D. T. PICKLES.

FLUSH TANK VALVE.

APPLICATION FILED JULY 7, 1915.

1,177,443.

Patented Mar. 28, 1916.

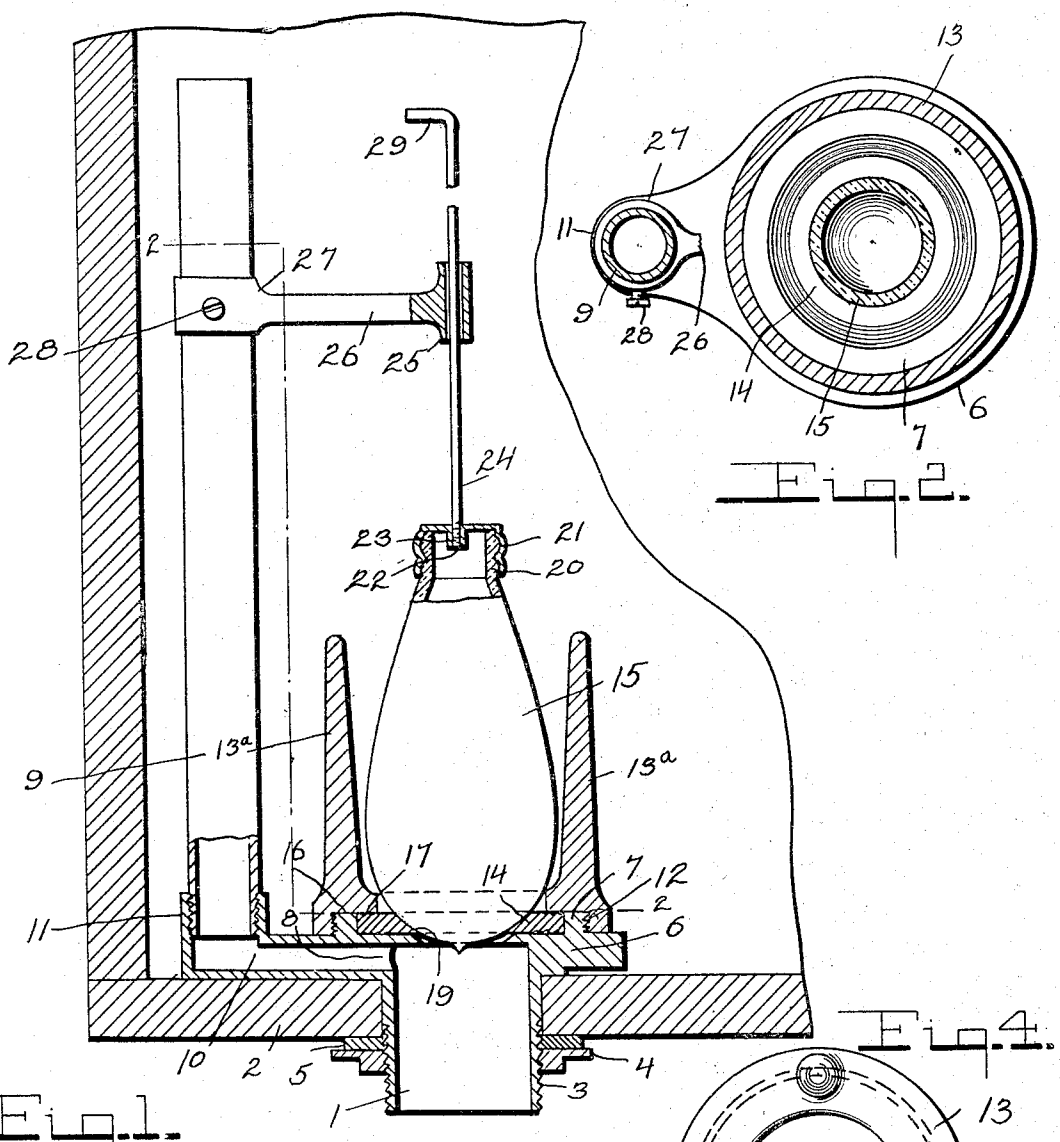


Fig. 1.

Fig. 2.

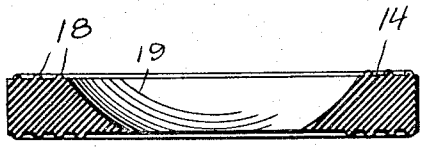


Fig. 3.

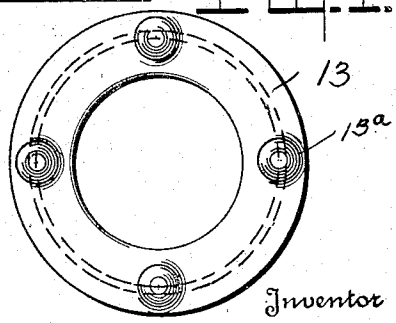


Fig. 4.

Witnesses

Inventor

D. T. Pickles

By A. Kaufmann Jr.

Attorney

UNITED STATES PATENT OFFICE.

DAVID T. PICKLES, OF WASHINGTON, NORTH CAROLINA.

FLUSH-TANK VALVE.

1,177,443. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed July 7, 1915. Serial No. 38,584.

