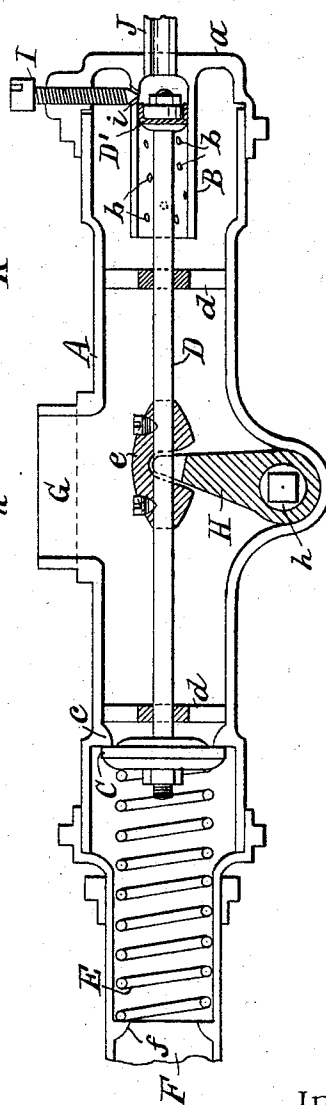
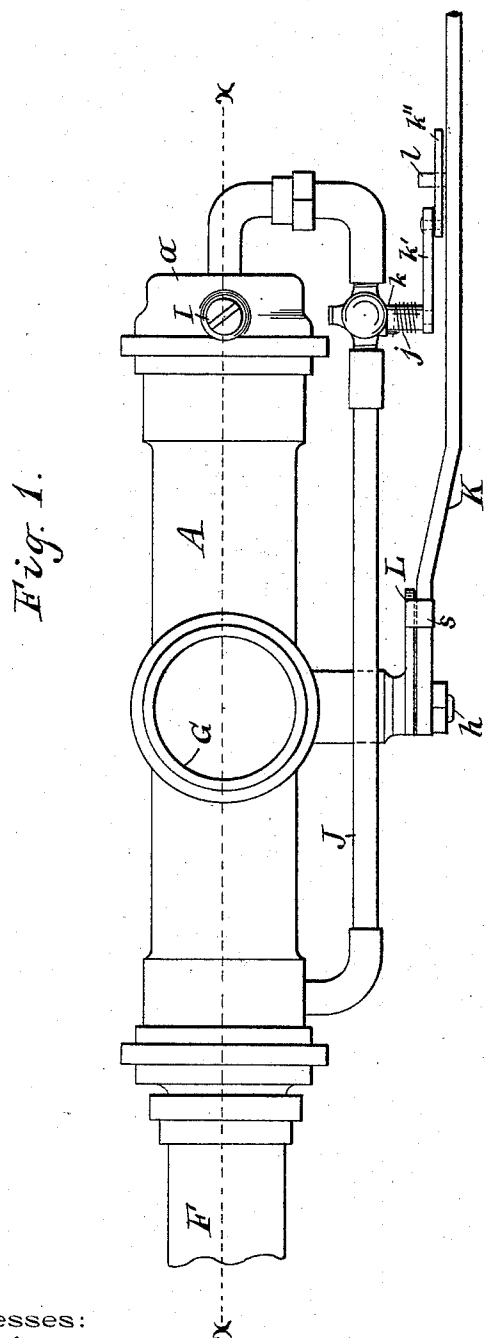




W. R. BAKER.
WATER CLOSET FLUSHING DEVICE.

No. 540,347.

Patented June 4, 1895.

Fig. 3.

