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Publication Number: 02311199 Section: Claims 3 of 4 pages Help

Full Text
Help

Go to Page:
Go

Sections:
- Front Page
- Drawings
- Specifications
- Claims

The scraper is provided with a centrally arranged threaded hole 29, normally serving as a communication duct between the tank 3 and the tube. The purpose of this scraper is to clean the inside of the tube, whereat a rod, the lower end of which is threaded, is pushed down into the tube 2, preferably after the nozzle 24 being removed, and screwed into the hole 29. The scraper 28 is then pulled upwards, whereby the tube walls are scraped clean, and the solid particles, deposited on the tube walls are thus loosened by the scraper, and brought up to the top end of the tube and removed.

The smoke generator described above operates in the following manner:

It is supposed that oil is supplied to the smoke generator so that the oil in the vaporization tube 2 reaches the primary level indicated on the drawing, and that the heating elements 20 and 25 are switched on, emitting heat, so that oil vapor is produced from the oil surface in the vaporization tube 2. Electric current is fed to the coil 15 of the electromagnet 14. By means of the flasher, not shown, or some similar device, the switch 18 is opened, so that the electromagnet can no longer hold the armature 13. Consequently, the armature and the piston are lowered to the position indicated by dotted lines, thus displacing a certain oil volume. Owing to the constriction 12 this oil quantity can not, to any considerable extent, flow back to the float chamber 7 but is forced through the conduit 5 into the oil tank 3 and from there into the vaporization tube 2. Consequently, the oil level in the vaporization tube 2 rises, whereby a quantity of oil vapor, corresponding to the increase of oil in the vaporization tube, is pressed out through the nozzle 24 and carried away by the wind, thus indicating the wind direction. When the circuit immediately thereafter is closed by means of the switch 18, the armature 13 is pulled up, which means that the piston 11 is brought back to its starting position, which is indicated by full lines. Owing to the constriction 12, no considerable quantity of oil can be sucked into the cylinder from the float chamber 7, but this takes place from the oil tank 3, so that the oil level in the vaporization tube sinks and air is sucked in through the nozzle 24 into the vaporization tube. This air is mixed with the oil vapor in the upper part of the vaporization tube, whereby the dew point of the oil vapor is lowered. The volume of the chamber filled with oil vapor in the vaporization tube 2 is thus alternately decreased and increased, with the result that oil vapor is forced out and air is sucked in. A quantity of oil, corresponding to the quantity of vaporized oil, indicated above, flows from the float chamber 7 to the tank, and into the vaporization tube 2, until the oil in the vaporization pipe reaches the same level as the oil in the float chamber 7, which latter level, as mentioned before, is predetermined. The operation described above is repeated, as soon as the switch 18 is again opened.

The influx of a certain quantity of air into the vaporization tube which, in the way described above, follows each puff of a cloud of oil vapor, thus lowers the dew point of the oil vapor escaping through the nozzle. In this way, by means of the heating element 25, it is possible to keep the nozzle 24 at a temperature high enough to prevent the oil from condensing therein, but not high enough to ignite the escaping mixture of oil limited to the embodiment described herein and shown on the drawing, as the embodiment may be varied within the scope of the invention. The method of lowering the temperature of the oil vapor through the inlet of air, and simultaneously avoiding condensation of oil by heating the nozzle, may be applied in smoke generators, executed in different ways. Some other liquid may be used instead of oil for the production of smoke or fog.

What is claimed is:

1. The method of producing fog which includes intermittently discharging easily condensable gas into the open air from a chamber through a nozzle, alternately sucking air into the chamber through the nozzle for diluting the gas in the chamber to thereby lower its dew point, and maintaining the nozzle at a temperature above the dew point of the mixture of air and gas and below the ignition point of the mixture.

2. The method of producing fog which includes supplying an easily condensable gas to a chamber communicating with the atmosphere through a nozzle, repeatedly varying the volume of the chamber to alternately suck air in, and force a mixture of air and gas out through the nozzle, and maintaining the nozzle at a temperature above the dew point of the mixture and below the ignition point thereof.

3. In an apparatus for the production of fog, means forming a vaporizing chamber, a nozzle providing continuous communication between the interior of said chamber and the atmosphere, means for supplying said chamber with fog producing substance, means for successively decreasing and increasing the volume of substance in said chamber to alternately suck air in through said nozzle and eject a mixture of air and fog producing vapor through said nozzle, and means for heating said nozzle to a temperature above the dew point and below the ignition point of said mixture.

4. In an apparatus for the production of fog, means forming a vaporizing chamber, a nozzle providing continuous communication between the interior of said chamber and the atmosphere, means for maintaining said chamber partially filled with fog producing liquid, means for successively decreasing and increasing the volume of liquid in said chamber to alternately suck air in through said nozzle and eject therefrom a mixture of air and fog producing vapor, means for heating a portion of the chamber wall which is always contacted by liquid, to thereby produce the fog producing vapor, and means for heating said nozzle to a temperature above the dew point and below the ignition point of said mixture.

5. In an apparatus for the production of fog, means forming a vaporizing chamber, a nozzle providing continuous communication between the interior of said chamber and the atmosphere, a vessel having a vertical extent at least partially coextensive with said chamber, a conduit having a restricted orifice connected between the lower parts of said chamber and vessel, means for supplying liquid to said vessel, a float valve for maintaining the level therein at approximately the maximum level desired in said chamber, means forming an enclosed space of variable volume connected to said chamber for successively decreasing and increasing the volume of liquid in said chamber to alternately suck air in and eject a mixture of air and fog producing vapor through said nozzle, and means for heating said nozzle