R. W. SHAW.

CARBURETER.

APPLICATION FILED SEPT. 25, 1909.

978,947. Patented Dec. 20, 1910.

Fig. 1.

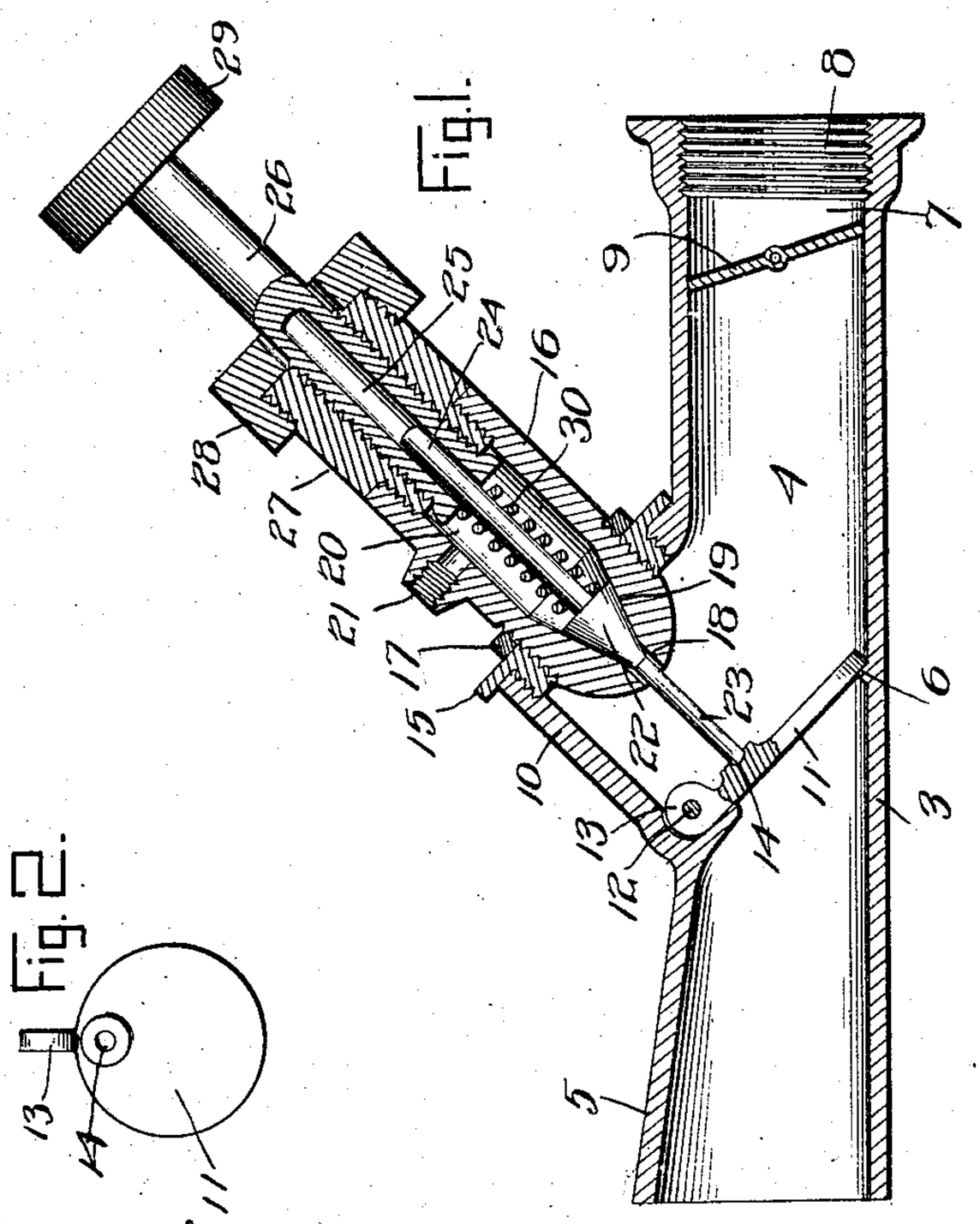

Fig. 2.

Witnesses

E. K. Reichenbach.

E. F. McCarthy

Inventor

Robert W. Shaw.

By B. F. Lester

Attorney

UNITED STATES PATENT OFFICE.

ROBERT WM. SHAW, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO GAVIN RAE, OF NEW YORK, N. Y.

CARBURETER.

978,947. Specification of Letters Patent. **Patented Dec. 20, 1910.**

Application filed September 25, 1909. Serial No. 519,601.

