H. E. FOGEL.

CARBURETER.

APPLICATION FILED JULY 31, 1909.

986,700.

Patented Mar. 14, 1911.

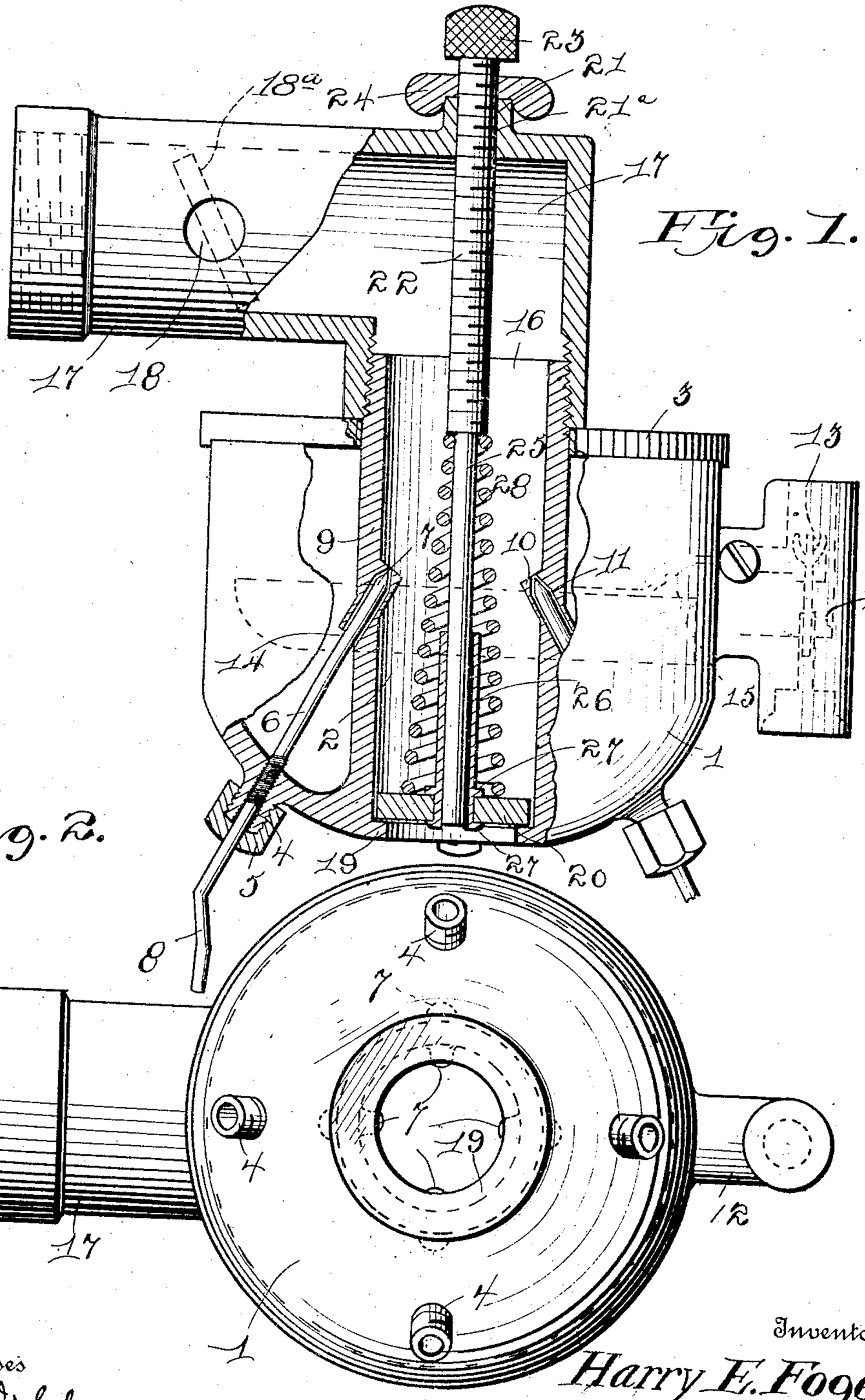

Fig. 1.

Fig. 2.

Witnesses

J. W. Wells

Jno. L. McCathran

Inventor

Harry E. Fogel.

By E. G. Siggers,

his Attorney.

UNITED STATES PATENT OFFICE.

HARRY E. FOGEL, OF FREEPORT, ILLINOIS.

CARBURETER.

986,700. Specification of Letters Patent. **Patented Mar. 14, 1911.**

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To all whom it may concern:

Be it known that I, HARRY E. FOGEL, a citizen of the United States, residing at Freeport, in the county of Stephenson and State of Illinois, 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 carbureters, and has for its object the production of a carbureter especially designed for use in connection with internal combustion engines.

Another object of this invention is the production of a carbureter, which is simple in construction, efficient in operation, and consists of a minimum number of parts.

With these and other objects in view this invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is an elevation of the carbureter partly in section; Fig. 2 is a bottom plan view of the same.

Referring to the drawings by numerals, 1 designates the main casing, which has a substantially hollow body provided with a central air inlet casing 2 formed integral with the body portion of the main casing 1. The air inlet 2 is formed, preferably, in the center of said casing and extends slightly higher than the top of the casing 1. Upon the top of the casing and surrounding the air inlet 2 is a top 3, which tightly fits upon the top of the casing 1, and thereby closing the upper end of the main casing 1, which contains the fuel.

