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International application number: PCT/US2007/010293

International filing date: 28 April 2007 (28.04.2007)

Document type: Certified copy of priority document

Document details: Country/Office: US
Number: 60/918,726
Filing date: 19 March 2007 (19.03.2007)

Date of receipt at the International Bureau: 17 January 2008 (17.01.2008)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)

31920

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APPLICATION NUMBER: *60/918,726*
FILING DATE: *March 19, 2007*
RELATED PCT APPLICATION NUMBER: *PCT/US07/10293*

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS *US60/918,726*

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. _____

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Dorothy M.	Hartman	Philadelphia , PA.

Additional inventors are being named on the _____ *separately numbered sheets attached hereto*

TITLE OF THE INVENTION (500 characters max):

METHOD TO SCRUB GREENHOUSE GASES FROM THE ATMOSPHERE

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

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OR

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☐ Application Data Sheet. See 37 CFR 1.76

☒ Drawing(s) *Number of Sheets* 2

☒ Specification (e.g. description of the invention) *Number of Pages* 6

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SIGNATURE _____ Date March 16 , 2007

TYPED or PRINTED NAME Dorothy M. Hartman REGISTRATION NO. _____ *(if appropriate)*

TELEPHONE 215-462-3100 Docket Number: _____

METHOD TO SCRUB GREENHOUSE GASES FROM THE ATMOSPHERE

FIELD OF THE INVENTION

{ 0001} This invention relates to using chemical methods Acid - Base Titration and Oxidation - Reduction reactions to change greenhouse gases such as carbon dioxide , methane , nitrous oxide to more beneficial forms to eliminate or reduce their presence in the atmosphere in an effort to reduce global warming .

BACKGROUND OF THE INVENTION

{ 0002 } Carbon dioxide , methane , nitrous oxide , and three groups of fluorinated gases are referred to as greenhouse gases which are causing a critical rise in the temperature of the earth's atmosphere contributing to a phenomenon known as global warming which is creating climatic changes and changes in habitat for many of the earth's species . Most accept that this is not a positive change and could mean catastrophic changes in the planet if some method(s) of eliminating or reducing these substances is not found .

SUMMARY OF THE INVENTION

{ 0003 } The present method or invention provides a chemical method which may be employed to change the nature of these compounds resulting in the formation of salts and water which may be more beneficial to the environment .

BRIEF DESCRIPTION OF THE DRAWINGS

{ 0004 } Fig. 1 - shows how the chemicals would be applied to produce the chemical reactions . The chemicals would be bases to be determined by applying chemical equations and resulting tests to determine which bases and how much to be applied to titrate the acid(s) to its neutralization point . Aerosol spraying would be used to apply chemicals to the atmosphere .

{ 0005 } Fig .2 - shows plant and animal life enclosed in a terrarium , biosphere or a control environment for the purpose of testing the effects of the sprays and chemical reactions on living and non living things and to determine methods of clean-up before the method is applied to real situations .

DESCRIPTION OF THE PREFERRED EMBODIMENT

{ 0007 } Method - Using Titration and Neutralization in Oxidation - Reduction reactions as possible means by which to rid the environment of certain harmful gases as by products of pollution which are contributing to the "Greenhouse Effect " on the planet and consequent Global Warming .

{ 0008 } Establishing method by achieving the following objectives :
(1) developing aerosol base sprays that can be used to titrate harmful acids from the environment . (2) developing methods in which the spraying could be safely expedited by using a contained environment such as a biochamber in a laboratory to determine the effects of spraying upon living organisms and the environment . (3) devising methods of clean-up and disposal of waste salts and other by products of the chemical reactions . Such experimentation to be carried out within the controlled and contained environment of a biochamber or otherwise controlled environment to determine feasibility of method(s) . Carbon Dioxide , Methane , Nitrous Oxide and 3 groups of florinated gases (but not CFCs) are the subject of the Kyoto Protocol - an international conference of the nations of the world .

