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FUEL FEEDING DEVICE.
APPLICATION FILED JAN. 14, 1918.

1,304,550.

Patented May 27, 1919.

Fig. 1.

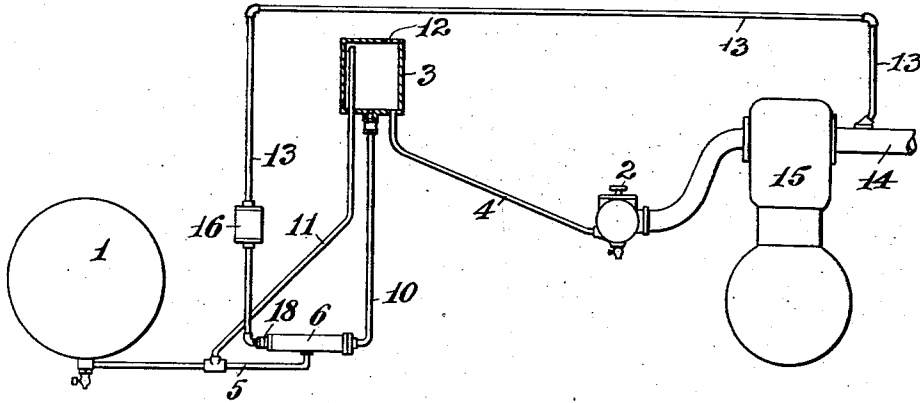
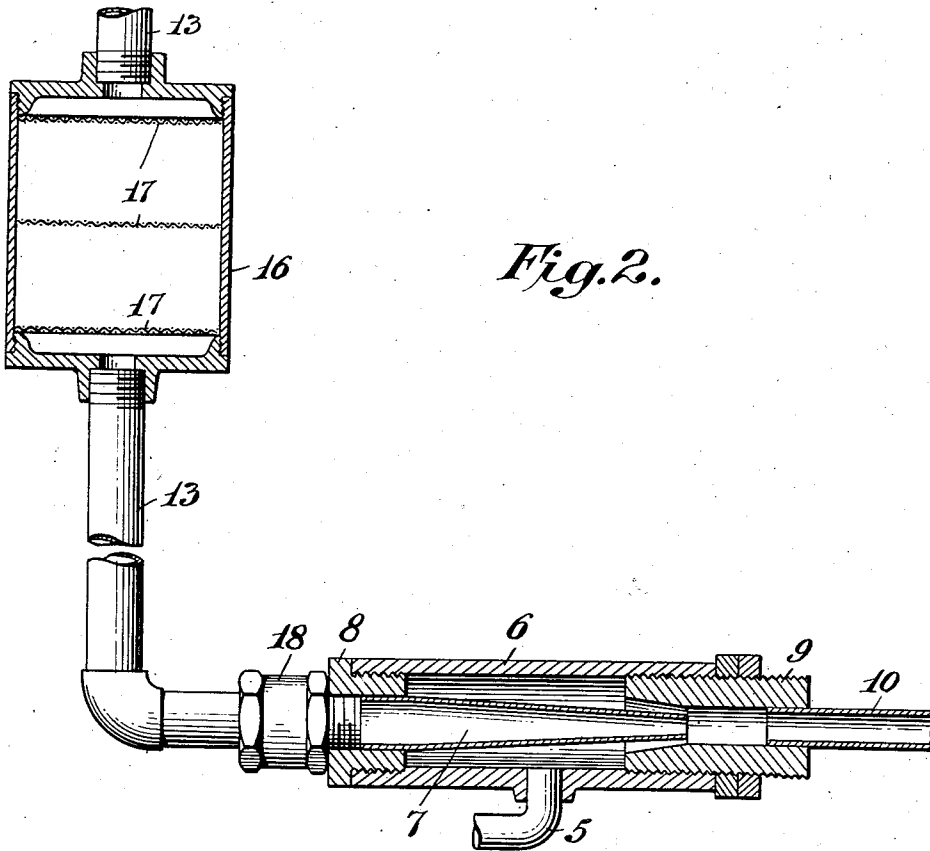


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, JR., OF BURLINGTON, NEW JERSEY.

FUEL-FEEDING DEVICE.

1,304,550.

Specification of Letters Patent.

Patented May 27, 1919.

Application filed January 14, 1918. Serial No. 211,888.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, Jr., a citizen of the United States, residing at Burlington, in the county of Burlington and State of New Jersey, and having a post-office address at Burlington, N. J., R. F. D. No. 3, have invented certain new and useful Improvements in Fuel-Feeding Devices, of which the following is a full, clear, and exact description.

