C. F. COLMAR.

GAS GENERATOR.

APPLICATION FILED NOV. 1, 1919.

1,372,280. Patented Mar. 22, 1921.

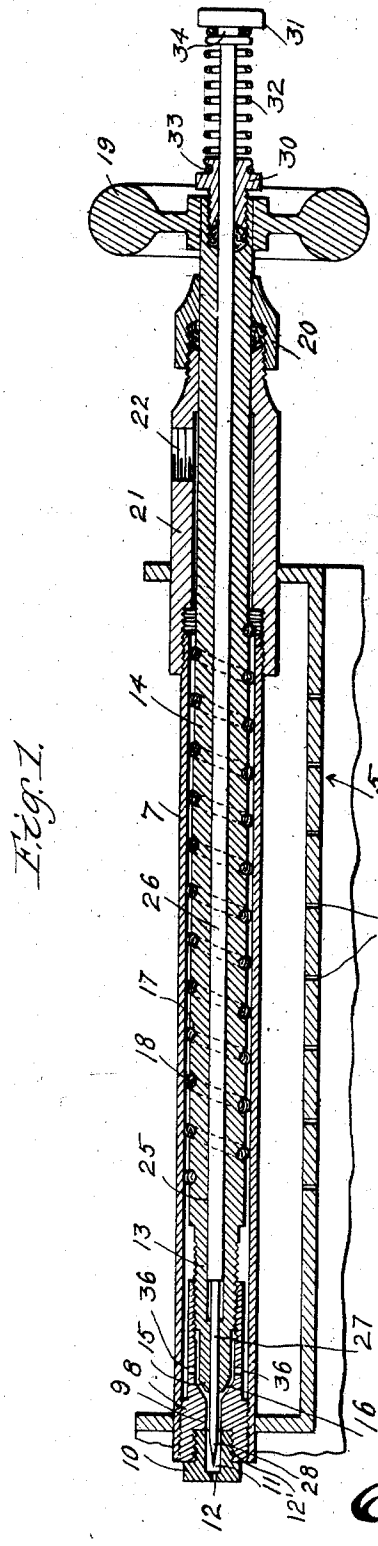


Fig. 1.

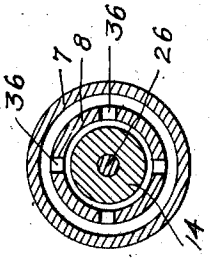


Fig. 3.

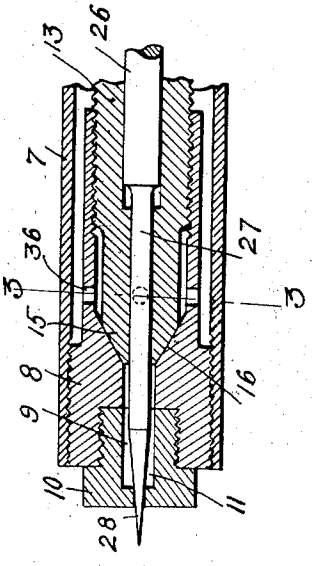


Fig. 2.

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GAS-GENERATOR.

1,372,280. Specification of Letters Patent. Patented Mar. 22, 1921.

Application filed November 1, 1919. Serial No. 335,162.

To all whom it may concern:

Be it known that I, CLARENCE F. COLMAR, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Gas-Generators, of which the following is a specification.

My invention relates more particularly to a device adapted to be associated with a hydro-carbon generator for removing the carbon deposits which accumulate in the minute outlet aperture formed in the burner tip or nozzle.

A main object of my invention is to provide a simple mechanism designed to be associated with a hydro-carbon generator, which may be conveniently operated either while the generator is in operation or when out of use, whereby the minute passage through the burner tip may be effectually cleansed from carbon deposits or other foreign matter, which may be lodged therein.

Other objects will appear in the following description, will be pointed out in the claims, and will be embodied in the accompanying drawings, in which:

Figure 1 is a longitudinal section through a hydro-carbon generator and burner, showing my improved cleaning mechanism attached thereto.

Fig. 2 is an enlarged fragmental section of the outlet end of the generator, showing the valve and the cleaning mechanism in a different position from that shown in Fig. 1.

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

Referring more specifically to the drawings, 5 designates the upper portion of a hydro-carbon burner provided with the flame slots 6, which are adapted to direct the flames from the burner against the generator during its operation.

