

[54] **FOG GENERATOR FOR INSECTICIDES
AND THE LIKE**

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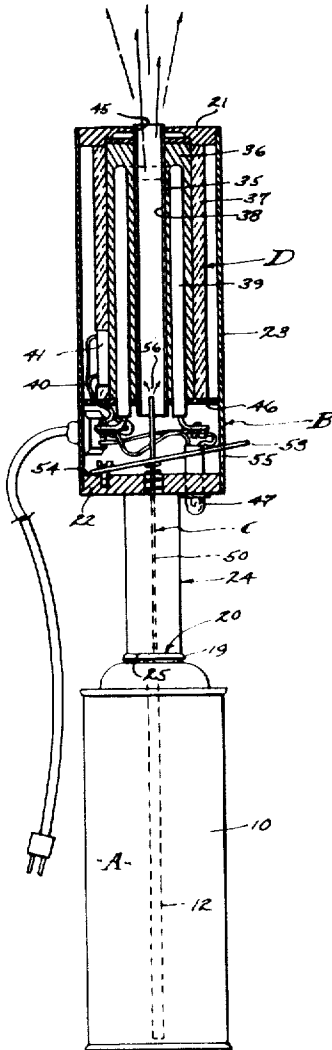
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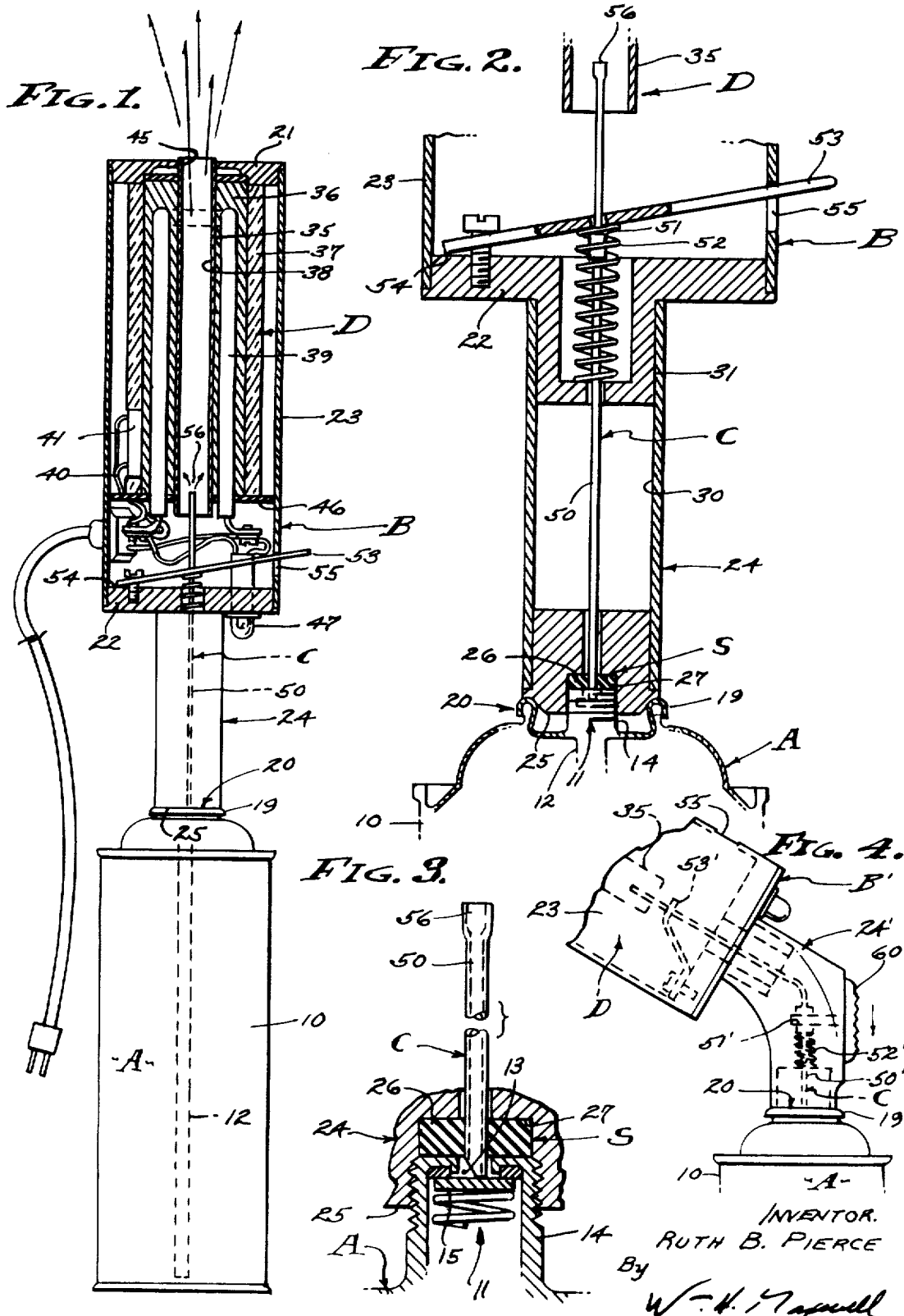
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[57] **ABSTRACT**