The casing 1 is provided upon the bottom thereof with a plurality of depending portions 4, which are externally threaded and are adapted to receive a cap 5. The depending portion 4 is also internally threaded, and a needle-valve member 6 is adapted to work in said depending portion and said needle-valve member comprises an elongated body provided with a tapering upper end 7 and the lower angularly-disposed end 8, which end 8 acts as a handle for the free operation of the needle-valve 6. The cap 5 is adapted to engage the needle valve 6 and prevent or limit the longitudinal movement of the same. It is, preferable, to employ a plurality of these needle valves for controlling the flow of fuel into the air inlet 2, as hereinafter described. The walls 9 of the air inlet are provided upon their inner and outer sides with protruding portions 10 and an aperture 11 is formed therein, in which aperture works the upper end of the needle valve 6. The upper end of the aperture 11 is tapered, so as to receive the upper tapered end 7 of the needle valve 6, so as to form a tight joint when it is desired to have the valve in a closed position for preventing the mixing of the fuel with the air.

From the foregoing description, it will be readily seen that the flow of the fuel through the apertures can be readily regulated by turning the valve member 6 and adjusting the same within the apertures or valve seats 11.

Formed upon one side of the casing 1 is a valve casing 12, in which is positioned a suitable valve member 13, shown in dotted lines. A float 14 is positioned within the casing 1 and surrounds the air inlet 2 and said float is connected to the valve 13 by means of a connecting member 15 also shown in dotted lines, and is adapted to open or shut the valve 13 when the float 14 raises or lowers with the fuel, thereby regulating the height of the fuel to be contained within the casing 1, and it is desired to have the float 14 and the valve 13 connected so as to readily close the valve 13, and cut the flow of liquid off therethrough, when the liquid in the casing 1 has reached the desired height.

The upper end 16 of the air inlet 2 is externally threaded and has an elbow connection 17 threaded thereon, which elbow can be readily connected to the engine, if it be so desired, for supplying the gas thereto. The elbow is provided with apertures 18 in which is journaled a damper 18ª shown in dotted lines.

The air inlet 2 is provided with a lower inwardly-extending flanged end 19, which acts as a valve seat for the plunger 20 hereinafter described. The elbow 17 is provided with an upwardly-extending portion 21 in which is formed an aperture 21ª, in which works a threaded member 22, which member is provided with a head 23 for facilitating the operation of said threaded member 22 within the threaded aperture 21ª. A button or nut 24 is positioned upon the threaded member 22 between the upper end of the

upwardly-extending portion 21 and the head 23 of the member 22 and is adapted to lock or hold the threaded member in a set position, after the threaded member 22 has been brought to the desired position for regulating the tension of the coil spring, engaging the plunger 20 as hereinafter described. It will be obvious that when the member 22 is brought to a desired position, the nut can be threaded in the opposite direction, so as to tightly engage the upper end of the upwardly-extending portion 21, thereby firmly locking the threaded member in a set position.

The threaded member 22 is provided with a depending-reduced portion 25, which portion works in a sleeve 26, which sleeve supports a plunger head 20 previously mentioned. The sleeve 26 is loosely mounted upon the reduced portion 25, and said sleeve is provided, near its lower end, with spaced-apart flanges 27, between which is adapted to be gripped the plunger head 20 thereby firmly holding the same upon the sleeve 26. A coil spring 28 is positioned upon the reduced portion 25, and is interposed between the threaded member 22, which is considerably larger than the reduced portion 25 and the plunger head 20. Said spring tapers toward its upper end, so as to fit snugly around the upper end of the reduced portion 25 and diverges toward its lower end, so as to engage the plunger 20.

It will be obvious that when the threaded member 22 is rotated, so as to cause the reduced portion to move downwardly within the sleeve 26 that the tension of the coil spring 28 will be greatly increased thereby causing the plunger head to more firmly engage the flange 29 and cause a greater suction to be necessary to be able to withdraw the plunger from said flanges.

In operation the motor will cause a suction through the elbow 17, which as the engine pulsates will drive the plunger 20 upwardly thereby causing a current of air to be drawn within the air chamber 2, which suction will also draw the fuel through the apertures 11 thereby mixing and passing through the elbow 17, will pass to the engine having been thoroughly mixed so as to deliver a good mixture of gases, when being delivered to the engine.

From the foregoing description, it will readily be seen that I have provided an improved carbureter, which is simple in construction, and which can be easily set up and adjusted, and I have also provided means for regulating the flow of fuel into the air casing.

What I claim is:

A carbureter comprising a casing forming a main fuel chamber, a vertical central casing constituting the carbureting chamber located in said main casing and projecting through the top thereof and having its lower end formed integral with the main casing and provided with an opening at its lower end in the bottom of the main casing, said opening communicating directly into the outer air and having on its inner end an annular flange serving as a valve seat, said central casing also having angularly disposed ports in its side, the inner projecting discharge ends of which are located above the lower end of said casing, leading from the fuel chamber to the carbureting chamber in said central casing, needle valves passing through said fuel chamber and projecting into said ports and adjustable from the bottom of the chamber, an inwardly-yielding disk-valve seated on said annular flange at the lower end of said central casing and closing the opening in the bottom thereof, a plunger rod connected with said inwardly-yielding valve and extending up through the carbureting chamber, an engine pipe connected to the upper end of said central casing, an adjustable elongated tubular sleeve depending from said engine pipe into the upper end of said central casing into which the plunger rod projects and is movable therein, a coiled spring on said plunger rod between said valve and said sleeve, and means for locking the sleeve in adjusted position.

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

HARRY E. FOGEL.

Witnesses:

BOYD F. SHERMAN,

R. P. ECKERT.