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G. W. BURTON & A. F. SEIBEL.

CARBURETER FOR HYDROCARBON ENGINES.

APPLICATION FILED MAY 28, 1904.

NO MODEL.

Fig. 1.

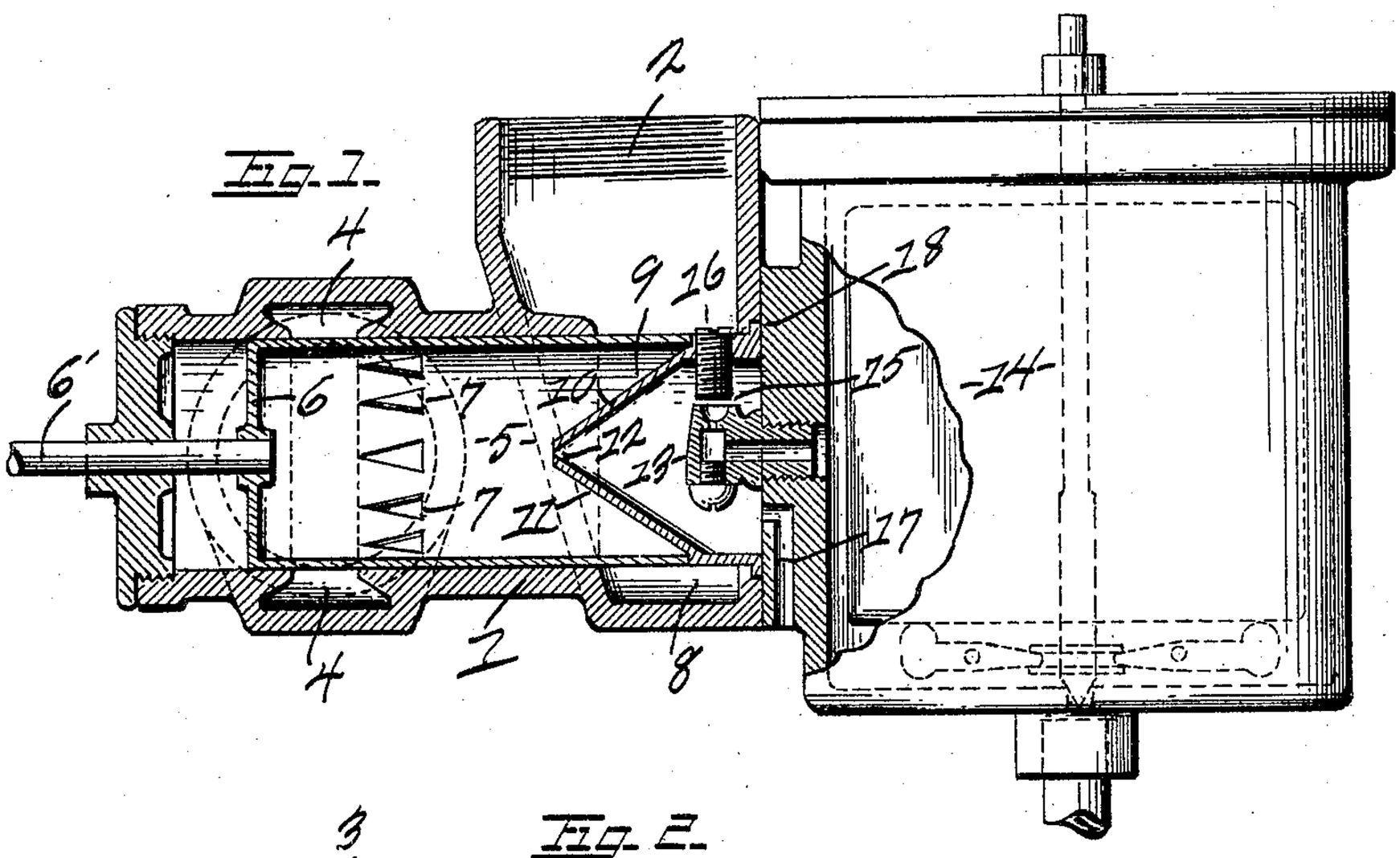
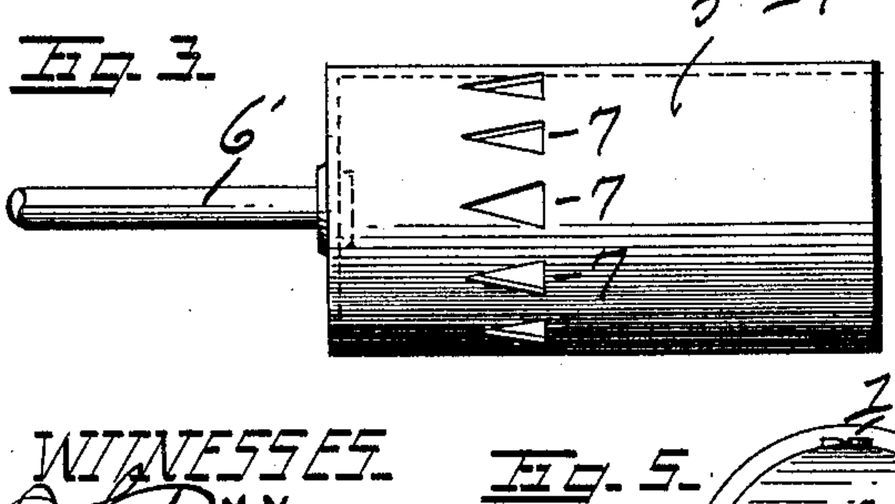