A gaseous fog generator connectably receiving aerosol containers charged with material to be liberated as a mist and subsequently treating said mist with a processing means applying heat thereto and which ensures thorough expansion of said material into the gaseous state. The aerosol container is attached to a shell for support and which accommodates the processing means that channels and which exposes mist nozzleed therein to heat, while isolating the shell from said heat. A tubular control and delivery stem characterizes the invention, wherein this one member is both operable to depress the aerosol valve member for discharge of material and operable to transport said discharged material for liberation as a mist and subsequent processing before final delivery.

33 Claims, 4 Drawing Figures





FOG GENERATOR FOR INSECTICIDES AND THE LIKE

This invention relates to dispensing gaseous fogs of insecticide and like chemicals. The primary purpose of such fogging guns or generators is to obtain maximum effectiveness from the material being dispensed and to convert mist or wet spray into an efficient gaseous fog. The gaseous state of the material being dispensed is obtained through the application of heat to the initially wet mist that is liberated from an aerosol container. Since heat application can be dangerous when charged aerosol containers are concerned, the prior art guns and/or generators have had complicated protective heat isolation means operating to separate the aerosol container from the heat applying means while subjecting only the liberating mist to heat. To these ends the prior art devices include intervening shields and intermediate heat transfer means, and all of which are associated with supporting structure, including handles, and which connect and relate the various elements. For example, independent shields have been employed to protectively embrace the aerosol container and heat generator and they are independently operative and remotely positioned for safety purposes; and independently operative heat absorption means have been interposed between aerosol containers and misting nozzles which are exposed to the heat applicator.

It is a general object of this invention to eliminate the complexity of said prior art shields and intermediate heat transfer means, all without impairing the safety of the device and to the end that heat isolation with respect to the aerosol container is maintained while subjecting the liberated mist to intense heat that is efficiently localized so as to ensure the discharge of gaseous fog, as distinct from otherwise wet mist.

An object of this invention is to provide a fogging generator of the type hereinabove referred to and wherein spray processing means in the form of a heat applicator is efficiently isolated from the supply of gas under pressure. With the present invention there is virtually no transfer of heat toward the aerosol container, yet there is a close association thereof insofar as distance is concerned.

It is an object of this invention to provide a heat isolating association of elements wherein the structural supports prevent the transfer of heat, being poor conductors of heat so as to limit structural absorption; and wherein the structural supports so dispose the elements of the device that natural convections dissipate heat away from the aerosol container.

