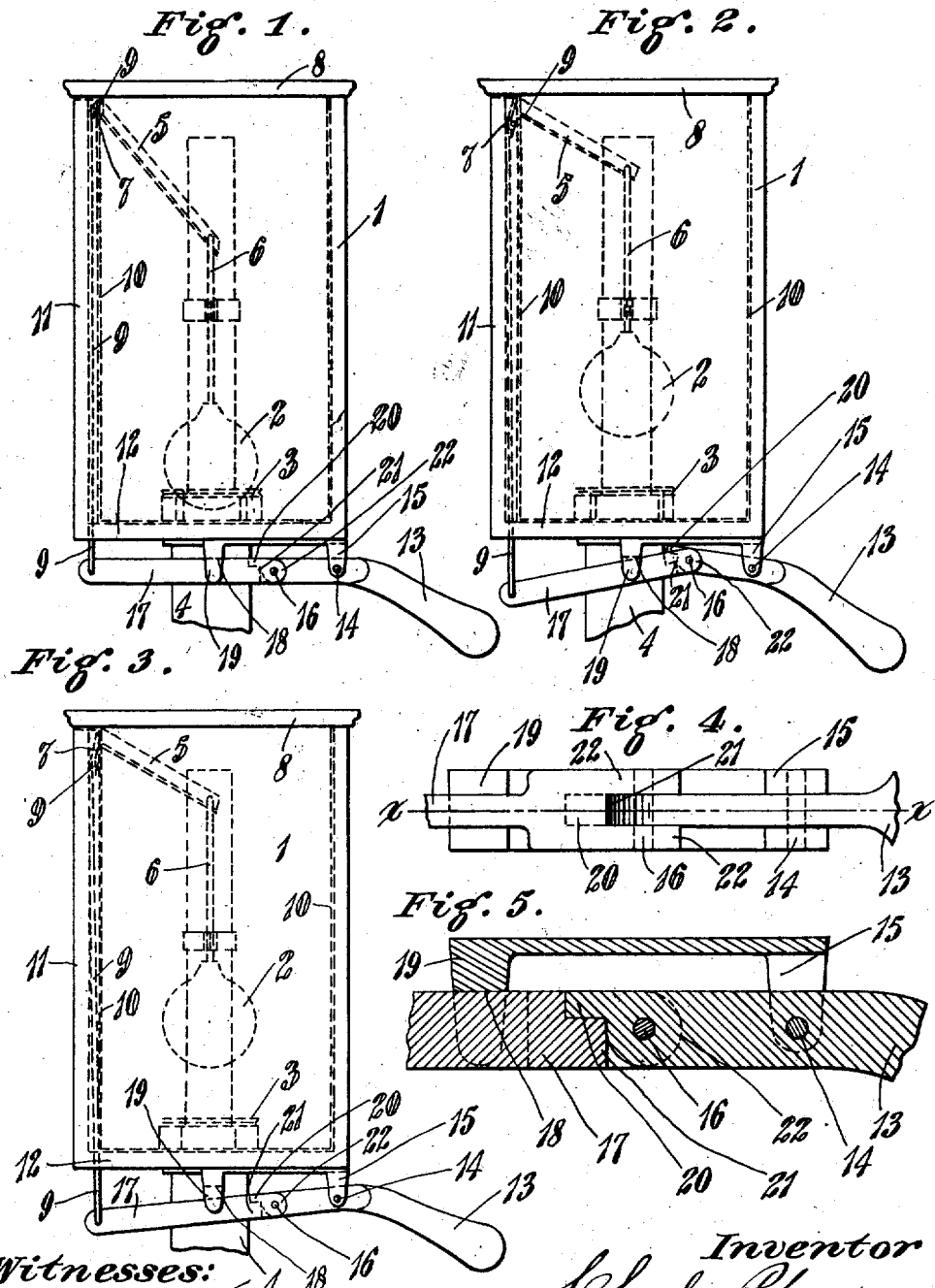


G. PFAU.
OPERATING MECHANISM FOR WATER CLOSET-FLUSHING TANKS.
APPLICATION FILED MAY 28, 1909

989,042.

Patented Apr. 11, 1911.



Witnesses:
Anna Pridel
Florence Hammel

Inventor
Charles Pfau
By James N. Ramsey
Attorney

UNITED STATES PATENT OFFICE.

