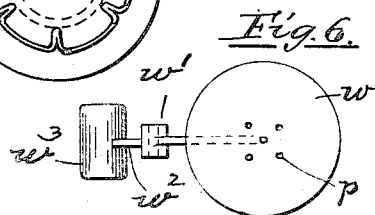
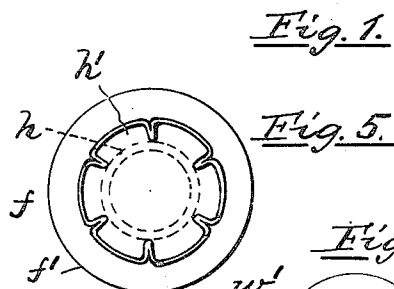
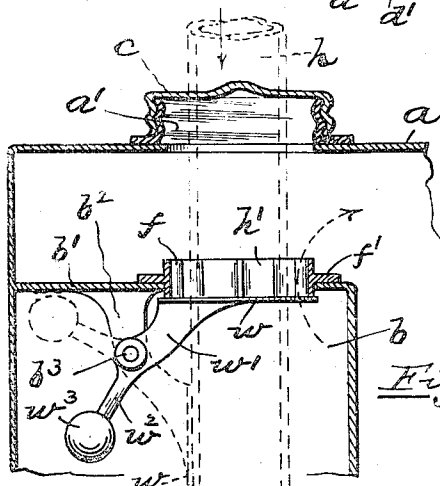
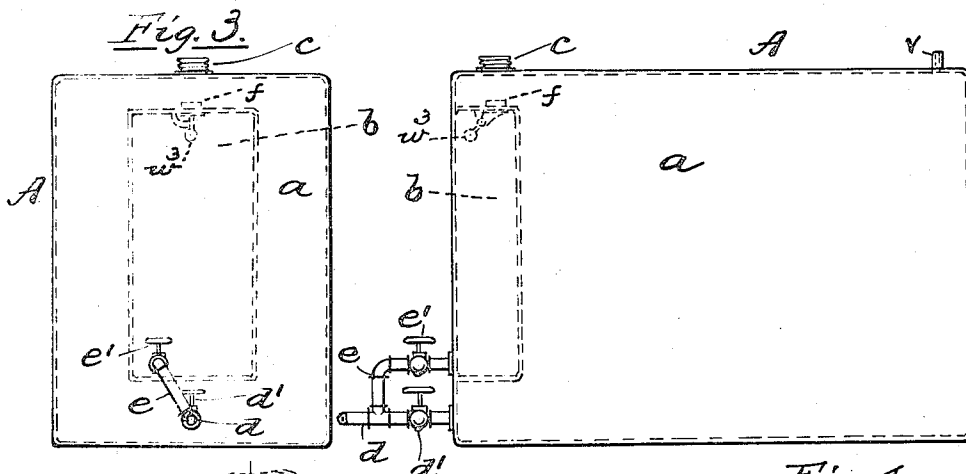
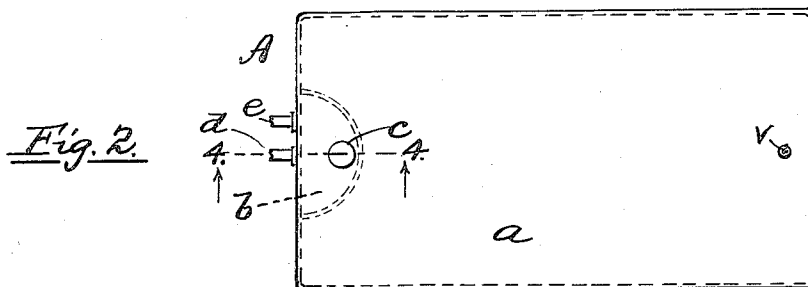


A. W. HUTCHINS.
FUEL SUPPLY TANK.
APPLICATION FILED SEPT. 29, 1909.

1,033,897.

Patented July 30, 1912.



INVENTOR:

WITNESSES:
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UNITED STATES PATENT OFFICE.

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FUEL-SUPPLY TANK.

1,033,897.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed September 29, 1909. Serial No. 520,095.

To all whom it may concern:

Be it known that I, ARTHUR W. HUTCHINS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Fuel-Supply Tanks, of which the following is a specification.

My invention relates to improvements in liquid-fuel tanks for motor vehicles, and it consists in certain novel features of construction and arrangement, all as more fully hereinafter set forth and claimed.

In tanks of the character referred to, and as usually devised and employed in self-propelled vehicles, as for example, automobiles, the main tank or reservoir, for containing gasoline or other liquid fuel capable of being converted into an explosive mixture and utilized in the engine for driving the vehicle, is further provided with a small, independent, auxiliary container, commonly termed an "emergency tank," which is attached or disposed immediately contiguous to the main tank and having a controlled outlet therefrom communicating with the tube or connection leading from the main supply-tank to the engine. It may be stated here that the purpose and function of the said smaller tank (assuming it to be kept normally filled with the fuel) is to temporarily supply the engine with fuel in case of an emergency or unusual condition or predicament, as for example in the event that the fuel in the main tank becomes exhausted, say a few miles distant from the nearest locality or fuel-supply station. It frequently happens, however, that when such a contingency arises the auxiliary tank will be found wholly empty or at most only partly filled with oil. This defect or abnormal condition of the auxiliary tank may be due to various causes, such as negligence, accident, leakage, oversight, &c. The main and emergency tanks usually have independent charging nozzles or capped inlet-openings, consequently it may happen that after charging the main tank with oil the other or small tank may be overlooked or forgotten, so that (assuming it to be wholly or partly empty) in case of need the relied-upon supply of oil from the latter will be wholly lacking or inadequate to furnish enough fuel to reach the nearest base of fuel-supply.

