

United States Patent and Trademark Office

1338343 - April 27, 1920 - Process And Apparatus For The Production of Intense Artificial Clouds, Fogs, or Mists

1619183 - March 1, 1927 - Process of Producing Smoke Clouds From Moving Aircraft

1631753 - June 7, 1927 - Electric Heater - Referenced in 3990987

1665267 - April 10, 1928 - Process of Producing Artificial Fogs

1892132 - December 27, 1932 - Atomizing Attachment For Airplane Engine Exhausts

1928963 - October 3, 1933 - Electrical System And Method

1957075 - May 1, 1934 - Airplane Spray Equipment

2097581 - November 2, 1937 - Electric Stream Generator - Referenced in 3990987

2409201 - October 15, 1946 - Smoke Producing Mixture

2476171 - July 18, 1945 - Smoke Screen Generator

2480967 - September 6, 1949 - Aerial Discharge Device

2550324 - April 24, 1951 - Process For Controlling Weather

2510867 - October 9, 1951 - Method of Crystal Formation and Precipitation

2582678 - June 15, 1952 - Material Disseminating Apparatus For Airplanes

2591988 - April 8, 1952 - Production of TiO₂ Pigments - Referenced in 3899144

2614083 - October 14, 1952 - Metal Chloride Screening Smoke Mixture

2633455 - March 31, 1953 - Smoke Generator

2688069 - August 31, 1954 - Steam Generator - Referenced in 3990987

2721495 - October 25, 1955 - Method And Apparatus For Detecting Minute Crystal Forming Particles Suspended in a Gaseous Atmosphere

2730402 - January 10, 1956 - Controllable Dispersal Device

2801322 - July 30, 1957 - Decomposition Chamber for Monopropellant Fuel - Referenced in 3990987

2881335 - April 7, 1959 - Generation of Electrical Fields

2908442 - October 13, 1959 - Method For Dispersing Natural Atmospheric Fogs And Clouds

2986360 - May 30, 1962 - Aerial Insecticide Dusting Device

2963975 - December 13, 1960 - Cloud Seeding Carbon Dioxide Bullet

3126155 - March 24, 1964 - Silver Iodide Cloud Seeding Generator - Referenced in 3990987

3127107 - March 31, 1964 - Generation of Ice-Nucleating Crystals

3131131 - April 28, 1964 - Electrostatic Mixing in Microbial Conversions

3174150 - March 16, 1965 - Self-Focusing Antenna System

3234357 - February 8, 1966 - Electrically Heated Smoke Producing Device

3274035 - September 20, 1966 - Metallic Composition For Production of Hydroscopic Smoke

3300721 - January 24, 1967 - Means For Communication Through a Layer of Ionized Gases

3313487 - April 11, 1967 - Cloud Seeding Apparatus

3338476 - August 29, 1967 - Heating Device For Use With Aerosol Containers - Referenced in 3990987

3410489 - November 12, 1968 - Automatically Adjustable Airfoil Spray System With Pump

3429507 - February 25, 1969 - Rainmaker

3432208 - November 7, 1967 - Fluidized Particle Dispenser

3441214 - April 29, 1969 - Method And Apparatus For Seeding Clouds

3445844 - May 20, 1969 - Trapped Electromagnetic Radiation Communications System

3456880 - July 22, 1969 - Method Of Producing Precipitation From The Atmosphere

3518670 June 30, 1970 - Artificial Ion Cloud

3534906 - October 20, 1970 - Control of Atmospheric Particles

3545677 - December 8, 1970 - Method of Cloud Seeding

3564253 - February 16, 1971 - System And Method For Irradiation Of Planet Surface Areas

3587966 - June 28, 1971 - Freezing Nucleation

3601312 - August 24, 1971 - Methods of Increasing The Likelihood of Precipitation By The Artificial Introduction Of Sea Water Vapor Into The Atmosphere Windward Of An Air Lift Region

3608810 - September 28, 1971 - Methods of Treating Atmospheric Conditions

3608820 - September 20, 1971 - Treatment of Atmospheric Conditions by Intermittent Dispensing of Materials Therein

3613992 - October 19, 1971 - Weather Modification Method

3630950 - December 28, 1971 - Combustible Compositions For Generating Aerosols, Particularly Suitable For Cloud Modification And Weather Control And Aerosolization Process

USRE29142 - This patent is a reissue of patent US3630950 - Combustible compositions for generating aerosols, particularly suitable for cloud modification and weather control and aerosolization process