To all whom it may concern:

Be it known that I, ROBERT WILLIAM SHAW, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

The present invention relates to means for producing an explosive gaseous or vaporous mixture for internal combustion engines, and the object in view is to provide an exceedingly simple structure, which will be reliable, and can be adjusted to varying conditions in order to secure a maximum of efficiency with a minimum amount of fuel.

An embodiment of the invention that is at present considered preferable and one that has proven entirely satisfactory is disclosed in the accompanying drawings, wherein:—

Figure 1 is a longitudinal sectional view through the carbureter. Fig. 2 is a plan view of the air actuated valve.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment disclosed, an open-ended tubular casing 3 is employed that is provided with a straight-away air passage 4 therethrough. The inlet portion of said passage tapers inwardly, as shown at 5, and terminates at its inner and smaller end in an inclined valve seat 6, thus producing a nozzle that alines with the other end portion 7, which end portion is preferably threaded interiorly, as shown at 8 in order that it may be conveniently coupled to an engine. A butterfly throttle valve 9, located in said end portion 7, controls the supply of explosive mixture to the engine. The casing is also provided on one side with an inclined nipple 10, the bore of which is disposed at right angles to the valve seat 6, and in substantial alinement with the opening that is surrounded by said seat.

An air-actuated valve 11 is pivoted, as shown at 12 within the casing and normally rests against the valve seat 6, being thus disposed at an inclination within the passage 4. This valve is preferably circular in shape, and has a projecting ear 13, through which the pivot 12 passes. It is also provided with an eccentrically disposed seat 14 that is arranged contiguous to the ear 13.

A supporting plug 15 is threaded into the boss 10, and screwed into this plug is a fuel supply nipple 16 that is held against accidental movement by a jam or lock nut 17. The nipple 16 has its inner end disposed in opposition to the valve 11, and has a fuel discharge orifice 18, in rear of which is a valve seat 19, forming one end of a fuel chamber 20. Fuel is supplied to this chamber by any suitable source, through a coupling nipple 21. A fuel controlling valve 22 coöperates with the seat 19, and has a stem 23 that projects through the orifice 18, and has its free end located in the recessed seat 14 of the valve 11. Said valve also has a rearwardly or outwardly projecting stem 24, the outer end of which is disposed in a socket 25 formed longitudinally in the inner end of an adjusting stem 26. This stem is threaded through a head 27 screwed into the outer end of the nipple 16, which head is covered by a packing cap 28. The stem also has a suitable actuating head 29, the periphery of which is preferably knurled or otherwise roughened. A coiled spring 30 surrounds the stem 24, one end bearing against the valve 22, the other end against the stem 26.

The manner in which the device operates may be briefly described as follows. It will of course be understood that the casing 3 has the end 8 connected to an engine by any suitable means, and that said casing may be disposed vertically, horizontally or in any position found most convenient. The supply of gasolene or other fuel is connected to the nipple 21. When the throttle valve 9 is opened, upon the intake stroke of the engine, air will be drawn through the funned portion 5, and consequently a draft of great intensity will be created in the passage 4. The valve 11 is of course raised from its seat by the inrush, thus pressing against the stem 23, and opening the valve 22, which will permit fuel to flow from the chamber 20 into the inrushing body of air. Immediately this fuel will be vaporized and carried into the engine. The amount of resistance to the action of the air can be readily varied by turning the stem 26 to more or less compress the spring 30. The simplicity of the structure will be obvious from an inspection of the drawings, and furthermore the parts are entirely accessible. For instance, the air actuated valve 11 can be readily removed and replaced by unscrewing the plug 15 from the boss 10. This removes the entire fuel feed

mechanism in assembled condition, and gives access to the valve 11. By removing the pivot 12; the valve can be removed through the opening in the boss 10, inasmuch as the diameter of said valve is less than the diameter of the opening.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

In a carbureter of the character described, the combination with a tubular open ended casing, one end portion of which tapers inwardly and terminates in an inclined valve seat, of a pivoted air actuated valve normally resting against the seat, a butterfly controlling valve located in the casing, said casing also having a boss projecting at an inclination from one side and having a bore of sufficient size to permit the removal of the air-actuated valve, a plug threaded into the boss, a fuel supply nipple threaded into the plug and having a valve seat, a fuel controlling valve normally resting against the seat and having a stem that engages the air actuated valve, and means for opposing a variable resistance to the opening of the air actuated and fuel controlling valves.

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

ROBERT WM. SHAW.

Witnesses:
GAVIN RAE,
CLARENCE W. SENIOR.