The generator is adapted to be supported above the burner 5, as shown in Fig. 1, and preferably consists of a cylindrical tube 7, formed of steel or other suitable material, and provided on its outlet end with a plug 8, having a centrally disposed gas outlet orifice 9, the said orifice at its outer end being enlarged and interiorly threaded for the reception of a detachable threaded burner tip 10, which is provided with an aperture 11 adapted to register with orifice 9 and a minute gas outlet orifice 12. The rear end of plug 8 is reduced in diameter and is provided with a centrally disposed threaded bore 12′, which is adapted to receive the outer threaded end 13, of the generator valve operating rod 14. The extreme outer end of valve operating rod 14 is tapered to form a valve 15, adapted to engage with a seat 16 formed in the bore of plug 8, as clearly shown in Figs. 1 and 2 of the drawings.

The valve rod 14 is provided with a helical groove 17 in which is secured the coil spring 18, adapted to engage with the inner wall of tube 7, for the purpose of scraping deposits of carbon therefrom. Valve rod 14 is provided with the usual operating handle 19, the inner end of said rod passing through a packing box construction 20 formed on the outer end of the inlet fitting 21, which is provided with the tapped aperture 22, adapted to receive the fuel supply pipe (not shown).

The valve rod 14 is provided with a centrally disposed bore 25, in which is mounted for reciprocating and rotating movement, the rod 26, which is provided on its end adjacent orifice 12, with a reduced portion 27 having the needle point 28, which extends outwardly beyond the valve end 15 of said rod, and is adapted to be projected into said orifice 12 to displace any obstructions which may be formed therein.

The valve operating rod 14 is provided on its opposite end with a packing gland construction 30, through which the opposite end of rod 26 passes, said end being provided with a push button 31, and interposed between said gland and push button and surrounding rod 26 is a compression spring 32. In order to limit the outward movement of push button 31, the ends of compression spring 32 are secured respectively to gland 30 and said push button, by securing a convolution of said spring into groove 33 and 34 formed respectively on said gland and push button.

The plug 8 is provided with a plurality of radially disposed perforations 36, which are adapted to open communication between the bore of said plug and the bore of tube 7. It will be seen by this construction that the fuel passes into aperture 22, thence into the bore of tube 7, thence through the convolutions of spring 18, thence through radial apertures 36, thence through seat 16 when valve 15 is open, and thence through bore 11 and orifice 12.

The handle 19 is operated to open and close valve 15 and in so doing the helical spring 18 operates to free the inner wall of tube 7 from all deposits of carbon thereon. This carbon or other foreign matter may sometimes become lodged in the minute aperture 12, thus clogging up the burner and detracting from its efficiency. When the orifice 12 becomes clogged, it is apparent that it is only necessary for the attendant to press upon the push button 31 against the compression of spring 32 to project the needle point 28 on rod 26 into aperture 12, and if deemed necessary, revolve said rod, thus cleaning orifice 12 from all foreign matter. The spring 32 operates to retract needle point 28 from orifice 12 and hold it in such retracted position during normal operation of the generator.

In Fig. 1 of the drawings, I have shown the valve 15 open and the needle point 28 in a retracted position, and when these members are in such position, the generator is in operative position. Fig. 2 shows the valve 15 closed, and the needle point 28 projected into the orifice 12 to clean the same from any matter which may have lodged therein.

What I claim is:

1. A hydro-carbon generator, provided with a fuel inlet port and a vapor outlet port, a valve provided with a hollow operating stem mounted in said generator and controlling said vapor outlet port, a rod mounted in said stem adapted for manual inward movement to project into the outlet orifice of said vapor outlet port, and means for operating said rod in a reverse direction for normally maintaining the same removed from said outlet port to permit the free passage of vapor through said outlet port.

2. A hydro-carbon generator, provided with a fuel inlet port and a vapor outlet port, a valve provided with a hollow stem adapted to open and close communication between said ports, a rod adapted for manual movement in one direction in said hollow stem and provided with a needle point adapted on the manual movement of the rod to project into said vapor outlet port, and a compression spring for operating said rod in a reverse direction and for normally retaining the same within said stem with the needle point removed from said vapor outlet port.

3. A hydro-carbon generator, comprising a cylindrical casing provided with a fuel inlet leading thereto and having a vapor outlet port leading therefrom, a valve provided with a hollow stem mounted in said casing and controlling said vapor outlet, a rod mounted in said hollow valve stem and provided on its outer end with a cleaning needle, said rod adapted for reciprocation in said hollow valve stem, whereby the orifice of the vapor outlet may be freed from foreign substances, and means to operate said valve to normally retain the same in the position within said stem with the cleaning needle removed from said vapor outlet.

In witness that I claim the foregoing I have hereunto subscribed my name this 16th day of October, 1919.

CLARENCE F. COLMAR.