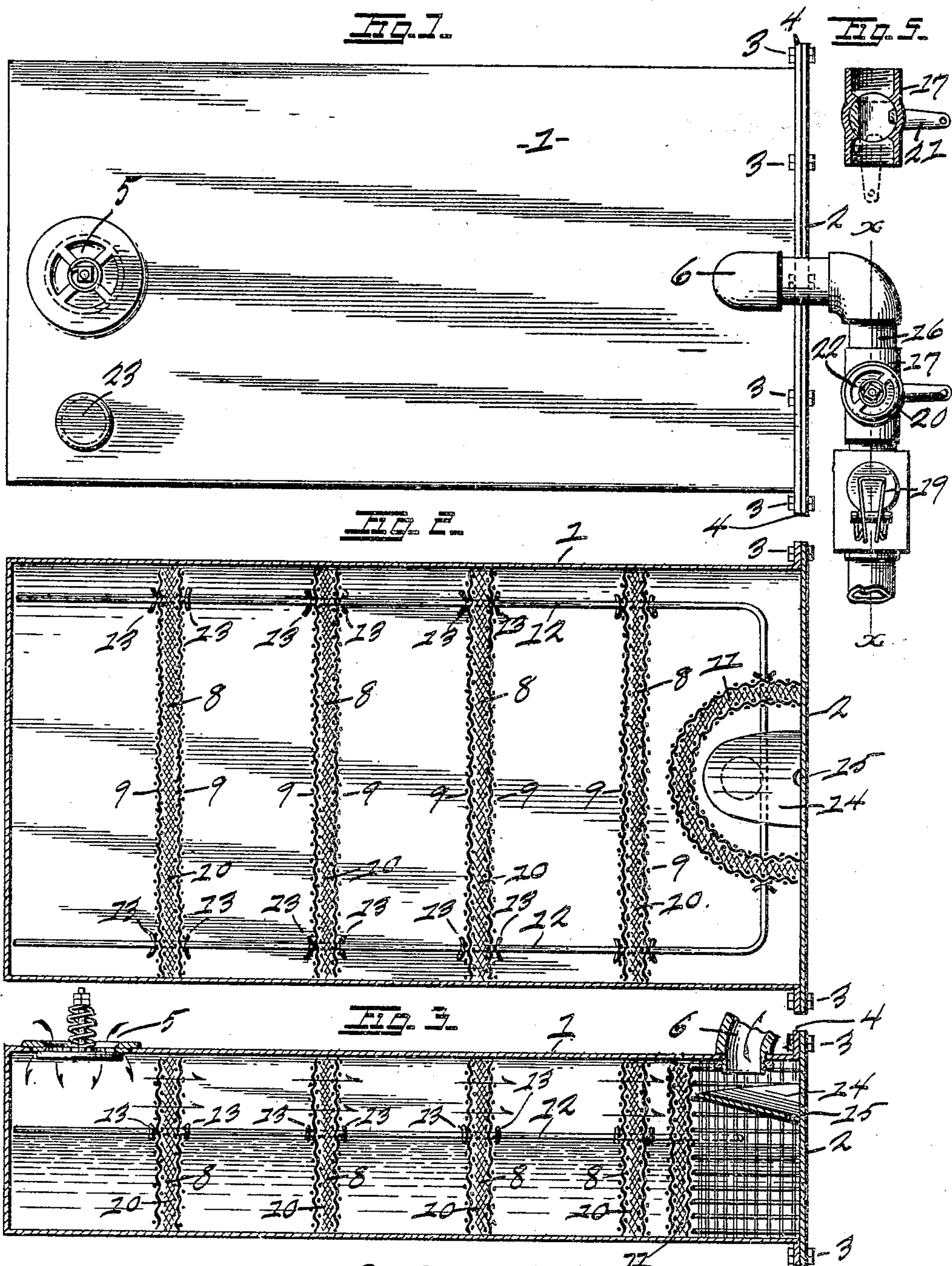


No. 801,044.

PATENTED OCT. 3, 1905.

C. W. PARSONS.  
CARBURETER FOR HYDROCARBON ENGINES.

APPLICATION FILED FEB. 4, 1905.



