C. F. JOHNSON.

CARBURETER.

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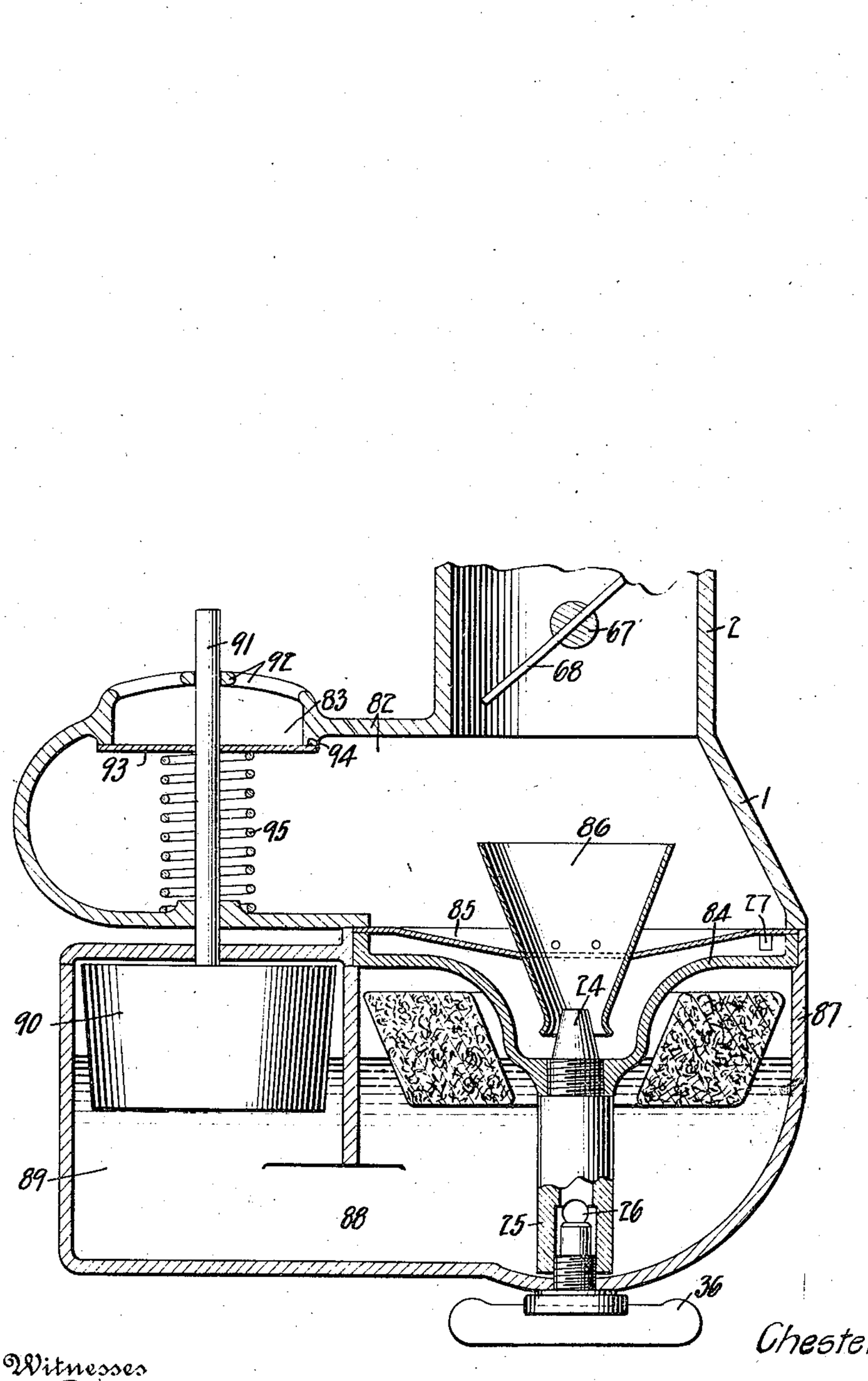
1,166,595. Patented Jan. 4, 1916.



Witnesses

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CHESTER F. JOHNSON, OF DETROIT, MICHIGAN.

CARBURETER.

1,166,595. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed November 5, 1914. Serial No. 870,348.

To all whom it may concern:

Be it known that I, CHESTER F. JOHNSON, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Carbureter, of which the following is a specification.

This invention relates to carbureters, and some of its objects are to provide means whereby a rich mixture may be supplied when starting and when it is desired to accelerate the engine temporarily for any purpose, and whereby the richness of the fuel mixture is reduced, when throttling down from high speed, to that corresponding to economical running.

This invention consists in the details of construction shown, described and particularly pointed out in the claims.

The accompanying drawing is a vertical section through a preferred embodiment of the invention.

