

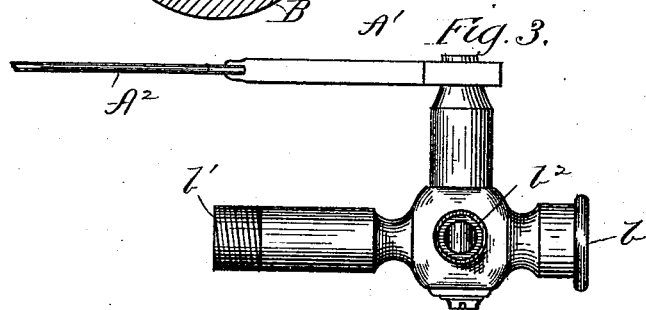
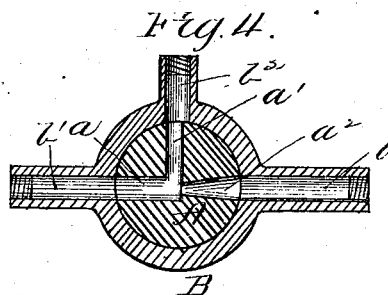
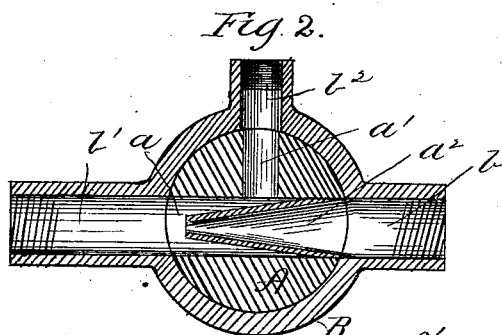
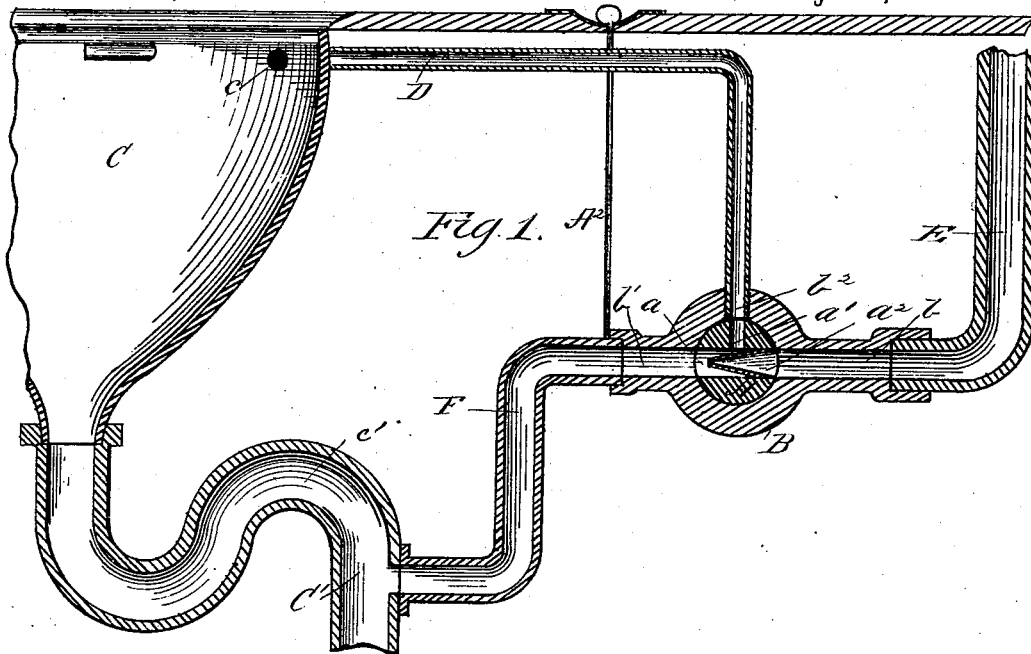
(No Model.)

W. L. HORNE.

STOP COCK INJECTOR FOR WATER CLOSETS, &c

No. 261,155.

Patented July 18, 1882.



Witnesses:
C. L. Hoyer
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Inventor,
William L. Horne
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C. H. Hoyer

UNITED STATES PATENT OFFICE,

WILLIAM L. HORNE, OF MERIDEN, CONNECTICUT, ASSIGNOR OF FOUR-TENTHS TO P. J. CLARK, OF SAME PLACE.

STOP-COCK INJECTOR FOR WATER-CLOSETS, &c.

SPECIFICATION forming part of Letters Patent No. 261,155, dated July 18, 1882.

Application filed March 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. HORNE, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Stop-Cock Injectors for Water-Closets and the Like; and I 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.

