

Oct. 30, 1923.

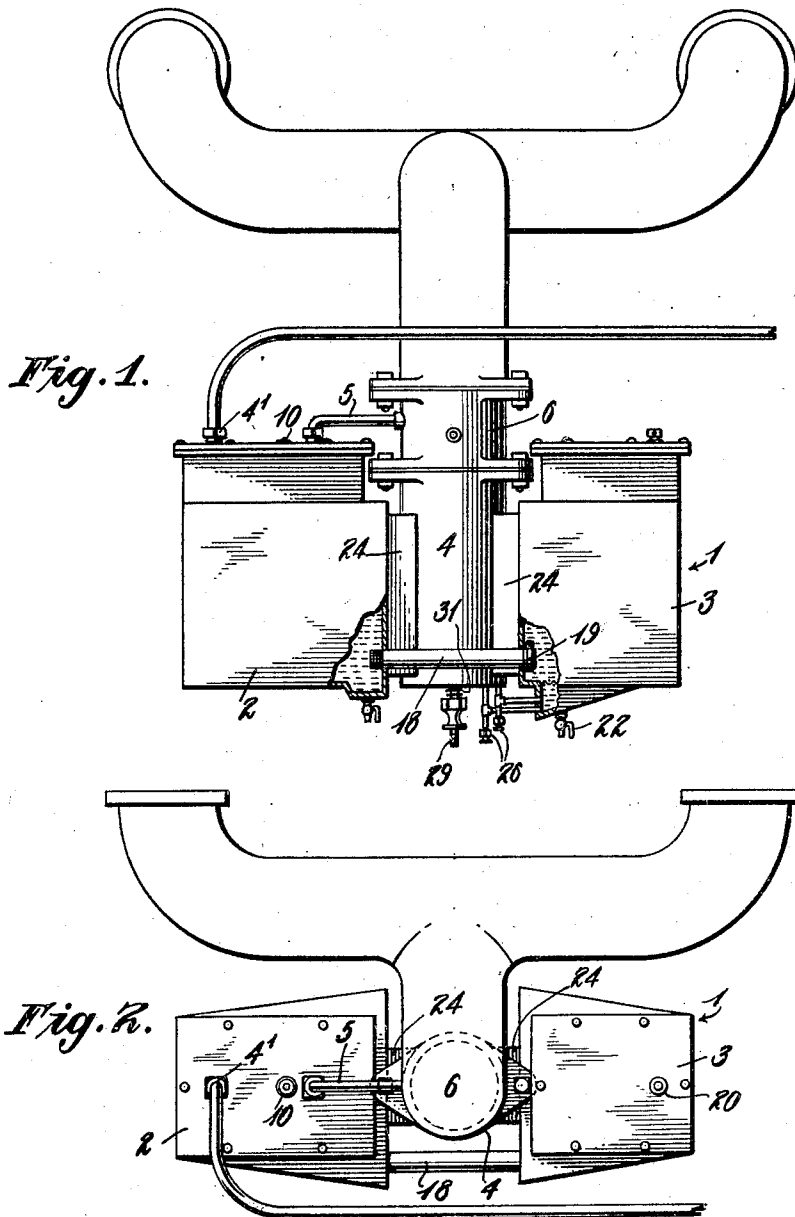
1,472,660

E. L. MEISINGER

VACUUM CARBURETOR

Filed June 28, 1922

3 Sheets-Sheet 1



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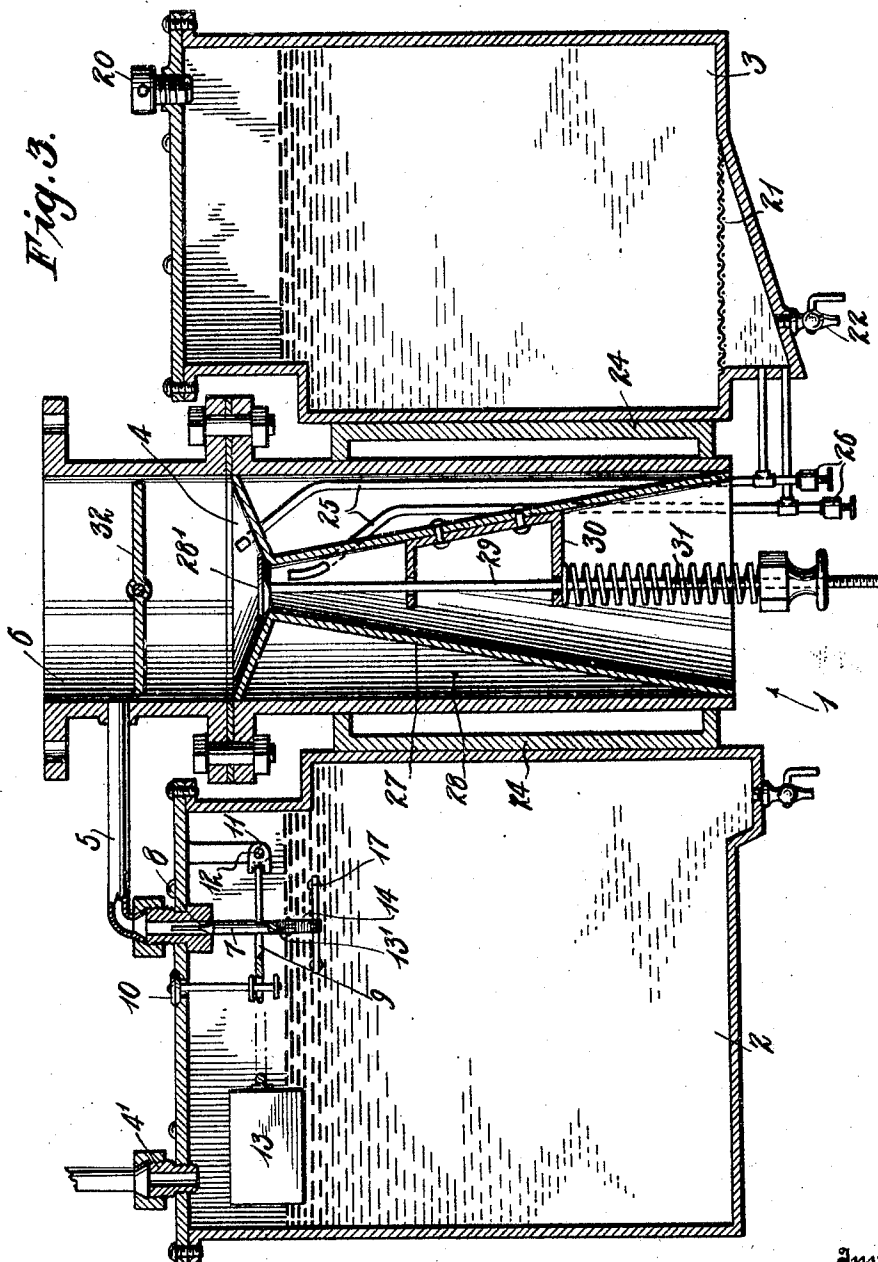