The object of the present invention is to devise and produce a liquid-fuel reservoir having an emergency tank constructed, arranged and combined with the main tank so as to overcome all the disadvantages and objections above named. The device is simple, reliable, comparatively inexpensive to manufacture, not liable to get out of order, and in a degree automatic in its action. That is to say, the smaller tank is located with respect to the main tank so that the act of charging the latter, whether it is to be wholly or only partly filled with the fuel, necessarily operates to first fill the smaller tank; the continued action causing the fuel to overflow therefrom into the main tank until the latter is charged to the desired extent. In any event, however, the small tank is first completely filled, or filled to the point of overflow, before the fuel or oil enters the main tank. Or, in other words, the charging of the main tank with the oil-fuel can only be effected by an overflow into the latter from the auxiliary tank.

In the accompanying sheet of drawings, Figure 1 represents a side elevation of a liquid-fuel tank embodying my improvements. Fig. 2 is a corresponding top plan view, the valved connections being omitted. Fig. 3 is an end elevation viewed from the left of Fig. 1. Fig. 4 is a vertical sectional view, enlarged, taken on line 4-4 of Fig. 2, showing the upper portion of the reservoir and an arrangement or relation of the charging or inlet-nozzles. Fig. 5 is a plan view of the inlet-nozzle of the small tank, detached; and Fig. 6 is a top view of a self-closing valve, adapted to keep the last-named nozzle normally closed.

In the drawings, A designates one form and arrangement of my improved liquid-fuel reservoir or tank as a whole, and as adapted for use in automobiles, motor-boats, &c. The body, *a*, of the tank, usually made of sheet-metal, may have any desired or suitable shape and size. As represented it has a rectangular shape. It is provided, say at the front end near the bottom, with an outlet or discharge pipe, *d*, and stop valve *d*¹, for controlling the outflow of the oil or liquid-fuel from the main tank to the engine, substantially as usual. It is also provided with a top filling or charging-nozzle, *a*¹, and removable screw-cap *c* fitting the same; *v* indicates an air-vent.

At the front end of the main tank member *a* is located a small liquid-tight inner tank, *b*, which may be termed an auxiliary tank or emergency tank, the same, as drawn, having its upper end, *b*¹, located a short distance below the top of the main tank, as clearly shown. A by-pass or tube, *e*, located at the bottom of tank *b*, extends outwardly therefrom and connects the latter with said pipe *d*; a valve, *e*¹, serving to control the outflow of fuel from the smaller tank. A charging-nozzle, *f*, is shown located in the top end, *b*¹, of the last-named tank, the same, as drawn, being positioned directly below and in alinement with the said nozzle *a*¹. It is provided with a flange, *f*¹, adapted to lie flatwise upon the end *b*¹ and be soldered thereto. The body part of the nozzle may have a vertically fluted or corrugated tubular form (see Fig. 5), thereby providing large air and oil overflow-passages, *h*¹, around the exterior of the removable hose or pipe *h* (indicated by broken lines) while the tanks are being filled with oil from the base or source of supply.

A suitable, light, self-closing valve may be employed for keeping the nozzle *f* normally closed; the valve *w* is, as drawn, provided with an arm, *w*¹, secured to a pivot-pin *b*³ journaled in the depending ears *b*². An extension, *w*², of said arm carries a weight, *w*³, capable of causing the valve to swing upwardly to its seat from the wide open position indicated by dotted lines in Fig. 4. If desired, small air-vent holes, *p*, may be pierced through the valve.

The manner of operation is obvious: Assuming both tanks to be empty, (the valves *d*¹ and *e*¹ then being closed) the screw-cap *c* is first removed, followed by inserting the open end of a hose, *h*, or other tube (indicated by dotted lines) connected with the source of fuel-supply, down through the nozzles *a*¹ and *f* the desired distance, the valve *w* being opened thereby and swung downward, as indicated by dotted lines in

Fig. 4. The inflow of oil through the hose now quickly fills the chamber or small inner tank *b* and then overflows via the open passages *h*¹ around the exterior of the immersed part of the hose into the main tank *a* until it is filled to the desired point or until the desired quantity of oil has been introduced into the tank, after which the hose is withdrawn, the valve at the same time automatically closing the nozzle *f*, followed by replacing the cap *c*, thus completing the operation of charging the two tanks of the reservoir.

I claim as my invention and desire to secure by United States Letters Patent:—

1. In a liquid-fuel reservoir for motor-vehicles, the combination of a chambered main tank having inlet and outlet nozzles, a relatively small auxiliary tank located within the main tank having a self-closing inlet-nozzle disposed below said main inlet-nozzle, said auxiliary inlet-nozzle, when open, causing the chambers of both the said tanks to intercommunicate, and an independent discharge-outlet from the auxiliary tank.

2. As an improved article of manufacture, a liquid-fuel reservoir device consisting of a normally closed main tank having independent inlet and discharge openings, an auxiliary tank having relatively smaller capacity than the main tank and located within the latter, a filling-nozzle located in the upper portion of the smaller tank adapted, when open, to render both tanks intercommunicating, a self-closing valve for keeping the said filling-nozzle normally closed, and a controlled outlet leading from the lower portion of the auxiliary tank.

In testimony whereof, I have affixed my signature in presence of two witnesses.

ARTHUR W. HUTCHINS.

Witnesses:

GEO. H. REMINGTON,
CALVIN H. BROWN.