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HUMIDIFIER AND TOP OILER FOR INTERNAL-COMBUSTION ENGINES

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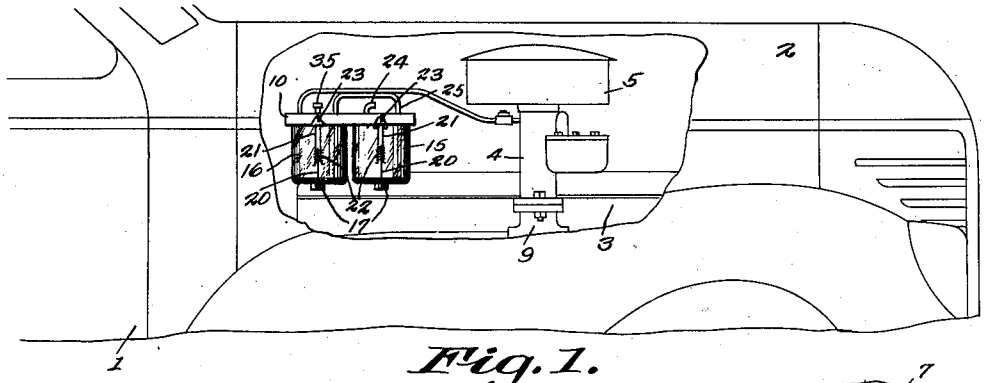


Fig. 1.

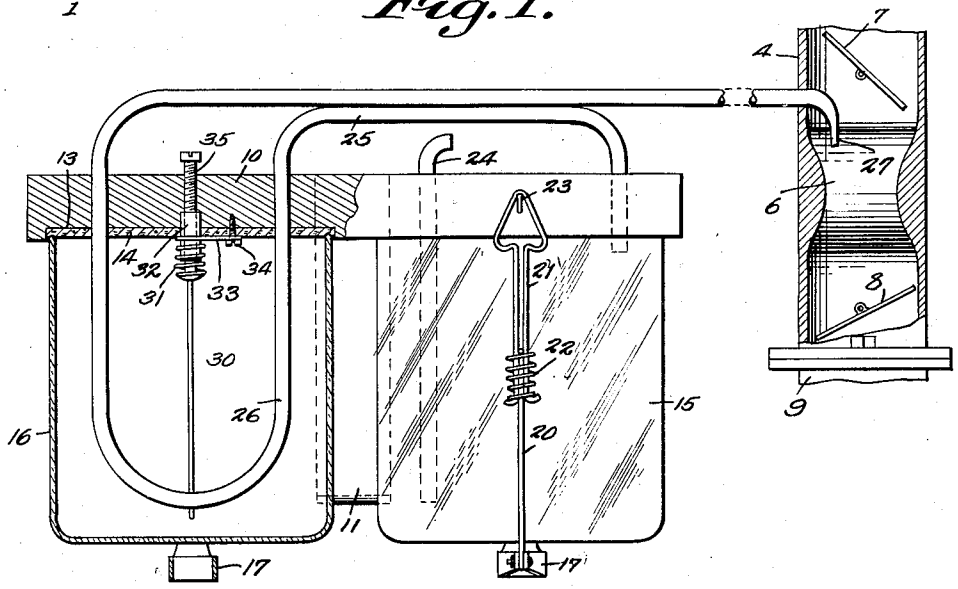
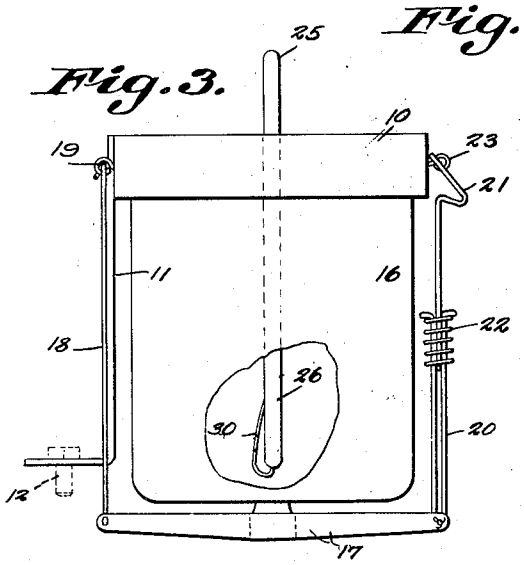


Fig. 2.

Fig. 3.



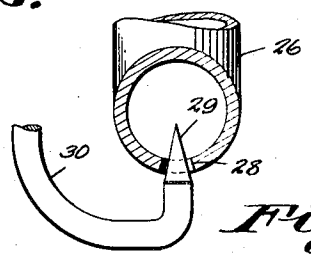


Fig. 4.

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HUMIDIFIER AND TOP OILER FOR INTERNAL-COMBUSTION ENGINES

De Yo E. Bardshar, Tacoma, Wash.

Application March 1, 1948, Serial No. 12,436

2 Claims. (Cl. 261—18)

1

This invention relates to humidifiers and top oilers for internal combustion engines.

An object of the invention is to provide an improved humidifier and top oiler adapted to be connected with the Venturi passage in the carburetor of an internal combustion engine.

Another object of the invention is to provide an automatically operated humidifier and top oiler for connection with the Venturi passage between the usual choke and throttle valves in the carburetor of an internal combustion engine.

A further object of the invention is to provide an improved automatically operated humidifier and top oiler for internal combustion engines which will be operated directly by the throttle action of the engine carburetor and will not effect carburation adjustment even when the apparatus goes empty.

