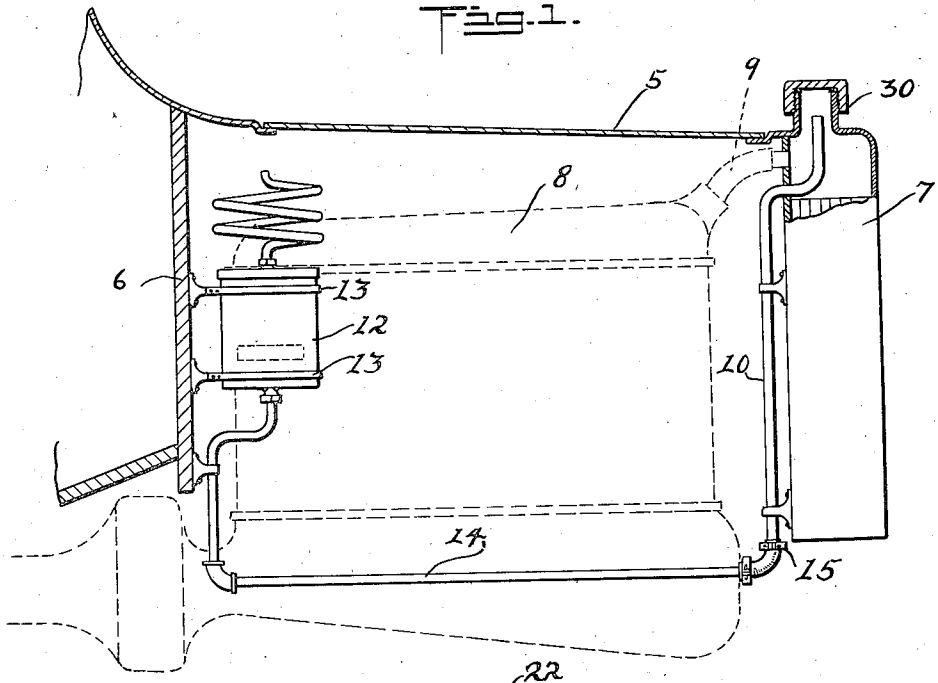
Aug. 23, 1932. J. A. PETERSON 1,873,632

AUXILIARY STORAGE TANK AND CONDENSER FOR MOTOR VEHICLE COOLING SYSTEMS

Filed Dec. 20, 1930

Fig. 1.



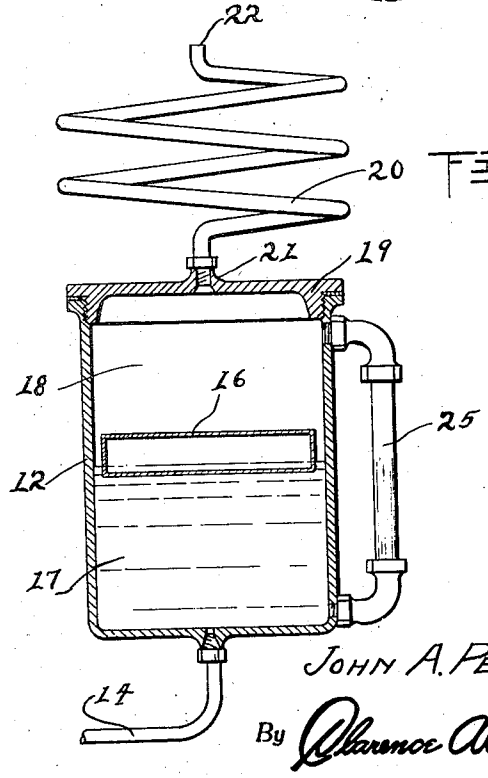


Fig. 2.

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UNITED STATES PATENT OFFICE

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AUXILIARY STORAGE TANK AND CONDENSER FOR MOTOR VEHICLE COOLING SYSTEMS

Application filed December 20, 1930. Serial No. 503,796.

The present invention relates to new and useful improvements in internal combustion engines, and more particularly it pertains to a new and novel improvement in connection with the cooling system thereof.

It is one of the objects of the present invention to provide a storage tank or receptacle whereby an auxiliary supply of cooling fluid for the cooling system of the internal combustion motor of an automobile may be at all times retained on hand.

