

TO THE COMMISSIONER OF PATENTS;

Your petitioners, ROYAL E. RIFE and VERA V. THOMPSON, citizens of the United States, and residents of San Diego, State of California, whose post office addresses are 3696 Zela St, and 3786 Albatross respectively, pray that Letters Patent may be granted to them for an improvement in

MEANS AND PROCESS FOR SEPARATION, TRANSPORTATION, CONTROL, AND EXTRACTION OF MINERALS AND CHEMICALS FROM LIQUIDS, SOLIDS, AND GASES, AND THE DEVIATIZATION AND /OR CONTROL OF BACTERIA, VIRUS AND FUNGI

set forth in the annexed specifications; and they hereby appoint

CONRAD C CALDWELL  
registration No. 18009

whose address is 4094 30th Street, San Diego 4, California, their attorney with full power of substituting and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected thereto.

Signed at San Diego, in the County of San Diego, State of California, this 30th day of August, 1955.

R. E. RIFE

VERA V. THOMPSON

Rec'd 054 Form 019 and 075  
MAY 31, 1955

Application # 512,326 MAY 31, 1955

Our invention relates to the art of treating  
chemical substances, bacteria, virus, and fungi with  
electro-magnetic radiations and has particular reference  
to the means and process for separation, transformation,  
control, and extraction of minerals and chemicals from  
liquids, solids, and gases, and the devitalization  
and/or control of bacteria, virus, and fungi by exposing  
such substances to the concentrated radiation of electro-  
magnetic energy having specific and determinable  
frequencies.

This application constitutes a continuation in  
part of our co-pending application Serial # 818,588 filed  
May 31, 1955 for a PROCESS FOR THE SEPARATION OF CHEMICALS  
FROM LIQUIDS, SOLIDS, AND GASES AND DESTRUCTION AND CONTROL  
OF BACTERIA, VIRUS, AND FUNGI.

It is well known that all chemical compounds  
have an inherent natural resonant frequency, and that if  
such chemical compound is subjected to such resonant  
frequency of sufficient intensity its chemical composition  
or characteristics have been changed.

It is also well known that bacteria, virus,  
and fungi are, in essence, a chemical conversion plant  
and will survive only in given environment which  
supplies the proper and necessary food and that upon  
consumption of this food the virus, or bacteria produces  
deleterious chemicals which adversely affect the body.  
If sufficient of the virus are present to produce  
the sufficient of such deleterious chemicals, various  
illness results. If the chemical composition or  
characteristic of the environment is changed suffi-  
ciently, or if the chemical by-product from the bacteria  
or virus is changed, the virus and bacteria become  
devitalized or destroyed and the harmful effect upon  
the body is removed.

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It is therefore among the objects of our  
invention to provide a means for producing electro-  
magnetic energy and of directing that electro-magnetic  
energy in a concentrated and directed beam to the  
locality of such virus, bacteria, or fungi being treated  
in order to destroy or change the chemical characteristics  
or composition thereof,

Also one of the objects of our invention is to  
provide a means for the generation of a directed, con-  
centrated beam of electro-magnetic energy and including  
means for varying or pre-selecting the frequency range  
for such electro-magnetic energy.

Students of bacteria and virus have long known

0     that each different bacteria, virus or fungi has its own  
or individual and distinctive color range. The color  
range corresponds to, or is controlled by the chemical compos-  
ition of the environment in which bacteria, virus or  
5     fungi resides.

      We have found by experimentation that the  
resonant frequency required to devitalize or destroy  
10    such bacteria, virus, or fungi or to affect the  
characteristics of the various chemical compounds being  
treated corresponds to the frequency range of the color  
of each bacteria, virus, or other chemical composition  
and that if such bacteria, virus, or fungi or chemical  
composition is subjected to electro-magnetic radiation  
15    having a frequency resonant with such color range and in  
sufficient intensity that the bacteria, virus, fungi or  
other chemical composition will be changed, devitalized,  
or destroyed.

20       Also among the objects of our invention is to  
provide a process or method for treating bacteria, virus  
and fungi by first determining the color range thereof  
and subjecting such bacteria, virus and fungi to a  
relatively high intensity radiation of electro-magnetic  
25    energy having a frequency which is resonant with such  
color frequency or harmonic thereof.

