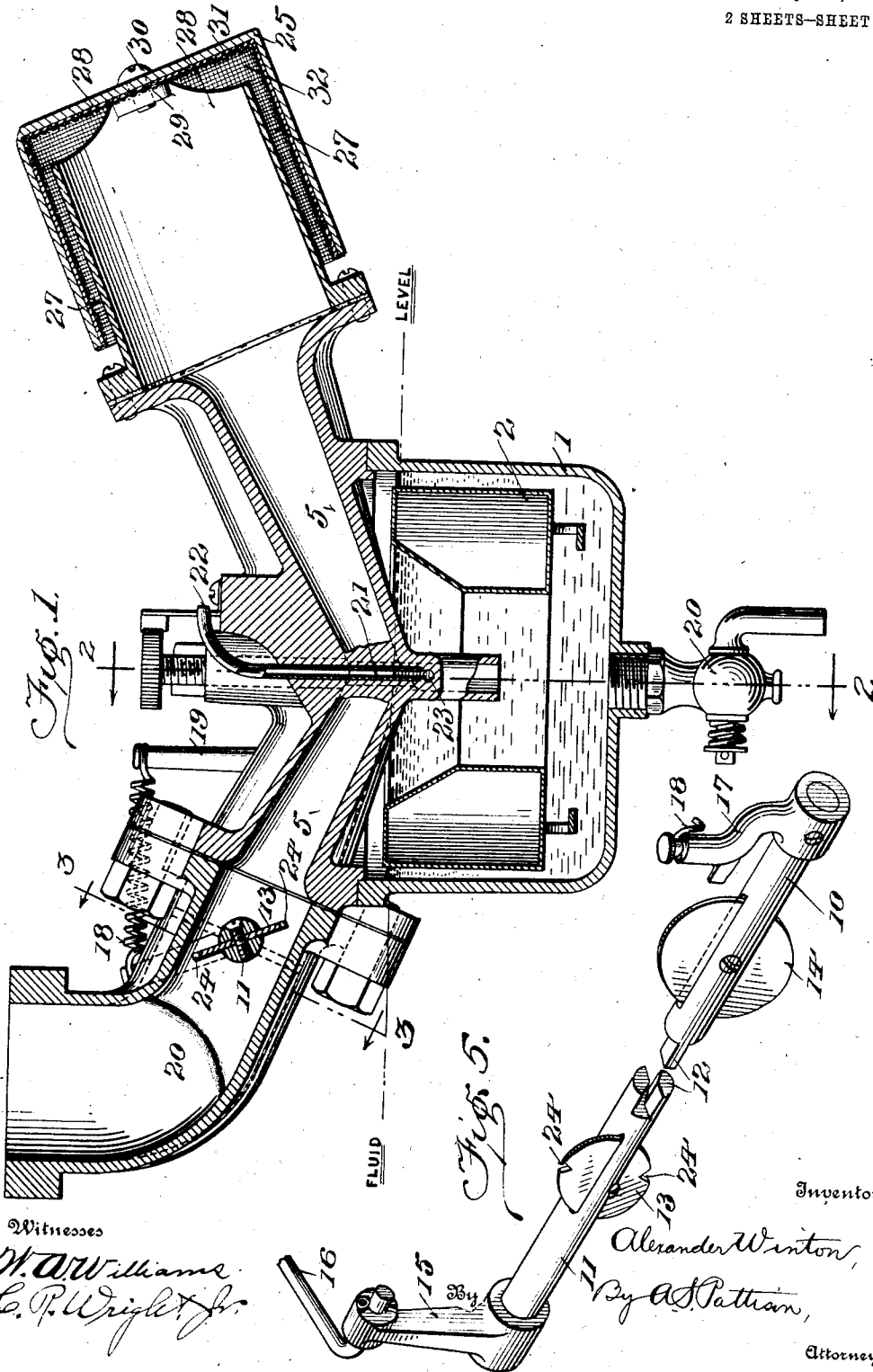


A. WINTON.
CARBURETER.
APPLICATION FILED MAR. 18, 1908.

1,096,482.