A still further object of the invention is to provide an improved humidifier and top oiler for internal combustion engines which will be highly efficient in operation and relatively inexpensive to manufacture and produce.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is a side elevation of the hood of an automobile with a part thereof being broken away to show the improved humidifier and top oiler supported in operative position on the automobile engine.

Figure 2 is an enlarged side elevation of the improved humidifier and top oiler connected with the venturi of a carburetor, with portions thereof being broken away and in section to show the interior construction thereof.

Figure 3 is an end view of the improved humidifier and top oiler with a part thereof being broken away to show the position of the feed line and hook-shaped needle valve associated therewith.

Figure 4 is an enlarged detail transverse sectional view through the feed line showing the hook-shaped needle valve for controlling the flow of top oil into the feed line.

Like characters of reference are used throughout the following specification and the accompanying drawing to designate corresponding parts.

2

In carrying out the invention, there is shown an automobile 1 having a hood 2 under which an internal combustion engine 3 is disposed.

The engine 3 is provided with a carburetor 4 of the down-draft type, upon which an air cleaner or filter 5 is supported. The carburetor 4 is formed with the usual venturi 6 and a choke valve 7 and throttle valve 8 disposed respectively above and below the venturi 6. As usual, the carburetor 4 will be connected with and supported by the intake manifold 9 of the engine 3.

A supporting frame 10 for the humidifier and top oiler is mounted upon the bracket 11 which in turn is secured by a bolt 12 to any portion of the engine 3 adjacent the carburetor 4.

The lower surface of the supporting frame 10 is secured at 13 to receive and seat the cork gaskets 14 upon which the glass water and top oil containing cups 15 and 16 are firmly held by means of cross arms 17 which extend below and contact the bottoms of said cups 15 and 16. A supporting wire 18 is connected at one end of each cross arm 17 and is connected at its upper end to an eye 19 attached to the supporting frame 10. The opposite ends of the cross arms 17 are attached to the U-shaped arms 20 between which the hinged hooks 21 are adjustably supported and resiliently tensioned by the coil springs 22. The upper ends of the hooks 21 are adapted to be detachably disposed over the eyes 23 attached to the supporting frame 10, thus when released, permitting of the removal and refilling of the cups 15 and 16.

An air intake tube 24 is extended through the frame 10, terminating within and adjacent the bottom of the water containing cup 15.

The feed pipe 25 extends through the frame 10 at one end, terminating adjacent the top of the water containing cup 15, and runs above the frame 10 to a point over the top oil containing cup 16, and extends downwardly through the frame 10 in the form of a loop 26, and upwardly through the frame 10, where it is again bent to extend across the frame 10 to enter through the carburetor 4 with its terminal end 27 bent downwardly and restricted at a point within the venturi 6 between the choke valve 7 and throttle valve 8.

An inwardly tapering top oil entrance opening 28 is formed through the bottom of the loop 26 of the feed pipe 25, and cooperates with a hook-shaped needle valve 29 formed on the lower end of the valve stem 30 which is supported at its

upper end by the coil spring **31** disposed about the collar **32** which in turn is attached to the lug **33** secured to the under surface of the frame **10** by means of the screw **34**.

An adjusting screw **35** is threaded through the collar **32** and extends through and above the frame **10** for selectively adjusting the needle valve **29** to the desired adjustment.

From the foregoing description, it will be seen that when water is placed in the cup **15** and top oil is placed in the cup **16** and the valve **29** adjusted, the operation of the humidifier and top oiler is entirely automatic, being controlled by the operation of the throttle valve **8**. Air will enter through the air inlet pipe or tube **24** and the suction from the carburetor **4** will humidify the air which will pass through the feed pipe **25** and will pick up top oil to be fed into the venturi **6** of the carburetor **4**.

While the preferred embodiment of the instant invention has been illustrated and described, it will be understood that it is not intended to limit the scope of the invention thereto, as many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

What is claimed is:

1. A humidifier and top oiler for internal combustion engines, comprising a supporting frame, water and top oil containing cups supported thereby, gaskets between said frame and cups, an air inlet pipe extending through said frame into said water containing cup, a feed pipe connected with said water containing cup and extending in loop form into the top oil containing cup and having an inlet opening in the loop, one end of said feed pipe terminating within said water containing cup with its opposite terminal end discharging into the venturi of a carburetor, a hook-shaped needle valve controlled means operating within the opening for regulating the flow of top oil into said feed pipe from said top oil containing cup, resilient means for supporting said needle valve, an adjusting screw for selectively controlling and adjusting said needle valve, and resiliently tensioned supporting means for said cups comprising cross arms disposed below said cups in contact therewith and detachably hinged hooks supported thereby engageable with said supporting frame.

2. A humidifier and top oiler for internal combustion engines, comprising a supporting frame, water and top oil containing cups supported by the frame, gaskets between said frame and cups, an inlet tube extending through said frame and being extended downwardly into said water containing cup, a feed pipe extending into the top of said oil containing cup, said feed pipe including a loop disposed in the oil containing cup, the loop extending to a point adjacent to the bottom of the oil containing cup, said loop having an oil inlet opening at the base thereof, the opening having a tapered wall, one end of said feed pipe terminating within said water containing cup with its opposite end terminating in the venturi of a carburetor, a hook shaped needle valve extending into the oil inlet opening regulating the flow of oil from the top oil containing cup into said feed pipe, resilient means for supporting said needle valve, and an adjusting screw for controlling and adjusting said needle valve.

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