WITNESSES

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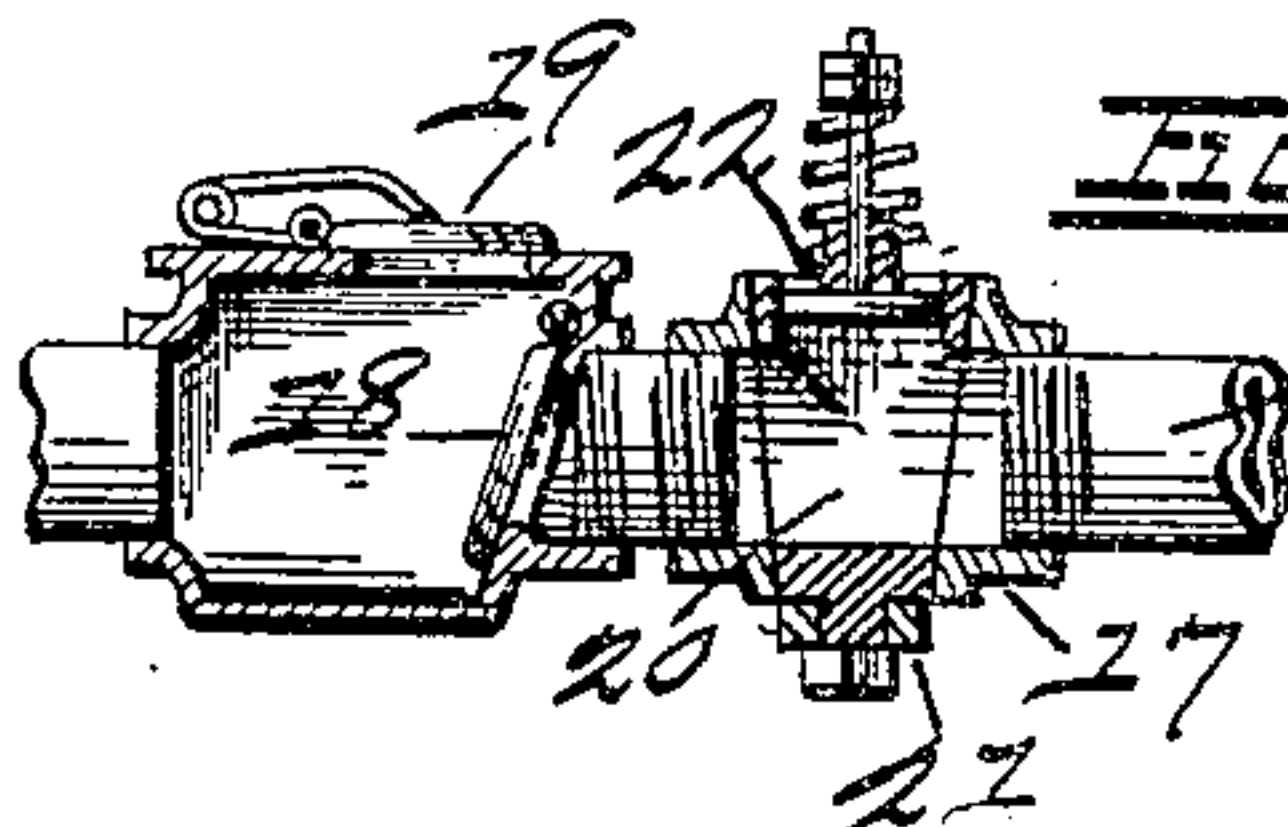


FIG. 4.

INVENTOR.

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att'y.



# UNITED STATES PATENT OFFICE.

CHARLES W. PARSONS, OF TOLEDO, OHIO.

## CARBURETER FOR HYDROCARBON-ENGINES.

No. 801,044.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed February 4, 1905. Serial No. 244,095.

*To all whom it may concern:*

Be it known that I, CHARLES W. PARSONS, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Carbureters for Hydrocarbon-Engines; and I 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.

My invention has reference to a carbureter for hydrocarbon-engines; and it has for its object to provide a simple, inexpensive, and efficient device for vaporizing hydrocarbon liquids and for mixing the vaporized liquid with the proper proportion of air to effect an explosive mixture.

A further object is to provide a combined carbureter and storage receptacle for the hydrocarbon liquid which shall occupy a minimum space, the invention being of especial utility for automobiles and launches.

A further object is to provide a device for generating hydrocarbon vapor which will dispense with the employment of carbureting devices requiring fine adjustment and manipulation, the ordinary carbureters arranged with needle-valves or similar regulating devices being objectionable.

A further object is to provide a carbureter which will generate hydrocarbon vapor as long as the engine which it supplies continues to operate and which will cease generating vapor the instant the engine ceases to operate.

With these objects in view my invention is constructed, and it embodies the novel combination, arrangement, and details of construction hereinafter shown, described, and claimed.

In the accompanying drawings, illustrative of my invention, Figure 1 is a plan view of my improved carbureter. Fig. 2 is a sectional plan view thereof. Fig. 3 is a vertical sectional elevation. Fig. 4 is a sectional detail view of the throttle-valve, check-valve, and relief-valve employed in the connection leading from the carbureter to the engine. Fig. 5 is a transverse section through the throttle-valve.

