

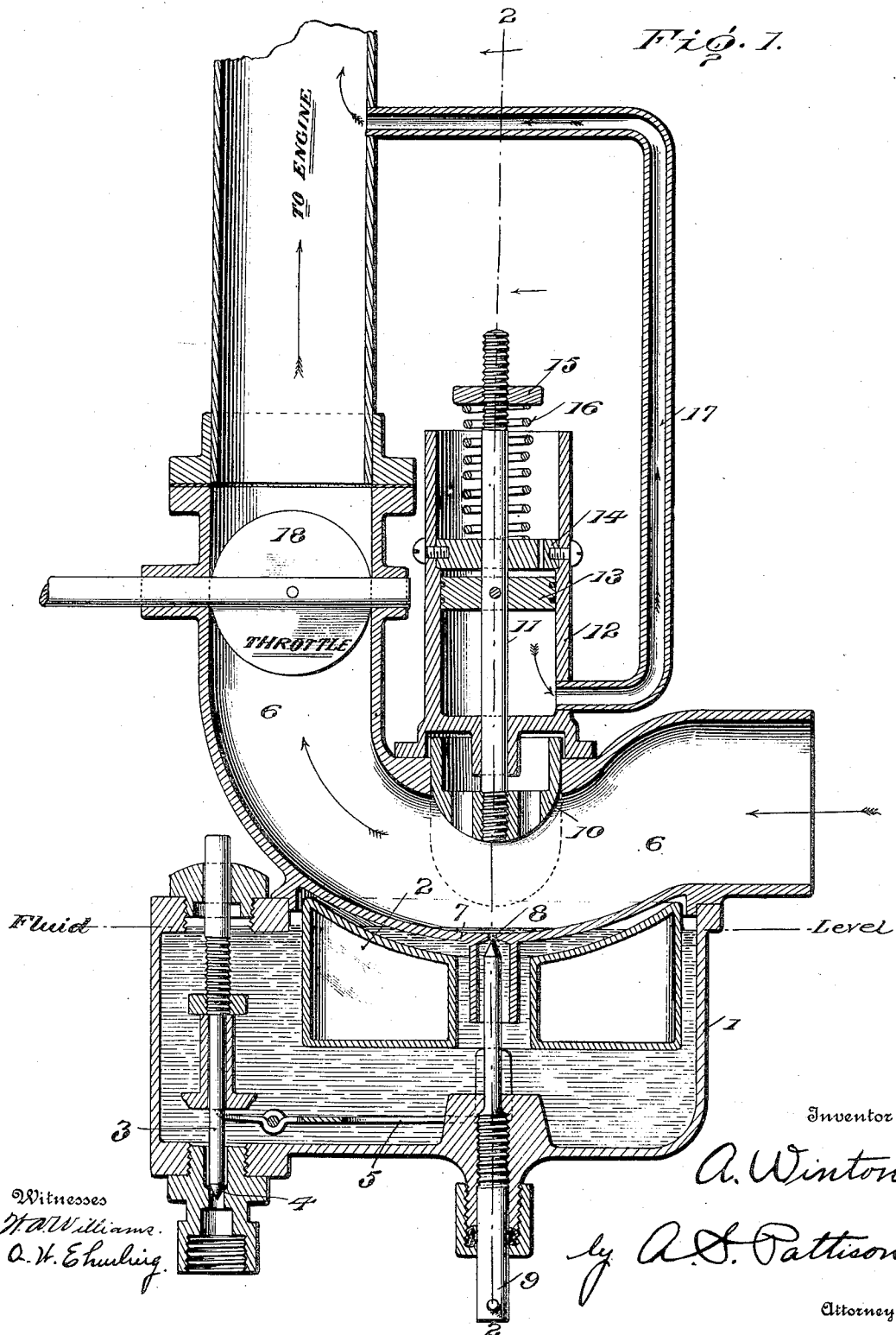
A. WINTON.
CARBURETER.

APPLICATION FILED APR. 9, 1907.

928,828.

Patented July 20, 1909.

