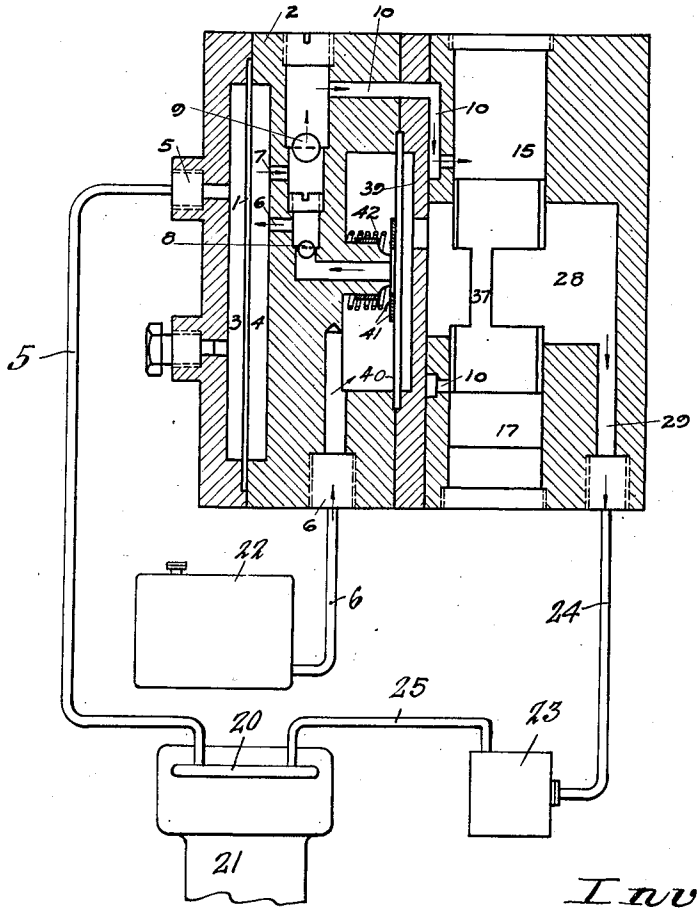
Feb. 10, 1925. 1,525,865

G. K. V. JOHANSON

APPARATUS FOR THE SUPPLY OF FUEL TO VAPORIZERS FOR INTERNAL COMBUSTION ENGINES

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Inventor

G. K. V. Johanson

By Marks & Clerk

Attys.

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UNITED STATES PATENT OFFICE.

GEORG KARL VILHELM JOHANSON, OF STOCKHOLM, SWEDEN, ASSIGNOR TO SVENSKA AKTIEBOLAGET GASACCUMULATOR, OF STOCKHOLM, SWEDEN.

APPARATUS FOR THE SUPPLY OF FUEL TO VAPORIZERS FOR INTERNAL-COMBUSTION ENGINES.

Application filed December 22, 1921. Serial No. 524,285.

To all whom it may concern:

Be it known that I, GEORG KARL VILHELM JOHANSON, a subject of the King of Sweden, and residing at Stockholm, Sweden, have invented certain new and useful Improvements in Apparatus for the Supply of Fuel to Vaporizers for Internal-Combustion Engines, of which the following is a specification.

The present invention refers to improvements in apparatus for the supply of fuel to vaporizers for internal combustion engines and has for object to establish an automatic throttling of the supply of fuel when the vaporizer is filled.

On the accompanying drawing a longitudinal section of a construction of such an apparatus is shown.

The casing 2 is divided in two chambers 3 and 4 by a diaphragm 1, whereby the chamber 3 communicates with a chamber with periodically varying pressure, as the cylinder chamber or mainfold 20 of an internal combustion engine 21, by means of a pipe 5. The chamber 4 is provided with an inlet 6 for fuel and with an outlet 7, said inlet and outlet being controlled by valves 8 and 9 respectively. The inlet 6 communicates with a reservoir 22 for the fuel and the arrangement is such, that the diaphragm 1 is put in a vibrating motion owing to the pressure variations in the cylinder chambers of the engine, whereby when the diaphragm is moved in one direction, fuel is sucked into the chamber 4 through the channel 6 and the valve 8, and is pressed through the channel 7 and the valve 9 to a channel 10 in the casing 2, when the diaphragm is moved in the opposite direction. Said channel 10 communicates with a chamber 28, which through a channel 29 is connected with the vaporizer 23, to which fuel is supplied by a pipe 24, the delivery of fuel passing to the engine by means of pipe 25. When the quantity of fuel is required to be measured before its introduction to the vaporizer the fuel passes through the channel 10 into the meter represented by the pistons 15, 17, and thence into the chamber 28 through the channel 29 to the vaporizer. The construction of the meter forms no part of the present invention. It will be understood that when no meter intervenes, chamber 10 which communicates with the vaporizer directly connects through chamber 28 to channel 29.

The said chamber 28 communicates with a chamber 39, which is closed by a diaphragm 40, actuating a valve or serving itself as a valve for the supply conduit to the vaporizer or to the meter. According to the construction shown on the drawing the end of the channel 6 is arranged opposite to the middle part of the diaphragm 40, which is provided with a valve plate 41. A spring 42 normally presses the diaphragm 40 from the end of the pipe 6, so that said end is open, but when the vaporizer of the engine is filled with fuel, the pressure in the chamber 28 or in the chamber 39 is augmented, whereby the diaphragm 40 is moved towards the end of the pipe, shutting off the supply of fuel until said pressure again is decreased and the spring 42 is able to move the diaphragm 40 to its normal position.

Having now particularly described my invention and in what manner the same is to be performed, what I claim is:

1. A fuel supply system for internal combustion engines comprising in combination an engine, a fuel tank, a pump operated by the fluctuations of pressure in one of the cylinders of said engine, a chamber intermediate said pump and said fuel tank through which the fuel is sucked to said pump, a flexible diaphragm situated in said chamber adapted to control the flow of such fuel to the pump, a second chamber on the opposite side of said diaphragm in communication with the pump delivery, and means for preventing said diaphragm from shutting off said fuel from the pump until a predetermined pressure of the delivery is attained within the said second chamber.

2. A fuel supply system for internal combustion engines comprising in combination an engine, a fuel tank, a pump operated by fluctuations of pressure in one of the cylinders of said engine, a chamber intermediate said pump and said fuel tank, an opening in said chamber forming the suction inlet to said pump, a flexible diaphragm situated in said chamber opposite to said

opening, a second chamber in communication with the pump delivery situated on the opposite side of said diaphragm to the said opening, and means for keeping said diaphragm away from said opening until a predetermined pressure of the delivery is attained within said second chamber.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORG KARL VILHELM JOHANSON.

Witnesses:

WALDEMAR BOMAN,

A. BIÖRCK.