P. HAAS.

TANK FOR WATER CLOSET VALVES.

APPLICATION FILED APR. 28, 1919.

1,316,715.

Patented Sept. 23, 1919.

Fig 1

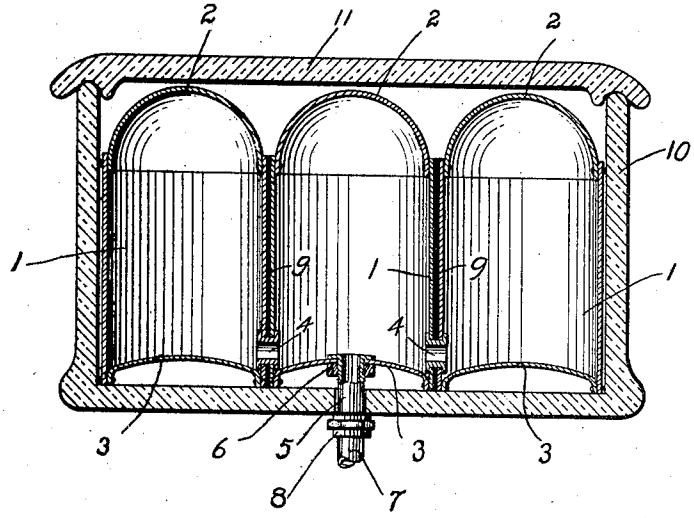
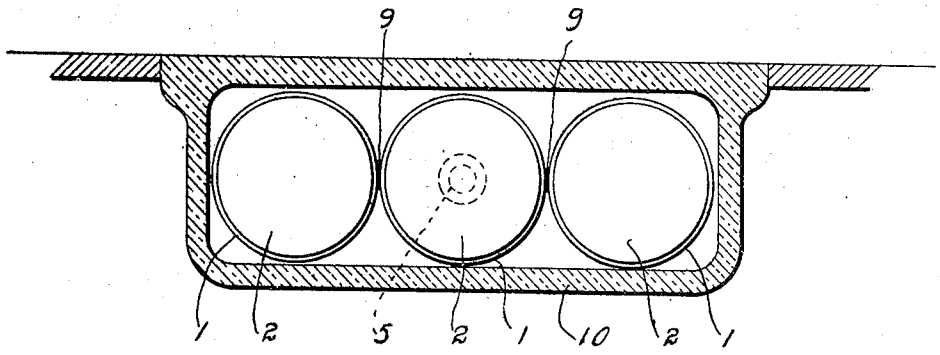


Fig 2



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TANK FOR WATER-CLOSET VALVES.

1,316,715. Specification of Letters Patent. Patented Sept. 23, 1919.

Application filed April 28, 1919. Serial No. 293,337.

To all whom it may concern:

Be it known that I, PHILIP HAAS, a citizen of the United States, presiding at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Tanks for Water-Closet 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.

My invention consists in the novel features hereinafter described reference being had to the accompanying drawing which illustrates one embodiment of the invention selected by me for the purpose of illustrating the same and the said invention is fully set forth in the following description and claims.

For many years a type of flushing apparatus has been in use in connection with water closets in which a rectangular flushing tank open to the atmosphere is employed as a reservoir for the flushing water which is accumulated after each flushing operation, from a supply pipe or main controlled by a valve actuated by a float, which as it rises with the level of the water in the tank, gradually closes the valve and shuts off the supply. More recently a different type of flush apparatus has been developed in which this open flush tank is dispensed with and in lieu thereof a closed air-tight tank is used in which the water accumulates in such manner as to compress the air in the tank to a pressure equal to that of the water in the main with which the tank is connected, so that the water is discharged from the tank under this high pressure instead of by gravity as in the installations in which the open flush tank is employed, and these closed tanks are usually constructed of cylindrical form in order to withstand the high pressure to which they are subjected, usually from sixty to eighty pounds per square inch.

In installing this latter type of apparatus, no difficulty is experienced in new buildings or structures, but where it is installed in buildings formerly equipped with flushing apparatus of the open tank type, it is necessary to remove the rectangular open tank, which by reason of its form is not adapted to be hermetically sealed or to withstand the high pressures. Such high pressures applied to the rectangular surface of the ordinary style of tank would tend to burst the same or cause them to leak. In many instances the rectangular open tanks have been installed in bath rooms in private dwellings and in other buildings at considerable expense, and they have been decorated in harmony with the decorations of the room in which they are located, and in some instances the open tanks are made of expensive material as porcelain, etc., so that their elimination would mean not only a considerable loss, but would necessitate the entire re-decoration of the room at large expense in order to obliterate all evidences of the previous location of the rectangular tank. This fact has prevented in many instances the installation of the latter type of flushing apparatus where its introduction has been particularly desired.

The object of my invention is to provide a closed air-tight tank suitable for use with the type of flushing apparatus hereinafter mentioned with which such an air-tight tank is required, which will be of such form as to withstand the internal pressures to which it may be subjected and to give the required capacity for holding the necessary amount of water and compressed air, and which at the same time is so constructed that it may be placed within, and be entirely concealed, by the usual open flush tank already installed, which in such case becomes merely a casing for the air-tight tank, thus enabling the installation of the flushing apparatus operating in conjunction with such an air-tight tank, in private houses and other places at present equipped with the open flush tanks, without dispensing with the open flush tank body or affecting in any way the appearance of the bath room or other room in which the apparatus is installed, or requiring any re-decoration thereof.

