

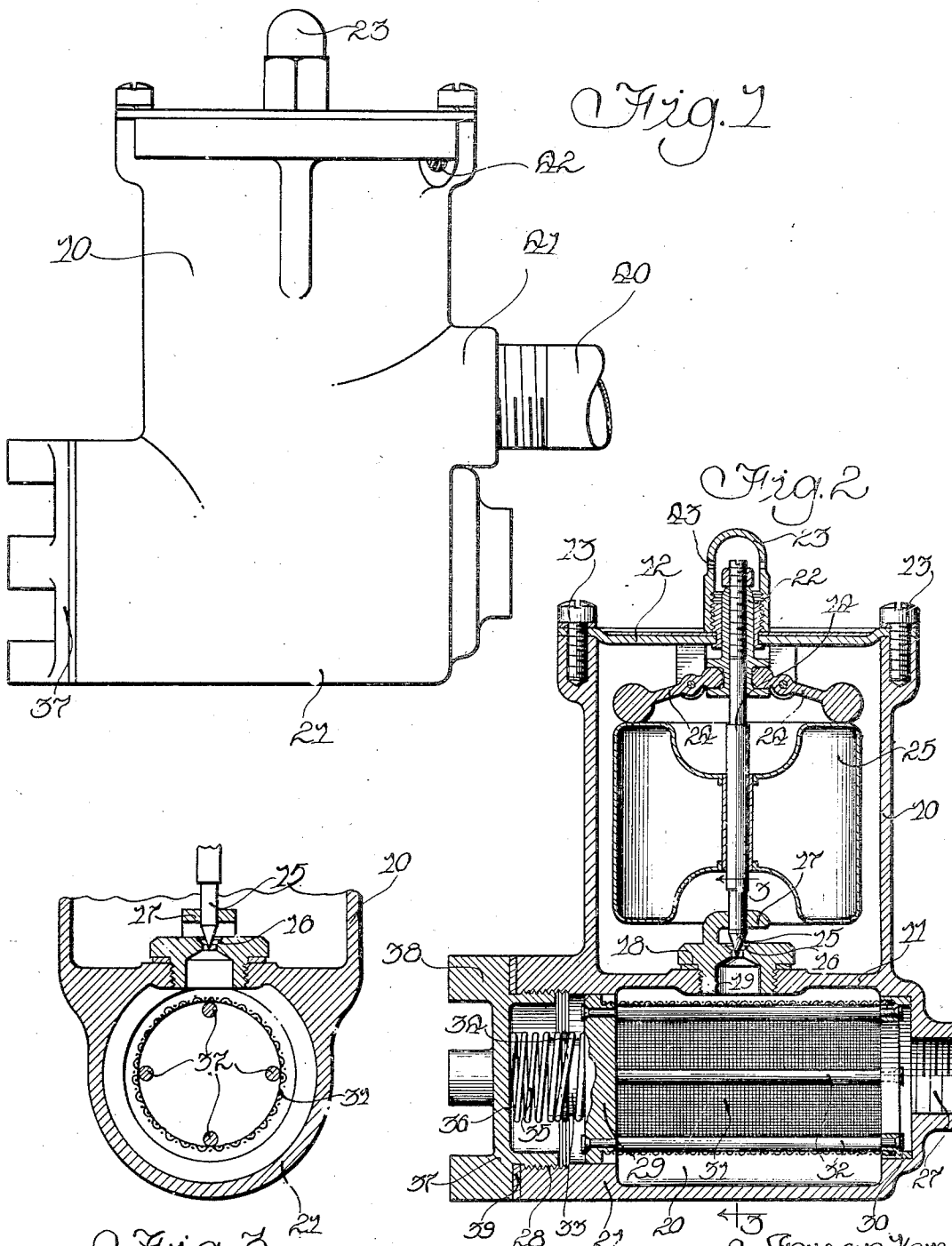
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C. J. GUSTAFSON ET AL

COMBINED CONSTANT LEVEL CHAMBER AND STRAINER

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Inventors
Charles J. Gustafson
Milton E. Chandler
By Brown, Betts & Kieffer
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES J. GUSTAFSON AND MILTON E. CHANDLER, OF CHICAGO, ILLINOIS, ASSIGNORS TO STROMBERG MOTOR DEVICES COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COMBINED CONSTANT LEVEL CHAMBER AND STRAINER.

Application filed November 11, 1920. Serial No. 423,414.

This invention relates to improvements in liquid storage tanks, and more particularly to an improvement in constant level chambers, for use in temporarily accumulating and holding a supply of liquid fuel for use in a burner, or for other supply purposes, such as for carbureters.

The principal aim of this invention is to construct a device of this character cheaply, to provide in conjunction with the chamber a strainer, and to so combine the straining chamber and strainer that fouling of the strainer is rendered practically impossible. We have designed the present device for the purpose of satisfying a demand on the market for such an article which has recently arisen, and which cannot be adequately met by the common type of so-called "float chamber."

Our invention resides in the strainer and pocket therefor and their relation to the inlet and outlet, whereby to clear the liquid of any solid impurities entrained therein and to prevent such impurities from reaching the float controlled valve and interfering with the proper operation of the same.

To this end the invention in its preferred embodiment is composed of the float chamber, strainer pocket having an axial inlet and radial outlet to said float chamber, with a strainer between the inlet and outlet.