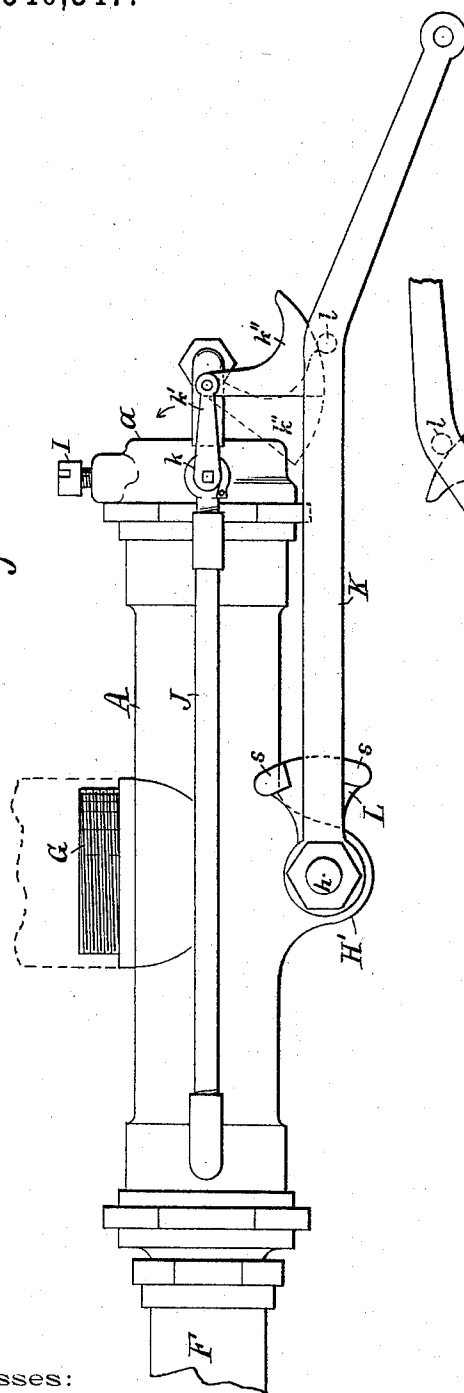
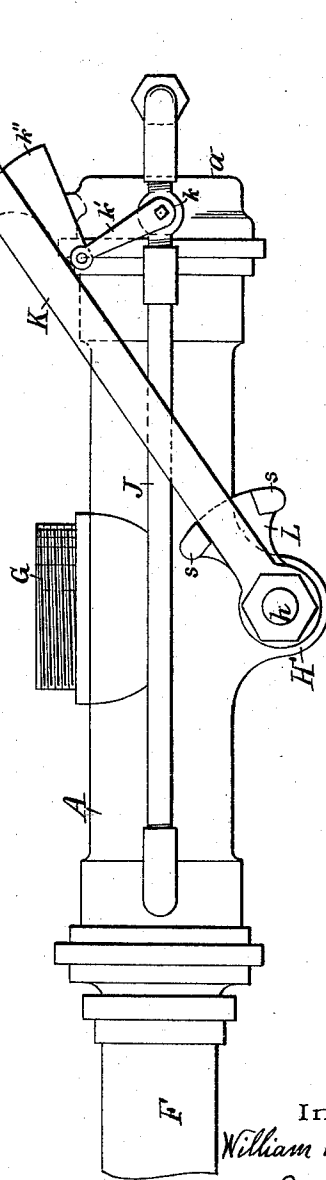


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER, OF WATERTOWN, NEW YORK.

WATER-CLOSET FLUSHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 540,347, dated June 4, 1895.

Application filed October 1, 1894. Serial No. 524,550. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. BAKER, of Watertown, in the county of Jefferson, in the State of New York, have invented new and useful Improvements in Water-Closet Flushing Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to flushing devices for water closets, which dispense with the service box, and furnish the necessary after-wash, and the object is to provide suitable and efficient means to allow the water to flow freely into the dash-pot during the opening of the main valve.

To this end my invention consists in the combination with a main pipe or chamber closed at one end and connected at the other end with a supply pipe, an outlet communicating with one side of the main pipe, a dash-pot within the latter pipe at the closed end thereof, a rod carrying a piston to operate in said dash-pot, a valve on the opposite end of the rod to open and close the supply pipe, and the lever to move the rod, of a small pipe or passage connecting the base of the dash-pot with the supply pipe, or the main pipe beyond the valve seat, a cut off in the small pipe or passage, and means through which the latter cut off is operated by the said lever; and my invention consists in certain other combinations of parts hereinafter described and specifically set forth in the claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a top plan view of a device embodying my invention. Fig. 2 is a vertical longitudinal section on line *xx* of Fig. 1. Fig. 3 is a side elevation showing the apparatus in its normal or inoperative position; and Fig. 4 is also a side elevation of the apparatus, but showing the same in an operative position.