Patented May 12, 1914.

2 SHEETS-SHEET 1.



Witnesses

W. A. Williams
C. P. Wright, Jr.

Inventor

Alexander Winton,

By A. S. Patton,

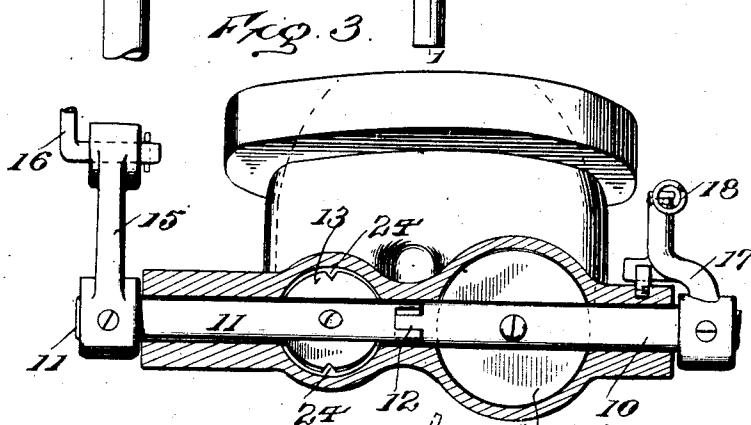
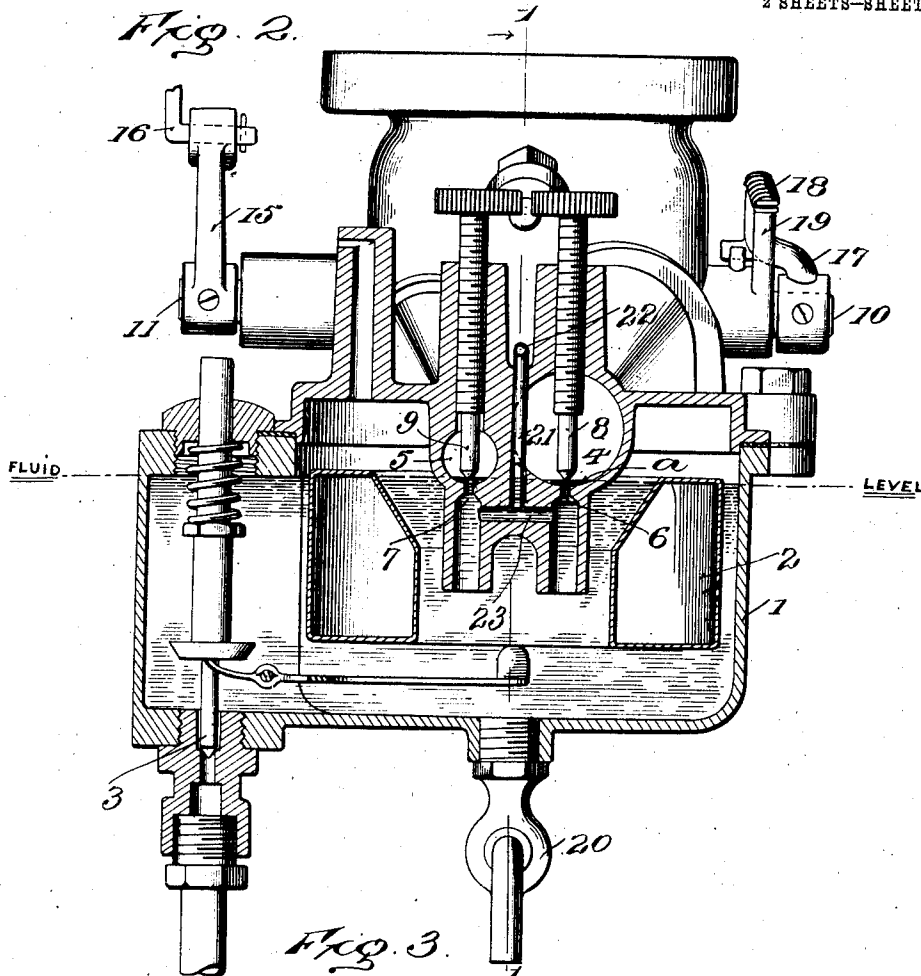
Attorney

A. WINTON.
CARBURETER.
APPLICATION FILED MAR. 18, 1908.

1,096,482.