It is still another object of this invention to provide a fogging generator having the features thus far referred to and wherein reliable coupling to the aerosol container and its mist liberating valve is effected by a depressible stem which is adapted to transport fluid material to a remote point for its initial nozzling into the surrounding atmosphere. Said initial nozzling is within the confines of spray processing means wherein intense heat is absorbed into the wet spray or mist and whereby expansion into a rarefied gaseous state is effected, for subsequent dispersion and intimate mixing into the surrounding atmosphere.

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred form and application thereof, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a partially sectioned elevation of the fogging generator as it is combined with and involves an aerosol container.

FIG. 2 is an enlarged sectional view of the processing means provided and of the control means which liberates material from the aerosol container and transports the same directly into said processing means.

FIG. 3 is an enlarged fragmentary sectional view illustrating the chambered and sealed coupled engagement to the aerosol container.

FIG. 4 illustrates angular adaptation of the fogging generator as it is combined with an aerosol container.

The improved fogging generator herein disclosed is particularly suited for the application of insecticide materials supplied from an aerosol container A as a liquid under pressure. The container A can vary in configuration and it comprises

generally a vessel 10 closed by a valve means 11. A syphon tube 12 extends to the bottom of the vessel 10 in order to provide for an erect discharge positioning of the vessel, and the valve means 11 has a shallow opening 13 in a cylindrical valve fitting 14 and wherein there is a depressible element 15 adapted to be displaced for release of liquid through the syphon tube 12 and from the vessel 10 for liberation through the said opening 13. A typical arrangement of such a valve means is shown and wherein liquid ejects from the opening 13 at the top of the vessel 10 surrounded by the fitting 14. As shown, the valve fitting 14 is externally threaded for any required coupling engagement and in this instance for mounting of the aerosol container to the combined elements of the fogging generator, all as hereinafter described.

The fogging generator is illustrated in its upright and normal spraying position, as a "wand" and involves, generally, a frame B for mounted engagement to the aerosol container A, a material transporting and liberating control-delivery means C to displace the valve means 11 and to remotely nozzle the material being dispensed, and a spray processing means D to subject the nozzled material to intense heat.

The frame B comprises the outer shell of the generator elements that attach to the aerosol container A and is intended for direct and convenient manual support for manipulation as circumstances may require. The frame B connectably receives the aerosol container A and supportably accommodates the other associated elements of the device, namely the control-delivery means C and spray processing means D. The frame B is vertically disposed with a threaded coupling at its lower end for reception on and threaded attachment to the valve fitting 14 of the container A. The valve fitting 14 is usually of limited diameter as shown and is surrounded by larger diameter portions of the container end. For example, such a container is often filled through a larger diameter opening than that of the valve fitting 14, in which case the said fitting is carried by a closure 20 that is permanently crimped into the container end and thereby establishing a reinforced encirclement 19 disposed in a plane normal to the axis of the container. The frame B is cylindrical in form and of a diameter comparable to that of the container A, of the frame B is characterized by upper and lower walls 21 and 22 made of heat insulating material. The two walls 21 and 22 establishing a chamber within a tubular shell 23 that extends therebetween, there being a coupling 24 extending from wall 22 to threadedly engage with the valve fitting 14 and to bear against the reinforced encirclement 19. The cross sectional configuration of the shell 23 and coupling 24 can vary as circumstances require, conventional cylindrical cross sections being shown.

In accordance with the preferred form of the invention the frame B and its elements 21—24 are coaxially disposed with the axis of the aerosol container A and its valve fitting 14, and characterized by a "wand" configuration. That is, the completely assembled fogging generator is normally disposed vertically in an erect position, while it is manipulatable into any other desired position for limited lengths of time as circumstances require. As shown, the coupling 24 has a lower end face 25 that is normal to the axis and upon which seats the reinforced encirclement 19 of the container A; and the coupling 24 is internally threaded so as to draw the aerosol container into seated engagement with the coupling. A feature is the seal S that is provided between the frame B and container A and which involves a gasket or compressible gland 26 that is carried within the threaded opening of the coupling 24 and which is pressed between a seat 27 and the opposing end face of the valve fitting 14. Both the seat 27 and gland 26 have a central opening therethrough to slideably pass the operating stem of the control-delivery means C, as later described.