Referring specifically to the drawings, A represents the main pipe or cylindrical chamber extending horizontally having its right hand end closed by a cap *a*. On the inner side of the cap, *a*, preferably integral with the same, as shown, is a dash-pot or tube B, concentric with the pipe, A, but much smaller in diameter than the latter and projecting from the cap a short distance. Extending

centrally and longitudinally within the pipe, A, is a rod, D, which is termed the piston rod. Said rod is adapted to be reciprocated longitudinally within the pipe and is supported by bearings, *d*, *d*, a distance apart. On the end of said rod entering the dash-pot is secured a piston, D', which fits quite closely to the sides of the tube B. On the opposite end of said rod is secured a valve, C, formed preferably of a leather disk of somewhat less diameter than the interior of the pipe A.

When the piston rod is forced to the right as far as possible by the action of the coiled spring, E, bearing with one end upon the valve, C, or a metallic washer of about the same size in contact with the leather disk, and with its other end upon a flange, *f*, within the supply pipe, F, the supply of water is cut off as the rim of the valve, C, is then in contact with a flange or seat, *c*, on the inside of the pipe. When the supply is thus cut off, or when the piston rod is moved to the right to its fullest extent, the piston, D', is in close proximity to the cap, *a*, or the base of the dash-pot B.

G is the outlet on the upper side of the pipe, A, and is connected by a pipe with the water closet or sink to be flushed. On the opposite side of the pipe A from the said outlet, is formed a bearing H', for a rock-arm H. Said rock arm extends toward the rod D, and being bifurcated at its free end lies on opposite sides of the rod and in a recess in a block, *e*, secured to the rod by set screws. By means of a spindle, *h*, extending through the said bearing and rock-arm, the rod, D, is moved to the left against the action of the spring to allow the water to flow around the valve, C, to and through the outlet G. A lever, L, on a square end portion of the spindle, operates the latter with the rock-arm as hereinafter explained. After being moved to the left a sufficient distance, the piston rod is released and allowed to return to its original or normal position by the action of the spring. If the piston, D', fits very closely and is not provided with a valve or opening, the tube, B, forming the sides of the dash-pot is perforated by a number of small holes, *b*, along its length, so that the valve, C, will gradually return to its seat owing to the gradual flow of water

from the dash-pot through said holes, *b*, that entered when the piston was moved to the left. The flow of water may be controlled or regulated by a screw, *I*, which passes through the side of the cap, *a*, and enters a small hole *i*, near the base of the dash-pot. By means of this screw the hole, *i*, may be closed more or less to delay the return of the valve *C* to its seat as long as may be necessary in order to flush the closet or sink sufficiently. By the adjustment of the screw, *I*, the flow of water may be prolonged after the handle has been released, as long as required.

Now in order that the water may flow freely to the dash-pot just before or at the instant the rod, *D*, begins to move to the left and in fact during the greater part of said movement, I provide a passage from the supply pipe to the base of the dash-pot by means of a small pipe, *J*, extending along on one side of and parallel to the main pipe. This small pipe, *J*, is bent or shaped to enter and extend through the center of the cap, *a*, at one end, the other end entering the side of the main pipe, *A*, to the left of the valve *C*. A cut-off in the small pipe opposite or near the cap, *a*, permits the flow of water through the pipe at the proper time. The cut-off has an oscillating spindle, *k'*, with a short arm, *k*, secured to its end for turning the spindle. When the cut-off is closed or in its normal position, the arm, *k'*, lies in a horizontal position, as shown in Fig. 3 of the drawings, and when it is open it extends in the direction shown in Fig. 4. On the end of the arm, *k'*, and loosely pivoted thereto is a segment of a disk, *k''*, having one side edge recessed. This part, *k''*, engages the operating lever *K* pivoted on the end of the spindle, *h*, through a pin, *l*, extending from the side of the said lever *K*. When the lever, *K*, is raised, the pin, *l*, strikes the curved edge of the part, *k''* and raises it with the arm, *k*, to the position shown in Fig. 4, thus opening the cut-off in the small pipe and allowing the water to flow into the dash-pot. When, however, the operating lever is raised slightly beyond the point shown, the part, *k''*, drops and the spindle, *k*, with its arm, *k'*, is returned to its original position by means of the coiled spring, *j*, on said spindle, closing the cut-off again.

