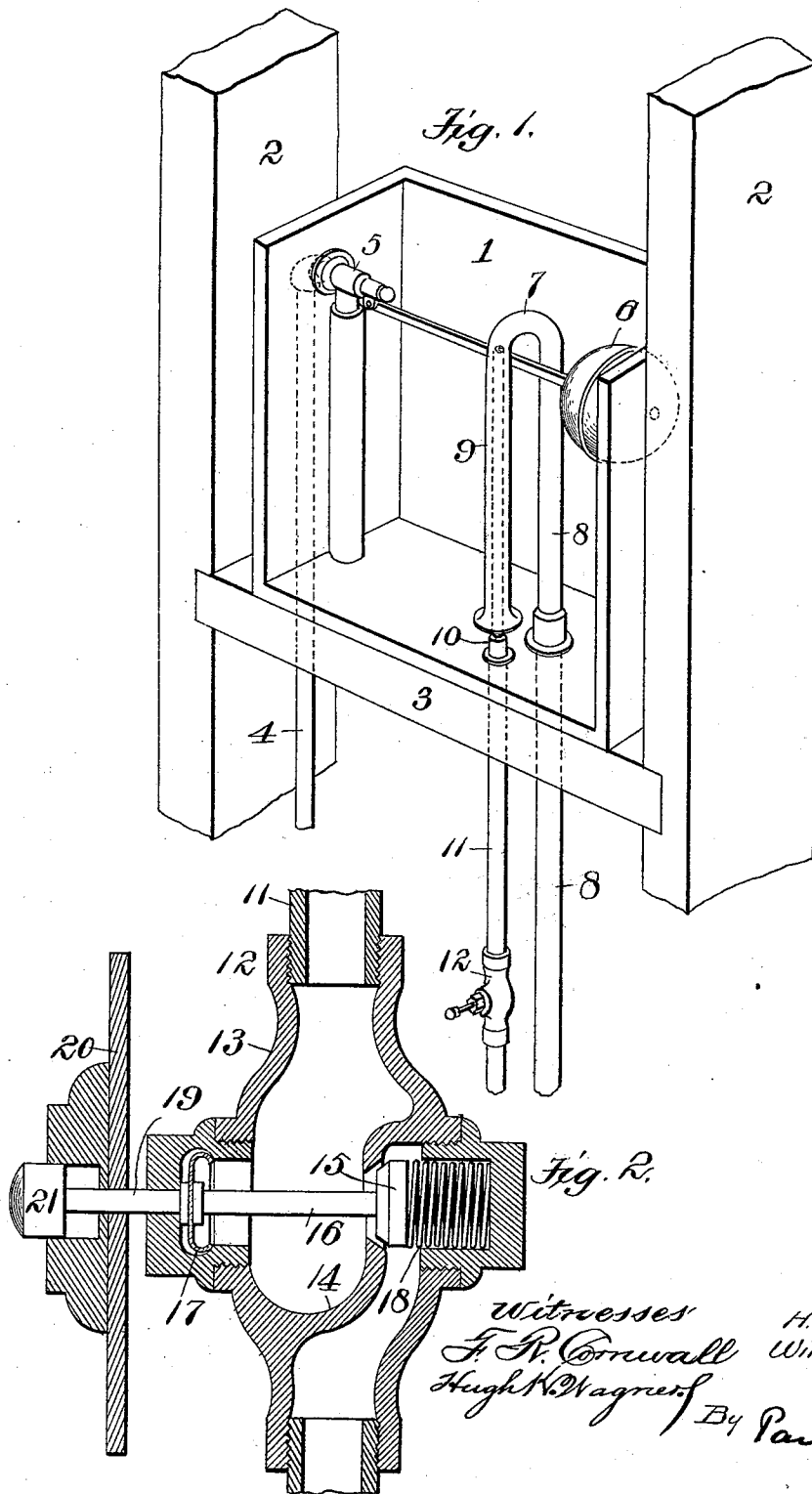


(No Model.)

H. W. KIRCHNER & W. A. SPEARS.
FLUSHING TANK FOR WATER CLOSETS.

No. 520,436.

Patented May 29, 1894.



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HENRY WILLIAM KIRCHNER AND WILLIAM A. SPEARS, OF DENVER,
COLORADO.

FLUSHING-TANK FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 520,436, dated May 29, 1894.

Application filed August 15, 1893. Serial No. 483,171. (No model.)