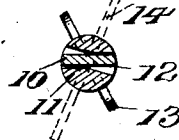
Patented May 12, 1914.

2 SHEETS—SHEET 2.



Witnesses
W. A. Williams
C. P. Wright Jr

Fig. 4.



Alexander Winton,
By A. S. Patterson

Inventor

Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO, ASSIGNOR TO WINTON GAS ENGINE AND MANUFACTURING COMPANY, OF CLEVELAND, OHIO.

CARBURETER.

1,096,482.

Specification of Letters Patent.

Patented May 12, 1914.

Application filed March 18, 1908. Serial No. 421,860.

To all whom it may concern:

Be it known that I, ALEXANDER WINTON, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in carbureters, for explosive engines, and is of that type disclosed and claimed in my co-pending application, Serial Number 389,264, in which a puddle or body of gasoline is maintained in the air passage for slowly moving volumes of air, but which effects a spray-action of the gasoline for rapidly-moving volumes of air.

The present improvement pertains to certain details of construction which will be fully described hereinafter, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1, is a vertical, sectional view taken centrally and longitudinally through one of the air passages. Fig. 2, is a vertical, transverse, sectional view on the line 2—2 of Fig. 1. Fig. 3, is a vertical, transverse, sectional view on the line 3—3 of Fig. 1. Fig. 4, is a transverse, sectional view through the interlocking joint of the throttle-operating rod. Fig. 5, is an enlarged detached perspective view of the throttles and their operating rod.

The carbureter here shown is of the form shown and described in my said co-pending application, and the general construction and operation need be described in only a general way to enable the present improvements to be understood.

In general, the carbureter comprises a supply chamber 1 in which is located a float 2 adapted to control a valve 3, to maintain within the chamber 1 a predetermined fluid level, in a manner well understood by those skilled in this art. Passing across this chamber 1 are the two curved air passages 4 and 5, which have communication with the fluid within the chamber 1 through the inlets 6 and 7. Suitable adjustable valves 8 and 9 are adapted to regulate the flow of the fluid through the inlets, and to assist in atomizing the escaping sucked fluid. A throttle-operating shaft passes transverse the passages 4 and 5, and this shaft is made of two parts

10 and 11, which have their inner ends interlocking, as shown at 12 for permitting the actuating part 11 to have a limited movement independent of the part 10, whereby the small throttle 13 is partially opened before the large throttle 14 is moved. An operating crank-arm 15 is attached to the outer end of the actuating part 11, and a rod 16 is connected therewith, and the rod 16 will be connected with any desired operating-handle (not shown) in a way well understood. Attached to the outer end of the part 10 of the throttle-shaft is an arm 17, to the outer end of which one end of a contracting spring 18 is attached, and the other end of the spring is connected with a stud 19 projecting from the case or cover of the carbureter. A drain cock 20 is located at the bottom of the chamber 1.

