

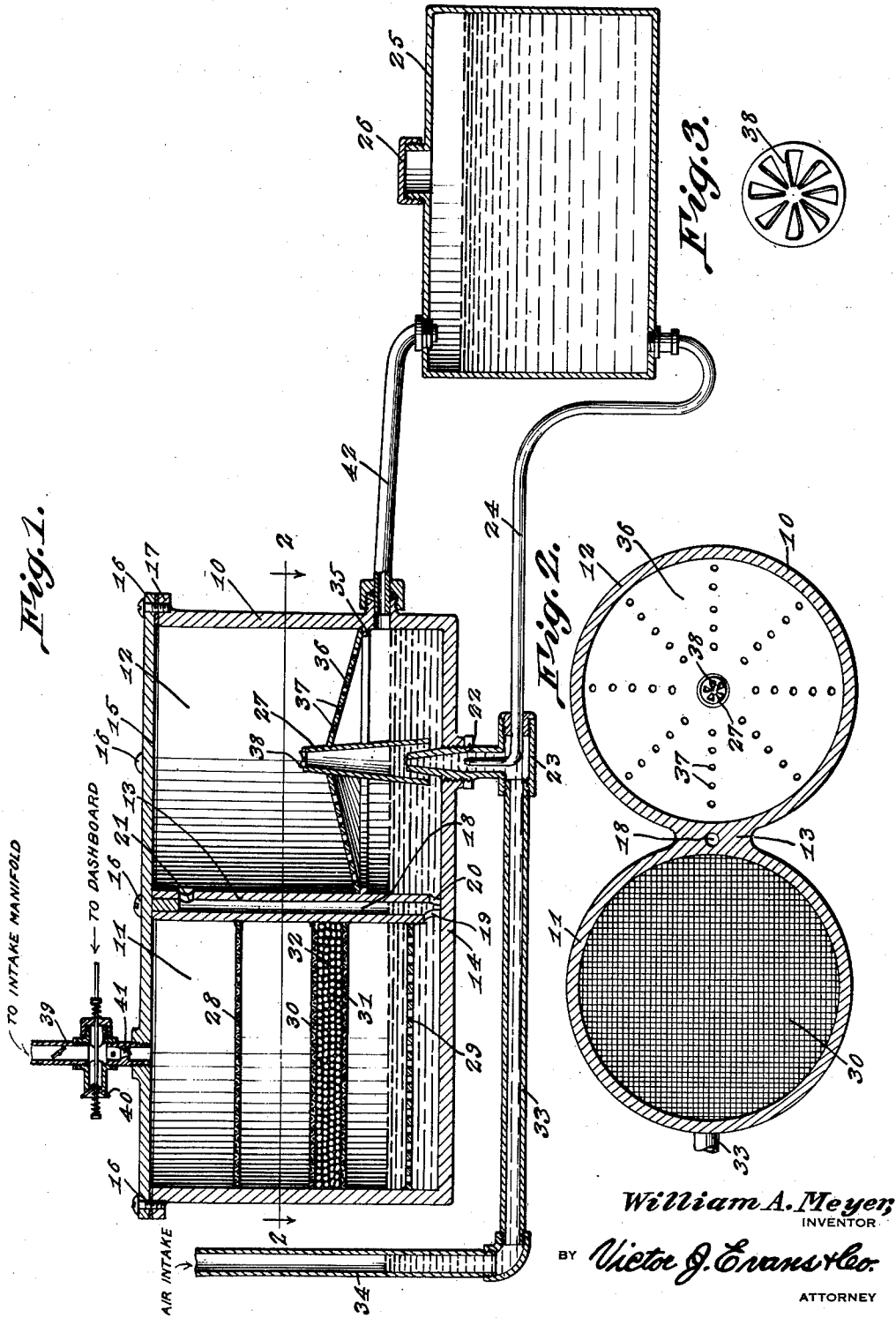
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FUEL VAPORIZER

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FUEL VAPORIZER

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2 Claims. (Cl. 261-122)

The invention relates to a carburetor and more especially to a fuel vaporizer for internal combustion engines.

The primary object of the invention is the provision of a device of this character, wherein gasoline will be treated prior to its admission to an engine of the internal combustion type for consumption thereby, so that the gasoline will be thoroughly vaporized on delivery to the engine and thereby assuring complete combustion and a minimum consumption of fuel.

Another object of the invention is the provision of a device of this character, wherein the construction thereof is novel in form so that a mixing of the volatile gases of gasoline or other distillates, employed as fuel for internal combustion engines, with air enables a perfect combustion to be had and carbon formation eliminated with less strain on the engine and permits quick starting during cold weather of such engine, there being a minimum discharge of obnoxious gases with the exhaust from such engine.

A further object of the invention is the provision of a device of this character, which is simple in construction, thoroughly reliable and efficient in its operation, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described in detail, illustrated in the accompanying drawing, which discloses the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawing:

Figure 1 is a vertical longitudinal sectional view through the device constructed in accordance with the invention.