Fig. 2.

Fig. 3.



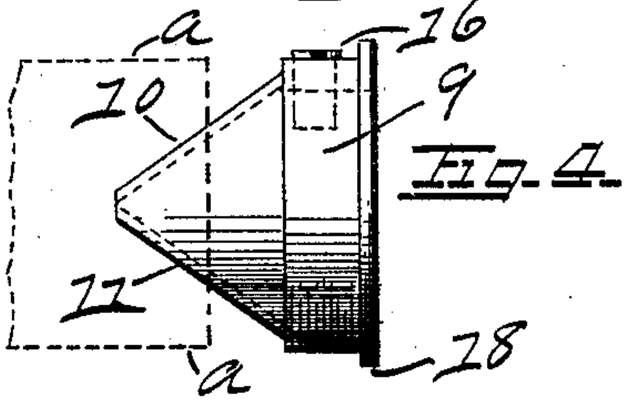
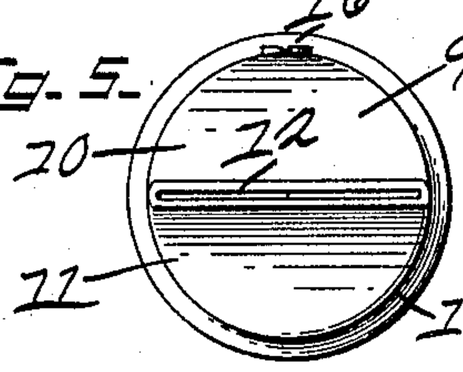


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE W. BURTON AND ALFRED F. SEIBEL, OF TOLEDO, OHIO.

CARBURETER FOR HYDROCARBON-ENGINES.

SPECIFICATION forming part of Letters Patent No. 775,553, dated November 22, 1904.

Application filed May 28, 1904. Serial No. 210,162. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. BURTON and ALFRED F. SEIBEL, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Carbureters for Hydrocarbon-Engines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

This invention has reference to a carbureter of simple and improved construction, and it embodies certain novel features and the details hereinafter shown and described, whereby the mixture of air and gasolene-vapor is at all times maintained in proper proportions.

In the accompanying drawings, illustrative of the invention, Figure 1 is a vertical sectional elevation of the carbureter. Fig. 2 is a sectional plan view. Fig. 3 is a view of the cylinder-valve detached from the carbureter. Fig. 4 is a side elevation of the wedge-shaped spraying-chamber detached, and Fig. 5 is a front elevation of the same.

Referring to the details of construction, 1 indicates the carbureter-body, having the main air-inlet 2 at one end and a laterally-extending outlet or discharge 3 for mixed vapor leading therefrom to the gasolene-motor, the communication with the discharge 3 being established through a port 4, extending entirely around the body 1.

5 is a valve slidably mounted within the body 1, the same being constructed of a section of tubing closed at one end at 6, the opposite end being open. The valve is actuated by a rod 6′, and 7 represents a series of openings arranged about the valve, so as to register with the port 4 when the valve is operated, the volume of mixed vapor passing through the openings 7 being dependent upon the extent of the movement of valve 5. The openings 7, as shown, are preferably triangular shaped, so that as the valve 5 is opened the passage for vapor through said openings will range from *nil* to a maximum. Arranged within the carbureter-body, at one end thereof, and surrounded by an annular passage 8, connecting with the main air-inlet 2, is a wedge-shaped spraying-chamber 6, having cylindrical side walls closely fitting within the open end of the cylinder-valve 5. At its forward end the spraying-chamber is provided with inclined upper and lower walls 10 and 11, an elongated slot 12 being arranged to connect with the interior of the chamber along the meeting edge of said walls. Within the spraying-chamber is a spraying-nozzle 13, communicating with the float-chamber 14, the gasolene in the latter being maintained on a level with the cup-shaped mouth 15 of the spraying-nozzle by means of an ordinary float-feed mechanism. The spray from the nozzle is regulated by a set-screw 16, screwed through the wall of the spraying-chamber immediately above the mouth of the spraying-nozzle and in adjustable relation thereto. By the arrangement shown the spray from the nozzle is conveniently regulated without the necessity of removing the spraying-chamber.

