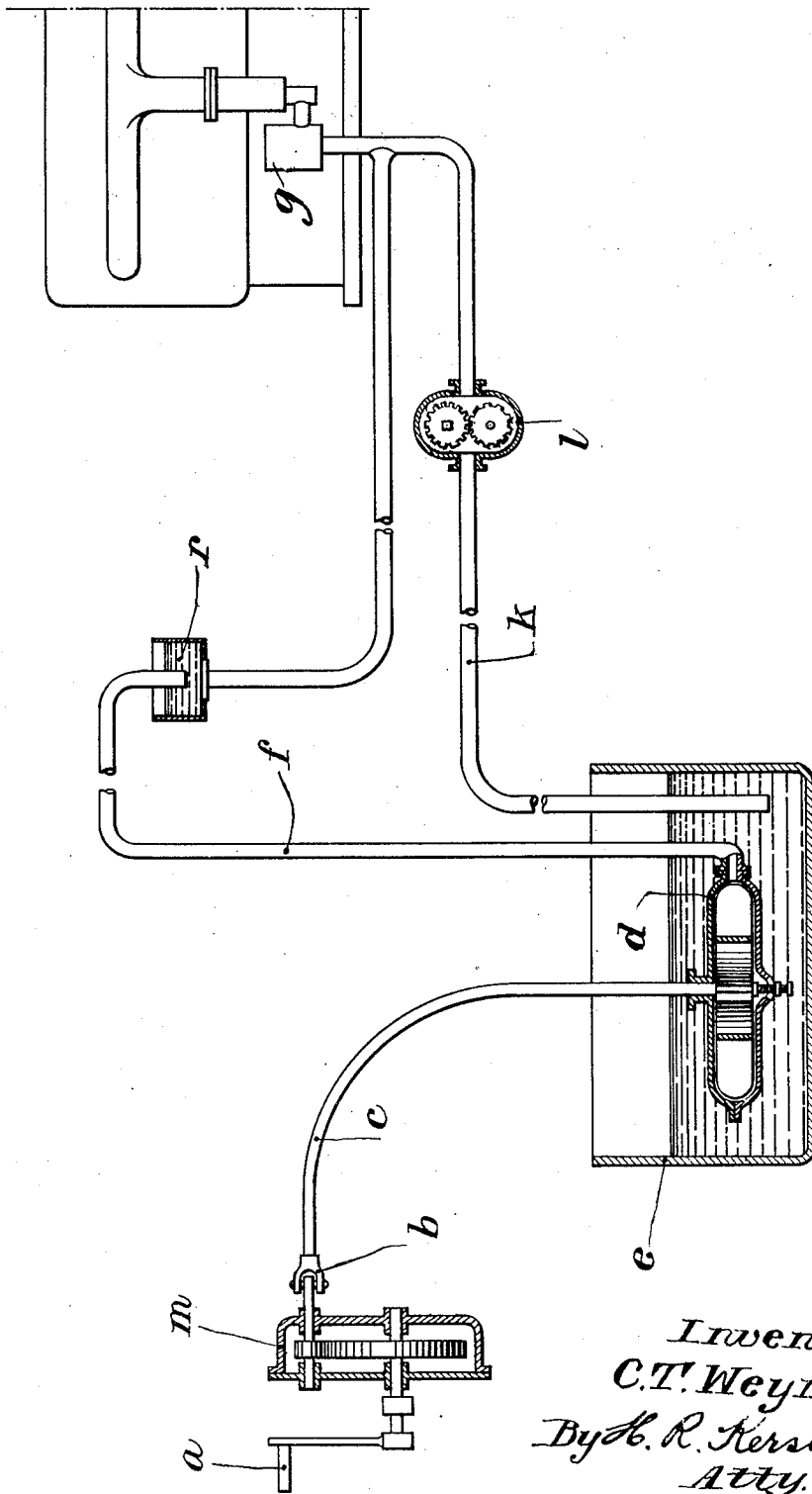


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AUXILIARY LIQUID FORCING DEVICE FOR CARBURETORS.
APPLICATION FILED JULY 18, 1919.

1,408,322.

Patented Feb. 28, 1922.



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UNITED STATES PATENT OFFICE.

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AUXILIARY LIQUID-FORCING DEVICE FOR CARBURETORS.

1,408,322.

Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed July 18, 1919. Serial No. 311,893.