Figure 2 is a sectional view on the line 2-2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a plan view of the outlet tip for the jet or spray nozzle of the device.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail, the device comprises a double columnar body 10, its columns 11 and 12, respectively, being joined through an integral web 13 and said body having a closed solid bottom 14 and an open top closed by a removable cover plate 15 fastened in place by screws 16 engaged in an external top flange 17 on the body.

The web 13 is provided with a vertical passage 18 communicative with the columns 11 and 12 at

its lower end through the ports 19 and 20, respectively, while said passage near its upper end is communicative with the column 12 through port 21. Tapped into the bottom 14 of the bottom 10, centrally of the column 12, is a feed nipple 22 having the union 23.

Within this nipple 22 is a fuel supply pipe 24, connected with a gasoline or other distillates tank 25, the supply pipe 24 opening into said tank close to its bottom. This tank has a removable filling cap 26 and the said tank is rendered airtight when the cap 26 is applied thereto.

Arranged in the column 11 superposed are the screens 28 and 29, the latter being in proximity to the bottom 14 of the body 10, while the screen 28 is located spaced from the cover plate 15. This screen 28 is of fine wire mesh, while the screen 29 is in the form of a perforated disk. Between the screens 28 and 29 is a filter including the closely arranged upper and lower wire mesh disks 30 and 31, respectively, between which are buckshot 32, the screens and filter being made fast within the column 11 in any suitable manner.

Connected with the union 23 is an air intake pipe 33 having the upstanding free end 34.

Formed interiorly of the column 12, spaced above the bottom thereof, is a ledge 35 on which is supported a conical-shaped disk 36 having the radially disposed rows of spaced perforations 37, while formed centrally of said disk, at the center thereof, is a jet or spray nozzle 27, the same being upwardly tapered with the lower open end thereof overhanging the nipple 22, the upper end of said nozzle 27 being provided with a bladed whirling head 38.

Opening through the cover plate 15 into the column 11 of the body 10 is a fuel delivery pipe 39 which communicates with the intake manifold of an internal combustion engine. This pipe 39 is fitted with a hand operated air valve 40, the same also functioning as an automatically operated safety valve for backfire of the engine. Below the valve 40, next to the cover plate 15 and within the delivery pipe 39, is a check valve 41 which prevents the return of fuel from the pipe 39 into the column 11 of the body 10, as should be obvious.

Leading from the column 12 at a distance above the bottom 14 of the body is a liquid leveling pipe 42 which communicates with the tank 25 near its top, and this pipe 42 functions for the purpose of breaking the vacuum within the fluid-tight tank 25.

In the operation of the device, on the suction stroke of the engine air will be drawn in through

the pipe 33 into the column 12 of the body 10 and as such air passes through the gasoline as contained within the body 10 it will accumulate volatile gases during its passage and the vapor will become jetted through the nozzle 37 whence it will pass through the port 21, passage 18, thence through port 19 and again through the gasoline contained in said body 10 in column 11, whence the explosive mixture will pass upwardly through the filter 32 and screen 28 and finally delivered through the pipe 39 into the intake manifold of the engine. A thorough vaporization will have occurred on the mixing of the air and gasoline and its feed to the delivery pipe 39 for consumption by the engine.

In the use of the device the engine can be started more readily and quickly in cold weather.

The gasoline within the body 10 is maintained at a determined level consistent with the communication of the pipe 42 with the column 12 of said body while the engine is operating and any surplus fuel above the level of the pipe 42 would drain back to the tank 25 through the said pipe, as will be clearly apparent from Figure 1 of the drawing.

What is claimed is:

1. In a carburetor, a body having separated main and auxiliary mixing chambers side by side and a by-pass therebetween communicating with the main chamber at the top and bottom and the auxiliary chamber at its bottom only, a fuel and air feeding nipple extending through the

bottom of the main chamber, a fuel supply tank having communication with said nipple, an air supply pipe having communication with said nipple, a return pipe from the main chamber to the fuel supply tank for assuring a determined depth of fuel within the main and auxiliary chambers, a jetting nozzle overhanging the nipple and having a reticulated cone concentrically of the same within the main chamber and above the plane of the return pipe, and a delivery pipe leading from the auxiliary chamber.

2. In a carburetor, a body having separated main and auxiliary mixing chambers side by side and a by-pass therebetween communicating with the main chamber at the top and bottom and the auxiliary chamber at its bottom only, a fuel and air feeding nipple extending through the bottom of the main chamber, a fuel supply tank having communication with said nipple, an air supply pipe having communication with said nipple, a return pipe from the main chamber to the fuel supply tank for assuring a determined depth of fuel within the main and auxiliary chambers, a jetting nozzle overhanging the nipple and having a reticulated cone concentrically of the same within the main chamber and above the plane of the return pipe, a delivery pipe leading from the auxiliary chamber, and grouped buckshot located in the auxiliary chamber and constituting a filter for the mixture within said chamber.

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