To all whom it may concern:

Be it known that I, DAVID T. PICKLES, a citizen of the United States, residing at Washington, in the county of Beaufort and State of North Carolina, have invented certain new and useful Improvements in Flush-Tank Valves; and I do hereby 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.

The invention relates to improvements in flush tank valves.

The object of the present invention is to improve the construction of flush tank valves and to provide a simple, inexpensive and efficient flush tank valve designed to eliminate the ordinary rubber bulb and to provide a construction which will not be materially affected by the chemical action of the water of any section of the country whereby the durability of flush tank valves will be greatly increased.

A further object of the invention is to provide a flush tank valve adapted to employ a glass bulb of the general form of an ordinary forty watt electric lamp so that burnt out electric lamps may be employed as flush tank balls when desired.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing Figure 1 is a vertical sectional view of a flush tank valve constructed in accordance with this invention, and shown applied to a portion of a flush tank, Fig. 2 is a horizontal sectional view on line 2—2 of Fig. 1, Fig. 3 is an enlarged detail sectional view illustrating the construction of the valve seat, Fig. 4 is a detail view of the valve guide.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates an outlet pipe extending through the bottom 2 of a flush tank and having a threaded portion 3 receiving a lock nut 4 for clamping it to the bottom of the flush tank, a rubber gasket 5 of the ordinary construction being interposed between the lock nut and the bottom of the flush tank. The threaded portion of the outlet pipe is adapted to be coupled in the usual manner to the flush pipe leading from the flush tank to the bowl, not shown. The outlet or outlet pipe 1 is provided at the top with an enlargement 6 having a flange 7 at its upper face and provided with a lateral passage 8 which is connected with an overflow pipe 9 by a horizontal tubular extension 10. The tubular extension 10 is provided with an upwardly extending socket 11 into which the lower end of the overflow pipe 9 is threaded. The flange 7 which is annular is spaced from the inner wall of the outlet or outlet pipe 1 and it is exteriorly threaded at 12 for the reception of a guide consisting of a disk or ring 13 and four vertical posts 13^a and adapted to clamp a valve seat 14 on the upper enlarged portion of the outlet. The posts 13^a are adapted to guide a valve 15 to the seat 14 and they and the disk 13 are constructed of any suitable material and the disk or ring 13 is provided at its lower end with an interior annular recess 16 forming an upper shoulder 17 which engages over the upper face of the valve seat 14 and clamps the same firmly in position. The valve seat 14 which is designed to be constructed of soft material such as rubber, lead, fiber, vulcanized rubber or the like to enable the valve 15 which is constructed of glass to seat itself without breaking is provided at its upper and lower faces with corrugations 18 of annular form to provide a water tight connection or joint and prevent any leakage at that point. The valve seat has a concaved valve receiving face 19 and it is in the form of a washer or gasket and is adapted to be readily replaced when necessary. The valve 15 which consists of a bulb of the same shape as a forty watt electric lamp has a threaded neck 20 for the reception of a threaded cap 21 which is also provided with a central threaded socket 22 into which screws the lower threaded end 23 of a rod or stem 24 and the latter is guided in a vertical sleeve 25 of a horizontal arm 26. The arm 26 is provided at its inner end with a set collar 27 which is adjustably secured on the overflow pipe or tube by a set screw 28. The upper end 29 of the valve rod or

stem is bent at right angles as shown and the rod or stem is adapted to be readily screwed into and out of the socket 22 of the metallic cap of the glass bulb valve. By employing a glass bulb valve of this shape an ordinary forty watt electric lamp when burnt out may be substituted for or used as a ball valve.

In practice the glass bulbs will be made sufficiently heavy to prevent any liability of accidental breakage or breakage during the ordinary operation of the flush tank valve and as the valve seat may be constructed of any material sufficiently soft to coact with the bulb valve and of a character not to be affected by any chemical action of the water, a flush tank valve of great durability is provided and the cost thereof will be considerably less than the rubber bulbs ordinarily employed and will not require such frequent replacement. Also when the valve seat or gasket is constructed of rubber only a small portion of rubber is exposed to the action of the water and it may be replaced when necessary without trouble and at an exceedingly low cost without liability of causing any leakage at the valve seat.

What is claimed is:—

1. A flush tank valve including an outlet pipe provided with an annular flange exteriorly threaded and spaced from the passage of the outlet pipe, a valve seat arranged within the flange, a vertical valve guide provided at its lower end with a recess, and interiorly threaded thereto to engage the said flange, said recess forming a shoulder and the latter extending over the flange and engaging the valve seat to retain the latter in place and a valve guided by the said guide and coacting with the valve seat.

2. A flush tank valve including an outlet pipe designed to extend through the bottom of a flush tank and provided at the top with an annular flange having exterior threads and spaced from the passage of the outlet pipe, a valve seat arranged on the upper end of the outlet pipe and fitted within the said flange and provided with annular corrugations located at the upper and lower faces of the said valve seat and interiorly threaded guiding means engaging the threaded flange and provided with a shoulder extending over the same and engaging the valve seat to hold the same in position.

3. A flush tank valve including an outlet pipe having an annular flange, a valve seat arranged within the flange, a valve guide comprising a circular bottom portion secured to the said flange and extending over the same and engaging the valve seat and provided with spaced upwardly projecting posts and a valve guided by the said posts.

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

DAVID T. PICKLES.

Witnesses:

L. A. SQUIRES,

S. C. PEGRAM.