2 SHEETS—SHEET 1.



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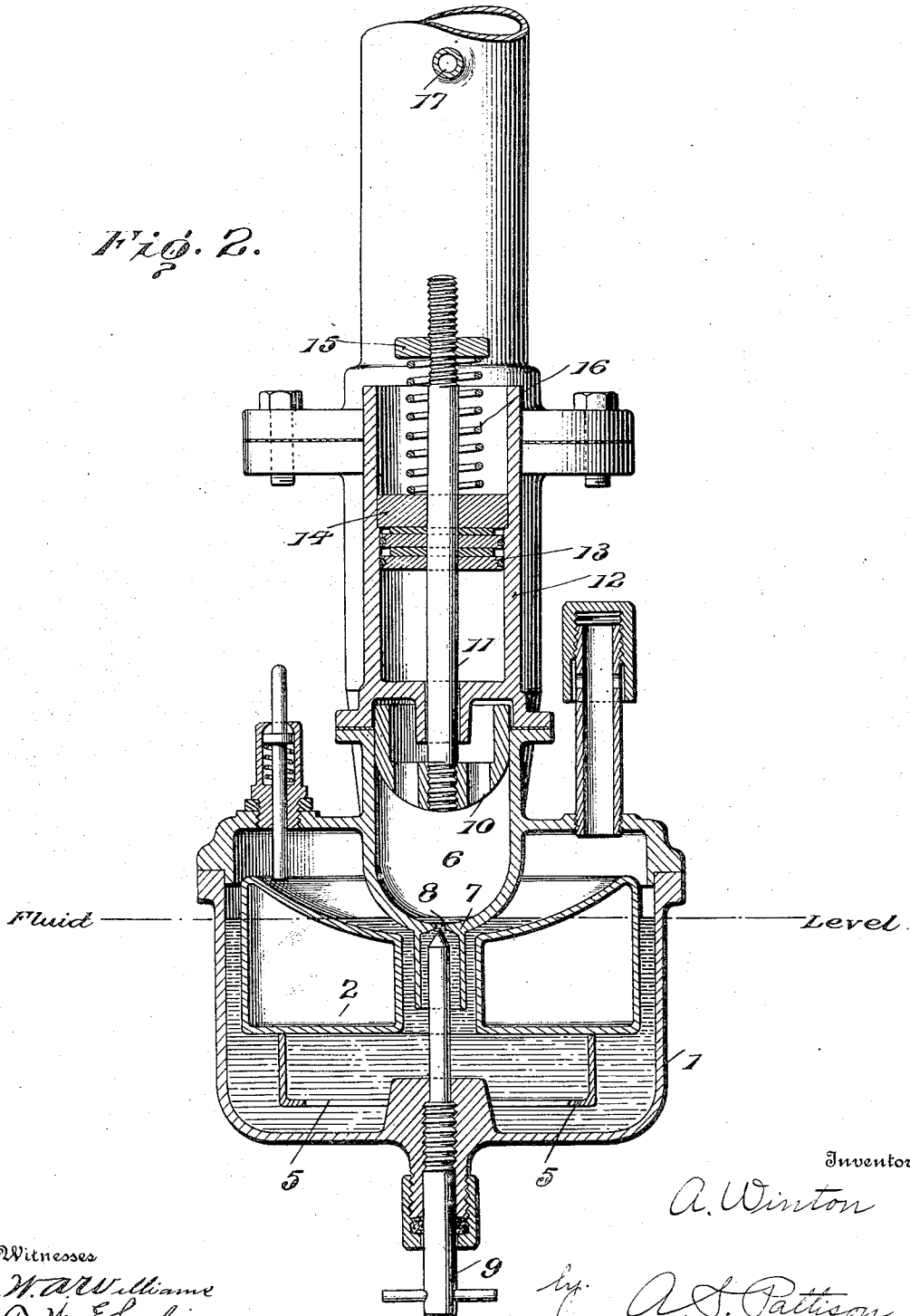
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2 SHEETS—SHEET 2.