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Fig. 4.

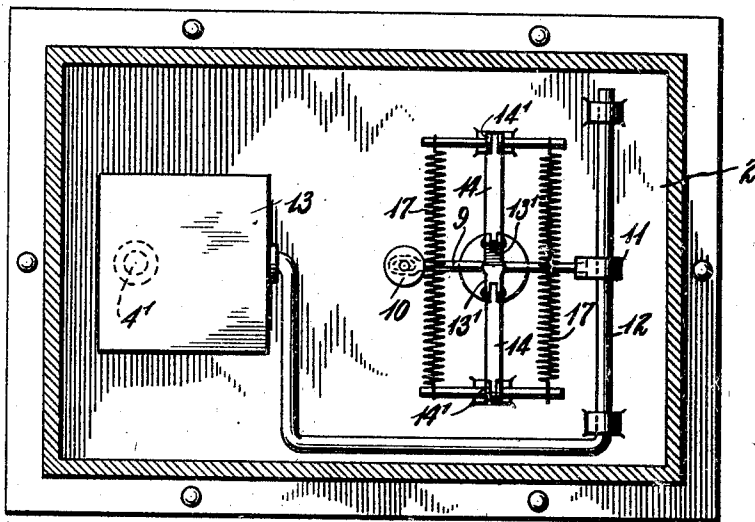
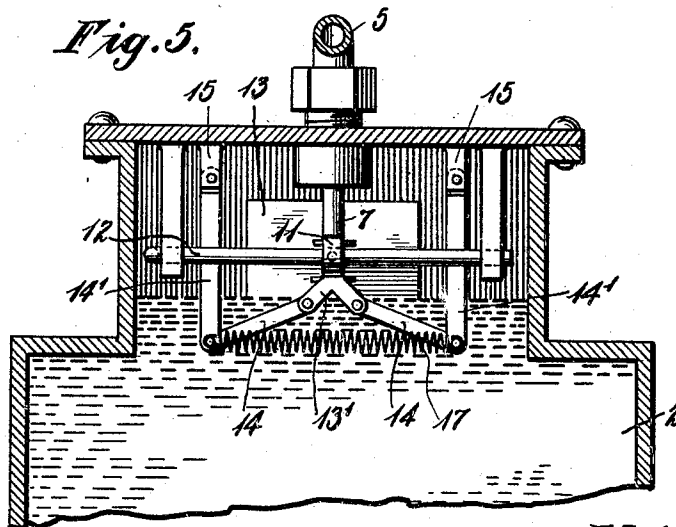


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD LAWRENCE MEISINGER, OF CLARION, PENNSYLVANIA.

