Oct. 16, 1923. 1,470,719

J. H. GANNON

LIQUID FUEL PURIFIER

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Fig. 1.

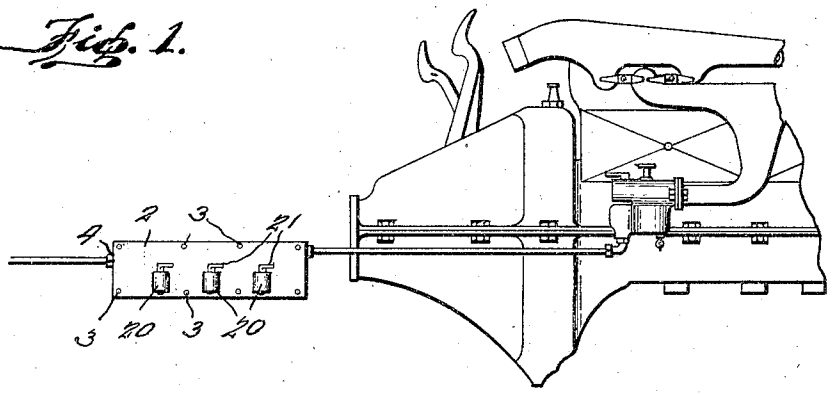
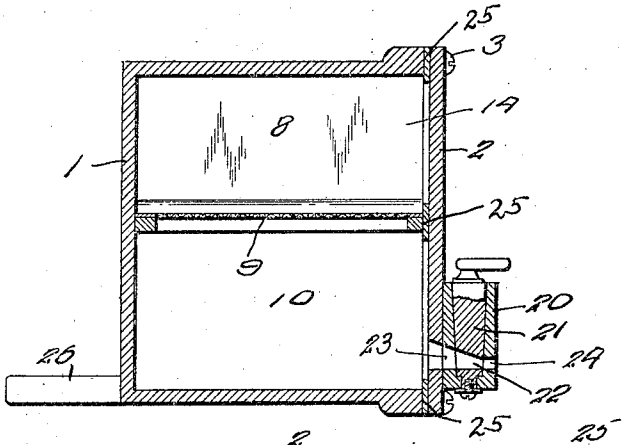



Fig. 2.



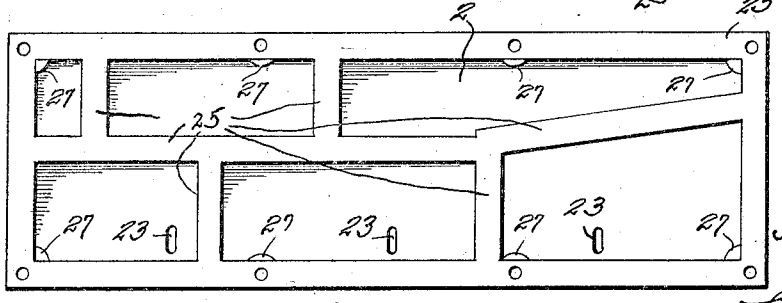




Fig. 5.