Thus far I have described in a general way the subject-matter of my said co-pending application, and will now describe my present improvements. In the type of carbureter here shown, in which a body or puddle of volatile fluid a is maintained for slow speed and slowly-moving volumes of air, I find that when the motor is running slow and the throttle suddenly fully opened, a momentary excess of gasoline occurs, by reason of the sudden increase in the velocity of the volumes of air passing by the body of fluid, thus drawing or pulling a considerable quantity of raw fluid up into the outer end 20' of the aspiration pipe or passage. To avoid this momentary excess of gasoline I provide means for relieving the high vacuum formed by the suddenly-increased speed of the volumes of air, which I find prevents this over-supply of fluid. The form here shown for accomplishing this result consists in providing an auxiliary air passage-way 21 which has its upper end 22 in open communication with the exterior of the chamber 1, and its inner end in communication with the fluid outlets 6 and 7, through the medium of a cross-passage-way 23. With this arrangement, when the throttle is suddenly opened wide, and a high vacuum formed, a sufficient amount of air passes through the air passage 21 into the gasoline conduit and largely interrupts the vacuum pull on the gasoline, and therefore reduces the quantity of gasoline supplied, although the amount of air admitted is not sufficient to effect the control of the motor. These

auxiliary passages 21 and 23, of the size shown, and having the lower end considerably below the level of the fluid in the chamber 1, the fluid normally closes the passage against the inlet of air, but when the motor is suddenly speeded, and a momentarily sudden high vacuum is formed, a sufficient amount of air is admitted to momentarily reduce the high vacuum pull as described, but after the sudden increased vacuum is over and the motor is running uniformly, then the fluid closes the lower end of the auxiliary air passage. In other words, the auxiliary air passage is not a constantly acting air delivery passage, nor is it in fact an air delivery passage to supply air to the gasoline, or to force the gasoline out of the fluid exit, but to the contrary it is only a vacuum reducer and operates spasmodically for the latter purpose only. This action, as stated, is due to the small size of the air passage, and to having its lower end sufficiently below the oil level and opening into a relatively large passage so that the specific gravity of the oil is sufficient to close the air passage when the motor is working uniformly.

I am aware that carbureters have heretofore had auxiliary air passages so located that the air passes constantly to the fluid exit, either to further carburet the air, or of such size and so located that it constantly assists in forcing the fluid out of the exit. My invention operates differently from either of the foregoing, as heretofore fully set forth, and for the reason explained. The arrangement is also found to prevent an excess supply of gasoline when the motor is run with full open throttle, thus creating a high vacuum, and especially in multiple cylinder motors. A vacuum relief is of especial value in that form of carbureters which have a maintained oil level either within, or substantially on a plane with the bottom of the air passage.

While I have here shown my vacuum relief in connection with substantially two carbureters formed by the two passages, and two oil inlets, yet I wish it understood that the invention is capable of use with a single air passage and a single oil inlet.

To prevent the supply of gas to the motor being absolutely cut off by the throttle, I provide it with a passage, notch or notches, which will permit a sufficient supply for the minimum speed of the motor when running free. When a motor is running with open throttle, the suction or passage of the air through the inlet pipe to the carbureter is clearly audible, and oftentimes very objectionable. To avoid this disagreeable noise, I provide a silencer or muffler for the inlet end of the air passage or passages and in communication therewith. As here shown, this muffler comprises a hood 25, which embraces the inlet end of the air passage, and preferably has connected and movable with it the inlet end 26 of said air passage. The hood 25 is made larger than the portion 26 to form a surrounding air inlet passage 27, and the end of the inlet portion 26 is cut away at 28 for the passage of air between it and the inside of the hood, while the portion 26 has a projection 29 extending inward from its side wall to which the hood 25 is attached and supported by a screw or bolt 30. A deadening lining of felt 31 (or similar material) is located at the inner side of the hood, and covering this lining is a very fine wire gauze 32, which prevents the felt from becoming shredded and any lint becoming detached and passing into the carbureter.

I have shown and described my present preferred form of the disclosed improvement, but I do not limit myself to the exact form here shown, for that may be varied without departing from the spirit and scope of my invention.

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

The combination with a carbureter for explosive engines having an air passage, of a cup-shaped hood surrounding the inlet end of the air passage, said hood having a lining of sound-deadening material.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER WINTON.

Witnesses:

I. F. BAUGHMAN,
EDITH GIDEON.