A great deal of research and effort has been spent in recent years attempting to convert ocean or sea water into usable domestic water to increase the source thereof for our expanding population. Most of such efforts have taken the direction of mechanical separation of sodium chloride and other chemicals dissolved in the ocean water by means of evaporation and condensation. Large amounts of energy are required for this type of separation, which of a necessity, establishes a high cost for the usable water produced.

We have found by experimental usage that the sodium chloride and other chemicals can be removed from sea water by subjecting such sea water to radiations of electro-magnetic energy having a frequency resonant with the natural frequency of such chemical, or by a chord of frequencies having such resonant frequency and harmonics thereof.

We have established on numerous occasions that by subjecting such chemical radiations that the solution being treated will become stratified in that the various chemicals will settle to the bottom leaving substantially pure water to be removed from the top. It is therefore also among the objects of our invention to provide an apparatus for the continuous treatment of sea water in order to separate the dissolved solids therefrom in order to obtain relatively pure and usable water.

The processes above described cover a such

broader range of application to chemical transformation  
than the examples illustrated. The process herein  
specified of separation transformation, control and  
extraction of minerals and chemicals from liquids,  
solids and gases and the devitalization and/or control  
of bacteria, virus and fungi by subjecting, exposing,  
treating or processing such liquids, solids and gases  
to a specific and determinable electro-magnetic fre-  
quency source which releases a vibrational energy  
coordinating with the critical energy level of the  
liquid, solid, or gaseous substance involved causes a  
transformation of such chemical constituents in such  
substances into an ionized or separable state. Such  
transformation produces a separable or soluble or  
partially soluble compound or ionized molecule which is  
capable of seeking its own level by settling or separ-  
ation from the other liquids, solids or gases by seeking  
its own level in solution depending upon the specific  
gravity of the separable constituent or constituents  
involved. Thus, the separation, transformation and/or  
extraction of the various chemicals, minerals, and/or  
molecules thus stratified by a process of sedimentation  
and/or filtration.

Other further objects and advantages of our  
invention will become apparent from the following  
specifications and the drawing illustrated thereof.

IN THE DRAWING:

Fig.1 is schematic representation of one of the preferred forms of our invention for treating bacteria,virus and fungus

Fig.2. is a schematic representation of a form of our invention for treating chemical compounds in solution.

The device illustrated and used in the practice of our invention for the treatment of bacteria,virus and fungi comprises essentially a frequency generator designated generally by the numeral 10 of any well-known type. Such frequency generators are well-known in the art. We prefer a type having a broad range of generation and sufficient output capacity to produce radiation of sufficient intensity to render our processes practical.

The frequency generator 10 may be provided with some means such as control knob 11 for changing or varying the frequency output. Although it is not necessary it is sometimes preferred that the frequency range cut-off should not be too sharp so that a relatively wide band of the frequency spectrum can be radiated as desired.

Whereas any satisfactory means for controlling and directing the broadcasting of such electro-magnetic energy can be employed,we have found the most satisfactory

to be a vacuum tube type such as illustrated herein and which includes a glass envelope 12, an electronic gun 13, and a reflector or concentrator 14. The tube is also provided with external terminals 15 and 16 which are conductively coupled <sup>to</sup> terminals 17 and 18 of the frequency generator 10 by means of conductors 19 and 20.

The envelope 12 should be evacuated of all air and refilled with one of the inert gases found in class "0" of the periodic tables to a pressure of approximately 14 millimeters of mercury. Whereas all the gases found in class "0" will work, we prefer the use of helium as a filler for the evacuated tube because it results in better definition of focusing of the beam and will stand up better under continuous use and bombardment.

In order to treat certain bacteria, virus or fungi so that they will be devitalized or destroyed it is first necessary to determine the color range of such bacteria, virus or fungi under a polarized microscope and then to set the control knob 11 of the frequency generator 10 to a segment of the frequency spectrum as published by Bureau of Standards which includes the known frequencies for the colors found for such bacteria, virus or fungi.

It has long been well-known that such maladies as cancer have been considered incurable and may prove fatal unless physically removed by surgery. It has also



been well known by us that a specific virus causes the cancer growth.