VACUUM CARBURETOR.

Application filed June 28, 1922. Serial No. 571,335.

To all whom it may concern:

Be it known that I, EDWARD L. MEISINGER, citizen of the United States of America, residing at Clarion, in the State of Pennsylvania, have invented certain new and useful Improvements in Vacuum Carburetors, of which the following is a specification.

The invention relates to improvements in a vacuum carburetor.

It is an object of the present invention to provide a combined vacuum tank and a carburetor in a unitary structure, thereby eliminating the use of independent vacuum tanks, such as are now extensively employed. This carburetor positively will not flood.

With the foregoing conception in mind the invention preferably consists of a vacuum carburetor having a gasoline receiving tank to which fuel is introduced by suction created by the engine, in combination with an adjacent accumulating chamber receiving a supply of fuel to be constantly fed to the engine through any approved form of jets. More specifically, my invention relates to an improved means for controlling the introduction of fuel from the main supply tank to the vacuum tank of the carburetor, such means being automatic in operation and serving to always maintain a proper level of the gasoline in the vacuum tank.

In the accompanying drawings I have shown the preferred embodiment of my invention, but it will be readily understood that the same is susceptible of many changes without departing from the spirit thereof.

In the drawings Figure 1 is an elevation partly broken away.

Figure 2 is a top plan view of the carburetor, and,

Figures 3, 4 and 5 are detail views of the float control for the vacuum tank.

Referring now more particularly to the drawings wherein like reference characters indicate corresponding parts, the numeral 1 designates the unitary structure comprising the vacuum chamber 2, the feed chamber 3 and the usual vaporizing or carburetting chamber 4 for the air and gasoline. It will be understood that the three elements above specified are formed as a unit, so that a separation of the vacuum chamber from the float chamber with the usual connecting pipe is not needed. I will now describe the various structural features of the carburetor.

The vacuum chamber 2 of the carburetor is provided with the usual pipe inlet 4' leading from the main gasoline tank usually positioned in the rear of the motor vehicle and is also connected with a suction pipe 5 leading to the manifold 6 of the engine whereby the suction strokes of the piston will create a vacuum in the interior of the tank 1 causing gasoline to be drawn through the pipe 4' into this tank. As is well understood in regard to vacuum tanks, a valve mechanism must be provided for shutting off the suction pipe when the vacuum chamber is filled with gasoline and to open up said pipe when the gasoline level drops. As a convenient means for accomplishing this end, I provide a valve 7, which, for the purpose of convenience I shall designate as a trip valve having a pointed end 8, which enters the opening in the suction tank to open and close the same. This valve is operated by a trip arm 9 connected at one end with a vent valve 10 which is opened and closed, being maintained closed of course when the trip valve is open. The trip arm 9 is preferably actuated by a trip dog 11 connected with the float arm 12 carrying the float 13 which rises and falls with the level of the fuel in the tank 1. The trip valve 8 is supported upon a bifurcated end 13' connected with links 14 suspended from the supporting members 15 on the under side of the tank, said links being normally maintained in a position to hold the valve closed by the action of the springs 17 connecting the opposed links 14'. When, however, the float 13 drops the links 14' are moved outwardly against the tension of the springs 17 and cause the trip valve 8 to lower whereby the suction is created in the tank 1 and gasoline drawn thereto through the pipe 4'. As the level of the gasoline raises the float rises and the springs 17 force the valve in a closed position, the valve again opening when the liquid level in the tank drops.

Leading from the vacuum tank 2 is a fuel feed pipe 18, the same having a check valve 19 therein. This check valve remains closed while suction is maintained in the tank 1 and opens automatically when the suction is stopped, due to the rise of the valve 8 and thereby allows gasoline to flow into the feed chamber or tank 3 which is maintained at a level substantially the same as the level of the gasoline in the vacuum chamber 1. This

chamber 2 is formed with a vent opening 20, a screen 21, and a drain plug 22. It is secured to the mixing tube or pipe 3, having saddles 24 fitting therethrough, the suction tank 1 likewise being formed with saddles, which two tanks are united by bolts or any other fastening devices.