Fig. 2.



Inventor

A. Winton

Witnesses

W. A. Williams
A. W. E. Hocking.

by A. S. Pattison.

Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO.

CARBURETER.

No. 928,828.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed April 9, 1907. Serial No. 367,215.

To all whom it may concern:

Be it known that I, ALEXANDER WINTON, a 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.

10 This invention relates to improvements in carbureters, and is for use in connection with explosive engines to furnish a uniform explosive mixture therefor, irrespective of the speed or requirements of the motor.

15 The present improvement relates to the class of carbureters which is made the subject-matter of a co-pending application of myself and Harold B. Anderson, Serial Number 323,117 in which the slowly moving volumes of air are subjected to surface carburization and the rapidly moving volumes of air subjected to spray carburization.

The present improvement pertains to automatic means for controlling the size of the air passage at the point of gasoline entrance therein in proportion to the volume and rapidity of the air passing through the air passages to meet the requirements of the motor.

30 In carrying out the present improvement, the air passage-way is automatically restricted at the point of fluid exposure for surface carburization of slowly moving volumes of air, and is enlarged automatically in proportion to the volume and rapidity of air passing through the air passage to the motor, whereby the slowly moving volumes of air are caused to travel in contact with and close to the exposed body of fluid for surface carburization.

45 In the accompanying drawings, Figure 1, is a sectional view of a carbureter embodying my invention, taken longitudinally through the air passage-ways. Fig. 2, is a sectional view on the line 2—2, and looking in the direction indicated by arrow.

50 In carrying out my present improvement a chamber 1 is provided into which the gasoline flows, and in which it is maintained at a predetermined level. This may be done in various ways, and the form of mechanism here shown for accomplishing this is the well known float and valve construction. It consists of a suitable float 2 concentrically arranged in the chamber 1, and a valve 3

which controls the inlet opening 4. An intermediately pivoted lever 5 has one end adapted to operate the valve 3 and the other end in engagement with the float 2. The operation of this mechanism for maintaining a fluid at a predetermined level is so well known and understood, that further description thereof is unnecessary.

65 Extending across the top of the chamber 1 is an air passage 6 through which the air passes to be carbureted on its way to the engine. The bottom 7 of this air passage 6 is located in a plane slightly below the maintained oil level of the chamber 1, whereby oil normally flows by gravity into the air passage through a suitable opening 8. This opening 8 is controlled by means of a suitable valve 9 which controls the volume and rapidity of the passage of the fluid from the chamber 1 to the air passage 6.

75 It is found in this type of carbureter that the best results are obtained by causing the slowly moving volumes of air to travel close to and against the exposed body of fluid, and this may be accomplished by restricting automatically the air passage at or substantially at the point of oil entrance to the air passage-way, but this air passage-way should be automatically enlarged in proportion to the volume of air passing through it to meet the demands of the engine at its various speeds.

80 The present improvement is designed to automatically vary the size of the passage-way at the point of fluid exposure in proportion to the volumes of air that are being carbureted.

85 The automatic means here shown consists in providing a movable gate-shutter or plunger 10 adapted to move toward the point of fluid exposure, as shown in dotted lines in Fig. 1. This gate or shutter has its stem 11 passing longitudinally through a cylinder 12, and within the cylinder is a piston 13 which is connected to the stem 11 in any suitable manner, so that the stem and piston move together. Secured within the cylinder 12 at a point outside of the piston is a suitable web or plug 14 which will limit the outward or upward movement of the piston 13, and the stem projects through this web 14 and moves freely therein. The projecting end of the stem is screw-threaded and carries an adjustable nut 15. Surrounding the stem and between the nut and the web is a suit-

