

A. L. STEWARD.
 STRAINER FOR VACUUM GASOLINE SYSTEMS.
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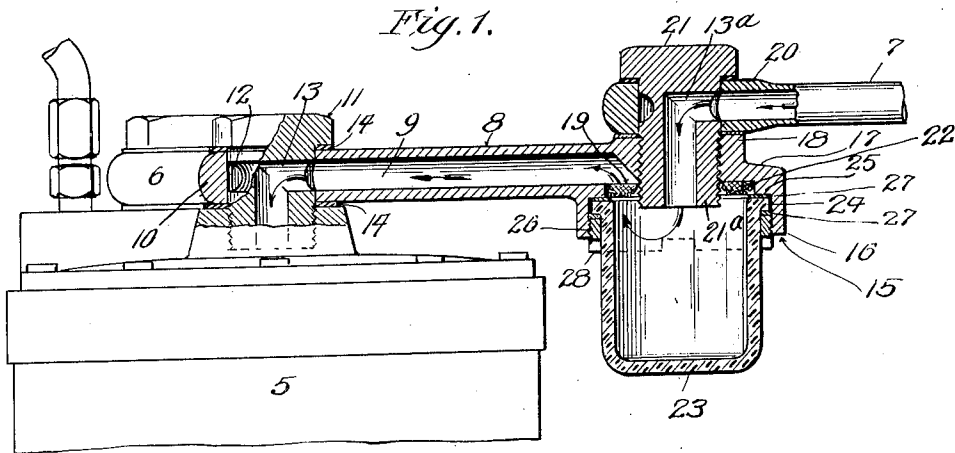
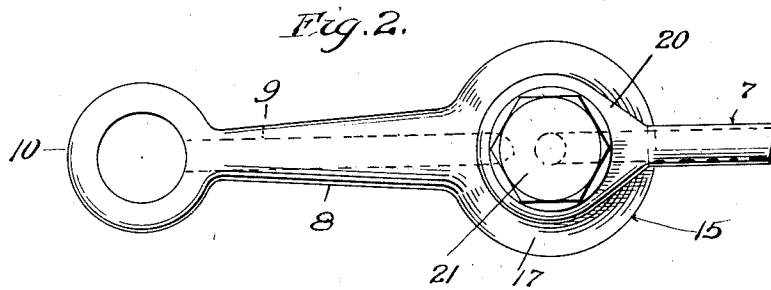


Fig. 4.

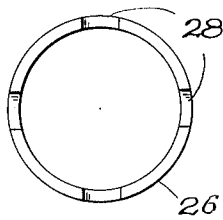
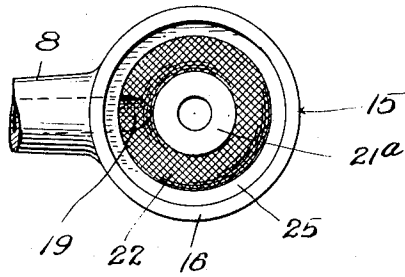


Fig. 3.



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STRAINER FOR VACUUM GASOLENE SYSTEMS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARCHIE L. STEWARD, a citizen of the United States, and a resident of Chicago, Cook county, and State of Illinois, have invented certain new and useful Improvements in Strainers for Vacuum Gasolene Systems, of which the following is declared to be a full, clear, and exact description.

10 This invention relates to strainers for vacuum gasolene systems, and its object is to rid gasolene or other combustible fluids from sediment during passage from the supply tank to the carburetor of an internal
15 combustion engine. It is well-known that frequently dirt, sand, or other sediment accumulates in the supply tanks, and is carried to the carburetors of motors, thereby clogging small apertures or passageways and
20 interfering with the proper functioning of the parts of the carburetor. This is also a frequent occurrence in systems where vacuum is used to move the gasolene from a supply tank to the carburetor. In the vacuum
25 tanks of wellknown makes, a screen or strainer is employed to intercept the dirt, sand, or other sediment but despite the presence of such screens, or strainers, the foreign
30 matter escapes through them or clogs them so as to interfere with the proper functioning of the parts. One reason for this is that the foreign matter is impinged downwardly upon the screen or strainer in the passage
35 of the gasolene therethrough. With the use of the present invention these difficulties are overcome, the foreign solid matter being completely separated from the gasolene. The invention provides for the interposition,
40 between the supply tank and vacuum tank, of a strainer, supported by the vacuum tank and through which the solid foreign matter is precipitated into a receptacle upon the movement of the column of fluid in a downward
45 direction, before the fluid passes up through a screen before flowing to the vacuum tank. The invention further consists in the several novel features hereinafter fully set forth and claimed.