The coupling 24 is an elongated tubular element having an inner diameter wall 30 that opens into the chamber within the tubular shell 23. Various forms of couplings can be provided and it is preferred that the threaded portion of the coupling be made of substantially hard metal establishing a durable nut, while the remainder can be made of softer material. As shown,

the lower wall 22 is made of plastic material with a central tubular and threaded insert 31 that reinforces the wall 30 of the coupling.

The spray processing means D is a heat means adapted to radiate intense heat into a confined predetermined area. Specifically, the means D is characterized by a discharge tube 35 into which mist or wet spray is liberated, and the area into which said intense heat is radiated is the interior of the discharge tube 35. Accordingly, the means D is a tubular radiator adapted to transfer heat into the liquid globules passing therethrough. Various means can be used for applying heat to radiate into the tube 35, preferably an electrical means. To this end, the tube 35 is encased in a substantial body 36 of heavy cross-section whereby heat is retained therein, and the body 36 is surrounded by an efficient heat insulating sleeve 37. Thus, the escape of radiant heat is from the exposed inner diameter wall 38 of the tube 35 that extends through the means D and which opens at the forward and upper end thereof. One or more electrical heat generating rods 39 are embedded in the body 36, and in an electrical circuit 40 under control of a temperature sensitive thermostat 41. By providing a heat radiating means of substantial body, residual heat can be stored and subsequently radiated over lengthy time periods. Thus, the fogging device is portable and is operable after it has been disconnected from the initially necessary power source. In practice, the discharge tube 35 is made of copper or the like for its superior heat conductive properties, while the body 36 is made of iron or the like having superior heat retentive properties.

The spray processing means D hereinabove described is a cylindrical element that slides into the shell 23 and thereby accommodated between the upper and lower walls 21 and 22. The upper wall 21 has a central bore 45 therethrough that passes the open discharge end portion of the tube 35, which correspondingly projects from the body 36. A feature of the invention is the reservation of a chamber area within the shell 23, below the means D and above the lower wall 22. This reserved area is established by a spacer 46 or the like and is for the accommodation of the accessory elements of device, including a power receptacle, a heat indicator light 47 and the operable elements of the control means C. The thermostat 41 is placed in contact with the body 36 and comprises a temperature responsive switch that opens when the required heat range is reached. The indicator light 47 is parallel in the electrical circuit through the thermostat switch, said circuit being in series through the heat generating rods 39.

The control-delivery means C is the feature of this invention which correlates the functions of the elements that are combined, it being unique that the lowermost receiving end of the discharge tube 35 is spaced and opened a substantial distance from the coupling 24 and connected valve fitting 14 of the aerosol container A from which the material to be dispensed is liberated. Accordingly, a small diameter tubular operating stem 50 is provided and which enters the valve fitting 14 and proximately enters the discharge tube 35, said stem being shiftably carried through the gland 26 where it is sealed. The control-delivery means C includes manually operable means to shift the the operating stem 50 and for the function of shifting the stem into engagement with the depressible element 15 of the aerosol container. In the form illustrated, the tubular operating stem 50 has an upwardly faced shoulder 51 and is surrounded by a return spring 52, and there is a transversely disposed lever 53 anchored to a fulcrum 54 on the wall 22 and which extends through a window 55 to be manually engageable at the exterior of the shell 23. The lever 53 is manually depressible and has an opening therethrough to pass and so that it engages the shoulder 51, compressing the spring 52 seated in the boss of the wall 22. The lower end of the operating stem 50 is truncated or suitably perforated for the lateral entry therein of the material liberated into the confines of the valve fitting 14. The upper terminal end of the operating stem 50 is restricted so as to form a nozzle 56 from which the said liberated material is initially discharged to atmospheric pres-

sure within the tubular discharge tube 35. Thus, the liberated material is permitted to expand within the confines of the intensely heated discharge tube 35, said expansion working hand in hand with the absorption of heat, and to the end that the initially wet spray and/or mist is converted to a gaseous mixture that expands upwardly while drawing air mixture through the lower end of the tube 35 and from the vented chamber within the shell 23.