We have observed by experimentation on cancer tissues removed from cancerous mice that the cancer virus can be destroyed by subjecting them to an intense radiation of electro-magnetic energy of a frequency range from 3000 to 2150 on a carrier wave of 4150 K.C. We not only have proved this by clinically growing cancer in mice and then subjecting them to such radiations which resulted in the curing of such cancer, but we have also observed the complete devitalization and destruction of cancer virus by subjecting such isolated virus to such radiation while observing their actual physical behavior under a light passing microscope of the type developed by Royal R. Rife and described in "The New Microscope" by R. E. Seidel and Elisabeth Winter, Volume 237 No. 2, February, 1944, Journal of Franklin Institute.

A great many other virus have been destroyed in the laboratory by subjecting them to radiations of electro-magnetic energy of a frequency which is resonant with the lower harmonic equivalent frequency of such virus. A few virus, fungi and bacteria which have been treated and devitalized or destroyed and the frequency on a carrier wave of 4150 K.C. required for their destruction is set forth in the following table:

Tetanus	180
Typhus	600

	Gonorrhoea	712
	Typhoid	712
	Staphylococci	722
	Pneumonia	776
5	Streptothrix	784
	Bacillus Coli Rod	800
	Tuberculosis Rod	808
	Streptococci	800
	Tuberculosis Virus	1582
10	Bacillus Coli Virus	1582
	Typhoid Virus	1942
	Sarcoma	2002
	Cancer Virus	2122

15 Referring now to Fig. 2 we have illustrated schematically one example of a device for treating chemicals in solutions such as the removal of sodium chloride and other chemicals from sea water. The illustration herein shown includes a container 20 designed generally by the numeral 20 containing the chemical solution 21. A plurality of frequency generators such as 22, 23 and 24 are provided for reasons which will be explained later. Each of the frequency generators are conductibly connected to 25 terminal plates 25 and 26 by conductors 27 and 28 respectively.

Also a source of direct current such as the D.C. power supply 29 is connected to the terminal 30 plates 25 and 26.

Whereas we have found that impressing a resonant frequency on the terminal plates 25 and 26 from a single frequency generator such as 22 is effective in changing the characteristics of the chemicals in solution, we have also found that the use of the multiple frequency generators for the purpose of impressing several different frequencies forming harmonic chords is more effective to transform or change the characteristics of the chemicals in solution.

We have also found that polarizing or biasing the plates 25 and 26 by attaching a source of direct current to the plates also assists in the chemical processes.

We have observed that the solubility characteristics and chemical characteristics of certain chemicals can be changed by subjecting a solution thereof to the action of electro magnetic energy corresponding to the resonant frequency of such chemical compounds. For example, ordinary sea water was subjected to radiations having a frequency range from 120 C.P.S. to 30,000 C.P.S. and it was observed that the various chemical compounds dissolved in water settled to the bottom in a stratified form corresponding to the specific gravity of the various chemicals and that the top portion of the water became sufficiently pure for domestic use. Filtration of the decanted top portion may become necessary.

The above examples and descriptions are intended  
as illustrations only, are not to be considered limita-  
tions upon our invention; also, the specific device  
illustrated schematically in the drawing is by way of  
illustration and constitutes what we consider to be  
the preferred and most efficient means for producing  
and directing a concentrated beam of electro-magnetic  
energy. The only limitations to be imposed upon the  
apparatus or the method are found in the following  
claims.

WE CLAIM:

1. An apparatus for treating chemical compounds, bacteria, virus or fungi to change the chemical characteristics thereof including; means for generating electrical current having a frequency tunable to the resonant frequencies of said chemical substances, bacteria, virus or fungi, said resonant current being superimposed on a high frequency carrier wave and broadcastable in the form of electro-magnetic energy; and means conductively coupled to said generator for concentrating and directing said electro-magnetic energy at the chemical substance, bacteria, virus or fungi to be treated.

2. An apparatus for devitalizing or destroying bacteria, virus or fungi including; a frequency generator capable of producing a high frequency carrier electrical current having an amplitude modulation of variable frequency and tunable to one of the harmonic resonant frequencies of said bacteria, virus or fungi; and means conductively coupled to said generator for broadcasting said current in the form of electro-magnetic waves and in concentrated, directed beams.