This invention relates to that class of devices known as "injectors." Its object is to produce an injector which is simple in construction and operation, thus reducing its cost to a minimum. Its further object is to arrange my injector in such relation with the bowl or hopper of a water-closet that the air or gases contained in said hopper will be exhausted therefrom by the action of the injector, and conducted away to a suitable pipe or flue.

To this end the invention consists, first, in a plug for stop-cocks which embodies the principles of an injector; second, in combining such a plug with a stop-cock shell having three or more ways; and, third, in the combination, with a water-closet bowl or hopper, of a stop-cock injector and suitable piping, whereby air or gases may be exhausted from said bowl.

In order that my invention may be fully understood by those familiar with the art, I will now proceed to describe the same with the aid of the accompanying drawings, wherein—

Figure 1 is a sectional elevation of my improved injector, the same being shown as connected with a closet-bowl to exhaust air or gases therefrom. Fig. 2 is a sectional view of the injector-cock, drawn to a larger scale. Fig. 3 is a plan thereof. Fig. 4 is a modification, shown in section.

The same letters of reference are used in all the figures to designate identical parts.

The injector is made in the form of a cock, the plug A of which is provided with channels a a' , opening into each other at an angle after the manner of a three-way plug. Within the channel a , which forms the combining-tube of the injector, is formed a nozzle or receiving-tube, a^2 , its end terminating a short distance beyond the channel a' of the plug. The shell

B of the cock is provided with three ways or channels, b b' b^2 , with which the channels a a' of the plug are adapted to register, as shown. The plug A may be rotated to close the channels of the shell B.

I have (in Fig. 1 of the drawings) shown my injector-cock as used in connection with a water-closet bowl to draw the air or gases from said bowl, and conduct said air or gases to the soil-pipe. In said figure, C is the bowl or hopper, which may be of any preferred form or material, though I prefer to use the pan-hopper, or one in which the flow of water is stopped while the closet is being used. Near the top of said bowl or hopper C, I provide an aperture, c , for the reception of one end of a small air-pipe, D, the other end of which is connected with the channel b^2 of the injector-shell. A water-pipe, E, which may be a branch pipe leading from the main supply-pipe of the closet, is connected with the channel b of the injector-shell, and the channel b' of said shell is connected with a pipe, F, leading to the soil-pipe C' of the closet below its trap c' . The plug A of the injector is provided at the exterior of the case B with a lever, A', to the end of which is secured a rod, A², or other suitable means for operating said plug. The plug being in the position shown in the drawings, a jet or spray of water will be emitted with considerable force from the receiving-tube a^2 of the plug into and through the combining-tube a , and so to the soil-pipe C', thereby creating a suction or draft in the combining-tube and air-pipe D, whereby the air or gases in the hopper C will be exhausted and discharged with the water into the soil-pipe C'. The action of the injector may be continuous, causing a constant exhaustion of air or gases from the hopper; or it may be put in operation only when the closet is in use; and the rod A² for operating the injector-plug to shut off or permit the flow of water may be provided with a suitable handle, projecting above the seat of the closet, or be connected to the seat to be operated automatically thereby.

It will be understood that I do not confine myself to the specific construction of the stop-cock injector hereinbefore described, as many modifications could be made in its construction.

tion without departing from the spirit of my invention. Fig. 4 of the drawings represents one of such modifications, the receiving tube or nozzle a^2 in this instance being formed by simply reducing the size of the way or channel. Instead of the pipe F leading to the soil-pipe C', it may be conducted to any suitable flue.

The hereinbefore-described arrangement for exhausting the air or gases from the bowl of a closet and conducting the same to the soil-pipe below the trap might be modified in some minor particulars—as, for instance, the air or branch pipe D or its equivalent might communicate directly with the soil-pipe, and operate in connection with an injector having no cock. The air or branch pipe D should in every instance, however, be provided with a cock to prevent the noxious gases from escaping from the soil-pipe into the bowl when the injector is not in operation.

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

1. An injector-plug for stop-cocks, consisting, substantially as before set forth, of a three-way plug, one of the ways of which is provided with an inwardly-projecting nozzle. 25

2. In a stop cock injector, the combination, substantially as before set forth, of the shell provided with three or more ways or channels, and the three-way plug, one of the ways of which is provided with an inwardly-projecting nozzle. 30

3. The combination, substantially as before set forth, of the closet bowl or hopper, the stop-cock injector, and the pipe-connections. 35

4. The combination, substantially as before set forth, of the bowl, the soil-pipe C', the air pipe or branch, an injector, and a stop-cock for cutting off the air in said branch. 40

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM L. HORNE.

Witnesses:

CHARLES W. MANN,
WELCOME E. BENKAM.