17 is a passage for the inlet of air into the spraying-chamber, the upper discharge end being so arranged that the incoming air will be directed against the inclined lower wall 11 of said chamber, whereas the spraying-nozzle occupies a position within the spraying-chamber so that the spray therefrom will be directed against the inclined upper wall 10.

18 is a marginal flange upon the spraying-chamber adapted to occupy a marginal recess at one end, surrounding the bore through the carbureter-body, the spraying-chamber being thereby held firmly in position when the float-chamber is bolted to the carbureter-body by means of bolts 19.

In the operation of the carbureter the operating-rod 6 on being drawn outward will cause the cylinder-valve 5 to be drawn away from the spraying-chamber, as indicated in dotted outline *a*, Fig. 4, the openings 7 therein registering to a greater or lesser extent with the port 4, depending upon the extent of the movement of the valve 5. The passage of air into the carbureter from the main air-inlet 2 will also depend upon the extent of the movement of the valve 5, being completely shut off

when the valve is in the position shown in Figs. 1 and 2 and being admitted in gradually-increasing quantities as the valve 5 is drawn away from the spraying-chamber, the passages for air being gradually enlarged as the valve is operated. Upon starting the engine the suction therefrom will cause the gasolene to be discharged from the spraying-nozzle against the inner inclined face of the wall 10 of the spraying-chamber, the air entering the spraying-chamber through the passage 17 being discharged against the inner face of the inclined wall 11. The gasolene spray on meeting the air from the passage 17 will be intimately mixed therewith, forming a rich gasolene-vapor which is drawn through the discharge-slot 12. It is apparent that any unvaporized gasolene deposited upon the inclined wall 11 will be carried along to the point of discharge by the incoming air, so that the possibility of considerable quantities of gasolene being deposited at the bottom of the spraying-chamber will be eliminated. The rich gasolene-vapor on being drawn through the slot 12 will be met by the incoming air from the main air-inlet 2, the air and vapor being drawn in properly-mixed proportions through the openings 7 to the engine.

By the employment of a carbureter constructed as herein described the speed of the engine may be varied within a wide range, the mixture proportions being at times uniformly maintained.

It is apparent that changes in the form, proportion, and minor details of the invention may be made. For instance, any ordinary or preferred arrangement of spraying-nozzle may be employed within the spraying-chamber, as we do not limit ourselves to the construction of nozzle shown.

Having described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a carbureter, the carbureter-body having an air-inlet and a mixed-vapor outlet, a valve slidably mounted within the carbureter-body having openings adapted to be brought into alinement with the vapor-outlet, and a wedge-shaped spraying-chamber disposed at one end of the carbureter-body adjacent to the air-inlet in operative relation to said valve, substantially as described.

2. In a carbureter, the carbureter-body provided with an inlet for air and an outlet for mixed vapor and having an annular port connecting with the vapor-outlet, a cylindrical slide-valve mounted within the carbureter-body provided with a series of openings adapted to register with the annular port in the carbureter-body, and a wedge-shaped spraying-chamber disposed at one end of the carbureter-body adjacent to the air-inlet, in operative relation to said valve, substantially as described.

3. In a carbureter, the carbureter-body having an air-inlet and an outlet for mixed vapor, a wedge-shaped spraying-chamber arranged within the carbureter-body at one end adjacent to the air-inlet, and a hollow cylindrical valve slidably mounted within the carbureter-body, provided with a series of triangular-shaped openings extending through its side walls, adapted to register with the vapor-outlet, said valve being closed at one end and having the other end arranged telescopically with relation to the wedge-shaped spraying-chamber, substantially as described.

4. In a carbureter, the carbureter-body having an air-inlet and an outlet for mixed vapor, a cylindrical bore extending longitudinally therethrough, and provided with a marginal offset around the bore at one end, a wedge-shaped spraying-chamber provided with a marginal flange adapted to occupy the marginal offset, a cylindrical valve adapted to slide within the bore of the body, having a series of openings adapted to register with the vapor-outlet and having one end arranged telescopically with relation to the wedge-shaped spraying-chamber, and a float-tank attached at one end of the carbureter-body adapted to clamp the spraying-chamber in position, substantially as described.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

GEORGE W. BURTON.
ALFRED F. SEIBEL.

Witnesses:
CARL H. KELLER,
E. O. MILLER.