B B are the trapless closets. C is the wash-bowl. D is the bath-tub. E is the soil-pipe. F is the ventilating-pipe, and G is the revolving cowl secured to the top of the ventilating-pipe. This ventilating-pipe F increases in diameter from the bottom toward the top, as seen in Fig. 1, and where trapless closets and other sanitary apparatus are used this pipe is made as large in cross-sectional area as the sum of

the added cross-sectional areas of all the pipes entering into the soil-pipe below, or even larger, if desired, this increase in the diameter of the pipe causing a partial vacuum in the pipes below, which augments the force of the upward current of air and allows the air to pass through all parts of the apparatus at a nearly-uniform velocity. The diameter of the cowl is greater than that of the upper portion of the pipe F upon which it revolves, the space between the two at the bottom of the cowl being closed by the guard or base-plate *a*, as seen in Fig. 2. The velocity of the upward current of air in the ventilating-pipe is further increased by the cone-shaped concentrating-guard H, which causes a current of air from the outside of the cowl to impinge upon the air issuing from its mouth after passing up through the ventilating-pipe. The guard H is secured to the cowl G by means of suitable connecting straps or braces, whereby it is properly sustained in place. The cowl G is supported by and revolves upon a spindle, *b*, rising from a brace secured within the ventilating-pipe F and entering a socket-tube attached to the inside of the cowl.

I am aware that closets and other sanitary apparatus have had small ventilating-pipes attached to them to avoid siphonage, and where the traps have been dispensed with the ventilating-pipe has been of the same diameter as the soil-pipe, and where other pipes have been used they have been of the same diameter or smaller than the soil-pipe, thereby causing friction. These I do not claim; but

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

A ventilating-pipe, F, increasing in size toward the top, in combination with the cowl G, of greater diameter than the pipe F, and having the base-plate *a* and the guard H, substantially as described.

JOHN COOPER.

Witnesses:

J. A. PEASE,
C. H. GAY.