

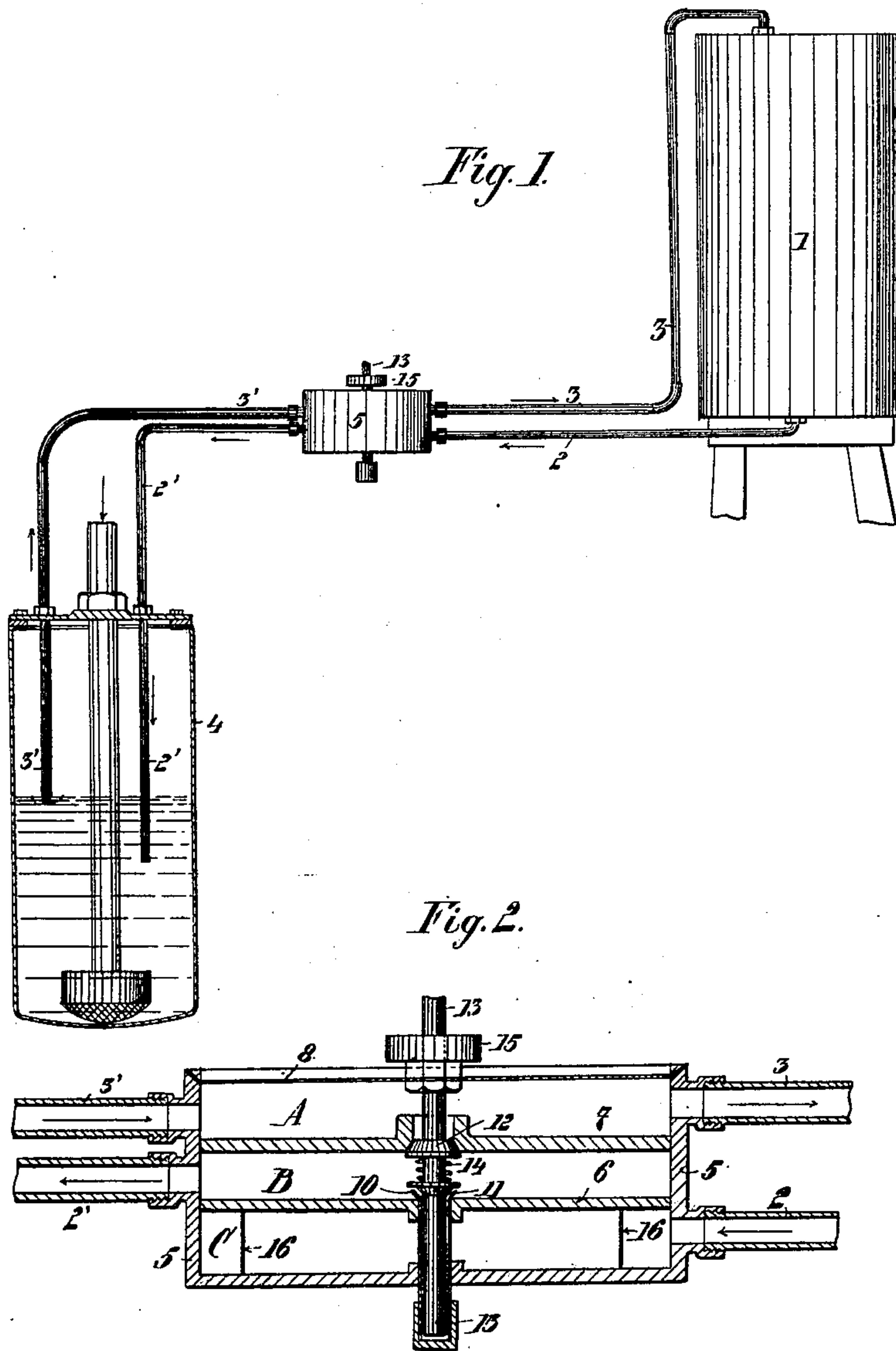
No. 679,018.

Patented July 23, 1901.

G. FISCHER.
OIL FEED FOR CARBURETERS.

(Application filed Sept. 1, 1900.)

(No Model.)



Witnesses:

W. K. Boulter

[Signature]

Inventor

Gustav Fischer,

by

Wm. K. Boulter,
Attorney

UNITED STATES PATENT OFFICE.

GUSTAV FISCHER, OF RIESA, GERMANY, ASSIGNOR OF FOUR-FIFTHS TO MAX RICHTER, OF DRESDEN, GERMANY, AND FRITZ WODA, HUGO MESTERN, AND PAUL PALLESTER, OF VIENNA, AUSTRIA-HUNGARY.

OIL-FEED FOR CARBURETERS.

SPECIFICATION forming part of Letters Patent No. 679,018, dated July 23, 1901.

Application filed September 1, 1900. Serial No. 28,842. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV FISCHER, mechanic, residing at Riesa, near Dresden, Kingdom of Saxony, Germany, have invented certain new and useful Improvements in Automatic Oil-Feeds for Carbureters; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to an automatic regulating apparatus for carbureted-air apparatus; and it consists, essentially, of two tubes, which connect the feed-reservoir with the carbureter, one for the carbureted air and the other for the fuel, and which are made dependent on one another in such a manner that when the liquid in the carbureter sinks below the mouth of the carbureted-air tube air (or carbureted air) passes into the feed-reservoir and in so doing actuates a valve in such a manner as to allow the liquid fuel to flow into the carbureter and to continue doing so until the surface of the liquid in the carbureter again covers the mouth of the carbureted-air tube and stops the entry of more liquid fuel.