From the foregoing, this improved fogging generator will be seen to operate most efficiently in safely converting to gas liquid that is liberated from an aerosol container as a spray or wet mist. The conversion is to render the liquid thoroughly gaseous, and which is most useful in the application of insecticides and like chemical materials. It is significant that the liberated materials, liberated into the confines of valve fitting 14, are transported through a small diameter tubular stem 50 and subsequently expanded at the nozzle 56 remote from the aerosol container A. Also, it is at the said remote point of discharge into an atmospheric pressure environment that intense heat is applied, there being no structural heat conductive elements of any magnitude that would carry heat toward the aerosol container. In actual practice, the movement of heat is inherently upward by virtue of the normal upright disposition of the "wand" -like device, there being a syphon effect caused by the jet action of the mist nozzled upwardly into and through the open ended tube 35, and all of which is enhanced by the natural upward expansion of gases as they are exhausted into the atmosphere. Further, there are no heat conductive contacts of the heated body 36 with any part connected to the aerosol container A, and as a result the said aerosol container remains unaffected by the heat applying means D which materially enhances the effectiveness of the material that is liberated as a mist and subsequently converted into a gaseous state through the application of intense heat.

In FIG. 4 a modified combination of fogging generator and aerosol container is shown, wherein the said generator is angularly disposed to the axis of said container A. In this form the operative elements of the control-delivery means C remain coaxial with the axis of the aerosol container A, while the frame B carrying the spray processing means D is angularly disposed to said axis. The coupling 24' is an elongated tubular element of angular configuration that opens into the chamber within the tubular shell 23. The operating stem 50' is correspondingly of angular configuration and projects laterally into the discharge tube 35. In place of the lever 53 within the shell 23 there is a guide 53' fixedly secured to the fulcrum point 54, said guide 53' loosely guiding the stem 50' so that its nozzle discharges centrally within the tube 35. In this form, the above described lever 53 is replaced by a slide 60 exposed at the side of the coupling 24', there being a shoulder 51' on the stem 50', engaged by the slide to depress the stem; and all of which is held away from the aerosol valve by means of a return spring 52' and operable as hereinabove described. The degree of angular arrangement can be selected as may be required, the small amount of depression required to operate the aerosol valve being inconsequential insofar as alignment of the stem 50' and tube 35 is concerned.

Having described only the typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art.

Having described my invention, I claim:

1. A fog generator for connectably receiving and liberating pressurized liquid material from an aerosol container having a valve fitting with a coupling member and with an opening therethrough exposing a depressible valve element therein operable to liberate said liquid material, including; a supportable shell with a chamber therein and having a coupling complementary to and releasably engageable with the first mentioned coupling member, material processing means within said chamber and having a discharge tube opening from within the chamber to outside atmosphere, and a control-delivery

means comprising a tubular operating stem in communication at its opposite ends with the valve fitting opening and discharge tube respectively and shiftably carried and operable to engage and to depress the said valve element of the valve fitting of the aerosol container when it is connected with said coupling and thereby liberate liquid material into said valve fitting opening and into and through the operating stem for release and exposure within the discharge tube for processing and subsequent discharge to outside atmosphere.

2. The fog generator as set forth in claim 1 and wherein the shell and coupling thereof are of coaxial form establishing a "wand"-like extension of the aerosol container connected thereto.