****- Note ... It does little good to scrub these greenhouse gases from the atmosphere without attempting to stop or control the processes which contribute to the problem. If the number of automobiles cannot be controlled especially in developing countries with massive populations like China and India as huge populations owning automobiles could irrevocably tip the balance to the extent that nothing can help . Presently the emissions released into the atmosphere must be stringently controlled or alternative fuel methods found to drive automobiles . Also reforestation must occur . Just as there has been considerable deforestation with the cutting down of forests and destruction of the rain forests - so we must reverse that by replanting trees . Projects designed to plant tree parks or arboreta should be adopted and all conservation methods used .

{ 0009 } Chemical equations and methods to be used in determining the kinds and amounts of chemicals present and what kinds and amounts of chemicals will be needed to bring about a chemical reaction that would result in desired results . Desired results being the reduction or elimination of harmful substances - and the resolution into the enviroment or clean-up and removal of less harmful substances or by products .
A. Determine Molality -determine concentrations of green house gases .Determine greenhouse gases , their percentages by obtaining and samples of environmental studies
Mole fraction of Component 1 = $\frac{n1}{n1 + n2 + n3}$

Mole fraction of Compound = $\frac{\text{moles of compound}}{\text{Total unity of other compounds}}$

Total Unity of other compounds = moles of compound 1 (x1)+ moles of compound 2 (x2) + moles of compound 3, (x3)

Sum of all mole fractions x1+x2+x3+..... = 1

B. Determine Molarity of those critical compounds : CO2 , CH4 , NO2 - carbon dioxide , methane , and nitrous oxide . Determine in closed , controlled chamber whether the use of titration and neutralization would effect these chemicals only and not interact with the other chemicals . Also determine other methods of separating these substances from each other and also from the chlorofluorocarbons to be studied separately .

1) determine number of moles of CO2
2) determine concentration of carbonic acid
3) determine what would be the safest bases to used
4) determine number of moles of NO and CH4

{ 0010 } Study and determine what bases can most effectively be used . Do a series of steps using different bases to determine which are best and what salts can most safely be used in the environment . All effort should be made to obtain salts that can be resolved within the enviroment as clean up efforts may themselves be harmful or just too expensive .C. Determine what bases can most readily and less caustically be used to titrate these compounds from the air sample . Determine molarity of these bases such as naoh , ca(oh)2 . The molarity of a solution is the number of moles of solute in 1 liter of solution . However , since the volume of the solution depends on temperature, the concentration expresses in units of molarity also depends on temperature . This is a disadvantage

{ 0011 } Acid-Base Titration is one of the methods to be used in this method. The general procedure is to determine the amount of , let's say an acid by adding an equivalent measured amount of a base or vice-versa , in order to see how to design a good acid-base titration experiment , it is useful to calculate the concentration of H3O+ at various stages in the titration of 50.00 ml of 1.000M HCL with 50.00 ml of 1.000M NaoH . We will give the value of f , the fraction of the original acid that has been neutralized . If the original number of moles of HCL is denoted by NO ,
f is given by $f = \frac{\text{number of moles of base added}}{N0}$
At the start of the titration f = 0 , and f=1 corresponds to a completely titrated acid , or the equivalence point of the titration . Before the titration starts , H3O+ = 1 M , and ph = 0. To calculate H3O+ for O< f < 1 , we let
V= original volume of the acid
v = volume of the base added

Then , since both acid and base have the same concentration , f = v/V m and the amount of acid at any stage in the titration is
H3O+ = n0 (1-f) = n0 (1 - v/V)