3659785 - December 8, 1971 - Weather Modification Utilizing Microencapsulated Material

3666176 - March 3, 1972 - Solar Temperature Inversion Device

3677840 - July 18, 1972 - Pyrotechnics Comprising Oxide of Silver For Weather Modification Use

3722183 - March 27, 1973 - Device For Clearing Impurities From The Atmosphere

3769107 - October 30, 1973 - Pyrotechnic Composition For Generating Lead Based Smoke

3784099 - January 8, 1974 - Air Pollution Control Method

3785557 - January 15, 1974 - Cloud Seeding System

3795626 - March 5, 1974 - Weather Modification Process

3808595 - April 30, 1974 - Chaff Dispensing System

3813875 - June 4, 1974 - Rocket Having Barium Release System to Create Ion Clouds In The Upper Atmosphere

3835059 - September 10, 1974 - Methods of Generating Ice Nuclei Smoke Particles For Weather Modification And Apparatus Therefore

3835293 - September 10, 1974 - Electrical Heating Aparatus For Generating Super Heated Vapors - Referenced in 3990987

3877642 - April 15, 1975 - Freezing Nucleant

3882393 - May 6, 1975 - Communications System Utilizing Modulation of The Characteristic Polarization of The Ionosphere

3896993 - July 29, 1975 - Process For Local Modification of Fog And Clouds For Triggering Their Precipitation And For Hindering The Development of Hail Producing Clouds

3899129 - August 12, 1975 - Apparatus for generating ice nuclei smoke particles for weather modification

3899144 - August 12, 1975 - Powder contrail generation

3940059 - February 24, 1976 - Method For Fog Dispersion

3940060 - February 24, 1976 - Vortex Ring Generator

3990987 - November 9, 1976 - Smoke generator

3992628 - November 16, 1976 - Countermeasure system for laser radiation

3994437 - November 30, 1976 - Broadcast dissemination of trace quantities of biologically active chemicals

4042196 - August 16, 1977 - Method and apparatus for triggering a substantial change in earth characteristics and measuring earth changes

RE29,142 - February 22, 1977 - Reissue of: 03630950 - Combustible compositions for generating aerosols, particularly suitable for cloud modification and weather control and aerosolization process

4035726 - July 12, 1977 - Method of controlling and/or improving high-latitude and other communications or radio wave surveillance systems by partial control of radio wave et al

4096005 - June 20, 1978 - Pyrotechnic Cloud Seeding Composition

4129252 - December 12, 1978 - Method and apparatus for production of seeding materials

4141274 - February 27, 1979 - Weather modification automatic cartridge dispenser

4167008 - September 4, 1979 - Fluid bed chaff dispenser

4347284 - August 31, 1982 - White cover sheet material capable of reflecting ultraviolet rays

4362271 - December 7, 1982 - Procedure for the artificial modification of atmospheric precipitation as well as compounds with a dimethyl sulfoxide base for use in carrying out said procedure

4402480 - September 6, 1983 - Atmosphere modification satellite

4412654 - November 1, 1983 - Laminar microjet atomizer and method of aerial spraying of liquids

4415265 - November 15, 1983 - Method and apparatus for aerosol particle absorption spectroscopy

4470544 - September 11, 1984 - Method of and Means for weather modification
4475927 - October 9, 1984 - Bipolar Fog Abatement System
4600147 - July 15, 1986 - Liquid propane generator for cloud seeding apparatus
4633714 - January 6, 1987 - Aerosol particle charge and size analyzer
4643355 - February 17, 1987 - Method and apparatus for modification of climatic conditions
4653690 - March 31, 1987 - Method of producing cumulus clouds
4684063 - August 4, 1987 - Particulates generation and removal
4686605 - August 11, 1987 - Method and apparatus for altering a region in the earth's atmosphere, ionosphere, and/or magnetosphere
4704942 - November 10, 1987 - Charged Aerosol
4712155 - December 8, 1987 - Method and apparatus for creating an artificial electron cyclotron heating region of plasma
4744919 - May 17, 1988 - Method of dispersing particulate aerosol tracer
4766725 - August 30, 1988 - Method of suppressing formation of contrails and solution therefor
4829838 - May 16, 1989 - Method and apparatus for the measurement of the size of particles entrained in a gas
4836086 - June 6, 1989 - Apparatus and method for the mixing and diffusion of warm and cold air for dissolving fog
4873928 - October 17, 1989 - Nuclear-sized explosions without radiation
4948257 - August 14, 1990 - Laser optical measuring device and method for stabilizing fringe pattern spacing
48050 - August 14, 1990 - Liquid atomizing apparatus for aerial spraying
4999637 - March 12, 1991 - Creation of artificial ionization clouds above the earth
5003186 - March 26, 1991 - Stratospheric Welsbach seeding for reduction of global warming
5005355 - April 9, 1991 - Method of suppressing formation of contrails and solution therefor
5038664 - August 13, 1991 - Method for producing a shell of relativistic particles at an altitude above the earth's surface
5041760 - August 20, 1991 - Method and apparatus for generating and utilizing a compound plasma configuration
5041834 - August 20, 1991 - Artificial ionospheric mirror composed of a plasma layer which can be tilted
5056357 - October 15, 1991 - Acoustic method for measuring properties of a mobile medium
5059909 - October 22, 1991 - Determination of particle size and electrical charge
5104069 - April 14, 1992 - Apparatus and method for ejecting matter from an aircraft
5110502 - May 5, 1992 - Method of suppressing formation of contrails and solution

