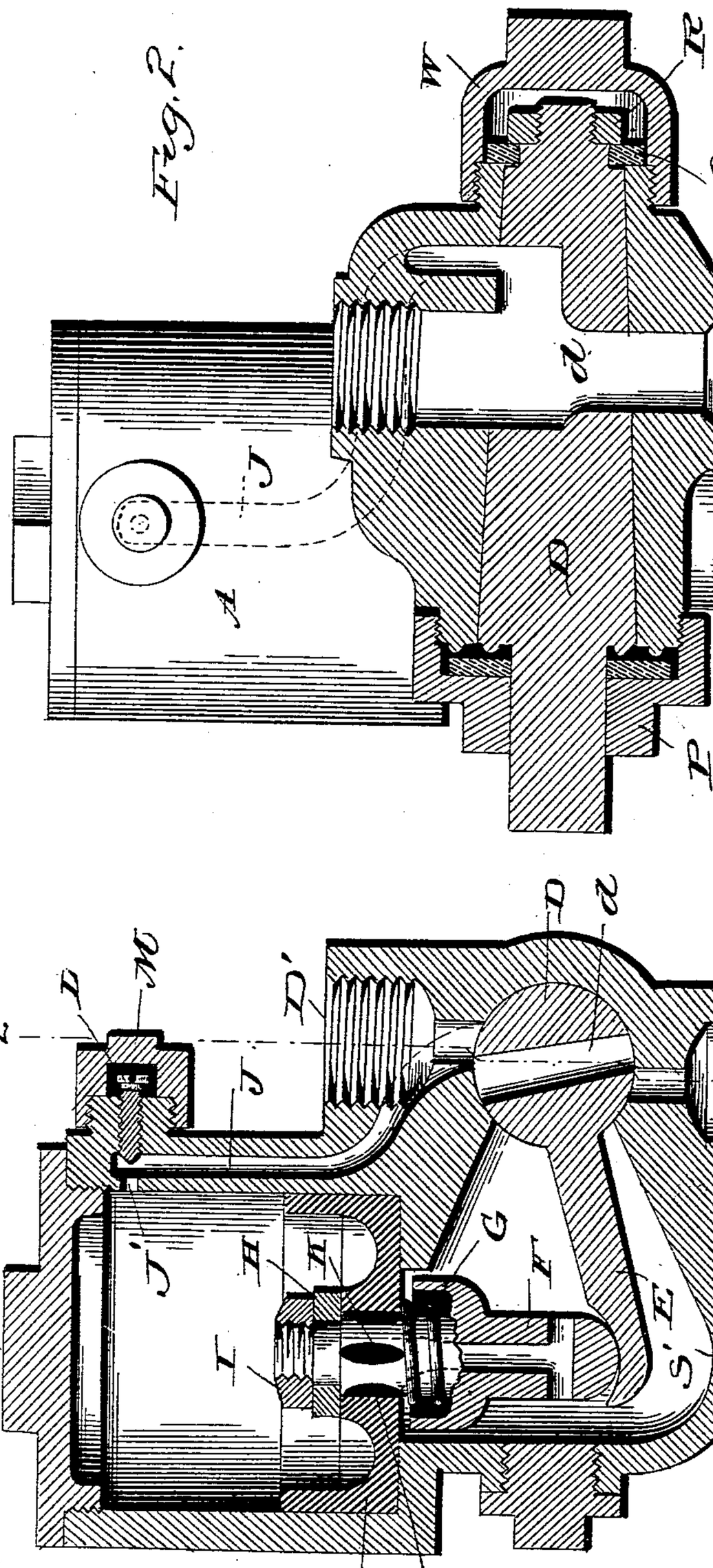
(No Model.)

J. W. BRAGGER.

DEVICE FOR FLUSHING CLOSETS.

No. 560,132. Patented May 12, 1896.



Witnesses:
L. C. Hills
A. L. Hough

Inventor.
John W. Bragger,
by Franklin H. Hough
Atty.

UNITED STATES PATENT OFFICE.

JOHN W. BRAGGER, OF WATERTOWN, NEW YORK, ASSIGNOR TO THE HITCHCOCK LAMP COMPANY, OF SAME PLACE.

DEVICE FOR FLUSHING CLOSETS.

SPECIFICATION forming part of Letters Patent No. 560,132, dated May 12, 1896.

Application filed January 2, 1896. Serial No. 574,142. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. BRAGGER, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Devices for Flushing Closets; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in valves for water-closets, and especially to a new and improved form of valve for flushing closets and automatically closing itself quietly, and so constructed that it can be adjusted to supply a sufficient quantity of water to thoroughly flush the closet at the pressure of water at which it is located and to overcome objections found in many of the tanks now in use.

A further aim of my invention is to produce a device with a cylinder in which a valve-operated plunger is designed to work, and which valve is operated by a valve-stem actuated by a lever connected to a plug, which latter is partially rotated when it is desired to flush the closet, and at the same time the stem is raised by the lever, as is also the plunger carrying the piston, and the water in the cylinder allowed to escape. After the lever operating the turning plug is released the valve in the plunger in the cylinder closes, and, as the plunger gradually lowers under the pressure of the incoming water into the top of the cylinder, the plug is slowly closed, and the water which has passed through the automatically-operated plug is carried away through a suitable duct to a trap, which, always being filled, will prevent any sissing and noise, which is caused by the water coming out in a spray when the parts are closing. By the use of the trap no perceptible noise will be made, as the air cannot enter, and hence water cannot spray.

