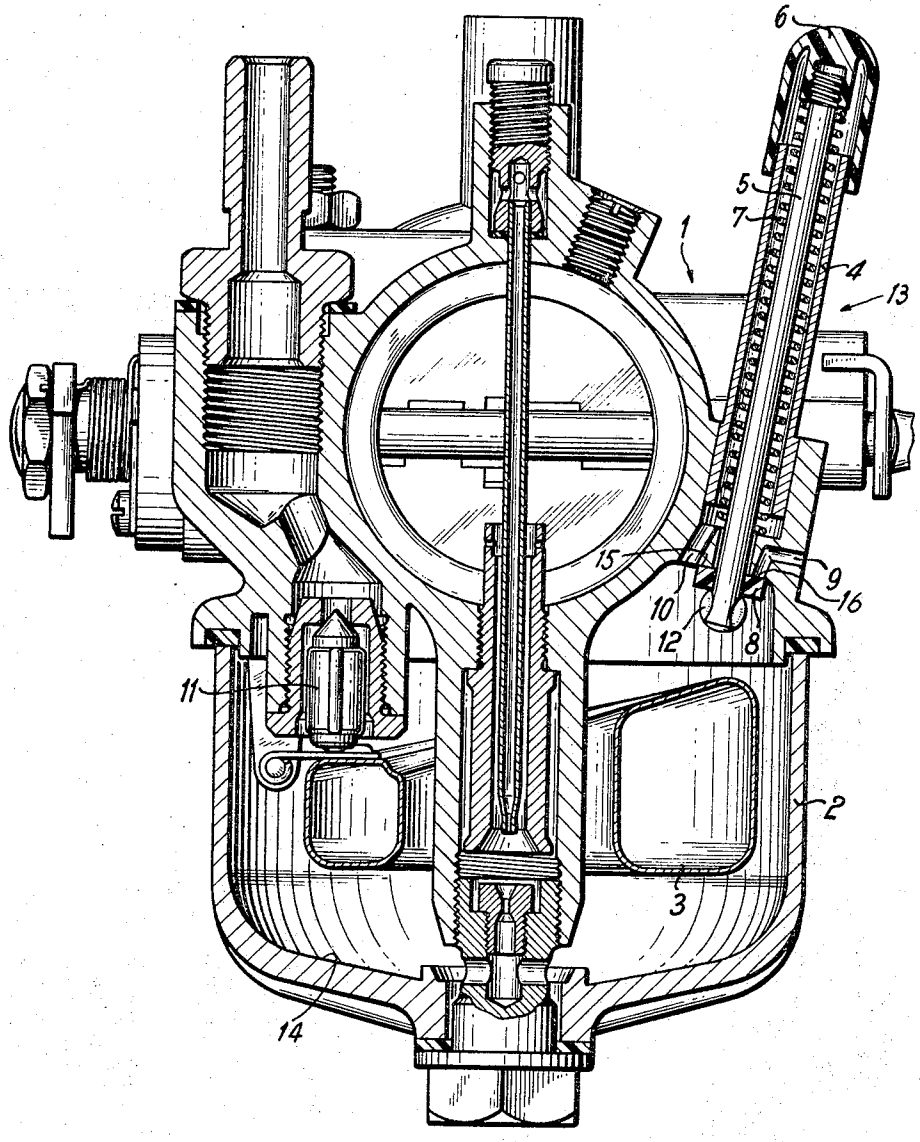
Aug. 29, 1967 R. HEID 3,338,565

CARBURETOR

Filed April 14, 1965



INVENTOR

Roland Heid

By

Richard Lind

Atty

United States Patent Office 3,338,565 Patented Aug. 29, 1967

3,338,565

CARBURETOR

Roland Heid, Schweinfurt am Main, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt am Main, Germany, a corporation of Germany

Filed Apr. 14, 1965, Ser. No. 448,209
Claims priority, application Germany, Apr. 25, 1964, F 25,854
5 Claims. (Cl. 261—70)

This invention relates to a carburetor and more particularly to a carburetor for internal combustion engines.

The primary object of my present invention is to provide a carburetor which uses a rod that projects from the outside into the interior of a fuel bowl and is adapted to move back and forth lengthwise. Such rods are used to touch and move a float in the fuel bowl and to make the float open a float needle valve. A rod of this kind is actuated when an engine is to be started and a higher fuel level is required.

Known carburetors of the referred to type have the disadvantage that whenever the rod, before starting the engine, is depressed too long to much fuel is caused to enter the suction path of the combusion engine, which leads to difficulties in starting the engine. Thus, it is an important object of the invention to overcome this drawback.

More specifically, it is an object of my invention to provide a carburetor which makes it possible for the operator of the engine to notice that the desired higher fuel level has been attained and dabbing with the float-engaging rod is to be stopped.

To the accomplishment of the foregoing and such other objects as will appear hereinafter, my invention consists in carburetor elements and their relation one to the other, as are more particularly described in the specification and sought to be defined in the claims.