It is a further object of the invention, so to construct the apparatus that its action will be automatic, that is to say that vapor arising within the cooling system of the motor will be conveyed to the auxiliary tank where means is provided for its condensation and wherein the liquid condensation may be automatically returned to the cooling system under certain conditions.

It is a still further object of the invention to combine with the auxiliary tank, a suitable condenser preferably in the form of a coil through which the vapor circulates, which coil is exposed to atmosphere and has one end open thereto.

With the above and other objects in view, reference is had to the accompanying drawing, wherein,

Figure 1 is a longitudinal sectional view of the hood portion of a motor vehicle showing the motor thereof in dotted line, the cooling system in full lines partially in section and a device constructed in accordance with the present invention in elevation, and;

Figure 2 is a detail vertical sectional view on an enlarged scale of a device constructed in accordance with the present invention.

Referring more specifically to the drawing, the reference numeral 5 designates the hood of a motor vehicle, 6 the dashboard thereof and 7 the radiator. The motor is designated 8 and is illustrated in dotted lines and has a connection 9 between its water circulating head and the radiator 7. The over flow pipe of the radiator is designated 10, and extends preferably downwardly along the rear side thereof.

A device constructed in accordance with the present invention comprises a receptacle or tank 12, and it may be suitably mounted in any desired position it being herein illustrated as carried in brackets or the like 13 secured to the front face of the dashboard 6.

A pipe or tube designated 14 connects said receptacle or tank 12 with the lower end of the over flow tube 10 as at 15 in Figure 1. It will be apparent that liquid or vapors which would ordinarily be discharged from the over flow tube 10 will be conveyed by means of the pipe or tube 14 to the receptacle 12 instead of being discharged from the radiator as has been heretofore the practice.

Mounted within the tank or container 12 there is a floating partition 16 and said partition 16 divides the tank or receptacle 12 into a fluid compartment 17 and an atmosphere compartment 18 the size of these compartments varying with the quantity or volume of liquid contained in the liquid compartment 17.

The tank or receptacle 12 has a removable cover 19, and carried by the cover 19 there is a condensing coil 20. One end of this coil is attached to the removable cover 19 as at 21 and the other end such as 22 is open to atmosphere.

Thus it will be seen that as fluid enters the tank or receptacle 12 any vapors arising therefrom will pass around the float partition 16, it being slightly smaller in diameter than the diameter of the tank, into the coil 20 where they will be condensed into liquid form and the condensate will drain through the end 21 of the coil into the receptacle 12.

A gauge such as a transparent tube 25 may be employed to give a reading as to the volume of liquids contained in the tank or receptacle 12.

From the foregoing description it will be apparent that as the cooling fluid in the radiator and other portions of the cooling system expands, the over flow or excess volume will be passed through the over flow tube 10 and the pipe or tube 14 to the tank or receptacle 12. Any vapors arising therefrom will pass into the condensing tube 20 and will be condensed returning to the tank or receptacle 12 in liquid form. As the motor ceases operation, and the fluid in the cooling system is

lowered in temperature, a partial vacuum will be produced in the cooling system, particularly in the top of the radiator 7 and this partial vacuum will serve to withdraw the condensed fluid from the tank or receptacle 12 again into the radiator for the purpose of supplying sufficient cooling fluids to the motor when the same is again placed in operation.

It is of course to be understood that in order to obtain the desired result in a system as above described, the cap which closes the radiator and designated 30 in Figure 1 must be air tight, and that the entire system must have no communication with the atmosphere other than that above the level of cooling fluids in the tank or receptacle 12.

While the invention has been herein illustrated in what may be termed a preferred form, it is to be understood that the invention is not to be limited to the specific construction herein shown, and that it may be practiced in other forms without departing from the spirit thereof and the scope of the appended claim.

Having thus described the invention, what is claimed as new, and what it is desired to secure by Letters-Patent of the United States, is;

In combination with the radiator of an automobile and having an overflow pipe, a receptacle, a pipe connecting said overflow pipe with the bottom of said receptacle, a top for closing said receptacle, and a condensing coil carried by said top, said condensing coil having one end open to atmosphere, and its other end in communication with the interior of said receptacle whereby fluid of condensation may drain from the condensing coil to said receptacle.

In testimony whereof I affix my signature.

JOHN ADNA PETERSON.