From the tank 2 gasoline feed jets or lines 25 extend upwardly into the carburetting or mixing chamber, one constituting a low speed jet and the other a high speed jet. The structure of these feeding tubes is common in carburetors and need not be definitely described herein. Suitable valves 26, however, are provided for controlling the supply of fuel through said feeding tubes.

The carburetting chamber forming a part of this invention is preferably a round iron tube or the like having a substantially cone-shaped member 27 inserted therein to provide a jacket 28, adapted to receive heating gases from the engine to assist in vaporizing the fuel. Said carburetting chamber is also formed with an air control valve 28' connected with a stem 29 passing through a bracket 30 and normally urged closed by a spring 31. The usual butterfly throttle valve 22 is disposed within the mixing chamber controlled by any suitable throttle. As the engine operates the air valve 28 is raised, allowing the air to pass into the space between said valve and the throttle valve 32, which air completely mixes and vaporizes the incoming gasoline admitted through the feed pipes 25. By adjusting the nut 33 the tension of the spring 31 is of course controlled and this will vary the extent of opening of the valve 28.

From the foregoing it is believed that the operation of the device and its advantages will be clearly appreciated, but these may be briefly repeated as follows: The vacuum chamber and the gasoline supply chamber for the feeding jets are built in a unitary structure so as to occupy little space under the engine hood and to dispense with long gasoline lines, such as are frequently used. The vacuum chamber is in direct communication with the engine through the suction pipe 5, serving to create a suction through said chamber serving to draw definite quantities of gasoline therein through the pipe 4'. The gasoline level is maintained in the vacuum chamber by the action of the float 13, controlling the trip valve 8, through the agency of the trip lever 9, and the trip dog 11 so that when the gasoline level falls the trip valve 8 is open and the suction created causing the further gasoline to be drawn into the tank. When the suction is being created in the tank 2 the tank 3 is out of communication therewith because of the fact that the check valve 19 automatically closes. As soon as this suction ceases the check valve 19 automatically opens admitting gasoline to

the tank 2 the level of which equals the level of the fuel in the tank 1. The tank 2 is in constant communication with the tank 3, the suction of the engine drawing the fuel from this tank through the feed jets 25 where it contacts with air while in a liquid or vapor condition admitted to the mixing chamber and passing through the restricted opening formed by the inserted collar 27. This collar of course is shaped so as to present a venturi to accelerate the passage of the gases and the valve 28 serves to materially control the quantity of air mixed with the gasoline. It will be appreciated that the invention is susceptible of many changes without departing from the spirit of the claims, and I wish it to be understood that the mixing chamber may be materially altered in form and that various means may be employed for creating the suction created in the vacuum chamber 1, and I am not limited to the means herein disclosed.

Having thus described my invention, what I claim is:

1. A carburetor having a vertical carburetting chamber open at its lower end, and an air inlet leading to said carburetting chamber with a valve for controlling the same, a vacuum supply chamber at one side of said carburetting chamber, a saddle for securing said chamber to the carburetting chamber, a suction pipe leading from the engine manifold above the throttle valve to said vacuum chamber, a float controlled valve for said suction pipe to maintain the level of fuel in said chamber constant, an independent gasoline feeding chamber disposed on the opposite side of said carburetting chamber and spaced therefrom throughout its length, an independent transverse pipe extending transversely of said carburetting chamber and spanning the gap between said vacuum chamber and said fuel feeding chamber for establishing communication between said chambers at the lower ends thereof, a check valve carried by said pipe and disposed within the fuel feeding chamber, and a fuel feeding supply pipe leading from the lower end of said fuel feeding chamber into said carburetting chamber for supplying fuel thereto.

2. In a vacuum fuel feeding apparatus, the combination with a vacuum chamber, a fuel inlet to said vacuum chamber, a suction pipe leading from an engine manifold to said vacuum chamber, a reciprocating valve for controlling said pipe, a pair of pivoted links suspended from the closure of said vacuum chamber, transverse arms pivotally connected to said links, a valve operating member having a lower bifurcated portion to which said arms are pivotally connected, resilient means connecting said pivoted links for normally maintaining said valve closed by urging said bifurcated mem-

ber upwardly and tripping mechanism for opening said valve including a float, a support therefor, a trip arm actuated upon the lowering of said float to separate said links
5 against the tension of said spring by the weight of said float and to cause said valve to lower, in combination with a vent valve operated by said trip arm and adapted to be closed when said suction pipe valve is open, and means for feeding fuel from the vacuum chamber to a carburetor. 10

In testimony whereof I affix my signature.

EDWARD LAWRENCE MEISINGER.