My invention relates to various new and useful improvements in fuel feeding devices adapted for the purpose of feeding gasoline or other liquid fuel from a supply tank to a carbureter on a higher level than said tank in connection with the operation of an internal combustion engine.

The object of my invention is to provide a very simple device for the purpose which at the same time shall be certain and highly efficient in operation. In carrying my invention into effect, I utilize preferably an auxiliary tank placed on a higher level than the carbureter, and I force the gasoline or other liquid fuel from the main tank to the auxiliary tank by the ejective action of a small part of the exhaust gases from the engine, or in other words, I interpose between the main and auxiliary tanks a small ejector operated by the exhaust gases and thus effecting a circulation against gravity of the liquid fuel. Preferably, I employ a suitable strainer for the exhaust gases before they reach the ejector so as to remove therefrom any solid particles of soot or carbon which might otherwise clog the ejector or contaminate the gasoline to an objectionable extent. Also I prefer to employ an overflow pipe running back from the auxiliary tank whereby any surplus gasoline will be carried back to the main tank or to the gasoline pipe between the main tank and the ejector.

In order that the invention may be better understood attention is directed to the accompanying drawing forming a part of this specification, and in which

Figure 1 is a diagrammatic view, showing the ejector and auxiliary tank in their relation to the fuel tank and carbureter, and

Fig. 2 an enlarged longitudinal section of the ejector, and the pipes immediately connected therewith.

In both of these views corresponding parts are represented by the same reference numerals.

The main fuel tank 1 is shown as being on

a lower level than the carbureter 2. An auxiliary tank 3 of suitable proportions is located on a higher level than the carbureter. Leading from the tank 3 is the gasoline pipe to the carbureter. A pipe 5 leads to the cylindrical casing of the ejector 6 and within this casing is a nozzle 7 supported by one of the end plugs 8. The other end plug 9 is, by means of screw threads as shown, adjustable toward and away from the nozzle 7 so as thereby to vary the size of the opening through which the gasoline or other liquid fuel passes. From the end plug 9 a pipe 10 leads to the auxiliary tank 3. An overflow pipe 11 connects the auxiliary tank, at the desired level of the liquid therein, to the pipe 5 so that the gasoline may maintain a constant circulation. A vent 12 allows exhaust gases after they have performed the lifting effect to bubble up through the gasoline in the auxiliary tank 3 and escape to the atmosphere. The nozzle 7 is continued as a pipe 13 which leads to the exhaust 14 of the internal combustion engine 15, the arrangement being such that a part only of the exhaust gases will be shunted into the pipe 13. It will, of course, be understood that the entire exhaust might be directed through this pipe, but I find in practice that a satisfactory lifting effect can be secured when only a fraction of the exhaust gases are permitted to enter the pipe 13. In the pipe 13 is a casing 16 containing a series of fine mesh screens 17 by which any solid particles will be separated from the gases, and if desired a check valve 18 may be interposed in the pipe 13 between the strainer and ejector to prevent the gasoline from flowing into the pipe 13 when the engine is stopped. The operation of the apparatus has been already indicated. The exhaust gases flowing at high velocity through the ejector 7 produce an ejective effect, which forces the gasoline through the pipe 10 into the auxiliary tank 3. In this tank the gases separate from the gasoline and pass off through the vent 12.

Having now described my invention what I claim as new therein and desire to secure by Letters Patent is as follows:—

1. In a fuel feeding apparatus, the combination with a fuel supply tank and an auxiliary tank, of an ejector for forcing the fuel from the main to the auxiliary tank, said ejector being operated by the exhaust gases from the engine and which effect the circu-

lation by direct contact with the fuel, substantially as set forth.

2. In a fuel feeding apparatus, the combination with a fuel supply tank and an auxiliary tank, of an ejector for forcing the fuel from the main to the auxiliary tank, said ejector being operated by the exhaust gases from the engine and which effect the circulation by direct contact with the fuel, and an overflow pipe from the auxiliary tank, substantially as set forth.

3. In a fuel feeding apparatus, the combination with a main supply tank, a carbureter on a higher level and an auxiliary tank

on still a higher level, of connections between the auxiliary tank and the carbureter, connections between the main tank and the auxiliary tank and an ejector in the latter connections operated by the exhaust gases of the engine and which effect the circulation by direct contact with the fuel, substantially as set forth.

This specification signed and witnessed this eleventh day of January, 1918.

THOMAS A. EDISON, JR.

Witnesses:

FRANK L. DYER,
A. E. RENTON.