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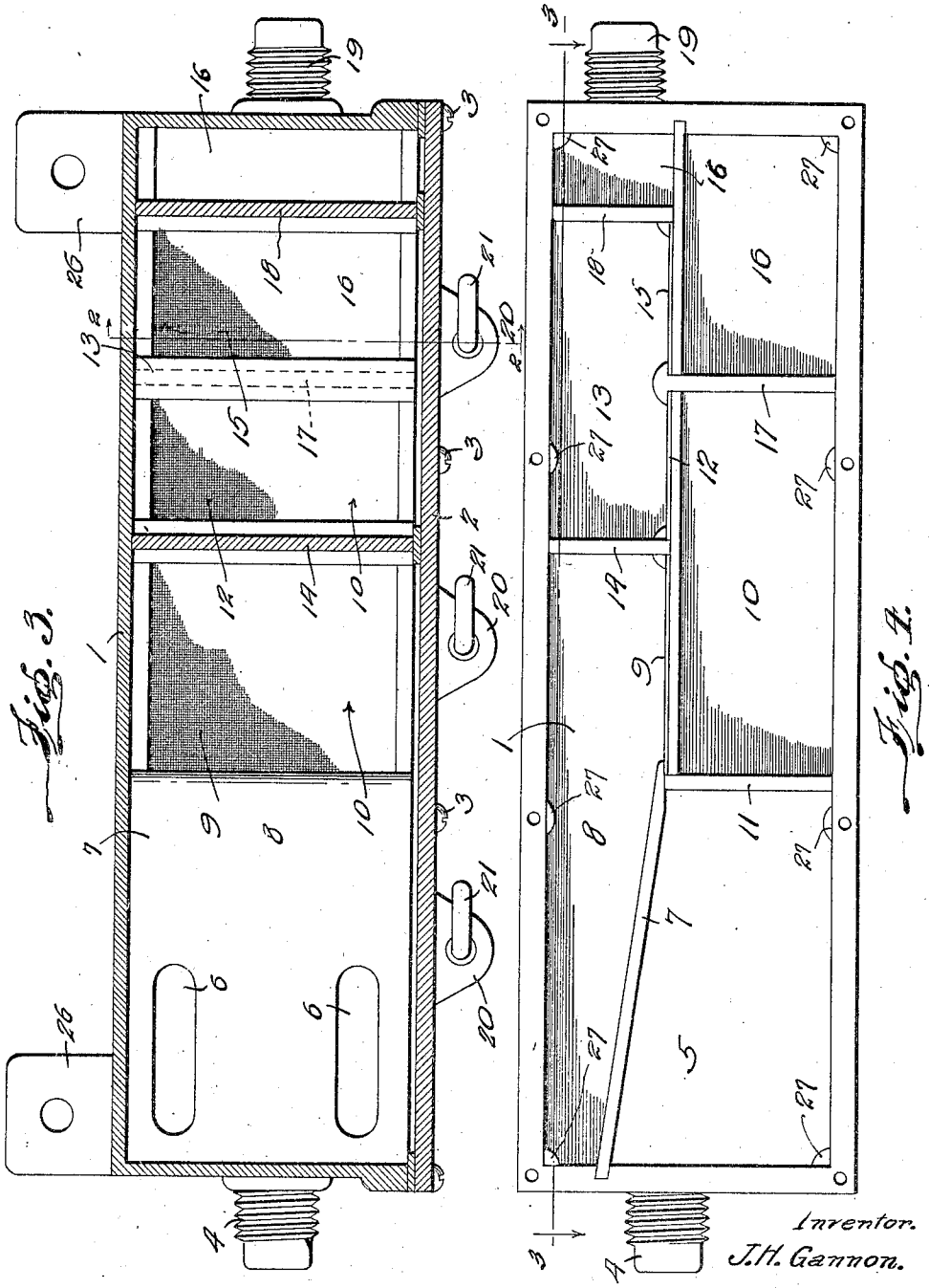


Fig. 3.

Fig. 4.

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Patented Oct. 16, 1923. 1,470,719

# UNITED STATES PATENT OFFICE.

JOHN H. GANNON, OF TUCSON, ARIZONA.

## LIQUID-FUEL PURIFIER.

Application filed March 15, 1921. Serial No. 452,479.

*To all whom it may concern:*

Be it known that I, JOHN H. GANNON, a citizen of the United States, residing at Tucson, in the county of Pima and State of Arizona, have invented a new and useful Liquid-Fuel Purifier, of which the following is a specification.

The object of my invention is to provide a novel and efficient purifier for straining and purifying liquid fuel for use in internal combustion engines; to provide a novel arrangement of compartments and screens in such a device; and to provide means for easy cleaning of the device. I attain these and other objects of my invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the invention applied to an automobile engine;

Fig. 2 is a transverse section approximately on the line 2—2 of Fig. 3;

Fig. 3 is a horizontal section on the line 3—3 of Fig. 4;

Fig. 4 is a side elevation of the device with the cover 2 removed; and

Fig. 5 is a bottom plan of the cover 2.

Like characters of reference designate like parts in each of the several views.