In the embodiment of my invention shown, the intake portion 82 of the carbureter body 1 has an air intake opening 83 in its upper side, and has clamped thereto by means of screw bolts (not shown) the float chamber top 84, and clamped between the top 84 and the body is a diaphragm 85 in which a strangle tube 86 is mounted. The float chamber 87 is clamped to the top 84 by a hand screw 36, threaded into the lower end of a pipe 25, the upper end of which passes through a threaded opening in the cover 84 and is extended to form a nozzle 24. At its lower end the pipe 25 is perforated at 26 to admit liquid from the float chamber. Included in the float chamber is a passage 88 and a cylindrical chamber 89 in the latter of which a float-piston 90 is adapted to reciprocate. The piston is guided by a piston-rod 91 that passes through alined openings in the cover of the chamber 89, the lower wall of the intake 82 and a spider 92 that extends across the opening 83, and is depressed by the pressure of air on the valve 93 (integral with or rigidly secured to the piston-rod 91) that is normally held in contact with the seat 94 by the buoyancy of the float. In certain instances a compression spring 95 may be inserted between the valve and the lower wall of the intake.

The primary air is admitted to the space between the diaphragm 85 and the cover 84 through a series of openings 27, but one of which is shown.

It will be understood that when an increased engine suction is communicated to the interior of the carbureter at any time and draws the air valve down, the float piston 90 will displace the liquid in the chamber 89 and cause an abnormal amount of fuel to be discharged from the nozzle, for the reason that, as the level of the fuel in the pipe 25 is raised, the nozzle will deliver more fuel under the same suction. And, as its level rises, the liquid in the fuel chamber strives to raise the float-piston and therefore holds the air valve nearer to its seat, thus retarding the flow of air, which causes the mixture to be still further temporarily enriched. The float plunger or piston also tends to reduce the flutter of the air valve, in which respect its function is similar to that of a dash pot.

While I have shown the throttle valve in each instance in the neck of the carbureter, it is obvious that it may be located elsewhere; for example, in the manifold of the engine.

It is also clear that many other changes may be made in the details of construction without departing from the spirit of my invention. I do not, therefore, wish to be limited otherwise than as indicated by the subjoined claims.

I claim:—

1. A carbureter comprising in combination, a mixing chamber, a fuel passage for discharging fuel into the mixing chamber, a fuel reservoir, means for maintaining a predetermined level of fuel in the reservoir, a float arranged to rest on the liquid in the reservoir and to be projected thereinto, a throttle valve, an air inlet valve, means connecting the air inlet valve and the float so that movement of one is communicated to the other, the arrangement being such that when the throttle valve is being opened and the engine is running, the air valve is opened and the float projected into the reservoir to cause the fuel mixture delivered to the carbureter to be temporarily enriched.

2. A carbureter comprising in combination, a mixing chamber, a fuel passage for discharging fuel into the mixing chamber, a fuel reservoir comprising a main chamber and an auxiliary chamber in free communication with each other, means for maintain-

ing a predetermined level of fuel in the reservoir, a float arranged to rest on the liquid in the auxiliary chamber and to be projected thereinto, a throttle valve, an air inlet valve, means connecting the air inlet valve and the float so that movement of one is communicated to the other, the arrangement being such that when the throttle valve is being opened and the engine is running, the air valve is opened and the float projected into the reservoir to cause the fuel mixture delivered to the carbureter to be temporarily enriched.

3. A carbureter comprising in combination, a mixing chamber, a fuel passage for discharging fuel into the mixing chamber, a fuel reservoir, means for maintaining a predetermined level of fuel in the reservoir, a float arranged to rest on the liquid in the reservoir and to be projected thereinto, a throttle valve, an air inlet valve, a seat for the air inlet valve, a spring tending to hold the valve on its seat, means connecting the air inlet valve and the float so that movement of one is communicated to the other, the arrangement being such that when the throttle valve is being opened and the engine is running, the air valve is opened and the float projected into the reservoir to cause the fuel mixture delivered to the carbureter to be temporarily enriched.

4. A carbureter comprising in combination, a mixing chamber, a fuel passage for discharging fuel into the mixing chamber, a fuel reservoir comprising a main chamber and an auxiliary chamber in free communication with each other, means for maintaining a predetermined level of fuel in the reservoir, a float arranged to rest on the liquid in the auxiliary chamber and to be projected thereinto, a throttle valve, an air inlet valve, a seat for the air inlet valve, a spring tending to hold the valve on its seat, means connecting the air inlet valve and the float so that movement of one is communicated to the other, the arrangement being such that when the throttle valve is being opened and the engine is running, the air valve is opened and the float projected into the reservoir to cause the fuel mixture delivered to the carbureter to be temporarily enriched.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHESTER F. JOHNSON.

Witnesses:

L. M. SPENCER,

HUGO W. KREINBRING.