

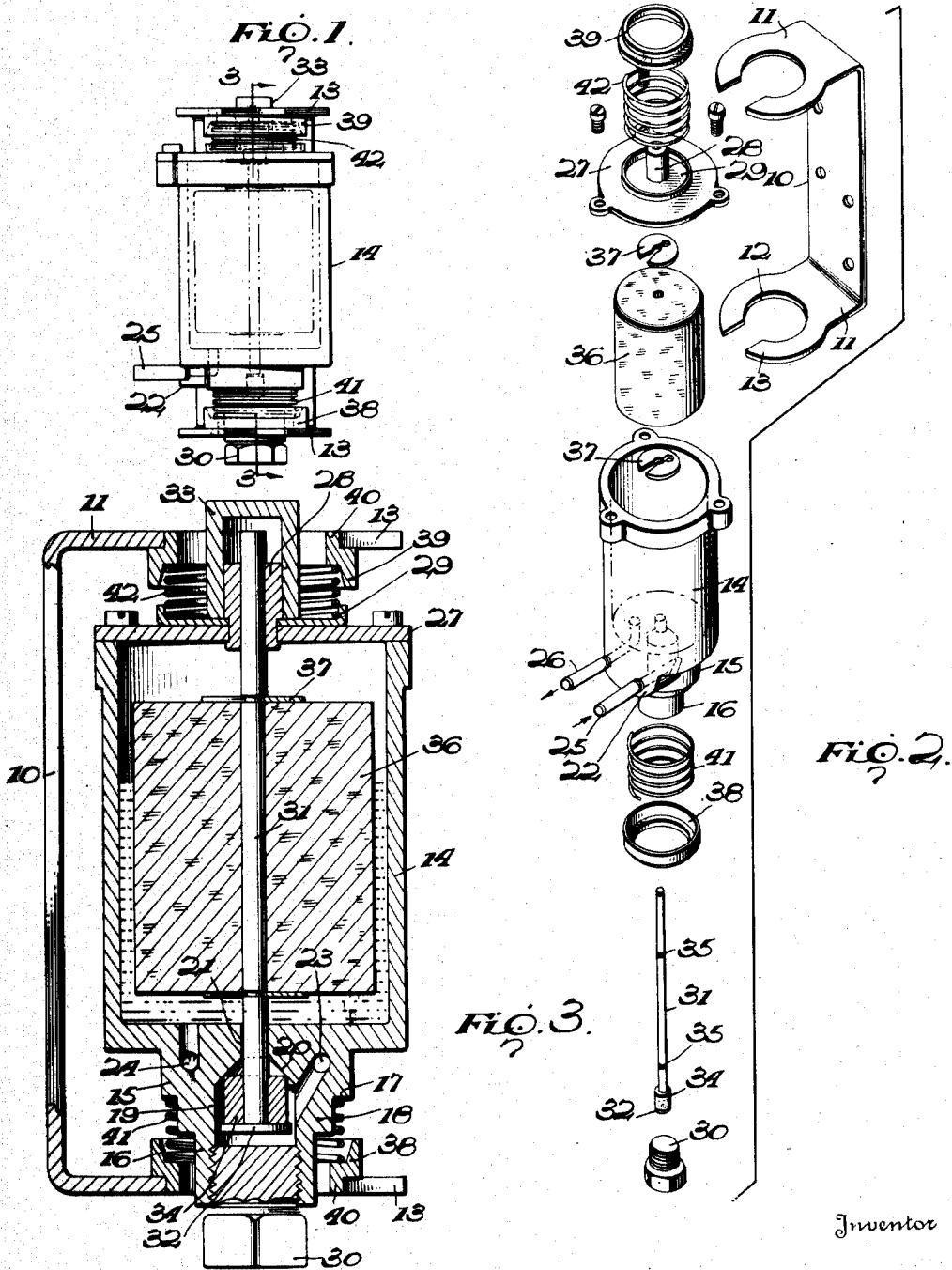
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FLOAT BOWL ASSEMBLY

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## FLOAT BOWL ASSEMBLY

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1 Claim. (Cl. 137—104)

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This invention relates to an improved float bowl assembly as employed in connection with my improved motor-generator unit disclosed in my prior application filed July 10, 1945, Serial No. 604,238, the present application being a substitute for my prior application filed August 30, 1945, Serial No. 613,459.

A portable motor-generator unit of the character disclosed in my prior application for said invention and adapted to be carried on the back of a person on foot, as for instance, in the armed forces for use in the field, is unavoidably subjected to much rough handling, vibration and shock, and it accordingly becomes necessary to provide in conjunction with the engine carbureter of the unit, a float bowl assembly which will function efficiently under conditions of abuse.

An object of the present invention, therefore, is to provide a float bowl assembly which, notwithstanding jar, shock, and vibration thereon, will not leak fuel therethrough.

Another object of the invention is to provide a float bowl assembly wherein the seal of the valve when closed will be protected, primarily, by companion cushioning means suspending the bowl to float therebetween, and, secondarily, by the resiliency of the material of the valve itself, the two being adapted to cooperate and maintain the seal of the valve under the most unfavorable conditions of operation of the assembly.

A further object of the invention is to provide an assembly embodying a valve and seat therefor of such character that dirt and grit will not lodge therebetween to cause leakage.