A more complete understanding of our invention may be obtained from the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is a side elevation of the device of our invention;

Figure 2 is a vertical axial sectional view of the same; and

Figure 3 is a similar view taken on the line 3—3 of Figure 2, looking in the direction indicated by the arrows.

Referring more particularly to the drawing, wherein similar characters of reference designate similar parts throughout the various views, 10 designates the side wall of the float chamber proper and 11 designates the bottom wall. The float chamber has been shown as cylindrical in cross section, but it is obvious that we do not limit the invention to any particular size or shape of constant level chamber.

The top of the float chamber or constant level chamber 10 is closed by a cover 12 secured in place by means of machine screws 13—13, said cover serving to guide the upper end of a valve stem 14 having a needle valve 15 on the lower end thereof. The needle valve 15 is adapted to seat in the opening 16 and is guided by a lug 17 formed on the valve seat member 18, said valve seat member being screwed or otherwise engaged at 19 with an opening in the bottom wall 11. This valve seat member serves as the inlet to said chamber from a pocket 20 formed in a cylindrical shell 21 having its axis at right angles to the axis of the float chamber and located below the same. The upper end of the valve stem carries a bracket member 22 which is guided in a cap 23 carried by the cover 12. A pair of weighted levers 24—24 are pivoted at the top of the float chamber and their weighted ends engaged on the top of a float 25. When the float rises, the inner ends of the levers serve to seat the valve and close the inlet. This is a standard construction and further description of the same is, therefore, thought to be unnecessary.

The shell 21 forming the strainer pocket is provided with a threaded opening 27 in the right hand end wall thereof, into which may be threaded a supply conduit (not shown). The opposite end of the shell 21 is open and is internally threaded as at 28 for reception of a cap which will be described presently.

The strainer comprises a solid end wall 29, an annulus 30, and a cylindrical screen 31 suspended between the wall and said annulus. The wall 29 and annulus 30 are connected by four or more rods 32 arranged within the screen 31 and riveted into the wall and annulus. The annulus is adapted to seat in abutment with the end wall of the shell 21 and the solid wall 29 is adapted to span the diameter of the opening at the other end of said shell. In order to retain the screen securely in position the wall 29 is provided with a stud 33, said stud having a spiral flange 34 thereon to receive one or more of the convolutions of a helical spring 35, said spring abutting the wall 36 of a cap 37 adapted to be threaded into a threaded opening 28. The cap is provided with a plurality of lugs 38 to accommodate a wrench and a gasket 39 is interposed between the plug and the shell to

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prevent leakage. The helical spring is of the expansion type, so that when the plug is screwed in place the screen is secured against displacement, the abutment of the annulus with the opposite end wall of the shell effectively preventing any leakage about the annulus, so that all of the fluid which enters the opening 27 passes into the strainer axially and leaves the same radially. The advantage of this will be obvious, all solid impurities contained in the liquid dropping to the bottom of the screen and being retained therein until such time as it is desirable to clean out the strainer. When this is necessary the plug is removed and the spring grasped and the strainer withdrawn, turned on its end and the contents thereof will fall out. A further advantage of this construction is that it is practically impossible to block up the strainer in ordinary use, as the solid impurities collect in the bottom of the screen, and as most of the liquid will be drawn from the top it will be quite obvious that the device may be used for any indefinite length of time before cleaning becomes necessary. The fluid, liquid or otherwise, which passes into the constant level chamber, is withdrawn for use from the chamber through a conduit 40 threaded into an outlet stud 41 formed on the constant level chamber 10. Openings 43 in the cap 23 permit air to enter the top of the chamber 10. A threaded opening 42 is provided near the top of the float chamber to receive an overflow pipe (not shown).

We desire to emphasize the simplicity of the device, the effective performance of its functions, and its capability of production at low cost.

We do not intend to limit ourselves to the detailed construction, other than the limitations imposed by the appended claims.

We claim:

1. In combination, a strainer chamber,

there being a passage way at one end of said chamber to the exterior thereof, a removable closure member at the other end of said chamber, a lateral outlet from said chamber, a strainer cage insertable through the end covered by said closure member, a straining screen on said cage, a flanged lug on the end of said cage opposite said closure member, and a spring having threaded engagement with said flanged lug to serve as a handle for removing the strainer cage from said chamber when said closure member has been removed and for engagement between said closure member when closed and said cage to hold said cage in position within said chamber.

2. In combination, a strainer chamber, a strainer element in said chamber, a closure member for closing the opening through which said strainer element is inserted into said chamber, and a spring attached to said strainer element to hold it in place and to serve as a handle for removing said strainer element through said opening.

3. In combination, a horizontally disposed strainer chamber having an axial inlet and a lateral outlet, a threaded plug closing an opening in said chamber opposite said inlet, a strainer cage in said chamber comprising an end wall, an annulus, and plurality of spacer rods connecting said end wall and said annulus, a cylindrical strainer screen encircling said rods, said annulus communicating substantially directly with said inlet, and a spring between said screw plug and said end wall, said spring being connected to said end wall and serving as a connecting member for the convenient removal of the strainer element from said chamber.

In witness whereof, we hereunto subscribe our names this 8th day of November, 1920.

CHARLES J. GUSTAFSON.
MILTON E. CHANDLER.