In order that the movement of the rod, *D*, may not take place until the small cut-off is opened to an extent, I simply pivot the lever, *K*, on the end of the spindle *h*, and key or otherwise secure a short lever, *L*, to the spindle, *h*, said lever, *L*, being broad and provided with projecting stops, *s, s*, on its free end lying on opposite sides of the lever, *K*, said stops being separated a greater distance than the width of the last mentioned lever. It will be apparent that by this means the spindle, *h*, will not be rotated until the cut-off in the small pipe is partly opened, and further that the said cut-off is released and closed by its

spring, *j*, just before the end of the movement of the rod, *D*, to the left.

I do not claim the device separate from the side passage or pipe in this application, as said device is set forth and claimed in a pending application filed June 22, 1894, Serial No. 515,324.

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

1. The combination with a flushing device of the class herein specified and comprising a cylindrical chamber with an inlet and an outlet, a dash-pot in one end of the chamber, a piston in said dash-pot, a rod connecting the piston with a valve in the opposite end of the chamber and means for moving the rod provided with a lever, of a passage extending along one side of said chamber and connecting the dash-pot with the opposite end of said chamber, a cut-off in said passage and means for operating the cut-off engaging the said lever, as set forth.

2. The combination with a flushing device of the class herein specified and comprising a chamber with an inlet and outlet, a dash-pot in one end of the chamber provided with holes in its sides throughout its length, a piston in said dash-pot, a rod connecting the piston with a valve in the opposite end of the chamber, a rock-arm and spindle for moving the rod, a lever secured rigidly to the spindle and provided with projections, and a lever pivoted on the end of the spindle and lying between the projections, of a pipe extending along one side of said chamber and connecting the dash-pot with the side of said chamber near the end thereof remote from the dash-pot, a cut-off in said passage, and means for operating the cut-off engaging the said pivoted lever, as and for the purpose described.

3. The combination with a flushing device of the class herein specified and comprising a chamber with an inlet and outlet, a dash-pot in one end of the chamber provided with holes in its sides throughout its length, a piston in said dash-pot, a rod connecting the piston with a valve in the opposite end of the chamber, a rock-arm and spindle for moving the rod, a lever secured rigidly to the spindle and provided with projections, and a lever pivoted on the end of the spindle and lying between the projections, of a pipe extending along one side of said chamber and connecting the dash-pot with the side of said chamber near the end thereof remote from the dash-pot, a cut-off in said passage, a spindle connected to the cut-off provided with an arm, a segment of a disk pivoted to the arm, a pin on the said pivoted lever engaging the segment, and a spring on the spindle to return the cut-off to its normal position, as set forth.

4. The combination with a main pipe closed

at one end and connected at the other end,
with a supply pipe, an outlet communicating
with one side of said main pipe, a dash-pot
within the latter pipe at the closed end thereof,
5 a rod carrying a piston to operate in said dash-
pot, a valve on the opposite end of the rod to
open and close the supply pipe, and the lever
to move the rod, of a small pipe or passage
connecting the base of the dash-pot with the
10 supply pipe, a cut-off in the small pipe or

passage and means through which the latter
cut-off is operated by the said lever, substan-
tially as described and shown.

In testimony whereof I have hereunto
signed my name.

WILLIAM R. BAKER. [L. s.]

Witnesses:

F. R. HUNTINGTON,
J. B. WISE.