Aug. 21, 1923. 1,465,370

S. H. SMITH

FLOAT

Filed March 5, 1921

Fig. 1

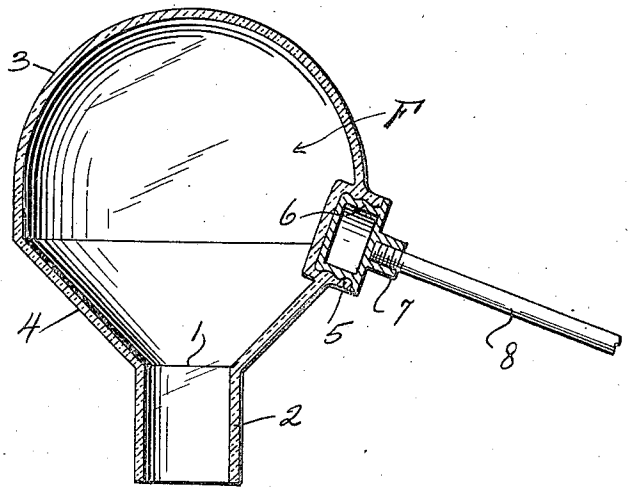
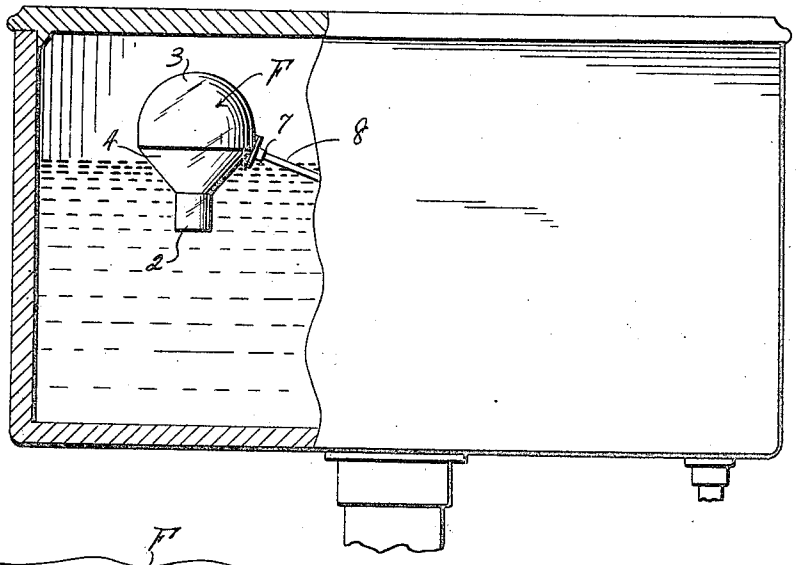


Fig. 2



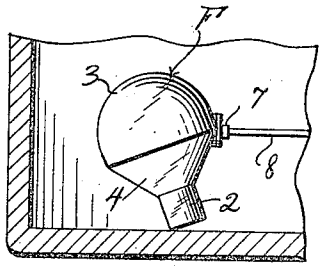


Fig. 3

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UNITED STATES PATENT OFFICE.

SAMUEL H. SMITH, OF ATLANTIC CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO WILLIAM B. LOUDENSLAGER, OF ATLANTIC CITY, NEW JERSEY.

FLOAT.

Application filed March 5, 1921. Serial No. 449,608.

To all whom it may concern:

Be it known that I, SAMUEL HERBERT SMITH, a citizen of the United States, residing at Atlantic City, in the county of Atlantic and State of New Jersey, have invented certain new and useful Improvements in Floats, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in floats and has relation more particularly to a device of this general character especially designed and adapted for use in connection with shut-off valves such as are employed in connection with flush tanks, cisterns or the like, and it is an object of the invention to provide a device of this general character having novel and improved means whereby the collection of water within the interior of the float proper is substantially prevented.