therefor

5156802 - October 20, 1992 - Inspection of fuel particles with acoustics

5174498 - December 29, 1992 - Cloud Seeding

5148173 - September 15, 1992 - Millimeter wave screening cloud and method

5245290 - September 14, 1993 - Device for determining the size and charge of colloidal particles by measuring electroacoustic effect

5286979 - February 15, 1994 - Process for absorbing ultraviolet radiation using dispersed melanin

5296910 - March 22, 1994 - Method and apparatus for particle analysis

5327222 - July 5, 1994 - Displacement information detecting apparatus

5357865 - October 25, 1994 - Method of cloud seeding

5360162 - November 1, 1994 - Method and composition for precipitation of atmospheric water

5383024 - January 17, 1995 - Optical wet steam monitor

5425413 - June 20, 1995 - Method to hinder the formation and to break-up overhead atmospheric inversions, enhance ground level air circulation and improve urban air quality

5434667 - July 18, 1995 - Characterization of particles by modulated dynamic light scattering

5441200 - August 15, 1995 - Tropical cyclone disruption

5486900 - January 23, 1996 - Measuring device for amount of charge of toner and image forming apparatus having the measuring device

5556029 - September 17, 1996 - Method of hydrometeor dissipation (clouds)

5628455 - May 13, 1997 - Method and apparatus for modification of supercooled fog

5631414 - May 20, 1997 - Method and device for remote diagnostics of ocean-atmosphere system state

5639441 - June 17, 1997 - Methods for fine particle formation

5762298 - June 9, 1998 - Use of artificial satellites in earth orbits adaptively to modify the effect that solar radiation would otherwise have on earth's weather

5912396 - June 15, 1999 - System and method for remediation of selected atmospheric conditions

5922976 - July 13, 1999 - Method of measuring aerosol particles using automated mobility-classified aerosol detector

5949001 - September 7, 1999 - Method for aerodynamic particle size analysis

5984239 - November 16, 1999 - Weather modification by artificial satellite

6025402 - February 15, 2000 - Chemical composition for effectuating a reduction of visibility obscuration, and a detoxifixation of fumes and chemical fogs in spaces of fire origin

6030506 - February 29, 2000 - Preparation of independently generated highly reactive chemical species

6034073 - March 7, 2000 - Solvent detergent emulsions having antiviral activity
6045089 - April 4, 2000 - Solar-powered airplane
6056203 - May 2, 2000 - Method and apparatus for modifying supercooled clouds
6110590 - August 29, 2000 - Synthetically spun silk nanofibers and a process for making the same
6263744 - July 24, 2001 - Automated mobility-classified-aerosol detector
6281972 - August 28, 2001 - Method and apparatus for measuring particle-size distribution
6315213 - November 13, 2001 - Method of modifying weather
6382526 - May 7, 2002 - Process and apparatus for the production of nanofibers
6408704 - June 25, 2002 - Aerodynamic particle size analysis method and apparatus
6412416 - July 2, 2002 - Propellant-based aerosol generation devices and method
6520425 - February 18, 2003 - Process and apparatus for the production of nanofibers
6539812 - April 1, 2003 - System for measuring the flow-rate of a gas by means of ultrasound
6553849 - April 29, 2003 - Electrodynamic particle size analyzer
6569393 - May 27, 2003 - Method and device for cleaning the atmosphere