June 4, 1929. J. GODDYN 1,715,453

CARBURETOR

Filed Jan. 2, 1926

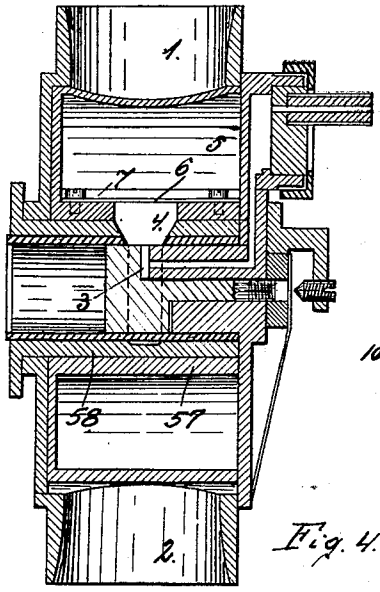


Fig. 4.

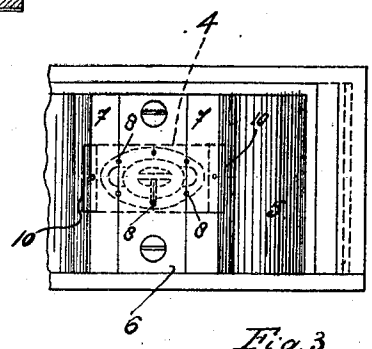


Fig. 3.

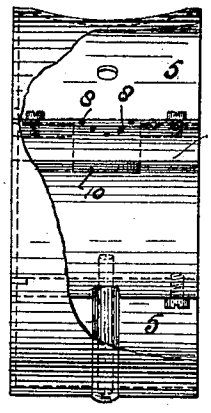


Fig. 2.

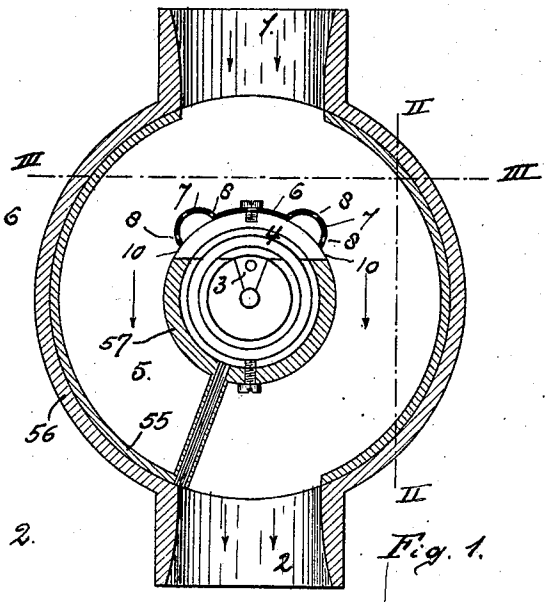


Fig. 1.

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UNITED STATES PATENT OFFICE.

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CARBURETOR.

Application filed January 2, 1926, Serial No. 78,857, and in the Netherlands September 24, 1925.

This invention relates to improvements in carburetors, and more particularly in the fuel outlet passage thereof; the invention being primarily designed for application to the type of carburetor shown in my prior French Patent No. 582,736, granted October 20, 1924.

According to the patented construction, the throttle and fuel valves are connected together for movement in unison, and the former is therein represented as of the drum type. The fuel inlet passage is disposed axially of the throttle valve, and the openings and the dimensions of the closing parts of said valve are so arranged that the passage for the mixture is open in the initial position of the valve and is greater than the inlet opening for the air; the difference between the sizes of these passages decreasing uniformly the more the valve is opened until by the time the valve is wide open the passages are equal in size.

The disadvantage of this type of carburetor is that when the air supply passage and the passage for carrying off the mixture have to be disposed in alinement, which is frequently the case, so that outlet of the mixture passage lies directly opposite the air supply passage, the current of air interferes with the flow of the fuel from the fuel passage or nozzle and the motor cannot attain its maximum number of revolutions.

According to the present invention, this objection is overcome by covering the outlet of the fuel passage by a plate in such a way that gaps are left at both sides of the plate, while the two perforated ends of the plate are bent or curved so as to form projections that extend into the mixing chamber.

An embodiment of the invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a vertical sectional view of such embodiment;

Figs. 2 and 3 are vertical and horizontal sections, respectively, taken on lines II—II and III—III of Fig. 1;

Fig. 4 is a vertical section at right angles to the plane of section of Fig. 1.

As shown in said drawing, the carburetor is provided with an air inlet passage 1 and an outlet passage 2 for the mixture, which passages are in line with each other. The fuel inlet passage 3 opens into a pocket 4 which itself opens into the mixing chamber 5; such pocket 4 being located directly opposite the air inlet passage 1 and having a narrow rectangular or slot-like outline as represented in dotted lines in Fig. 3. The mixing chamber 5 is provided by the interior of the hollow throttle valve 55, which latter is mounted to rotate within the casing 56 of the carburetor about a horizontal axis. This valve includes a hollow hub portion 57 which fits over a horizontal, hollow shaft 58 that is disposed centrally of the casing, and said shaft, in turn, encloses the fuel passage 3.

The outlet pocket 4 underlies a cover plate 6, the two ends of which are so bent or curved as to form convex transverse ridges or ribs 7 that project into the mixing chamber 5; and this plate is provided with a plurality of small apertures 8 which enable leakage therethrough and thus prevent agglomeration of the fuel in the space covered by the plate, some of the openings being situated in the aforesaid projections 7. While it has been stated above that the cover plate overlies pocket 4, this does not mean that it entirely cuts off communication between that portion of the mixing chamber whereinto the pocket opens and the rest of said chamber: on the contrary, the arrangement and dimensions of the plate and pocket are such that at each end of the latter narrow slot-like gaps 10 are left uncovered, and it is through these gaps that the fuel escapes into chamber 5 for admixture with the air.

The operation is substantially as follows: Air enters the chamber 5 through the inlet 1 and flows in both directions around the plate 6, being deflected to some extent by the projecting ribs 7 on the plate so that it is guided past the gaps 10. As it passes these gaps, the air current necessarily exerts some suction action in the space beneath said plate; such action being supplemental to that ordinarily produced by the engine. The fuel drawn through said gaps by the thus-increased suction meets and mixes with the air current and is vaporized thereby, the vaporized mixture continuing its travel in the same direction as the original air current and leaving the carburetor through the outlet 2.

I claim as my invention:—

1. In a carburetor, a cylindrical casing having an air inlet and an outlet for the mixture located opposite each other, a hollow valve rotatable within said casing to control said inlet and outlet and providing an internal mixing chamber adapted to communicate with the same, said valve having a hollow, horizontal hub portion which is disposed axially of said casing, a fuel supply

passage enclosed by said hub and terminating in a narrow, slot-like outlet pocket opening into the mixing chamber directly opposite the air inlet, and a cover plate in said chamber immediately overlying said pocket but terminating at its ends short of the corresponding ends of the pocket so as to leave narrow outlet gaps for the fuel; said plate having its opposite ends provided with convex, transversely arranged ribs which project into the path of the air current in the mixing chamber so as to guide the air past such gaps and thus increase the suction behind the plate, whereby the fuel is caused to flow through said gaps into the air current.

2. A carburetor, according to claim 1, in which the cover plate is provided with a plurality of leak openings for the fuel, some of said openings being situated in the guide ribs.

In testimony whereof I affix my signature.

JOHANNES GODDYN.