W. L. HAMILTON & G. McCULLOUGH.

VALVE CLOSURE FOR VENTILATORS.

APPLICATION FILED DEC. 20, 1917.

1,275,557. Patented Aug. 13, 1918.

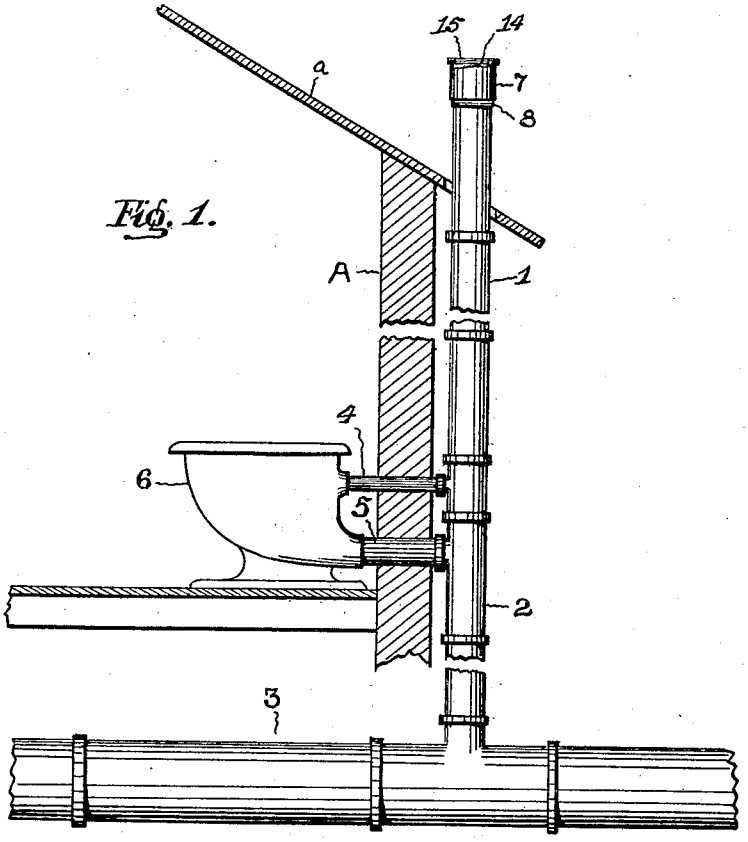


Fig. 1.

Fig. 2.

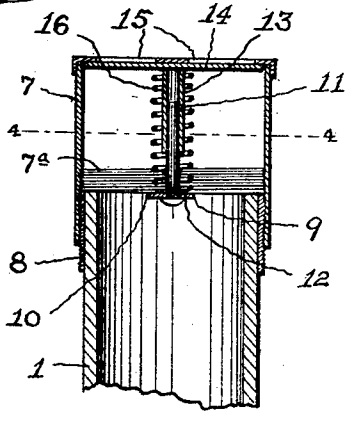
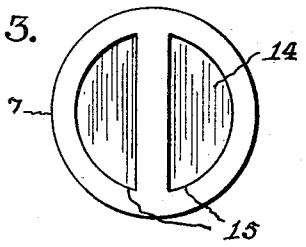


Fig. 3.



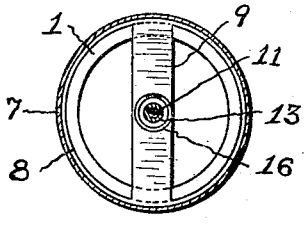


Fig. 4.

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UNITED STATES PATENT OFFICE.

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VALVE-CLOSURE FOR VENTILATORS.

1,275,557. Specification of Letters Patent. Patented Aug. 13, 1918.

Application filed December 20, 1917. Serial No. 208,017.

To all whom it may concern:

Be it known that we, WILLIAM L. HAMILTON and GEORGE McCULLOUGH, both citizens of the United States, residing at Austin, in the county of Travis, State of Texas, have invented a new and useful Valve-Closure for Ventilators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a valved ventilating cap for plumbing systems, and has for its object to provide a device of this character which can be readily fitted upon the upper end of a ventilating pipe, and which embodies novel features of construction for normally closing the same, although allowing an ingress of air when such becomes necessary for flushing purposes, thereby preventing the atmosphere around the house from becoming contaminated by the escape of deadly sewer gases from the open end of the ventilating pipe.

Further objects of the invention are to provide a valved ventilating cap of this character which is comparatively simple and inexpensive in its construction, which can be readily fitted in position, which will prevent the escape of poisonous gases without interfering in any manner with the ingress of fresh air into the pipe when such is necessary, and which can be adjusted to operate in the most effective manner under all conditions.