Another object of the invention is to provide a device of this general character including a tubular buoyant body provided with an opening in its lower wall and which opening is defined by an outstanding sleeve or neck, said sleeve or neck being adapted to extend below the water level of the fluid with which the float proper coacts and which sleeve or neck is of a length to assure the sealing of the opening in the lower portion of the body without the water entering within said body, so that the maximum of efficiency at all times of the float is assured.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved float whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in vertical section taken through a float constructed in accordance with an embodiment of my invention, the coacting valve rod being shown fragmentarily and in elevation;

Figure 2 is a view partly in side elevation and partly in section showing a float constructed in accordance with my invention in applied position and at the limit of its upward movement as created by the high water level of the fluid with which the float coacts; and

Figure 3 is a fragmentary view partly in section and partly in elevation showing the float at its lowermost position within the coacting tank.

As disclosed in the accompanying drawings, F denotes a float constructed in accordance with an embodiment of my invention and which float is hollow and has its lower wall provided with an opening 1. The opening 1 is defined by a depending sleeve or tubular neck 2 of desired length.

While the float F in its entirely may be of any configuration preferred, it is herein disclosed as having its upper portion 3 substantially semispherical in form with its lower portion 4 in the form of an inverted cone with the opening 1 arranged at the lower or apex portion thereof.

The side wall of the float F and preferably at the junction between the portions 3 and 4 is provided with a socket 5 in which is threaded or otherwise engaged a cap 6. The cap 6 at its axial center is provided with an outstanding tubular boss 7 in which is adapted to be engaged, as by threads, the outer end portion of a float rod 8 of a type now generally employed in connection with the feed valves of flush tanks, cisterns or the like.

It is to be particularly noted that the axial center of the socket 5 and the inserted cap 6 is angular to the axial center of the float F as continued through the axial center of the sleeve or neck 2. This angular relation is such that the sleeve or neck 2 is slightly closer to the adjacent end of the rod 8 than is the upper portion of the float F of that portion diametrically opposed to the sleeve or neck 2. By this arrangement, while this angular relation is obtained, the sleeve or neck 2 and the rod 8 are coplanar.

It is a recognized fact that with hollow floats now generally in use, water resulting from internal sweating is collected within the interior of the float and in time its efficiency is materially affected. It is, therefore, of importance to provide a float wherein this water may be readily drained out and to construct a float of this kind where-

in the water with which the float coacts does not enter within the body of the float.

These advantageous results are obtained in the device as herein disclosed as the sleeve or neck 2 is of a length, when the float is partially submerged, to seal the opening 1 without any of the water entering within the body proper of the float. The water within the tank will partially enter within the neck or sleeve 2 to effect the requisite seal and at the same time will place the air within the body proper of the float under slight compression and this in itself results in the float performing its function with greater efficiency.

It is also desirable to have the float F angularly related to the rod 8 as hereinbefore set forth, so that when the float F is at the limit of its upward movement, as is illustrated in Figure 2, said float, together with the stem or neck 2, will be substantially in a vertical position.

Figure 3 shows the float F in its lowermost position and with the water entirely drained from the tank. However, should there be a certain amount of water remaining within the tank so that the outer open end of the neck or sleeve is at all times sealed, any water which may be within the body proper of the float F may be conveniently drained therefrom by manually lifting the float F up out of contact with the water within the tank.

From the foregoing description it is thought to be obvious that a float constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A float of the class described comprising a hollow body, one portion of the float being substantially semispherical and the opposite portion being in the form of an inverted cone, the apex of the second portion being provided with an opening, and an outstanding sleeve defining the opening.

2. A float of the class described comprising a hollow body, one portion of the float being substantially semispherical and the opposite portion being in the form of an inverted cone, the apex of the second portion being provided with an opening, an outstanding sleeve defining the opening, the float at the junction of the semispherical and the cone portions being provided with a socket, and a body engaged within the socket and adapted for connection with a float rod or the like.

In testimony whereof I hereunto affix my signature.

SAMUEL H. SMITH.