CHARLES PFAU, OF CINCINNATI, OHIO, ASSIGNOR TO THE PFAU MANUFACTURING COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

OPERATING MECHANISM FOR WATER-CLOSET FLUSHING-TANKS.

989,042.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed May 28, 1909. Serial No. 498,948.

To all whom it may concern:

Be it known that I, CHARLES PFAU, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Operating Mechanisms for Water-Closet Flushing-Tanks, of which the following is a specification.

My invention relates to water closet attachments, and the object is to provide a mechanism for operating the escape valve of the flushing tank by a movement in either direction, so that ignorance of the design of the mechanism will not result in damage to the parts by exerting undue strain upon them in an effort to operate them in the wrong direction.

My invention consists in a handle, and a lever, the handle and one end of the lever being connected to form a rule-joint and the other end of the lever being connected to the mechanism to be operated, a fulcrum for the handle to which it is confined, and a fulcrum for the lever from which it may disengage, and in the construction and arrangement of these parts as will hereinafter be more fully set forth and claimed.

In the drawing: Figure 1 is an end elevation of a flushing tank provided with my improvement, the valve being represented as closed. Fig. 2 is a similar view illustrating the valve as being opened by depressing the handle. Fig. 3 is a similar view illustrating the valve being opened by raising the handle. Fig. 4 is a bottom plan view, enlarged, of the handle, the lever and the bracket, parts being broken away for lack of space. Fig. 5 is a longitudinal vertical section on the line $x-x$ of Fig. 4, parts being broken away for lack of space.

My invention is particularly applicable to water closet flushing tanks of the "low down" type. In such tanks, as in water closet flushing tanks in general, it is desirable to conceal the operating mechanism to as great an extent as possible in the interest of good appearance, as well as to afford the proper protection for the parts. With this end in view, the construction of the tanks has been developed in such degree that in the most improved constructions only a handle projects for the operation of the escape valve of the tank. At the same time, different constructions, thus hidden are embodied in flushing tanks of

different makes, some of which are designed to be operated by moving the handle upward and others of which are designed to be operated by moving the handle downward. The result of such a condition is that users, not being able to conveniently determine the direction in which the handle is to be operated, will be as likely to attempt to operate it in the wrong direction as not, if they are unfamiliar with a particular flushing tank, or are thoughtless in regard to the matter. Such attempts to operate the mechanism in the wrong direction manifestly are damaging to the mechanism, due to the strain thrown upon the parts which are designed to be operated only in one direction. This difficulty is obviated by providing a handle for the operation of the mechanism and so connecting it to the mechanism that the raising of the handle or the depression of it will operate the mechanism in the same direction and thus operate it properly. As illustrated, my improvement is embodied with a water closet flushing tank 1, provided interiorly with a valve 2 cooperating with a seat 3 in the escape pipe 4, this valve being adapted to be lifted from its seat by means of an arm 5 connected at one end to the valve and by means of the rod 6, and fulcrumed in a bracket 7 on the upper edge of the tank at the rear, under the cover 8 of the tank. A rod 9 extends down from the other end of the arm 5, this rod extending between the lining 10 of the tank and its rear wall 11 and extending through the bottom 12 of the tank.

The handle 13 for operating the escape valve 2 extends past the front of the tank and has a fulcrum 14 in a bracket 15 extending down from the lower side of the bottom of the tank near the front thereof. This handle 13 extends rearwardly of its fulcrum 14 and has a pivotal connection 16 with one end of a lever 17, which lever extends farther rearwardly and is pivotally connected to the lower end of the rod 9 near its other end. Rather nearer the forward end of the lever 17, a fulcrum 18 is provided for it, this fulcrum being a downward extension of the bracket 15 which extends rearwardly. The bracket has arms 19 flanking the lever 17 adjacent to the fulcrum 18 to guide the lever when it moves downwardly. The handle 13 has a rearward projection 20 on its rear end, near its upper side, and, as

shown, the lever 17 has a lug 21 with which this projection 20 may engage so that the connection between the handle 13 and the lever 17 constitutes a rule-joint, permitting
 5 relative movement of the handle and lever when the forward extension of the handle is depressed, raising the rearward extension and turning on the fulcrum 14. During this relative movement of the handle and the
 10 lever, the lever turns on its fulcrum 18, the part of it forward of this fulcrum being raised and the part to the rear being depressed, pulling down on the rod 9 and acting through the arm 5 and rod 6 to raise the
 15 valve 2 from its seat 3. If the forward extension of the handle 13 is raised, it will turn on its fulcrum 14 and its rearward extension will be depressed while, no relative movement between the handle 13 and the
 20 lever 17 being permitted, the lever 17 will be carried bodily downward, so that its rear end this time also will be depressed, raising the valve 2 from its seat in the same manner. Thus, whether the forward extension of the handle 13, which is the only
 25 part readily observed by the user, is depressed or raised, the valve will be operated in exactly the same manner, and at no time will there be any undue strain on the parts
 30 due to an attempt to operate them in the wrong direction.