3. The fog generator as set forth in claim 1 and for an aerosol with a coupling member that is threaded, and wherein the coupling of the generator is threaded and is threadedly engageable with said threaded coupling member for connection of the aerosol container to the generator.

4. The fog generator as set forth in claim 1, and for an aerosol container that has a reinforced encirclement surrounding the coupling member that is threaded, and wherein the coupling of the generator is threaded and is threadedly engageable with said threaded coupling member, and wherein the coupling of the generator has an end face normal to its threaded axis to seat on the said reinforced encirclement when the generator coupling is threadedly engaged with the first mentioned aerosol coupling member thereby stabilizing the aerosol container relative to the generator.

5. The fog generator as set forth in claim 1 and for an aerosol with an access opening into the valve fitting, and wherein the stem of the control-delivery means is sealed in a gland carried by the coupling of the generator and projects therefrom into said opening in the valve fitting to engageably depress the element therein and liberate material therethrough.

6. The fog generator as set forth in claim 1 and for an aerosol with an access opening into the valve fitting, and wherein the stem of the control-delivery means is sealed in a gland carried by the coupling of the generator to have sealed engagement with the valve fitting, the stem projecting through the gland and into the sealed opening of the valve fitting to engageably depress the element and to transport liquid liberated therein.

7. The fog generator as set forth in claim 1 and for an aerosol with an access opening into the valve fitting, and wherein the stem of the control-delivery means is sealed in a gland carried by the coupling of the generator to have sealed engagement with the valve fitting and open laterally at its valve element engaging end, the stem projecting through the gland and into the opening of the valve fitting to engageably depress the element therein and to receive liquid liberated laterally thereinto.

8. The fog generator as set forth in claim 1 and wherein the stem of the control-delivery means has a shoulder engageable by a transversely disposed lever anchored to a fulcrum on the shell and projecting through a window in the shell for shifting and to engage with the shoulder to operate the stem to depress the valve element.

9. The fog generator as set forth in claim 1 and wherein the stem of the control-delivery means has a shoulder engageable by a transversely disposed lever anchored to a fulcrum on the shell and a spring seated in the coupling of the generator and holding the lever opposed to said shoulder, and said lever projecting through a window in the shell for shifting and to engage with the shoulder to operate the stem to depress the valve element.

10. The fog generator as set forth in claim 1 wherein the stem of the control-delivery means has a nozzle at its liberating end and is sealed in a gland carried by the coupling of the generator and opens laterally at its valve element engaging end, the tubular coupling of the generator having sealed engagement with the valve fitting, the stem projecting therefrom into the opening of the valve fitting to engageably depress the

element therein and to receive liquid liberated laterally thereinto, and wherein the stem of the control-delivery means has a shoulder engageable by a transversely disposed lever anchored to a fulcrum on the shell and a spring seated in the coupling of the generator and holding the lever opposed to said shoulder, and said lever projecting through a window in the shell for shifting and to engage with the shoulder to operate the stem to depress the valve element.

11. A fog generator for connectably receiving and liberating pressurized liquid material from an aerosol container and processing it for subsequent gaseous discharge, said aerosol container having a valve fitting with a coupling member and with an opening therethrough exposing a depressible valve element therein operable to liberate said liquid material as a mist, including; a supportable shell with a chamber therein and having a coupling complementary to and releasably engageable with the first mentioned coupling member, mist processing means within said chamber and having a discharge tube opening from within the chamber to outside atmosphere and having heating means radiating heat into said discharge tube, and a control-delivery means comprising a tubular operating stem in communication at its opposite ends with the valve fitting opening and discharge tube respectively and shiftably carried and operable to engage and to depress the said valve element of the valve fitting of the aerosol container when it is connected with said coupling and thereby liberate liquid material into said valve fitting opening and into and through the operating stem for release and exposure within the discharge tube for subsequent absorption of radiated heat and gaseous discharge to outside atmosphere.