50 The invention is clearly illustrated in the accompanying drawing, in which,—

Figure 1 is a central longitudinal section through a strainer embodying a simple form of the present invention, and showing the same applied to a vacuum tank of well-
55 known construction;

Fig. 2 is a plan of the device removed from the tank;

Fig. 3 is a view, looking from below, of the device, partly broken away, and the receptacle removed, and

Fig. 4 is a face view of a certain locking ring.

Referring to said drawing, the reference character 5, designates a vacuum tank of wellknown construction, the interior of
65 which is connected to the manifold (not shown) of the internal combustion engine with which it is used, by a pipe leading from the fitting 6. As is wellknown, a partial vacuum is created in the vacuum tank, in an
70 intermittent manner, whereby a practically constant supply of gasolene is maintained in the vacuum tank. Ordinarily, the vacuum tank is connected to the gasolene supply tank
75 by a pipe 7, leading directly from the vacuum tank to the supply tank, but with the use of the present invention said pipe is disconnected from the vacuum tank and the
80 present device is interposed between the vacuum tank and pipe. The usual feed pipe (not shown) runs from the vacuum tank to the carburetor.

In the embodiment of the invention illustrated, the device comprises a tubular supporting stem 8, having a passageway 9 for
85 the fluid, which discharges into the receiving end of the vacuum tank. In the illustrated form of connection between the device and vacuum tank, the tubular stem 8, terminates in a loop 10 through which is
90 passed the threaded stem of a set-screw, or bolt 11, which fastens the device to the head of the vacuum tank, whereby the device is supported by the tank. The setscrew or bolt has an annular groove 12 which registers with the discharge end of the passageway 9, and from said groove leads an
95 L shaped passage 13, which runs to the interior of the vacuum tank, thereby establishing communication between the passageway 9, and vacuum tank. Gaskets 14, are
100 interposed between the head of the setscrew or bolt 11 and loop 10 and between the loop and head of the vacuum tank to prevent leakage at these places.

105 The other end of the tubular stem 8 is provided with a hollow enlargement or head 15 for receiving the screen, dirt receptacle and connecting device for the supply pipe. As shown, said head 15 is in the form of an

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annular horizontally disposed flange 16, which joins with and extends down from the end of the tubular stem 8. The top of the flange 16 is closed by a wall 17 and a centrally disposed internally threaded boss 18. The passageway 9, opens to the interior of the head through an upwardly opening port 19. The interior of the head also communicates with the supply pipe 7, which may have a loop 20 secured to the boss 18 by a setscrew or bolt 21, similar to the setscrew 11, and having an L shaped passage 13^a, communicating with the supply pipe 7 and with its interior of the head. This exact form of connection between the supply pipe and head is immaterial, as any suitable fitting may be employed for this purpose. The discharge end of the said set screw, bolt or fitting 21, terminates below the level of the port 19 and the screen 22 is located above said discharge end and below the port 19. Said screen is constructed of very fine material and has a very fine mesh to exclude particles that might possibly be carried in suspension in the fluid passing to port 19. Preferably the screen is annular in form and surrounds the stem 21^a of the setscrew 21. For convenience the edges of the screen may be soldered to the wall 17 of the head 15. It is preferred to make the screen concavo convex in cross section as shown, although this is not essential to the invention broadly considered. The screen covers the port 19, and effectively prevents passage therethrough of any solid foreign matter.