To all whom it may concern:

Be it known that we, HENRY WILLIAM KIRCHNER and WILLIAM A. SPEARS, citizens of the United States, residing at Denver, in the county of Arapahoe, State of Colorado, have invented a new and useful Improvement in Flushing-Tanks for Water-Closets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, wherein like figures indicate like parts wherever they occur, and in which—

Figure 1 is a perspective view, illustrating our improved flushing tank, the front wall thereof being removed to more clearly illustrate the interior. Fig. 2 is a sectional view through the push button and its controlled valve.

Our invention relates to a new and useful improvement in flushing tanks for water closets, &c., the object being to construct a tank of the kind described, in such manner that the same may be secreted in the wall, thus doing away with all exterior plumbing, as generally practiced, where outside tanks are used.

Coincidentally with the aforementioned object, another object is to dispense with the chain or cord which operates the flushing valve, and instead thereof, utilize a push button, located in the wall within convenient reach of the operator.

These objects we accomplish by the construction illustrated in the accompanying drawings, wherein—

1 indicates a tank or receptacle for water, which tank or receptacle is preferably of such dimensions as to be received between the studs 2, 2, and rest on a cross piece 3. The inlet or supply pipe for the tank, is indicated at 4, and leading up from any suitable source of supply, terminates in a float valve 5, which is controlled by the float 6. This float valve and float may be of any ordinary or approved construction, as they form no part of our present invention, only in the combination with the other features as will now be described.

7 indicates a siphon consisting of a long arm 8, which leads down into the bowl or

urinal as the case may be, and a short arm 9, which terminates in the tank near the bottom thereof. The bend of the siphon or connection between the long and short arms, is located slightly above the level of the water when the tank is "charged." Extending up into the short arm to a height above the level of the water in the tank when the same is charged is a pipe or nozzle 10, whose exterior diameter is less than the interior diameter of the short arm, so as to afford a space for the passage of water when the tank is discharging, said pipe being an extension of a pipe 11 which leads from any suitable source of supply of water. Located in this pipe 11 at some point where it can be easily actuated, is a valve 12, for controlling the passage of water through said pipe. This valve consists of a casing 13, into which the pipe is received, said casing being divided by a partition 14, which partition is formed with an opening controlled by a valve 15. This valve is provided with a stem 16, which stem is formed with a head in juxtaposition to a diaphragm 17. A spring 18 is located in the rear of the valve whose function is to seat the valve 15 after actuation.

To unseat the valve 15, we provide a rod 19 whose inner end bears against the diaphragm 17, and whose outer end extends through a wall plate 20, upon which a rosette is placed, where it is provided with a push button 21.

The operation is as follows:—For illustration, we will assume that the tank 1 is charged, the water being at a level dependent upon the position of the float. To cause a discharge of water into the bowl, from the tank, the push button 21 is pressed, unseating the valve 15, and permitting the water to flow into and through the pipe 10, which will create a partial vacuum in the short arm above the tank water, and by reason of the atmospheric pressure on the water in the tank, being greater than that in the short arm, it will cause the water in the short arm to rise, until it reaches the bend in the siphon. At this point its movement is greatly accelerated by the water emitted from the pipe 10, and in a very short space of time, the water in the long arm will reach a depth

greater than the length of the short arm, a
which time the tank will be discharged
through the medium of the siphon without
the use of the water flowing from the pipe 10,
5 which water is only necessary to create a
vacuum to start the flow in the siphon.

We are aware that there are many minor
changes in the details of the several features
of construction of my invention, which may
10 be made, without in the least departing from
the spirit thereof.

Having thus described our invention, what
we claim, and desire to secure by Letters Pat-
ent, is—

15 In a flushing apparatus for water closets,
&c., the combination with a flushing tank, of
a supply pipe provided with a float for con-
trolling the discharge pipe in the form of a
siphon in the flushing tank, the neck of which
20 is above the level of the water when the tank

is full, a pipe extending up into the short
arm of the siphon to a point in the neck
above the level of the water, and a valve in
said pipe for controlling the flow of water
therethrough, whereby when the water is ad- 25
mitted through said pipe it discharges into
the bend of the siphon, and, creating a par-
tial vacuum therein, draws up the water from
the tank through the short arm and starts
the flow through the discharge pipe, substan- 30
tially as described.

In testimony whereof we hereunto affix our
signatures, in presence of two witnesses, this
10th day of July, 1893.

H. WILLIAM KIRCHNER.
WILLIAM A. SPEARS.

Witnesses:

H. D. SMITH,
GEO. T. MCGLAUGHLIN.