June 5, 1934.

A. F. THOMPSON

1,961,308

FUEL ECONOMIZER

Filed Nov. 8, 1933

Fig. 1

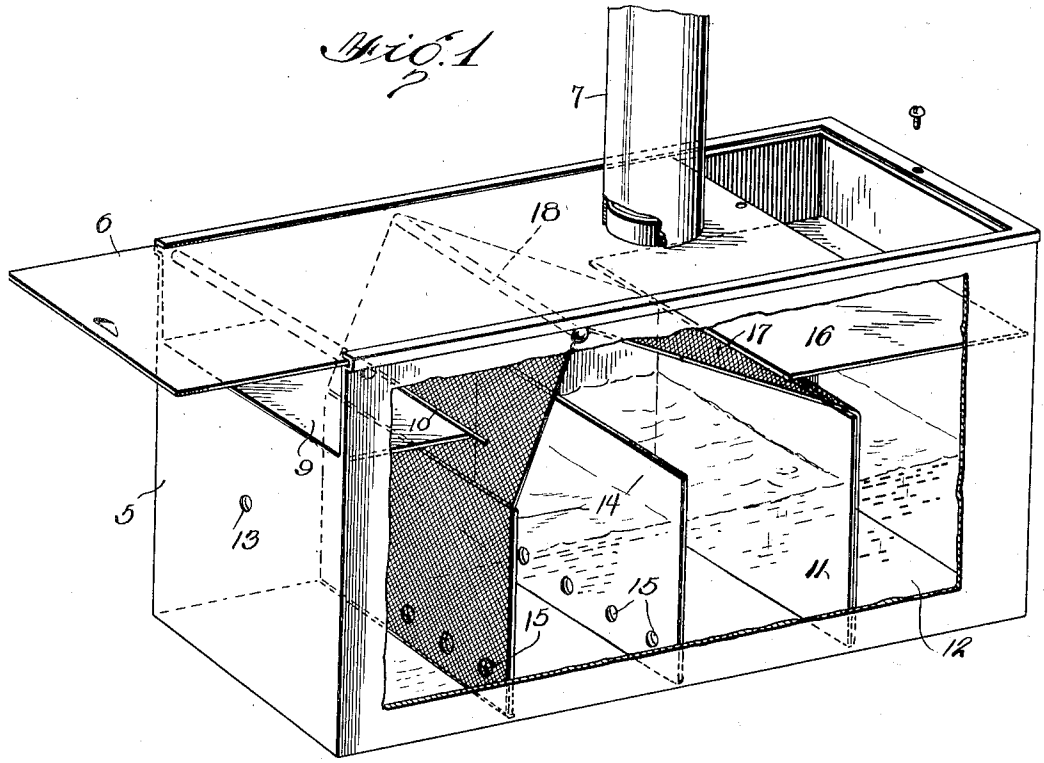


Fig. 2

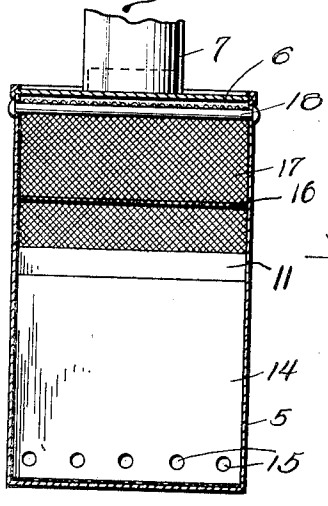
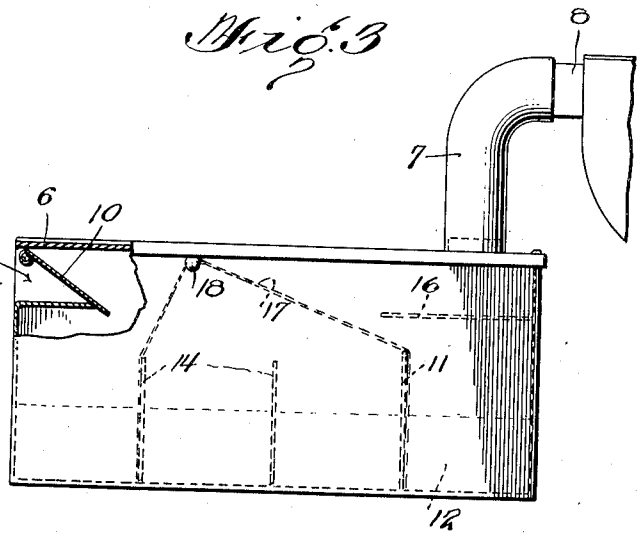