In the accompanying drawings in which I have illustrated one form or embodiment of my invention for the purpose of illustrating the same,

Figure 1 represents a sectional view of my improved flush tank placed within a rectangular open flush tank from which the usual ball flush and water control valve has been removed.

Fig. 2 represents a top plan view of my

improved tank showing the surrounding walls of the rectangular open flush tank in section.

In carrying out my invention I form my improved air-tight flush tank in a plurality of sections arranged side by side, each section comprising a cylindrical body 1, closed at the top and bottom, preferably by means of pressed sections 2, 3, respectively, which are riveted, brazed, or welded to the cylindrical body 1 in well known ways, so that each section is air-tight. The sections may be made of any suitable metal as sheet iron or steel (which is preferably galvanized), copper, brass, etc., and of sufficient thickness to withstand the pressures to which they are subjected. These sections will be of such a diameter and length that when placed side by side they will easily fit within the standard rectangular flush tanks now in use, as indicated in the drawing.

The several sections will be connected in any desired way so as to place their interior compartments in communication. This may be accomplished, for example, by means of nipples 4—4, which may be passed through registering apertures in adjacent sections, preferably near the bottom thereof, and secured by riveting, by threaded connection, by soldering, or otherwise, before the adjacent heads are inserted in the process of manufacture. The adjacent sections may be connected by one or more of such nipples as desired, and the several sections of the tank, preferably three in number, will be held firmly together by the nipples and may be further united by means of soldering or otherwise (as indicated at 9) as desired, in order to form a solid integral tank structure. One of the sections, preferably the central one where three are employed, is provided with means for attaching a pipe indicated at 5, which will be so located so as to conform to the position of the usual flush pipe aperture in the ordinary rectangular open flush tank, and extend through the same. Thus, in the drawing Fig. 1, I have shown the central section of my improved tank provided with a short pipe 5 extending through a threaded aperture in the lower head 3 of the section, and held in place by a set nut 6, and this pipe may also be soldered in order to make it air-tight, if necessary or desired. 7 represents the ordinary flushing pipe which is connected by a union 8, to the section or nipple 5, for convenience in installing the apparatus.

As illustrated in the drawing, my improved tank can be readily inserted in the interior of any standard flush tank, by removing the ball float and valve and pipe connections, and in the drawing I have shown a porcelain tank at 10 provided with a removable cover 11 of usual or well known construction, to illustrate the application of my improved air-tight tank thereto. Obviously my improved tank is inserted in the rectangular flush tank so that the short pipe 5 extends through the bottom opening of the flush tank 10 and the usual connection is made by pipe 7 with the flushing valve of well known character, which controls the admission of water to the air-tight tank and the discharge of water from the tank through the pipe 7 to the closet bowl. As will readily be seen, when the water enters the air-tight tank through the pipe 7, it will distribute itself into the several sections of the tank, and as the water level rises the air in the tank sections will be compressed until the air pressure equals and counterbalances that of the entering water, as is usual in the case of air-tight flush tanks of this character. When the flushing valve is operated, the compressed air in the upper part of each of the sections will operate equally on the surface of the water to expel it through the pipe 7 to the bowl by way of the flushing valve, in the usual manner.

I do not limit myself to the precise number of sections which I may employ in making the flush tank, nor to the particular details of construction thereof. It is only necessary that a sufficient number of sections of a diameter suitable to fit within the narrow width of the open tank, and to afford a sufficient capacity, are employed. I prefer to employ three sections arranged as shown in the drawing, as this affords a convenient location for the pipe 5 in the center of the lower head of the central section, but in case a larger or smaller number of sections is employed, the pipe connection can be made with one of these sections in any usual or desired manner.

By the use of my improved air-tight flush tank, the installation of the same in connection with bathrooms and other rooms in private houses and other buildings now equipped with the open type of flush tank can be readily effected without marring the appearance of the room, without removing the rectangular tank, and without necessitating material repairs or re-decorations.

While I have described the sections of my improved tank as being made of a cylindrical body 1 and compressed heads 2 and 3, secured thereto by riveting, brazing, soldering, or otherwise, it is obvious that these sections may be formed in any desired manner and that one or other of the heads may be formed integral with the cylindrical body if desired, or as may be found most convenient and economical in manufacturing the same.

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

1. As a new article of manufacture, the herein described air-tight flush tank comprising a plurality of sections, cylindrical in

cross-section, placed side by side and communicating with each other, whereby the said tank may be placed in and concealed within the ordinary open flush tank.

2. As a new article of manufacture, an air-tight flush tank comprising a plurality of sections, cylindrical in cross-section, arranged side by side and rigidly connected together, said sections communicating with each other, and one of said sections being provided with a water inlet and outlet, whereby said tank may be placed in and concealed within the ordinary open flush tank.

3. As a new article of manufacture, an air-tight flush tank comprising a plurality of sections, cylindrical in cross-section, arranged side by side, and having their adjacent walls rigidly united, said sections being connected with each other by nipples to afford free communication between the interiors of said sections, and having a water inlet and outlet aperture in one of said sections.

4. As a new article of manufacture, an air- tight flush tank comprising a plurality of sections, cylindrical in cross-section, arranged side by side, each section comprising a cylindrical body closed at each end, the adjacent portions of the cylindrical bodies being united, said sections being in communication with each other adjacent to their lower ends, and one of said sections being provided at the bottom with a water inlet and outlet aperture.

In testimony whereof I affix my signature.

PHILIP HAAS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."