Referring to the accompanying drawings I provide a suitable casing 1 having a removable face plate 2, which is attached to the casing by suitable means as screws 3. I provide a suitable inlet 4 opening into the water and sediment chamber 5; and I provide a suitable outlet at the other end of the casing 1 opening out of the chamber 16 in a plane above that of screen 15. Inlet member 4 is 25 per cent larger capacity than outlet 19.

Positioned above chamber 5 and extending beyond said chamber longitudinally of the casing, I provide a flotation chamber 8, which is in communication with chamber 5 through the large opening 6 in the partition 7, as shown in Figs. 3 and 4. I provide a screen 9 interposed between chamber 8 and a second water and sediment chamber 10, the latter chamber extending beyond the end of chamber 8 longitudinally of the casing 1. I further provide a screen 12 interposed between water and sediment chamber 10 and a second flotation chamber 13, the latter chamber extending substantially beyond chamber 10 longitudinally of the upper portion of the casing. I further provide a screen 15 interposed between the flotation chamber 13 and a third water and sediment chamber 16, with the upper portion of which chamber the outlet 19 communicates, as shown in Fig. 4. On the under side of face plate 2 I provide gasket strips or ribs 25 corresponding in position with the walls of the several chambers shown and described. I provide a plurality of openings 23 through the face plate 2 and in communication with openings 24 through valve passages 22 in the valves 21 when the latter are open. Valves 21 are provided with any conventional form of handles, such as illustrated. Passages 22 and 23 are upwardly tapered, as shown in Fig. 2, to permit of the insertion of a wire at such an angle as to allow the drawing off of accumulated water from the purifier.

The operation of the device is as follows: The liquid fuel enters through inlet pipe 4 into the water and sediment chamber 5, thence passing through opening 6 of the deflecting board or partition 7 into the flotation chamber 8. The great bulk of water and sediment settles in the bottom chamber 5. In the flotation chamber 8 all lint or other floating objects rise to the top of this chamber and there remain. The liquid fuel leaves chamber 8 through screen 9, entering the second water and sediment chamber 10, thence being diverted by partition 17, through screen 12, into the second flotation chamber 13, and thence through screen 15 into the third water and sediment chamber 16, thence finding its way out through the outlet 19. The circuitous course of the fuel through the various compartments and screens effectively purifies the liquid fuel, as lint, etc., are intercepted by the screen and sediment is deposited by gravity in the lower chambers, from which chambers also any water is removed through the faucets 20. The provision of the removable face plate 2 allows quick and easy cleaning of the device. As the outlet 19 is positioned in a plane above the plane in which the series of screens are positioned, they are at all time submerged, thus preventing clogging by floating matter. The inlet and outlet nipples 4 and 19, respectively, are of conventional construction and suitably connected to the fuel supply line, as illustrated in Fig. 1. The screens will be made of suitable wire cloth of a fineness of mesh to suit the liquid fuel used.

What I claim is—

1. A liquid fuel purifier comprising a cas-

ing and partitions therein dividing the interior thereof into a plurality of chambers, said chambers being a water and sediment chamber in the lower part of the casing at one end thereof, a flotation chamber above the water and sediment chamber and extending beyond the latter, a second water and sediment chamber underlying the extending portion of said flotation chamber and extending beyond the latter, a second flotation chamber in overlying relation to said second water and sediment chamber and extending beyond the latter, and a third water and sediment chamber having a portion thereof underlying the extending portion of the second flotation chamber, said partitions being formed to provide openings between each flotation chamber and the two water and sediment chambers having portions underlying said flotation chamber, screens disposed in the openings between said flotation chambers and said water and sediment chambers, an inlet communicating with said first named water and sediment chamber, and an outlet communicating with said third water and sediment chamber above the plane of said screens.

2. A liquid fuel purifier comprising a casing and partitions therein dividing the interior of the casing into a plurality of chambers, certain of said chambers being located in the lower part of the casing and constituting a series of water and sediment chambers and the remaining chambers being located in the upper part of the chamber in overlying relation to said water and sediment chambers and constituting flotation chambers, each of said water and sediment chambers being in communication with the adjacent water and sediment chamber through an overlying flotation chamber, an inlet communicating with the water and sediment chamber at one end of the series, an outlet communicating with the water and sediment chamber at the opposite end of the series, and faucets in communication with the respective water and sediment chambers.

