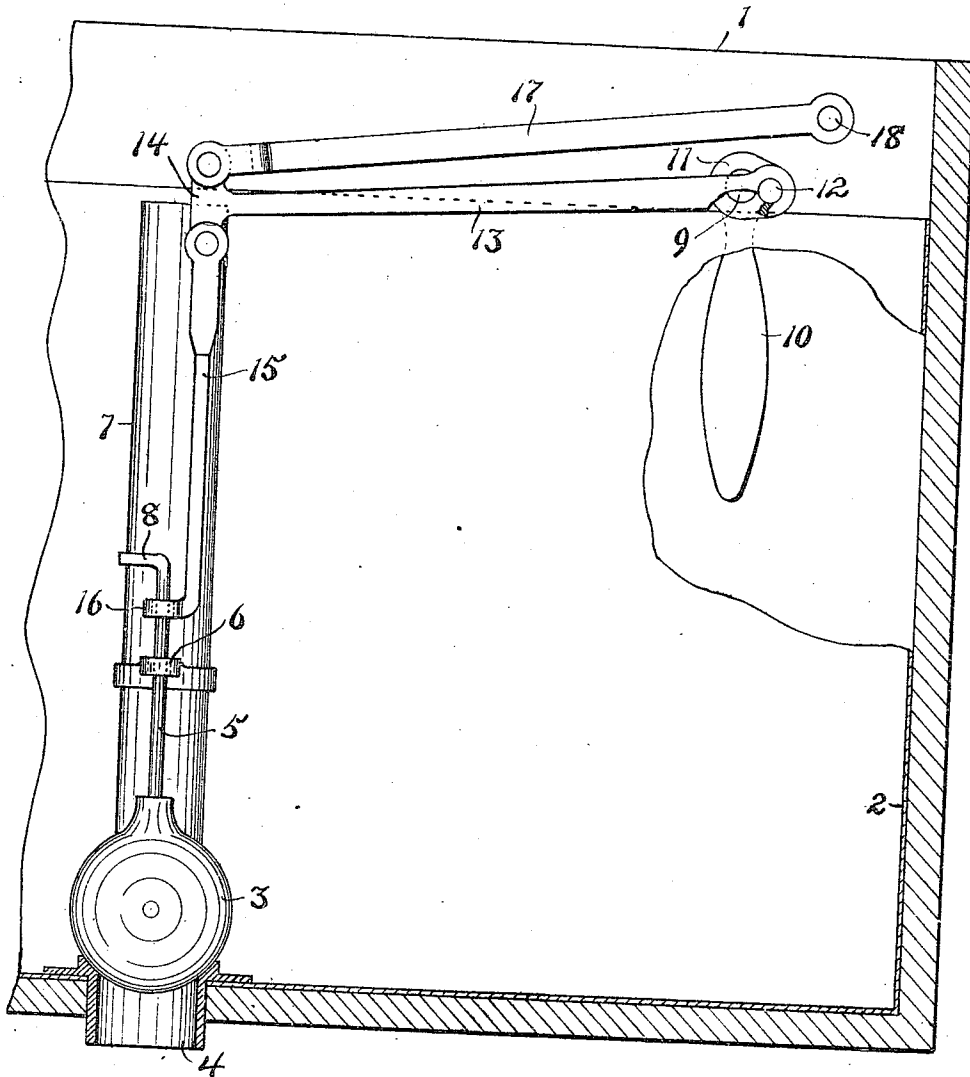


J. T. KNOTT.
VALVE OPERATING MECHANISM.
APPLICATION FILED OCT. 24, 1907.

959,758.

Patented May 31, 1910.



WITNESSES:
Wm H. Brumman
Mathilda Mittler.

John T. Knott INVENTOR

BY *A. G. Brumman*
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN T. KNOTT, OF FORT WAYNE, INDIANA, ASSIGNOR TO KNOTT VAN ARNAM MANUFACTURING COMPANY, A CORPORATION OF INDIANA.

VALVE-OPERATING MECHANISM.

959,758.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed October 24, 1907. Serial No. 398,935.