12. The gaseous fog generator as set forth in claim 11 and wherein the shell and coupling thereof are of coaxial form establishing a "wand"-like extension of the aerosol container connected thereto.

13. The gaseous fog generator as set forth in claim 11 and for an aerosol with a coupling member that is threaded, and wherein the coupling of the generator is threaded and is threadedly engageable with said threaded coupling member for connection of the aerosol container to the generator.

14. The gaseous fog generator as set forth in claim 11 and for an aerosol container that has a reinforced encirclement surrounding the coupling member that is threaded, and wherein the coupling of the generator is threaded and is threadedly engageable with said threaded coupling member, and wherein the coupling generator has an end face normal to its threaded axis to seat on the said reinforced encirclement when the generator coupling is threadedly engaged with the first mentioned aerosol coupling member thereby stabilizing the aerosol container relative to the generator.

15. The gaseous fog generator as set forth in claim 11 and for an aerosol with an access opening into the valve fitting, and wherein the stem of the control-delivery means is sealed in a gland carried by the coupling of the generator and projects therefrom into said opening in the valve fitting to engageably depress the element therein and liberate material therethrough.

16. The gaseous fog generator as set forth in claim 11 and for an aerosol with an access opening into the valve fitting, and wherein the stem of the control-delivery means is sealed in a gland carried by the coupling of the generator to have sealed engagement with the valve fitting, the stem projecting through the gland and into the sealed opening of the valve fitting to engageably depress the element and to transport liquid liberated therein.

17. The gaseous fog generator as set forth in claim 11 and for an aerosol with an access opening into the valve fitting, and wherein the stem of the control-delivery means is sealed in a gland carried by the coupling of the generator to have sealed engagement with the valve fitting and open laterally at its valve element engaging end, the stem projecting through the gland and into the opening of the valve fitting to engageably depress the element therein and to receive liquid liberated laterally thereinto.

18. The gaseous fog generator as set forth in claim 11 and wherein the stem of the control-delivery means has a shoulder engageable by a transversely disposed lever anchored to a fulcrum on the shell and projecting through a window in the shell for shifting and to engage with the shoulder to operate the stem to depress the valve element.

19. The gaseous fog generator as set forth in claim 11 and wherein the stem of the control-delivery means has a shoulder engageable by a transversely disposed lever anchored to a fulcrum on the shell and a spring seated in the coupling of the generator and holding the lever opposed to said shoulder, and said lever projecting through a window in the shell for shifting and to engage with the shoulder to operate the stem to depress the valve element.

20. The gaseous fog generator as set forth in claim 11 wherein the stem of the control-delivery means has a nozzle at its liberating end and is sealed in a gland carried by the coupling of the generator and opens laterally at its valve element engaging end, the tubular coupling of the generator having sealed engagement with the valve fitting, the stem projecting therefrom into the opening of the valve fitting to engageably depress the element therein and to receive liquid liberated laterally thereinto, and wherein the stem of the control-delivery means has a shoulder engageable by a transversely disposed lever anchored to a fulcrum on the shell and a spring seated in the coupling of the generator and holding the lever opposed to said shoulder, and said lever projecting through a window in the shell for shifting and to engage with the shoulder to operate the stem to depress the valve element.

21. A fog generator for connectably receiving and liberating pressurized liquid material from an aerosol container and processing it with isolated heat for subsequent gaseous discharge, said aerosol container having a controllable material discharging valve fitting with a coupling member, including: a supportable shell with a chamber therein and a coupling projecting from the shell and with a remote end complementary to and releasably engageable with the first mentioned coupling member, material processing means within said chamber and having a discharging tube opening from within the chamber to outside atmosphere and having heating means radiating heat into said discharge tube, and a control-delivery tube shiftable to operate said valve fitting to deliver material from the said valve fitting into the discharge tube, said coupling being comprised of heat insulating members disposed between the shell and the valve fitting connected thereto.