3. A liquid fuel purifier comprising a casing and partitions therein dividing the interior of the casing into a plurality of chambers, certain of said chambers being located in the lower part of the casing and constituting a series of water and sediment chambers and the remaining chambers being located in the upper part of the chamber in overlying relation to said water and sediment chambers and constituting flotation chambers, each of said water and sediment chambers being in communication with the adjacent water and sediment chamber through an overlying flotation chamber, an inlet communicating with the water and sediment chamber at one end of the series, an outlet communicating with the water and sediment chamber at the opposite end of the series, and faucets in communication with the respective water and sediment chambers, said faucets having their passages angularly disposed to permit of the insertion of a wire into the chambers for the purpose of drawing off water, and a removable face plate included in the casing and on which the said faucets are mounted.

4. A liquid fuel purifier comprising a casing and partitions therein dividing the interior of the casing into a plurality of chambers, certain of said chambers being located in the lower part of the casing and constituting a series of water and sediment chambers and the remaining chambers being located in the upper part of the chamber in overlying relation to said water and sediment chambers and constituting flotation chambers, each of said water and sediment chambers being in communication with the adjacent water and sediment chamber through an overlying flotation chamber, an inlet communicating with the water and sediment chamber at one end of the series, an outlet communicating with the water and sediment chamber at the opposite end of the series, faucets in communication with the respective water and sediment chambers, said casing including a face plate, and means for attaching said face plate to the remainder of the casing.

5. A liquid fuel purifier comprising a casing and partitions therein dividing the interior of the casing into a plurality of chambers, certain of said chambers being located in the lower part of the casing and constituting a series of water and sediment chambers and the remaining chambers being located in the upper part of the chamber in overlying relation to said water and sediment chambers and constituting flotation chambers, each of said water and sediment chambers being in communication with the adjacent water and sediment chamber through an overlying flotation chamber, an inlet communicating with the water and sediment chamber at one end of the series, an outlet communicating with the water and sediment chamber at the opposite end of the series, said casing including a face plate, means for attaching said face plate to the remainder of the casing, and faucets in communication with the lower portions of said water and sediment chambers, said faucets having angularly disposed openings therethrough to permit of the convenient insertion of a wire for the purpose of drawing off water.

6. A liquid fuel purifier comprising a casing and partitions therein dividing the interior of the casing into a plurality of chambers, certain of said chambers extending in a series in the lower part of said casing and constituting sediment chambers and the remaining chambers extending in overlying

relation to said sediment chambers and constituting flotation chambers, said sediment chambers and said flotation chambers being arranged in staggered relation and each sediment chamber being in communication with the adjacent sediment chamber through an overlying flotation chamber, an inlet communicating with the sediment chamber at one end of the series, and an outlet communicating with the sediment chamber at the opposite end of the series.

7. A liquid fuel purifier comprising a longitudinal casing and partitions therein dividing the interior of the casing into a substantially horizontally extending series of chambers in the lower part of the casing and a chamber or series of chambers overlying the first named chambers, the chambers of said first named series being in staggered relation in respect to the other chamber or chambers and said partitions being formed with openings whereby each chamber of the first series is in communication with the other chamber or chambers of the second series adjacent thereto, an inlet communicating with the sediment chamber at one end of the series and an outlet communicating with the sediment chamber remote from that provided with the inlet.

8. A liquid fuel purifier comprising a longitudinal casing and partitions therein dividing the interior of the casing into a substantially horizontally extending series of chambers in the lower part of the casing and a chamber or series of other chambers overlying the first named chambers, the chambers of said first named series being in staggered relation in respect to the other chamber or chambers and said partitions being formed with openings whereby each chamber of the first series is in communication with the other chamber or chambers of the second series adjacent thereto, screens arranged in the openings between said sediment and said flotation chambers, an inlet communicating with the sediment chamber at one end of the series and an outlet communicating with the sediment chamber at the other end of the series and being positioned above the plane of said screens.

JOHN H. GANNON.