And a still further object of the invention is to provide an assembly which may be readily taken apart and cleaned.

Other and incidental objects of the invention will appear during the course of the following description, and in the drawings:

Figure 1 is a front elevation of my improved assembly showing the device full size.

Figure 2 is a perspective view showing the parts separated but in proper relative position.

Figure 3 is an enlarged vertical section on the line 3—3 of Figure 1.

In carrying the invention into effect, I employ a substantially U-shaped holder 10 which is preferably of resilient sheet metal and is provided with parallel spring arms 11 in which are formed aligned openings 12. If so desired, the metal of the arms may, as best seen in Figure 2, be cut away to define arcuate jaws 13.

Removably supported by the holder 10 is a cylindrical fuel bowl 14 provided at its lower end

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with a base 15 from which extends an axial nipple 16. Externally, the base 15 is provided with an annular shoulder 17 below which is a shoulder 18, while, internally, the base is formed with a cylindrical valve chamber 19 having a conical upper end wall which forms a valve seat 20. Leading from the upper smaller end of said seat is a passage 21 connecting the valve chamber with the interior of the bowl.

At one side thereof, the base 15 is provided with a boss 22 in which is formed a fuel inlet passage 23 entering the valve chamber 19, and formed through said boss to communicate with the interior of the bowl is a fuel outlet passage 24. Fixed in the outer end of the passage 23 is a short tube 25 over which is slipped a conventional flexible hose connected, as shown in my prior application for motor-generator unit mentioned, with a fuel tank for supplying liquid fuel to the bowl 14, and fixed in the outer end of the passage 24 is a short tube 26 over which is slipped a conventional flexible hose leading, as also shown in said prior application for motor-generator unit, to a carbureter fuel nozzle for supplying liquid fuel thereto from the bowl.

Closing the bowl 14 at its upper end is a detachable cover plate 27 through which is fixed an axial bushing 28, and clamped between the bushing and said plate is a spring cup 29. Closing the valve chamber 19 is a removable plug 30 screwed into the lower end of the nipple 16.

Slidably through the passage 21 at the bottom of the bowl 14 and through the bushing 28 is a valve stem 31 which is provided at its lower end with a head 32 and is protected at its upper end by a removable cap 33 frictionally fitting over said bushing. Snugly fitting the stem is a cylindrical valve 34 which rests against the head 32 and is preferably of rubber. The upper end of the valve is thus disposed to engage at its outer periphery with the valve seat 20, and since said seat is tapered, the valve will have only edge contact with the seat. Dirt and grit will thus be prevented from lodging or collecting between the valve and seat to cause leakage while the resiliency of the valve will tend to maintain a seal between the valve and seat when the valve is closed. Furthermore, as will be noted, the valve is flat and square at both ends thereof. Thus, should one end of the valve become worn, the valve may be removed and reversed end for end.

Formed in the valve stem 31 are spaced annular grooves 35, and detachably mounted on the stem to lie between said grooves is a float 36. In the present instance, I have shown a float of cork.

Removably engaged in the grooves 35 are stop collars 37 seated against the ends of the float and limiting the float against endwise movement on the stem so that, as will be understood, the float will respond to the rise of fuel in the bowl 14 to close the valve 34 and thereafter maintain said valve closed until fuel is used from the bowl. It is to be noted that the passage 21 at the bottom of the bowl is of a size to permit the flow of fuel from the valve chamber 19 upwardly around the valve stem 31 into the bowl. Also, it is to be noted that after the cover plate 27 has been removed, the uppermost of the collars 37 may be displaced, when the float 36 may be withdrawn from the valve stem. The lowermost of said collars may then be removed when, after displacing the plug 30, the valve stem 31 and valve 34 may be withdrawn.

Removably engaged with the arms 11 of the holder 10 are like cup rings which, for convenience, are indicated at 38 and 39 respectively. These rings are preferably provided with sloping inner walls, and formed on said rings are annular flanges 40 snugly fitting in the openings 12 of said arms. Interposed between the ring 38 and the shoulder 17 of the base 15 at the lower end of the bowl 14 is a cushioning spring 41 fitting at its upper end about the shoulder 18 of said base, and interposed between the ring 39 and the cup 29 is a like cushioning spring 42 fitting at its lower end in said cup. The lower end of the spring 41 fits within the ring 38 while the upper end of the spring 42 fits within the ring 39. Thus, the springs will yieldably hold the bowl 14 against displacement in any direction and will also yieldably sustain the bowl to float therebetween. These springs will accordingly provide a primary cushioning means tending to relieve shock and

vibration and maintain the seal of the valve 34 with the seat 20, while the resiliency of the material of the valve will provide a secondary cushioning means cooperating with said springs to also promote the seat of the valve when closed.

Having thus described my invention, what I claim is:

A float bowl assembly including a holder having spaced arms provided with openings therein, cup rings having flanges engaged in said openings, a fuel bowl provided at one end with a base having a shoulder thereon and at its opposite end with a cover plate having a spring cup thereon, said bowl being formed with an inlet and an outlet, a float within the bowl having a valve connected thereto for controlling flow through said inlet and outlet, and cushioning springs engaged at corresponding ends thereof with said rings and at opposite corresponding ends thereof one with said base to surround said shoulder and the other with said spring cup, said springs connecting the bowl with said holder and sustaining the bowl to float between said spaced arms.

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