To all whom it may concern:

Be it known that I, CHARLES TERRES WEYMANN, a citizen of the United States of America, residing at 7, Rue Berteaux-Dumas, Neuilly-sur-Seine, France, have invented certain new and useful Improvements in Auxiliary Liquid-Forcing Devices for Carburetors, (for which I have filed application in France, Sept. 26, 1917, Patent No. 515,020,) of which the following is a specification.

This invention relates to an auxiliary or emergency apparatus intended to form a temporary substitute for the main feed of an aviation engine, for example, when for any reason, such as a perforation caused by a projectile, the said main feed fails.

The invention mainly comprises a centrifugal pump operated by hand from a distance and immersed in the main feed tank, which pump forces into an auxiliary tank a quantity of petrol intended to replace that which is failing, in order to enable the engine to continue to work until the time when the aviator is out of danger.

The accompanying drawing shows diagrammatically, by way of example, a construction according to the invention, which comprises a centrifugal pump *d* immersed in the main tank *e* and operated by means of a gearing *m* driven by hand and constituted by a series of gear wheels, one of which operated by the crank handle *a* imparts a movement of rotation of 1:20 for instance, to a spindle *b* to which is connected one end of a flexible shaft *c*. The other end of the said flexible shaft is connected to the spindle of the centrifugal pump *d*.

The discharge pipe *f* of the said pump terminates at an auxiliary tank *r* supplying, by difference in head, or with constant level, the carburetor *g*.

The centrifugal pump *d* does not comprise any flap valve or other obstacle, owing to which, the discharge piping *f* of the said pump can be used, if necessary, for an auxiliary main feed piping, even if the said piping is under suction.

Moreover the pump *d* being completely immersed, its spindle needs no stuffing box.

l designates the main feed pump which is arranged in the piping *k* that connects the reservoir *e* to the carburetor *g*.

The arrangements hereinbefore described are given merely by way of example; the

shapes, dimensions, etc., may be varied without departing from the invention.

This device can be used for forcing any other liquid besides petrol, that is to say, for pumping water out of the bilges of ships, etc.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The combination with an internal combustion engine carburetor, a fuel reservoir, fuel conducting means connecting the reservoir and carburetor and a main feed pump arranged in the fuel conducting means, of an auxiliary passage functioning independently of the fuel conducting means for conveying fuel from the reservoir to the carburetor, and means for forcing fuel through said auxiliary passage.

2. A combination as defined in claim 1 in which the means for forcing the fuel through said passage includes a centrifugal pump arranged in the hydrocarbon reservoir to feed the auxiliary passage and the carburetor, and means for actuating the centrifugal pump when normal feed of the carburetor ceases.

3. A combination as defined in claim 1 in which the means for forcing the fuel through said passage includes a centrifugal pump arranged in the hydrocarbon reservoir to feed the auxiliary passage and the carburetor, a flexible transmission shaft to rotate said centrifugal pump, a speed multiplying gear, and a crank for actuating the speed multiplying gear.

4. An apparatus for furnishing hydrocarbons to a carburetor when the main feed for said carburetor is disabled, comprising in combination with the main fuel reservoir of the carburetor, an auxiliary reservoir functioning independently of the main feed, an auxiliary pump independent of the carburetor pump for furnishing fuel to the auxiliary reservoir, and auxiliary piping independent of the main feed piping of the carburetor for conveying fuel from the auxiliary pump to said auxiliary reservoir.

5. An apparatus of the kind defined by claim 4 in which the auxiliary pump is submerged in the liquid in the main reservoir.

6. An apparatus of the kind defined by claim 4 in which the auxiliary pump is of the valveless centrifugal type and is sub-

merged in the liquid in the main reservoir, whereby the auxiliary piping may be employed to aid the main piping to convey the fuel at all times.

- 5 7. An apparatus as defined in claim 4 having manually operated mechanism for actuating the auxiliary pump.

8. In combination, an internal combustion engine carburetor, a main fuel reservoir,
10 piping arranged between said reservoir and said carburetor for conveying fuel from the former to the latter, a main feed pump for

forcing fuel through said piping, an auxiliary piping for conveying fuel from the main reservoir to the carburetor when the main feed piping or pump is out of operation, said auxiliary piping functioning independently of the main feed piping, an auxiliary pump for circulating fuel through the auxiliary piping, and means for actuating
15 the auxiliary pump. 20

In testimony whereof I affix my signature.

CHARLES TERRES WEYMANN.