Fig. 3



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FUEL ECONOMIZER

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Application November 8, 1933, Serial No. 697,174

2 Claims. (Cl. 261—107)

This invention has relation to that type of charge-forming devices for gasoline engines in which the air applied to the intake end of the carbureter is moistened and also laden with a small quantity of oil vapor for the purpose of improving the efficiency of the engine and for lubricating the valves, and the object of the invention is to simplify and improve this type of device to the end that it may be inexpensively manufactured and therefore marketed at a low cost, as more fully hereinafter set forth.

In the drawing annexed;

Fig. 1 is a perspective view of my device, one side of the casing being broken away to show the interior, and the lid being partly drawn back to show the manner in which access may be had to the interior for filling the compartments and for cleaning purposes.

Fig. 2 is a vertical sectional view of the apparatus taken about midway its length; and

Fig. 3 is a side elevation of the apparatus partly broken away.

Referring to the drawing by reference characters, 5 designates a metal casing which is desirably made rectangular in shape and provided with a sliding lid 6. An outlet pipe 7 is connected to a hole at one end of the lid and at its other end is attached to the intake 8 of the usual carbureter. Air is admitted to the casing 5 at the end opposite the outlet pipe 7 through an inlet 9 formed across the top end of the casing. This inlet 9 is normally closed by a gravitating flap valve 10 which automatically opens inwardly to admit air under suction of the engine.

At the outlet end of the casing, the interior thereof is transversely divided by an imperforate partition 11 to form an oil chamber or pocket 12, said partition terminating short of the top of the casing. This partition 11 also forms at the other end of the casing a water chamber having an overflow opening 13 in the end wall of the casing and provided with two transverse partitions 14 terminating short of the top of the casing and provided with one or more holes 15 to permit free passage of the water.

Over the oil pocket 12, at a point above the top edge of the partition 11 and having its inner edge project beyond the partition 11 is an imperforate baffle plate 16 extending entirely across the casing and forming in effect a water shed for the oil receptacle 12.

An air moistening screen 17 is arranged within the receptacle 5 at a point between the inlet 9 and outlet 7 so that all air entering the casing 5 shall pass through the meshes of this screen. The screen is supported upon a transverse rod 18 extending across the casing 5 just under the lid 6 and the two end portions of the screen hang downwardly, one into the water-bath and the other into the oil-bath. This screen is of the same width as the interior of the casing, and its bottom edges may be temporarily attached to the partition if desired.

The operation of the device is obvious. The capillary attraction of the screen for the water and oil together with the movement of the vehicle will keep the upper parts of the screen moist with oil as well as water so that all the air that passes through the engine will pick up a small quantity of this water and oil vapor and carry it to the engine. The device will as usual be placed close to the engine and the heat from the engine will therefore be utilized to partly vaporize the water and oil and thus properly condition the charge for use in the engine. Any water that splashes up onto the baffle member 16 will run back into the water receptacle. This baffle member 16 will prevent splashing of the water into the oil receptacle 12 but even if a small quantity of water is splashed into this oil receptacle it will sink to the bottom thereof and do no harm. The oil carried into the engine is principally for lubricating purposes. Only a very small quantity of oil is needed and so it is advantageous to so construct and locate the oil receptacle that only a very slight suction action will be created at the exit of the oil receptacle. The automatic valve 10 at the inlet of the casing is desirable because when the engine is stopped the vapor laden air will be trapped in the casing and thus keep the device in prime condition for starting again and also, incidentally, prevent objectionable odor escaping from the casing. The partitions 14 assist in heating the water by conduction, and one of these partitions also assists the partition 11 and rod 18 in holding the screen removably in place.

I claim:

1. In a device of the class set forth, a casing divided transversely by a partition to form an oil pocket at one end and a water chamber at the other end, both of these chambers opening into the interior at their tops, said partition terminating short of the top wall of the casing, an inlet for gas at one end of the casing, an outlet for gas at the other end of the casing, a horizontal baffle member being arranged above the oil pocket between the top thereof and the outlet of the casing, and means associated with said chamber and pocket within the casing for impregnating the air with vapors of water and oil as it passes therethrough.

2. The structure recited in claim 1, said means for impregnating consisting of a screen depending from the top of the casing and having its lower ends immersed respectively in the water chamber and the oil pocket.

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