To all whom it may concern:

Be it known that I, JOHN T. KNOTT, a citizen of the United States of America, and resident of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Valve-Operating Mechanism, of which the following is a specification.

This invention relates to improvements in valve operating mechanism of that class used for flushing tanks for water closets, and the object thereof is to afford simple mechanism of its class under control of the handle which may be operated by turning in either direction. This object is accomplished by the construction illustrated in the accompanying drawing which is a vertical section of a portion of a flushing tank, partly cut away, and showing the relative arrangement of parts of the valve and operating mechanism.

Referring now to the numerals of reference marked upon the drawing: 1 is a flushing tank, and 2 is the internal metallic lining therefor.

3 is a hollow valve adapted to close the discharge opening 4 which leads through the bottom of the tank. The valve has a stem 5 which extends upward from the valve loosely through a guide 6 which projects from the side of the overflow tube 7, and the stem of said valve is bent at right angles at its upper end 8. A shaft 9 extends through the front of the tank, and upon its outer end is fixed a handle 10, and upon its inner end is fixed a crank 11, the latter having a pin 12 the center of which is out of alinement with the axis of the shaft 9. A swinging arm 13 is connected at one of its ends with the crank-pin 12, and at its other end has an integral T piece 14. To the lower end of the T piece 14 is loosely attached a connecting rod 15, the lower end 16 of which extends at right angles. That vertical portion of the valve stem 5 which extends above the guide 6 passes loosely through the bent end 16 of the connecting rod 15, and said valve stem is adapted to be lifted when the connecting rod is raised and its bent end comes into contact with the bent end 8 of the stem 5.

A strut 17 is pivoted at one of its ends to the upper end of the T piece 14 at the outer end of the arm 13, and at its opposite end to a stud 18 which extends from the inner face of the front of the tank at a point

higher than the shaft 9. The strut 17 is adapted to swing upon the stud 18 and its outer end therefore moves in the course of an arc of a circle, the center of which is coincident with the center of the stud 18. When the crank 11 is turned pressure is exerted at the outer end of the strut 17 because of the connection of the arm 13 with the outer end of the strut and crank-pin, and the strut will thereby be moved upwardly by the outer end of the arm. The connecting rod 15, being connected with the outer end of the arm 13, will likewise be raised and, in turn, the valve 3 will be lifted from its seat, allowing the liquid contents of the tank to pass through the opening 4 by gravitation. The crank-pin 12 is so located with respect to the other moving parts that the arm 13 will be forced toward the point of its connection with the strut 17 when the handle 10 is swung in either direction, and the outer end of the arm thereupon moves upwardly guided by the swinging end of the strut.

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

1. In apparatus of the class described, a tank having a discharge opening; a valve in the tank adapted to normally close the opening; a shaft extending through the wall of the tank; a handle fixed upon the outer end of the shaft; a crank fixed upon the inner end of the shaft; an arm having connection at one of its ends with said crank; a connecting rod having pivoted connection at the outer end of the arm and engagement with the valve to actuate the latter; a stud projecting from the inner face of the wall of the tank; and a strut pivoted at one of its ends upon the stud and having connection at its opposite end with the outer end of the arm.

2. In apparatus of the class described, a tank having a discharge opening extending through its bottom; a valve within the tank adapted to close the opening; a crank; a handle for operating the crank; an arm having connection at one of its ends with the crank and at its opposite end connected relation with the valve to lift the latter; and a strut having pivoted connection at one of its ends to a stationary point higher than the crank, and at its opposite end with the outer end of the arm, the strut being adapted

ed to guide the outer end of the arm upwardly when the latter is actuated by the crank.

3. In apparatus of the class described, a
5 tank having a discharge opening in its bottom; a valve for said opening; a crank; an arm connected at one of its ends with said crank and at its opposite end with the valve; and a strut having pivotal support at one of
10 its ends and connection at its opposite end

with the corresponding end of the arm and being adapted to guide the arm upwardly when the latter is actuated by the crank.

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

JOHN T. KNOTT.

Witnesses:

MATHILDA METTLER,
WM. H. BENSMAN.