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G. STANCO

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FLOAT OPERATED VALVE

Filed April 14, 1927

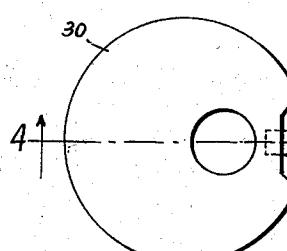


Fig. 2.

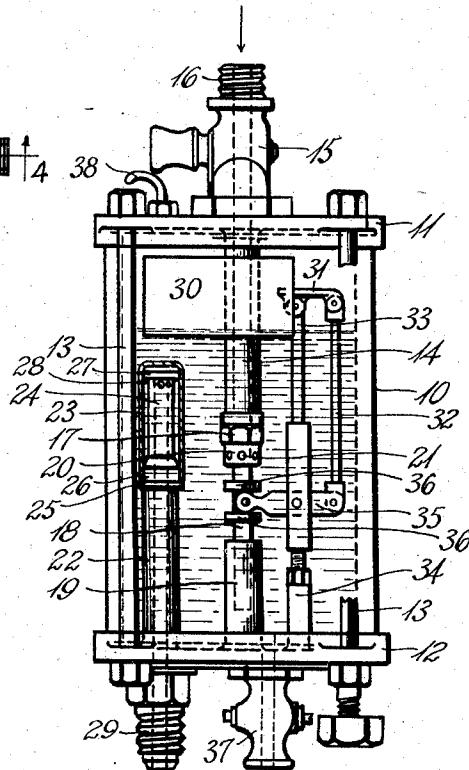
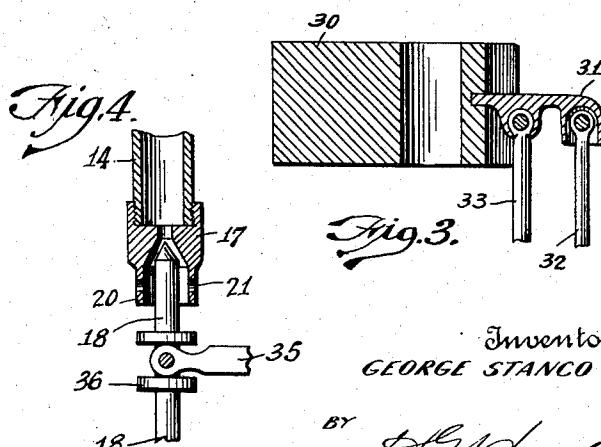


Fig. 1



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## FLOAT-OPERATED VALVE

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This invention relates to fuel filters for internal combustion engines and consists of a receptacle comprising a transparent cylinder sealed by header plates, inlet means and 5 a float actuated mechanism including a needle valve for regulating the fuel level in the receptacle, and a stand pipe having a screened intake communicating with a fuel outlet, and a suitable draining device.

10 The principal object of the invention is to provide a float-operated valve of novel and improved construction for use with fuel filters of the class described.

Another object is to provide a device of 15 the class specified which will be durable, efficient and effective, and inexpensive to manufacture.

These, together with other objects, may be attained by the construction, combination 20 and arrangement of the parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and ascertained in the claim hereunto annexed.

Referring to the drawing:—

25 Figure 1 is an elevation of a float operated valve and fuel filter constructed in accordance with this invention;

Figure 2 is an enlarged detailed top view of the float and its connections;

30 Figure 3 is an enlarged detailed cross-sectional elevation taken on the line 4—4 in Figure 2; and

Figure 4 is an enlarged detailed sectional elevation of the valve seat and the co-operating end of the needle valve.

Similar reference numerals refer to corresponding parts throughout both views.

The receptacle comprises a cylinder 10 formed preferably of transparent material, 40 such as glass, so that the contents thereof are visible. Upper and lower header plates 11 and 12, respectively, seal the cylinder and are clamped in position by means of the stay bolts 13.

45 Inside the receptacle is a lead-in tube 14 extending through the upper header plate 11 and connected on the outside to a valve 15. This valve is provided with a threaded nipple 16 adapted to receive the usual union on 50 the fuel feed pipe originating in the main

supply tank. The said valve enables the fuel to be turned on and off when desired.

The lead-in tube 14 extends downwardly to approximately mid-way of the depth of the receptacle, and in the lower end thereof is formed the needle valve seat 17, the needle valve 18 entering the seat from below and which is slidable in a sleeve 19 rigid on the lower header plate 12 concentrically with the lead-in tube. In the skirt 20 below the needle valve seat 17 is a plurality of spaced ports 21 through which the fuel flows from the lead-in tube 14.

The stand pipe, indicated by 22, is threaded in the lower header plate 12 and extends upwardly within the receptacle to a point just below the normal level of the fuel, so that the screen is constantly submerged. This screen, indicated by 23, and shown in section in Figure 1, is preferably formed of wire gauze of sufficiently fine mesh as to bar all foreign particles from access to the stand pipe. The screen 23 is preferably cylindrical and is provided with a homogenous top, and having an open bottom fits over the head portion 24 of the stand pipe. The lower edge of the cylindrical skirt of the screen abuts the shoulder 25, and a portion of the lower part and of the upper part thereof engage spacing collars 26 and 27, respectively. The screen being made to fit these parts snugly, the same is held rigidly in position when in use, but may be readily withdrawn for cleaning.

The fuel enters the stand pipe 22 through the skirt of the screen and thence through a plurality of spaced ports 28, and also directly through the mouth of the stand pipe through the top portion of the screen. It will be observed that for cleaning purposes the stand pipe may be withdrawn through the lower header plate 12 by first unscrewing the same.

On the outside of the receptacle the stand pipe 22 is provided with a threaded nipple 29 for receiving the usual union on the fuel pipe leading therefrom usually to a carburetor attached to the engine.

The proper level of the fuel is maintained by means of the needle valve actuated by

the float 30. This float is secured to a rocker 31, the latter being pivoted first to a perpendicularly disposed tie rod 32 and intermediately to a post 33. This post is threaded in a socket 34 on the lower header plate 12, and by turning the post in the required direction in this socket proper adjustment is attained.

The lower end of the tie rod 32 is pivoted 10 to a rocker arm 35 which is in turn pivoted to a lower section of the post 33, the free end of said rocker arm being bifurcated and embracing the needle valve 18 between two fixed collars 36 thereon. Thus when the fuel 15 level becomes lowered by exhaustion of some of the fuel through the stand pipe 22, the free side of the float 30 drops and opens the needle valve to admit more fuel, and when the level again rises the free side of the float 20 ascends and closes the needle valve. This operation repeats itself constantly as the flow of fuel is accelerated or retarded according to the demand from the carburetor.

All water and sediment in the fuel collects 25 in the bottom of the receptacle, and may be periodically drained off through the drain cock 37 provided for the purpose.

In the upper header plate 11 is provided an air vent or breather tube 38.

30 There has thus been provided a simple and useful device of the class described and for the purpose specified, and now having fully described the invention in such manner that any person skilled in the art to which 35 it appertains could construct and use the same, I claim:—

In a device of the class described, a receptacle having an inlet adapted to communicate with a fuel supply, a lead-in tube communicating 40 with the inlet and extending downwardly within the receptacle, a needle valve associated with the lead-in tube, a post within the receptacle, a rocker arm engaging the stem of said valve and pivoted to one 45 end of a tie rod and intermediately pivoted to said post, a rocker pivoted at one end to the opposite end of said tie rod and also pivoted to said post, a float fixed to the opposite end of said rocker, and a fuel outlet 50 device.

In testimony whereof I have affixed my signature.

GEORGE STANCO.