22. The gaseous fog generator for processing discharged aerosol material with isolated heat as set forth in claim 21, and wherein an insulating member extends between and joins the shell and said projecting coupling.

23. The gaseous fog generator for processing discharged aerosol material with isolated heat as set forth in claim 21, and wherein an insulating member extends between the remote end of and said coupling per se.

24. The gaseous fog generator for processing discharged aerosol material with isolated heat as set forth in claim 21, wherein an insulating member extends between the shell and said projecting coupling, and wherein an insulating member extends between the remote end of and said coupling per se.

25. Apparatus for forming a fog from the mist emerging from an aerosol container and comprising in combination;
a discharge tube,
means for controllably heating the discharge tube,
a control-delivery tube having first and second ends,
a coupling adapted to have an aerosol container attached thereto,
means shiftable mounting said control-delivery tube so that said first end is proximate with one end of said discharge tube and said second end is inserted in said coupling, and
means for moving said control-delivery tube along its axis whereby it can be shifted to control the flow of mist passing through it from said aerosol container when said container is attached to said coupling.

26. Apparatus as set forth in claim 25 wherein said heating means and said discharge tube have more thermal inertia than that involved in merely heating the discharge tube, whereby said apparatus is operative to produce fog for a continued time.

27. Apparatus as set forth in claim 25 wherein there is provided;

a shell surrounds said discharge tube and said heating means,

a first wall of heat insulating material mounting said shell in fixed relation with respect to said discharge tube and in spaced relation to said heating means, and
means mounting said coupling to said wall.

28. Apparatus for generating fog from the mist emitted from an aerosol container and comprising in combination;

a discharge tube,

a thermal storage unit surrounding said discharge tube,

an electrical heating unit mounted in heat transfer relationship with said thermal storage means and said discharge tube,

a coupling to which an aerosol container may be attached, means mounting said coupling to said discharge tube, said means being comprised in part of thermal insulating material of tubular shape and substantial diameter to reduce the flow of heat from said heating unit to said coupling,

a control-delivery tube,

means shiftable mounting said control-delivery tube with one end in said coupling and the other in communication with an end of said discharge tube, and

means moving said control-delivery tube along its length so that it can be shifted to actuate the valve mechanism of an aerosol container attached to said coupling and conduct the effluent from said container to said discharge tube.

29. Apparatus for generating fog from the mist emitted from an aerosol container and comprising in combination;

a discharge tube,

an electrical heating unit mounted in heat transfer relationship with said discharge tube,

a coupling to which an aerosol container may be attached, means mounting said coupling to said discharge tube, said means being comprised in part of thermal insulating material of tubular shape and substantial diameter to reduce the flow of heat from said heating unit to said coupling,

a control-delivery tube,

means shiftable mounting said control-delivery tube with one end in said coupling and the other in communication with an end of said discharge tube, and

means moving said control-delivery tube along its length so that it can be shifted to actuate the valve mechanism of an aerosol container attached to said coupling and conduct the effluent from said container to said discharge tube.

30. The fog generator as set forth in claim 1 and wherein the coupling of the supportable shell is of angular form with the tubular operating stem of the control-delivery means extending coaxially therethrough.

31. The fog generator as set forth in claim 11 and wherein the coupling of the supportable shell is of angular form with the tubular operating stem of the control-delivery means extending coaxially therethrough.

32. The fog generator as set forth in claim 21, wherein the coupling of the supportable shell is of angular form supporting the discharge tube of the material processing means to project laterally from the axis of the aerosol container, and wherein the control-delivery tube extends coaxially through said coupling and into the discharge tube.

33. The fog generating apparatus as set forth in claim 29, wherein the coupling is of angular form supporting the discharge tube and electrical heating unit to project laterally from the axis of the aerosol container, and wherein the control-delivery tube is of correspondingly angular form extending coaxially through said coupling and moved by the last

mentioned means on the axis of the aerosol container to actuate the valve mechanism thereof.

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