With these and other objects in view, the invention consists in certain novel combinations and arrangements of the parts as will more fully appear as the description proceeds, the novel features thereof being pointed out in the appended claims.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation of a plumbing system provided with a valved ventilating cap constructed in accordance with the invention, portions being broken away and shown in section.

Fig. 2 is an enlarged vertical sectional view through the valved ventilating cap and the upper end of the ventilating pipe.

Fig. 3 is a top plan view of the ventilating cap.

Fig. 4 is a horizontal sectional view through the ventilating cap on the line 4—4 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates a conventional ventilating pipe which extends upwardly on the outside of the building A and terminates at a point above the roof *a* thereof. This ventilating pipe forms a continuation of the plumbing pipe 2 which leads downwardly to the underground sewer 3, said plumbing pipe 2 being connected by the usual pipes 4 and 5 to the bath room fixture 6.

The ventilating cap 7 is shown as having the lower end thereof internally threaded at 7^a for engagement with an externally threaded collar 8 which is fitted on the upper end of the ventilating pipe 1. A cross bar 9 extends diametrically across the collar 8 at the top thereof and is seated within notches 10 in the upper end of the pipe 1, thereby locking the collar against rotation. A guide pin 11 projects upwardly from the middle of the cross bar 10, being shown as having the lower end thereof threaded for engagement with a nut 12, said pin passing through the cross bar which is rigidly clamped between the said nut 12 and the head of the pin. A sleeve 13 telescopes upon the guide pin 11, being mounted to slide freely thereon, said sleeve being pendent from and rigidly secured to a valve plate 14 which normally engages the top of the cap 7 and closes ventilating openings 15 therein. A coil spring 16 surrounds the guide sleeve 13 and pin 11, being interposed between the cross bar 9 and the valve plate 14, and normally holding the latter yieldably in a closed position. Under normal conditions this valve plate will close the openings 15 and prevent the escape of gases from the ventilating pipe, although any suction caused by the formation of a partial vacuum within the ventilating system will cause the valve plate to open downwardly against the action of the spring 16 and permit the ingress of air into the ventilating pipe. The ventilating pipe thus serves all of its useful functions, although the escape of sewer gases is prevented. By adjusting the cap 7 on the collar 8 the tension of the spring 16 can be regulated, thereby enabling the device to be adjusted in such a manner

as to obtain the most satisfactory results under all conditions. When the cap 7 is screwed downwardly the tension of the spring is increased, while when the cap 7 is screwed upwardly the tension of the spring is decreased.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A valved ventilating cap for plumbing systems, including a cap fitted upon the end of the ventilating pipe and having an opening in the top thereof, an inwardly opening valve plate normally closing the opening, a spring yieldably holding the valve in a closed position, and means actuated by adjustment of the cap on the ventilating pipe to regulate the tension of the spring.

2. A valved ventilating cap for plumbing systems, including a collar fitted upon the end of the ventilating pipe, a guide pin carried by the collar, a cap mounted upon the collar and having an opening in the top thereof, an inwardly opening valve plate normally closing the opening in the top, guide means pendent from the guide plate and slidably engaging the guide pin of the collar, and a spring yieldably holding the valve plate in a closed position.

3. A valved ventilating cap for plumbing systems, including a collar fitted upon the ventilating pipe, an axially disposed guide member carried by the collar, a cap adjustably applied to the collar and having an opening in the top thereof, an inwardly opening valve plate normally closing the opening in the top, guide means pendent from the valve plate and slidably engaging the guide member of the collar, and a spring yieldably holding the valve plate in a closed position, the tension of the spring being regulated by adjusting the cap upon the collar.

4. A valved ventilating cap for plumbing systems, including a collar fitted upon the end of the ventilating pipe and provided with a cross bar, an axial guide member projecting upwardly from the cross bar, a cap adjustably mounted upon the collar and having an opening in the top thereof, an inwardly opening valve plate normally closing the opening of the cap, a guide member pendent from the valve plate and slidably engaging the valve member of the cross bar, and a coil spring surrounding the guide members and interposed between the cross bar and the valve plate, said spring holding the valve plate yieldably in a closed position, and the tension of the spring being regulated by adjusting the position of the cap on the collar.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM L. HAMILTON.
GEORGE McCULLOUGH.

Witnesses:
W. F. McANALLY,
E. A. MINDUSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."