3. An apparatus for devitalizing or destroying  
2. bacteria, virus and fungi including; a frequency  
3. generator capable of producing a high frequency carrier  
4. electrical current having an amplitude modulation of  
5. variable frequency and tunable to one of the harmonic  
6. resonant frequencies of said bacteria, virus or fungi;  
7. and means conductively coupled to said generator for  
8. broadcasting said current in the form of electro-  
9. magnetic waves and in a concentrated, directed beam,  
10. said last named means including partially evacuated  
11. envelope containing one of the inert gases from  
12. class "0" of the periodic table, an electronic gun and a  
13. reflector target.

4. An apparatus for devitalizing or destroying  
2. bacteria, virus or fungi including; a frequency  
3. generator capable of producing a high frequency carrier  
4. electrical current having an amplitude modulation of  
5. variable frequency and tunable to one of the harmonic  
6. resonant frequencies of said bacteria, virus or fungi;  
7. and means conductively coupled to said generator for  
8. broadcasting said current in the form of electro-  
9. magnetic waves and in a concentrated, directed beam,  
10. said last named means including a partially evacuated  
11. envelope containing helium at approximately 14 mm Hg.  
12. pressure, an electronic gun and a refractor target.

1. 3. An apparatus for treating chemical  
2. compounds to change the characteristics thereof com-  
3. prising; means for generating a high frequency current  
4. having an amplitude modulation of a frequency resonant  
5. with one of the harmonics of the natural frequency of  
6. said compound; terminal plates conductively coupled to  
7. said generator adapted to cause said modulated high  
8. frequency current to pass through said compound; and  
9. means for impressing a direct current bias on said  
10. terminal plates.

1. 4. An apparatus for treating chemical  
2. compounds to change the characteristics thereof com-  
3. prising; a plurality of means for generating a high  
4. frequency current, each high frequency current having  
5. an amplitude modulation of a frequency resonant with  
6. one of the harmonics of the natural frequency of said  
7. compound, the frequencies of said several amplitude  
8. modulations forming harmonic chords; terminal plates  
9. conductively coupled to said generators adapted to cause  
10. said modulated high frequency current to pass through  
11. said compound; and means for impressing a direct current  
12. bias on said terminal plates.

1. 7. The method of devitalizing, destroying
2. or changing the chemical characteristics of bacteria
3. virus, fungi or chemical substance, comprising the
4. steps; examining the bacteria, virus, fungi or chemical
5. substance under a polarized microscope to determine
6. natural color thereof; determining the frequency
7. corresponding to said color and subjecting said
8. bacteria, virus, fungi or chemical substance to electro-
9. magnetic energy having a frequency resonant with one of
10. the harmonics said frequency corresponding to said color.

H. R. RICE

Vern H. Thompson



STATE OF CALIFORNIA

} ss.

COUNTY OF SAN DIEGO

ROYAL R. RIFE and VERNER W. THOMPSON, the petitioners named in the foregoing application, being sworn, depose and say;

That they are citizens of the United States and residents of San Diego County, State of California; that they verily believe themselves to be the original, first and joint inventors of the improvement in

MEANS AND PROCESS FOR SEPARATION, TRANSFORMATION, CONTROL, AND EXTRACTION OF MINERALS AND CHEMICALS FROM LIQUIDS, SOLIDS, AND GASES, AND THE REVITALIZATION AND/OR CONTROL OF BACTERIA, VIRUS AND FUNGI

described and claimed in the annexed specifications; that they do not know and do not believe that the same was ever known or used before their invention or discovery thereof, or patented or described in any printed publication in any country before their invention or discovery thereof, or more than one year prior to their application, or in public use or on sale in the United States for more than one year prior to their application; that said invention has not been prior to their application; that said invention has not been patented in any country foreign to the United States on an application filed by themselves or their legal representative or assigns more than twelve months prior to this application; that no application for patent on said improvement has been filed by themselves or their representatives or assigns in any country foreign to the United States.

R. R. RIFE

VERNER W. THOMPSON