able spiral spring 16 which serves to hold the piston, the stem and the shutter or gate 10 normally outward. A suitable passage-way 17 establishes communication between the air passage-way and the cylinder 12 at its inner or lower end. Located in the air passage 6 is a suitable throttle 18 by means of which the engine is controlled, and which serves to control the volume of air which is permitted to pass through the air passage and pass the exposed fluid or point of carburization, and also controls the flow of the explosive mixture to the engine, and in this way controls the engine. The throttle is located between the point of carburization and the engine, so that when the throttle is moved to close or partially close the passage-way 6 it reduces the volume of air passing through the passage 6 and past the point of carburization. With the throttle located as shown the velocity of the volumes of air when the throttle is partially closed, is constant at the point of carburization, and unless some means is provided for restricting the air passage at the point of carburization, these slowly-moving volumes of air at a constant velocity are found to travel in the upper portion of the air passage, and surface carburization is diminished. By the mechanism here described, and one form of which is illustrated, the air passage at the point of carburization is automatically varied in the following way:—

As is well known, explosive engines draw their explosive mixture through the carbureter, and thus cause a suction. When the throttle 18 is turned in a direction to cut off the flow of mixture thereto, a suction will be caused through the pipe 17, drawing air from the cylinder 12 and thus reducing the pressure from the inner side of the piston 13, thus permitting the atmospheric pressure to act on the piston to drive it inward and downward against the tension of the spring 16, and this serves to move the gate or shutter 10 in the direction indicated in dotted lines, Fig. 1. The withdrawal of air from the cylinder 12 has a tendency to create within the cylinder what is commonly referred to as a vacuum, and this tendency to move the piston 13 is increased or diminished in proportion to the cutting off of the air through the passage 6 by the throttle 18. When the throttle 18 is almost closed there will be a strong suction through the pipe 17, and the shutter 10 will be caused to reach the limit of its closing movement for the very low speeds of the motor. The opening of the throttle will permit the demands of the motor to be supplied, and thus relieve the tendency to vacuum in the cylinder 12 in proportion to the volumes of air permitted to pass through the passage 6 by the throttle 18.

I do not make any claim in this application for the restricting of the passage-way

at the point of fluid exposure, for this is the broad subject-matter of a co-pending joint application of myself and Harold B. Andersen, but I do claim the distinguishing characteristics of the present invention as compared with the mechanism and mode of operation of the above mentioned joint application.

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

1. A carbureter having a carbureting passage provided with an oil inlet, a shutter within the passage-way located to direct the passing air against said oil inlet, a chamber, a pressure actuated member within the chamber operatively connected with the shutter, the said chamber in communication with the said carbureting passage for the purpose described, and a throttle in the carbureting passage at a point between the shutter and said communication with the carbureting passage.

2. A carbureter having an air passage with a substantially horizontal portion, the bottom of the horizontal portion having an oil-inlet, a transversely movable shutter movable through the top of the horizontal portion of the air passage and entering it adjacent the oil-inlet, a vertically arranged cylinder in a line with the shutter, a piston within the cylinder directly connected with the shutter, means for holding the piston and thereby the shutter normally in a withdrawn position, a communication between the air passage and the cylinder below the piston, and manually actuated means for controlling the air passage through said air passage.

3. A carbureter of the type described having an air passage provided with an oil inlet, a member for restricting the said air passage only at the oil inlet to deflect the air against the oil, yielding means holding the said member normally in an unrestricting position, and a pressure-actuated means for moving the said restricting member in the opposite direction, for the purpose described.

4. A carbureter of the type described having an air passage provided with an oil inlet, a member for restricting the air passage only at the oil inlet to deflect the air against the oil, an adjustable yielding means for holding the said member in its unrestricting position, and a pressure-actuated mechanism controlled by the passage of the air through the air passage and adapted to move the restricting member in opposition to the said yielding means.

5. In a carbureter having an air passage provided with an oil-inlet in its bottom, means for maintaining a body of oil in the said air passage, a chamber, a pressure actuated member within the chamber, said

chamber in communication with the air passage, a movable shutter connected with and actuated by said pressure actuated member, said shutter located in the air passage about at the said body of oil, and means independent of the shutter for controlling the passage of air through said air passage.

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

ALEXANDER WINTON.

Witnesses:

HAROLD B. ANDERSON,
W. J. WARD.