Below the screen is a receptacle 23 for catching and retaining any dirt, sand, or other sediment which may find its way to the strainer. Said receptacle is preferably constructed of glass or other transparent material whereby the contents thereof is constantly visible; it is of cup-like formation and has a flange 24 upon its upper end, which is clamped between an annular shoulder 25 formed in the head 15, and a locking ring 26 threaded in the lower end of the flange 16. Gaskets or packing rings 27 are interposed between the receptacle flange 24 and shoulder 25 and locking ring 26 to make a tight joint at this place. Conveniently notches 28 are formed in the lower edge of the locking ring 26 to enable a spanner wrench of suitable form to be used in screwing up or unscrewing the locking ring from the head. Said gaskets or packing rings 27 also protect the glass receptacle from injury by reason of the pressure thereon caused by the locking ring.

In operation a partial vacuum is created in the vacuum tank 5 by the motor in the usual and well known manner, and this causes an inflow of gasoline to the tank from which it flows to the carbureter. Before entering the vacuum tank it passes through

the strainer where its passage is indicated by the arrows. It is to be observed that it enters the receptacle 23 in a downward direction. The dirt, sand, or other sediment falls to the bottom of the receptacle where its presence is readily detected. The gasoline, after entering the receptacle, flows up through the screen 22 and enters the passageway 9 through the port 19, and discharges into the vacuum tank through the passage 13 in the screw or bolt 11. Because of the fact that the gasoline moves upward through the screen 22, practically none of the solid foreign matter lodges on the screen, but falls to the bottom of the receptacle. The receptacle may be readily detached by unscrewing the locking ring 26, and the sediment thereupon may be removed from the receptacle and the latter replaced and secured in place by the locking ring.

More or less variation of the exact details of construction is possible without departing from the spirit of this invention; I desire, therefore, not to limit myself to the exact form of the construction shown and described, but intend, in the following claims, to point out all of the invention disclosed herein.

I claim as new and desire to obtain by Letters Patent:

1. A strainer for gasoline vacuum tanks, comprising a hollow stem, one end of which is arranged to be supported directly on the vacuum tank in open communication with the interior thereof, and the other end of which is arranged for connection with the usual gasoline supply pipe for the vacuum tank, fittings having downwardly discharging gasoline passages therein, for removably securing said hollow stem to said vacuum tank and supply pipe, the discharge port of the gasoline passage of the fitting for the supply pipe being located below the inlet port to the passage in the hollow stem, a gasoline receptacle removably supported by said hollow stem, between the discharge port of the supply pipe and inlet port to the passage of the hollow stem, and a screen interposed between the discharge port of said fitting for the supply pipe and inlet port to the hollow stem.

2. A strainer for gasoline vacuum tanks, comprising a hollow stem one end of which is arranged to be supported directly on the vacuum tank, in open communication with the interior thereof, and the other end of which is formed with a hollow head having an inlet port to the passage in the hollow stem, arranged for connection with the usual gasoline supply pipe for the vacuum tank, fittings having downwardly discharging gasoline passages therein, for removably securing said hollow stem to said vacuum tank and supply pipe, the discharge port of the gasoline passage of the fitting for the

- supply pipe being located below the inlet port to the passage in the hollow stem, a gasoline receptacle removably supported by the hollow head of said hollow stem, between the discharge port of the supply pipe and inlet port to the passage of the hollow stem, and a screen interposed between the discharge port of said fitting for the supply pipe and inlet port to the hollow stem.
3. A strainer for gasoline vacuum tanks, comprising a hollow stem one end of which is arranged to be supported directly on the vacuum tank, in open communication with the interior thereof, and the other end of which is formed with a hollow head having an upwardly opening inlet port to the passage in the hollow stem and arranged for connection with the usual gasoline supply pipe for the vacuum tank, fittings having downwardly discharging gasoline passages therein, for removably securing said hollow stem to said vacuum tank and supply pipe, the discharge port of the gasoline passage of the fitting for the supply pipe being located below the inlet port to the passage in the hollow stem, a gasoline receptacle removably supported by the hollow head of said hollow stem, between the discharge port of the supply pipe and inlet port to the passage of the hollow stem, and a screen interposed between the discharge port of said fitting for the supply pipe, and inlet port to the hollow stem.

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