Referring to the details of construction, 1 is a sheet-metal reservoir or receptacle for hydrocarbon liquid, the same being preferably elongated and flat, of substantially rectangular shape, as shown, and provided with

a removable head or end plate 2, preferably secured by means of bolts 3, there being a flange 4 formed upon the body of the reservoir, said flange being provided with suitable perforations to receive the bolts. At one end of the reservoir is provided a spring-actuated inlet-valve 5 for air, and at the opposite end of the reservoir is provided an outlet 6 for carbureted vapor. Arranged in vertical position in the reservoir at suitable distances apart are a plurality of partitions 8, the margins of which contact with the top, bottom, and side walls of the reservoir. Each of these partitions is constructed of two sections of reticulated material (indicated at 9) with a layer or packing 10, of absorbent material, such as ordinary cotton-waste, between them. Instead of the reticulated sections foraminous sheet-metal sections may be employed.

11 is a bent or curved partition identical in construction with the partitions 8, the same being arranged adjacent to the vapor-outlet. The several partitions 8 and the curved partition 11 are joined together and firmly maintained in the respective positions shown in Fig. 2 by means of a frame consisting of a rod 12, bent in the form of a U, the partitions being held against displacement upon the rod by any suitable means, that shown being cotter-pins 13, inserted through transverse perforations in the rod. Immediately below the vapor-outlet is provided a curved plate 14, secured to the removable head 2, the same having a perforation 15 therethrough at its lowest point to allow liquid to drain therefrom. Plate 14 serves as a guard to prevent liquid hydrocarbon from entering the vapor-outlet.

16 is a connection leading from the vapor-outlet to a gas-engine, said connection being provided with a throttle-valve 17, a check-valve 18, and a spring-actuated relief-valve 19. Throttle-valve 17 has a rotatable plug 20, actuated by a handle 21, the plug being provided at the top with a spring-actuated intake-valve 22, adapted to admit air into the connection leading to the engine when the passage for vapor from the reservoir is throttled, as indicated in dotted lines, Fig. 5.

23 is a capped opening through which hydrocarbon liquid is introduced into the reservoir.

In the operation of my invention the reservoir is filled approximately one-half full of hydrocarbon liquid, as indicated in Fig. 3, the upper half of the reservoir being unoccupied



by liquid and permitting the passage of vapor therethrough. The several partitions 8 and the partition 11 being partially submerged in the hydrocarbon liquid the absorbent material embodied in their construction will become thoroughly saturated therewith. Upon operating a vapor-engine connected with the reservoir the suction resulting from such operation will cause air to enter the reservoir through the inlet-valve 5. The air will then pass successively through the partitions 8 and the partition 11, as indicated by the arrows, Fig. 3, becoming highly carbureted before it is finally drawn through the outlet 6, leading to the engine. Aside from their being employed to impregnate the incoming air with hydrocarbon vapor the partitions 8 also prevent the splashing of the liquid from end to end of the reservoir, it being apparent that the liquid can only splash a limited distance between the partitions. This arrangement is of especial value where the device is employed in gasoline-launches, as the splashing of the liquid in the reservoir due to the plunging of the launch in a sea might seriously impair the efficient operation of the device. To further prevent the tendency of the liquid to splash at the end of the reservoir having the vapor-outlet, I have arranged the curved partition 11 immediately adjacent to the vapor-outlet. To eliminate the possibility of liquid being drawn through the vapor-outlet 6, I have provided the plate 14 immediately below the outlet, and the same is provided with an orifice 15, through which any liquid deposited thereon will be returned to the body of the liquid in the reservoir.

An especially valuable feature of my invention is the ease with which it is assembled

and taken apart. The head or plate 2 is readily removed, the plate 14 carried thereby being removed therewith. The entire vaporizing structure, comprising the partitions 8 and 11 and the frame 12, may then be withdrawn from the reservoir for the purpose of inspection or repairs, although the possibility of derangement to require inspection and repairs is obviously remote.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a carbureter, a reservoir for hydrocarbon liquid, an air-inlet at one end thereof, a vapor-outlet at the other end, a plurality of transverse partitions of absorbent material partially submerged in the liquid in the reservoir, and a curved partition of absorbent material adjacent to the vapor-outlet, substantially as described.

2. In a carbureter, a reservoir adapted to contain hydrocarbon liquid and provided with an air-inlet and a vapor-outlet, and a plurality of partitions spaced apart within the reservoir, each constructed of two sections of reticulated material with absorbent material between them, and means for maintaining said partitions in position comprising a rod bent in the form of a U and provided with fastening-pins inserted through transverse perforations therein on opposite sides of the partitions, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHARLES W. PARSONS.

Witnesses:

CARL H. KELLER,  
EDWARD O. MILLER.