The accompanying drawings show the whole apparatus in Figure 1. Fig. 2 shows a vertical section and, on a larger scale, the regulating-valve.

From the fuel-reservoir 1 lead two tubes 2 2' and 3 3' to the carbureter 4, one, 2 2', passing from the bottom of this reservoir under the level of the liquid in the carbureter, the other, 3 3', passing from the top of the reservoir 1 to the level of the liquid in the carbureter. The reservoir is arranged higher than the carbureter, so that the fuel flows by the action of gravity in the carbureter. These tubes are interrupted by and pass through a regulating-valve 5, which regulates the feed of fuel with accuracy and maintains the surface of the liquid in the carbureter constantly at the same level. This regulating-valve, Fig. 2, consists of a vessel 5, divided into three compartments A B C by means of two partitions 6 and 7. The upper chamber A is closed, preferably, by a diaphragm 8 of thin metal. The partitions 6 and 7 are centrally perforated and provided on the sides facing each other with valve-seats 9 and 10, the

valves 11 and 12 corresponding to which are connected by means of a common rod 13 on the metallic diaphragm 8. The valve 11 is rigidly fixed to the rod 13, while the valve 12 moves upon it and is kept in position by a spring 14, whereby it is maintained in its seat independently of the other valve 11 on the common rod. The valve 12 is provided for the purpose of closing constantly the opening in the partition 7, so that this opening remains closed as the diaphragm 8 is lowered, (or pressed down,) so that the carbureting liquid cannot flow out of the compartment B through the compartment A, but will be discharged through the pipe 2'. The tube 3 3', passing from the top of the reservoir 1 to the level of the liquid in the carbureter 4, connects the upper compartment A with the carbureter and the reservoir 1. The other tube 2 leads from the reservoir 1 to the compartment C, while the tube 2', connecting the valve with the carbureter 4, enters the compartment B. The valve-rod 13 is weighted, as at 15, so that the valve 11 is kept permanently closed, and only by the weight upon the valve-rod being overcome can the said valve be opened, and so allow the fuel to flow through the lower compartment C and the middle compartment B from the reservoir 1 to the carbureter 4.

The manner in which the apparatus works is as follows: When the surface of the liquid in the carbureter 4 sinks below the mouth of the tube 3', carbureted air passes from the carbureter 4 through the tube 3' to the compartment A and then through the tube 3 into the feed-reservoir 1 over the surface of the liquid therein contained. When the pressure of the gas in the compartment A reaches a certain intensity, it raises the flexible diaphragm and also the valve 11, so that the liquid may pass from the reservoir and the compartment C into the compartment B. The result is that as the compartments B and C and the tubes 2 2' are filled with the liquid fuel the latter passes through the lower and middle compartments B and C into the carbureter 4 until the level of the liquid covers the mouth of the tube 3'. The level of the liquid in the carbureter is never able to sink

much under the mouth of the tube 3', since as soon as it closes the mouth of this tube the series of actions tending to restore its level, as already described, take place. In the com-

5 partment C there is arranged a circular fine sieve 16 to keep back the impurities of the liquid which passes through the sieve.

The material of the diaphragm is preferably a thin sheet of copper, because this ma-
10 terial does not allow the diffusion of the gas and is also more sensible than organical materials, as leather, india-rubber, and the like.

This apparatus, which may be used in different industries, allows of the use of only a
15 small quantity of fuel by covering the mouth of the gas-tube in the carbureter, which is very advantageous and avoids any danger of explosion.

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

1. The combination with a reservoir for liquid fuel and a carbureting-chamber, of connecting-tubes intermediate the two, the ends
25 of which tubes within the carbureting-chamber terminate at different levels, and a regulating device interposed in the said connecting-tubes and divided into chambers, one of which chambers provides direct communication from the carbureting-chamber to the fuel-
30 reservoir, and a valve controlling the flow through the other chamber of the fuel from the reservoir to the carbureting-chamber, said valve being controlled by the pressure of air
35 within the carbureting-chamber.

2. The combination with a reservoir for liquid fuel and a carbureting-chamber, of con-

necting-tubes intermediate the two, the ends of which tubes within the carbureting-chamber terminate at different levels, and a regulating device interposed in the said connecting-tubes and divided into chambers, one of which chambers provides direct communication from the carbureting-chamber to the fuel-reservoir, a vertically-movable weighted rod
45 extending through the chambers, a flexible diaphragm for one of the chambers to which the rod is connected, and a valve carried by the rod and adapted to control the flow of fuel from the reservoir through the other chamber
50 to the carbureting-chamber.

3. The combination with a fuel-reservoir, and a carbureting-chamber arranged at different levels as described, of connecting-tubes intermediate the said reservoir and chamber
55 and terminating within the carbureting-chamber at different levels, and a regulating device interposed in said connecting-tubes and divided into three chambers as set forth, a vertically-movable weighted rod passing through
60 the chambers, a flexible diaphragm to which the rod is connected, a valve fixed to the rod and controlling the flow of fuel through the lowermost chamber and the middle chamber, and a second valve movable on the rod and
65 controlling the communication between the uppermost chamber and the middle chamber.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV FISCHER.

Witnesses:

SIMON HENDLEY,

ALVESTO S. HOGUE.