To these ends and to such others as the invention may pertain to the same consists, further, in the novel construction, combination, and adaptation of the parts, as will be hereinafter more fully described, and then specifically defined in the appended claims.

I clearly illustrate my invention in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which drawings—

Figure 1 is a central vertical section through my improved automatically-operated valve. Fig. 2 is a vertical sectional view longitudinally through the plug.

Reference now being had to the details of the drawings by letter, A designates a cylinder, which is a part of casting marked X and is provided with a screw-threaded cap C and a plunger B, working in said cylinder or receptacle. The center of the said plunger is perforated, and the stem F, adapted to operate the valve H, works vertically in said aperture. The valve H is held in place on the upper end of the said stem by means of the nut I and rests on a shoulder thereon, and when the valve is closed it rests on a portion of the plunger surrounding its central aperture. The hub of the stem of the piston is recessed out to receive a spring G, the other end of the spring being adapted to bear against the lower face of the plunger to hold the valve against its seat and prevent water escaping from the receptacle A through the holes K in the valve-stem, except when the plunger is moving upward only.

D is a turning plug mounted in a portion of the casting X and has an elongated transverse aperture *d*, through which water is allowed to flow from the inlet D′, which communicates with a water-main. The said turning plug is provided with a suitable turning-handle and a lever E, the free end of which is recessed out on its upper side and rests underneath the lower end of the said valve-stem.

A port J has communication with the upper portion of the receptacle A at one of its ends, its other end with a port in the turning plug D or direct from inlet. The aperture at J′, entering the receptacle A, is regulated by the screw L, allowing more or less water to pass through into the receptacle, as may be desired. A cap M fits over the head of the

screw L, which is provided to retain any drippings which may ooze out around the adjusting-screw.

Leading away from beneath the turning plug is a duct emptying into a trap N, this duct being designed to register with the aperture in the turning plug when the plug is open. Leading into the trap is a small duct S, which leads to an aperture S′ into the chamber in which the lever E is located, and a suitable screw Q is provided, which may be adjusted to regulate the capacity of the outlet leading into the duct S. A cap M′ covers the head of the screw Q to prevent drippings from about the adjusting-screw.

The operation of my automatically-operated valve is as follows: When it is desired to flush the closet, the operator turns the handle of the turning plug so that the aperture in the plug will register with the inlet and outlet ducts and allow the water to freely pass to the trap. As the plug is partially rotated the lever E causes the piston-stem F to be raised, which forces the valve H open, and the plunger is caused to rise by the hub portions of the stem coming in contact with the lower portion of the said plunger. As the plunger rises the water in the receptacle A is allowed to pass through the holes K into the chamber beneath, and consequently the pressure in the receptacle A is relieved. The waste water thus passing through the apertures in the valve-stem is conducted away through the duct leading to the trap, and which latter, being filled with water, prevents air entering the chamber carrying the lever E, and hence avoiding unnecessary spraying and sissing. When the handle which turns the plug is released, the pressure above the plunger will close the valve regulating the aperture in the plunger and cause the plunger to gradually lower and with it the stem, which in turn causes the lever E to close the plug and shut off the stream of water passing through the aperture therein. It is now the greatest sissing would occur if it were not for the trap. It will be observed that the duct or aperture through the plug is of a larger diameter at its upper end than at its lower, so that when the handle to the plug is released the pressure of the water on the upper end of the aperture will cause the water to be forced through the duct J and into the receptacle A. The turning plug, which is held in place by means of the cap P and nut R, has suitable packing-washers O and rings bearing against the portion of the plug having the largest diameter, and a cap W covers the smaller end of the turning plug.

Having thus described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. A device for flushing closets, consisting of a cylinder having a plunger working therein, a valve-regulated aperture in said plunger, combined with a turning plug, which is adapted to cause the said valve to be opened and the plunger raised, when it is partially rotated, substantially as shown and described.

2. In a water-closet-flushing device, the combination with the cylinder, an inlet thereto, plunger and piston carrying a valve which is spring-actuated, as described, of a turning plug having an aperture designed to register with a supply and outlet channel, when the plug is open, of a lever secured to one end of the turning plug, its other end resting beneath the lower end of the piston-stem, whereby, when the plug is rotated, the piston and plunger are raised, substantially as shown and described.

3. An automatically-operated flushing device for water-closets, having in combination with a cylinder A, provided with a screw-cap, a plunger B centrally perforated and working in said cylinder, a piston-stem working in said aperture a valve seated on a shoulder of the said stem a nut for holding same in place, a recessed portion of the stem carrying a spring designed to bear against the under side of the said plunger, the walls of the recess designed to bear against the plunger, when the piston-stem is raised, a turning plug journaled in a casting X, having an aperture, the lever E secured at one end to the plug, its other end resting under the valve-stem, and the ducts J and S, regulating-screws L and Q, and the trap N, all substantially as shown and described.

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

JOHN W. BRAGGER.

Witnesses:
J. S. COON,
JNO. B. TAYLOR.