To obtain the concentration of H30+ , we divide by the total volume of the solution
H3O+ = no $\frac{(1-v/V)}{(V+v)}$ = no $\frac{(1-f)}{(V+v)}$
Titration is the method that can be used for the greenhouse gase carbon dioxide , and nitrous oxide as both of these form acids when their oxides are dissolved in water vapor . Typically - acid base titrations result in neutralization of the acid and the base and the formation of a salt as a by product . This method may work with Co2 and no but the challenge is finding "safe" bases potent enough to do the job or stronger bases which can be distributed in a "safe" manner . These bases would then be produced as aerosol sprays to be used to "seed" the clouds or the atmosphere to attempt to "scrub" the concentrations that have been detected . Some method must be determined to deal with the "fall out " or particulate matter from the formation of salts .
CaO(s) Calcium Oxide + Co2 (g) carbon dioxide -→ Ca Co3 Calcium Carbonate , salt . Limestone is relatively benign and is found in abundance in the environment .
Carbon dioxide , if present as HCO3 + carbonic acid can be titrated . Oxidation - reduction reactions may be necessary to convert co2 carbon dioxide and nitrous oxide to carbonic acid or nitric acid so that they may be titrated . Generally both carbon dioxide and nitrous oxide will form acids when dissolved in water :
CO3 + H2O = HCO3 + OH -

D . Also devise a chemical plan to deal with the fluorinated gases :
CFC-12
HCFC-22
Tetraflouromethane
Sulphur hexafluoride

{ 0012 } E. Also devise method of creating wind patterns in contrived laboratory set up (terrarium or biochamber) in anticipation that meteorologists charts and predictions would be used to detemine what times are safest for spraying . Prevailing winds will carry the fall out as quickly as possible over the ocean so as to encourage precipitates and particulate matter to fall into the oceans . Precipitates such as CACO3 - calcium carbonate or limestone settle into the oceans naturally forming limestone deposits . The nature and safety of these particulates to be determined in the containment laboratory .KOH , Mg(OH)2, NAOH, NH4OH are really powerful bases , but there are less dangerous bases . Testing will determine which may be feasible .

{ 0013 } Oxidation - reduction reactions further may be necessary to convert acids to titratable forms , co2 + co dissolved in water vapor should produce HCO3 -carbonic acid and nitrous oxide dissolved in water should produce nitrous acid or nitric acid . CO3 + H2O = HCO3 + OH- The carbonic acid can then be acted upon by a stronger base - for

example Ca(OH)2 ; calcium hydroxide which then yields Ca Co3 , a salt and water .What bases are necessary to "Seed" the atmosphere so as to produce the titration which in turn will neutralize the acids and form a salt and water vapor as by products ? These will be determine by trial and error using the contained biochamber for research . Titration and neutralization :

$$F = \frac{\text{Number of Moles of Base Added}}{\text{Number of moles of Acid}}$$

{ 0014 } Methane , which is an alkane can be handled in a different way by oxidation -reduction reactions . CH3 is a comparatively inert molecule . Methane is a saturated hydrocarbon and is classified as a member of the alkene group . Its chemistry can be changed by replacing a hydrogen atom . So many compounds resulting from methane chemistry can be dangerous for examples : dangerous fuels like butane and propane , chloroform which like ether is an anesthesia , and fluorocarbons. A more complex chemistry may be necessary for the methane - a 1 to 2 step process :
a) reducing methane to methanol with replacing an akyl radical .
b) then treatment of the methanol with acetic acid to produce esthers . Esthers can produce sweet odors .

CLAIMS

1. The use of the chemistry acid-base titration as a method to scrub greenhouse gases like carbon dioxide , nitrous oxide , sulphur dioxide or other oxides which form acids when dissolved in water vapor .

2. The use of oxidation - reduction chemistry in a step process to scrub methane from the environment . Methane is a saturated hydrocarbon which can be reduced to methanol with the replacing of an akyl radical . Methanol can be treated with acetic acid to produce esthers . Esthers can produce sweet odors .

3. Oxidation-reduction chemistry may be used to reduce or change other dangerous atmospheric fluorocarbons . All these methods should be used in combination with other pollution reduction and the use of other conservation methods such as reducing carbon emissions in automobiles ; the creation and use of alternative fuels , reforestation by a concerted effort to plant trees and increase green plants which naturally metabolize carbon dioxide .