Broadly, the carburetor of the invention comprises a fuel bowl which has an overflow opening, float means within the fuel bowl for the control of valve means, such as a needle valve, a support, float-engaging means, and packing means. The support may be a carburetor housing or the fuel bowl itself. The float-engaging means includes a rod member as has been referred to and spring means, and is mounted on the support so as to allow the rod member to be moved back and forth in lengthwise directions between an inoperative and an operative position and to have an end portion of the rod member project into the interior of the fuel bowl in either of the two terminal positions. The spring means urge the rod member toward, and normally hold the rod member in, the inoperative position. The rod member is adapted to be moved against the influence of the spring means toward and into engagement with the float means and to cause same to open the valve means when the rod member is in engagement with the float means. This engagement position and the aforesaid operative position of the rod member are identical.

According to a more specific but important aspect of the invention, the inner face of the fuel bowl has a flat portion. The fuel bowl is provided with an overflow duct which opens in the flat inner wall portion and, in addition, near a point at which the rod member enters the fuel bowl. The packing means mentioned hereinbefore is constituted by a ring which is mounted on the rod member and engages the flat inner wall portion when the rod member is in inoperative position. In this position, the ring seals the inner opening of the overflow duct, which is referred to hereinafter as overflow opening.

The specification is accompanied by a drawing in which the single figure is a sectional view of a carburetor embodying features of this invention.

Referring to the drawing in greater detail now, there is shown a throttle valve carburetor. The carburetor housing is designated **1**, and the fuel bowl **2**. Fuel enters the fuel bowl through a needle valve **11** which is controlled by a float **3** that maintains a definite fuel level in the bowl **2**. Mounted on the carburetor housing **1** is a float-engaging device generally designated **13**. A rod **5** of the device **13** is held in its elevated position, as illustrated, by a compression spring **7** that surrounds the rod **5** and bears at its upper end against a cap **6** and at its lower end against the carburetor housing **1**.

The rod **5** and spring **7** are surrounded by a protective sleeve **4** which is of relatively great length. It is shown to extend downwardly far enough to prevent fuel to escape through a bowl vent **10** when the carburetor assumes an inclined position. A portion of the rod **5** at its lower end projects into a fuel chamber **14** enclosed by the bowl **2**.

The rod **5** carries on its lower end portion which projects into the bowl **2** a packing ring **8** that in the illustrated elevated or inoperative posiotin of the rod is shown to be interposed between protuberant parts **12** and a portion **15** of the interior wall of the bowl **2**.

The wall portion **15** is flat so that the ring **8**, with the rod in its raised or inoperative position, may tightly engage the wall portion **15** and safely seal the overflow opening **16** which leads to a duct **9**.

The operation of my carburetor is as follows:

When the engine is being started and a higher fuel level is required, the rod **5** which is held, as has already been mentioned, in its raised position by the force of the spring **7** is pressed downwardly, against the spring force, so that the lower end of the rod engages the float **3**. The float, as it is moved downwardly, opens the needle valve **11**. At the same time, as the packing ring **8** moves together with the rod **5** in a downward direction, the overflow opening **16** is opened. As soon as the fuel chamber **14** is filled with fuel, overflowing fuel appears at the free end of duct **9**, which can be seen from the outside. Thus, an undesirably strong fuel enrichment of the suction paths is avoided. During normal engine operation, and while the rod **5** is in the illustrated position, the overflow opening **16** is sealed from the fuel chamber **14**.

It will be aparent that while I have shown and described a few forms only many changes and modifications may be made without departing from the spirit of the invention defined in the following claims.

I claim:

1. Carburetor comprising

(a) a fuel bowl having an overflow opening,

(b) float means within said fuel bowl for controlling fuel valve means,

(c) a support,

(d) float-engaging means including a rod member and spring means, said float-engaging means being mounted on said support to allow said rod member to be moved back and forth in lengthwise directions between an inoperative and an operative position and to have an end portion of said rod member project into the interior of said fuel bowl in either of said positions, said spring means urging said rod member toward, and normally holding same in, said inoperative position, said rod member being adapted to be moved against the force of said spring means toward and into engagement with said float means and to cause same to open said valve means when said rod member is in engagement with said float means or in said operative position, and

(e) packing means on said end portion, said packing means sealing said overflow opening when said rod member is in said inoperative position, and unblock-

ing said overflow opening when said rod member is in said operative position.

2. In the carburetor according to claim 1, said float-engaging means further including a sleeve surrounding said rod member and spring means, said fuel bowl being provided with a vent, said sleeve being mounted at one of its ends on said support so as to prevent escape of fuel from said fuel bowl through said vent when the carburetor is in an inclined position.

3. In the carburetor according to claim 1, said float-engaging means further including a cap seated on the other or free end of said sleeve, said spring means being constituted by a helical compression spring, said compression spring bearing at one end against said cap and at the other end against said support.

4. In the carburetor according to claim 1, said fuel bowl having an interior wall, a portion of said interior wall being flat, said overflow opening being in said flat wall portion and near a point at which said rod member enters said fuel bowl, said packing means being constituted by

a ring carried on said rod member, said ring engaging said flat wall portion and sealing said overflow opening.

5. In the carburetor according to claim 4, said rod member being provided with protuberances to hold said ring in place between said protuberances and said flat wall portion.

References Cited

UNITED STATES PATENTS

1,019,943	3/1912	Bright.
1,040,528	10/1912	Dock.
2,656,167	10/1953	Phillips.

FOREIGN PATENTS

389,197	2/1924	Germany.
729,565	5/1955	Great Britain.

HARRY B. THORNTON, *Primary Examiner.*

R. R. WEAVER, *Assistant Examiner.*