As illustrated in the drawings, the lever 17 is bifurcated, having two members 22 between which is received the rear end of
 35 the handle 13 being connected thereto by means of the pivot pin 16 extending through the handle and the members 22, while the lug 21 is integral with the lever and fills the space between its members 22 near the lower
 40 side of the lever to the rear of the rear end of the handle, the handle 13 having the rearward projection 20 to engage with this lug 21. However, it will be understood that my improvement is capable of considerable modification, as well as adapted to be adjusted in
 45 various positions for operating upon mechanisms of different design without departing from the scope and spirit of the invention, and, therefore, I do not wish to be understood as limiting myself to the precise description and illustration contained therein,
 50 but

What I claim as new and desire to secure by Letters Patent is:

55 1. The combination of operating mechanism for water closet flushing tanks, with a fulcrum to which the handle is confined, a lever, and a fulcrum for the lever with which it may engage and disengage, said
 60 handle and one end of said lever being connected to form a rule-joint between said fulcrums, and the other end of the lever being connected to the mechanism to be operated, whereby the movement of the handle in
 65 either of two directions will move the oper-

ating mechanism in one direction, substantially as and for the purposes herein set forth.

2. In operating mechanism for water closet flushing tanks, the combination with
 70 the mechanism of the tank, of a handle extending forwardly of the tank, a fulcrum mounted on the tank to which said handle is confined and on which it may
 75 turn to be raised or depressed, an extension of the handle rearwardly of the fulcrum, a lever, a pivotal connection between the rearward extension of the handle and the forward end of the lever, a rearward projection on the rear end of the rearward extension of the handle near its upper
 80 side, a lug on the lever to be engaged by the rearward projection on the handle, whereby the connection between the handle and the lever constitutes a rule-joint, and
 85 relative movement between the handle and the lever only occurring when the forward extension of the handle is depressed, and a fulcrum for said lever rearwardly of its connection with the handle, with which
 90 said lever may engage during relative movement between the handle and the lever but with which it may disengage when the lever moves with the handle, said lever being connected rearwardly of its fulcrum to the
 95 mechanism of the tank to be operated and the part of the lever rearwardly of said fulcrum being moved downward whether said forward extension of the handle is raised or depressed, substantially as and for the purposes set forth.
 100

3. The combination of operating mechanism for water closet flushing tanks, with a fulcrum to which the handle is confined, a lever, and a fulcrum for the lever with which it may engage and disengage, said
 105 handle and one end of said lever being connected to form a joint between said fulcrums, and the other end of the lever being connected to the mechanism to be operated, whereby the movement of the handle in either of two directions will move the operating mechanism in one direction, substantially as and for the purposes herein set forth.
 110

4. The combination of operating mechanism for water closet flushing tanks, with a handle, a fulcrum to which the handle is confined, a lever, and a fulcrum for the lever with which it may engage and disengage,
 115 said handle and one end of said lever being connected to form a rule-joint, and the other end of the lever being connected to the mechanism to be operated, whereby the movement of the handle in either of two directions will move the operating mechanism in one direction, substantially as and for the purposes herein set forth.
 120

5. The combination of operating mechanism for water closet flushing tanks, with
 125

a handle, a fulcrum to which the handle is confined, a lever, and a fulcrum for the lever with which it may engage and disengage, said handle and one end of said lever
5 being connected to form a joint between said fulcrums, and the other end of the lever being connected to the mechanism to be operated, substantially as and for the purposes herein set forth.
10 6. In operating mechanism for water

closet flushing tanks, mechanism to be operated, a lever connected thereto, a handle pivoted to said lever, a fulcrum to which said handle is confined, and a fulcrum with which said lever is adapted to engage and disengage, substantially as set forth. 15

CHARLES PFAU.

Witnesses:

JAMES N. RAMSEY,
FLORENCE HAMMEL.