Aerosol Spraying

Fig. 1

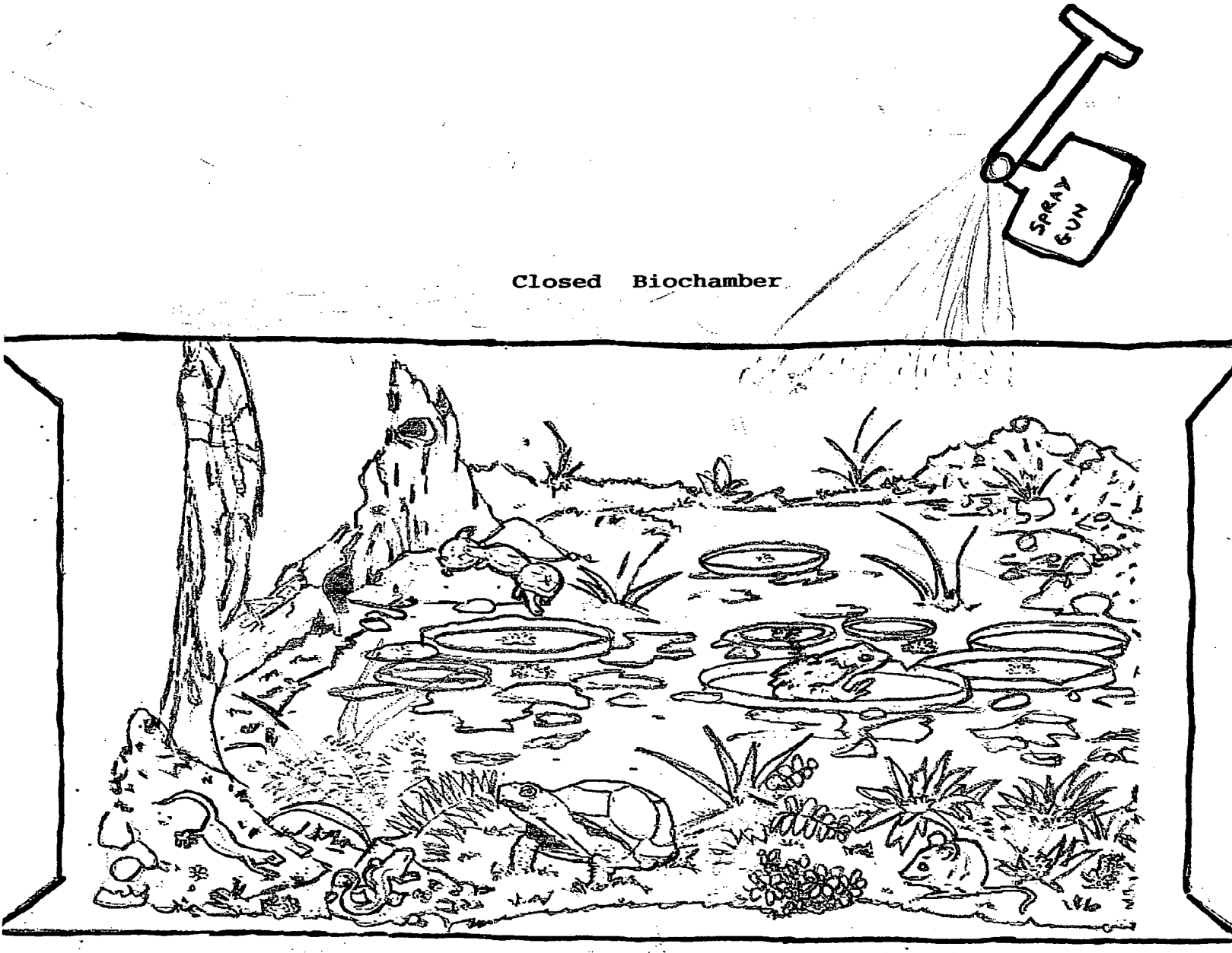

Fig. 2