

United States Patent
Carter, Jr.

[15] 3,666,176
[45] May 30, 1972

[54] SOLAR TEMPERATURE INVERSION DEVICE

[72] Inventor: Samuel R. Carter, Jr., 10601 Menoul
N.E., Albuquerque, N. Mex. 87112

[22] Filed: Mar. 3, 1970

[21] Appl. No.: 15,980

[52] U.S. Cl. 239/2 R, 239/14, 244/33

[51] Int. Cl. E01h 13/00

[58] Field of Search 239/2, 14; 244/24, 31, 33

[56] References Cited

UNITED STATES PATENTS

3,489,072	1/1970	Secor	239/2 X
2,268,320	12/1941	Brandt	239/14 X
3,272,435	9/1966	Brownell, Jr.	239/14
911,260	2/1909	Pennock	239/14 X

OTHER PUBLICATIONS

"Weather Modification and Smog" M. Neiburger Science, Oct. 4, 1957, Vol. 126, No. 3275, pp. 637-645

"Latest Progress In Turning Rain On and Off at Will" The Washington Post, Aug. 20, 1916.

Primary Examiner—M. Henson Wood, Jr.

Assistant Examiner—Michael Y. Mar

Attorney—Clarence A. O'Brien and Harvey B. Jacobson

[57] ABSTRACT

A cloud cover trapping air pollutants over an affected region is dispersed by anchored balloons positioned closely above the cloud cover adjacent to the cloud trap. Heat radiated from the balloons produces a thermal updraft to change the characteristics of the clouds and subject them to the dispersal effects of air currents and wind.

13 Claims, 3 Drawing Figures

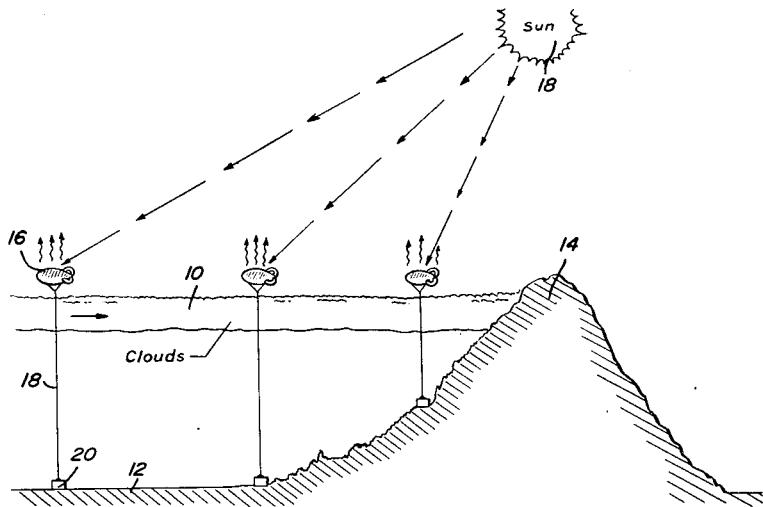


Fig. 1

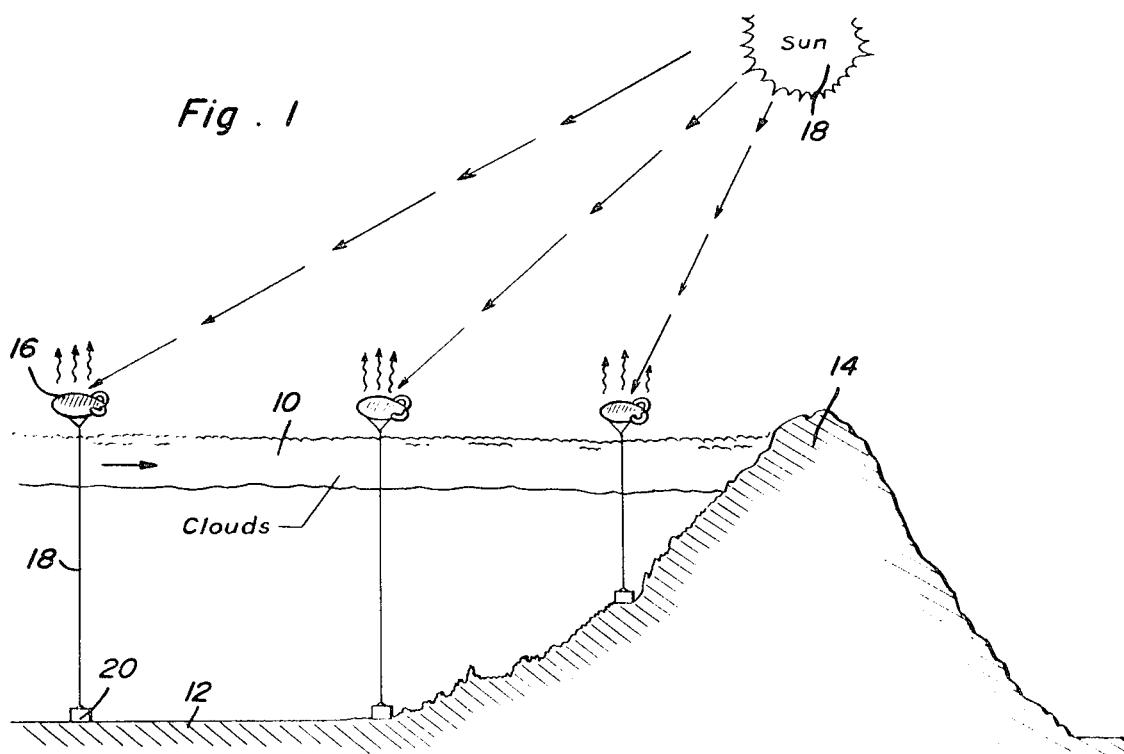


Fig. 2

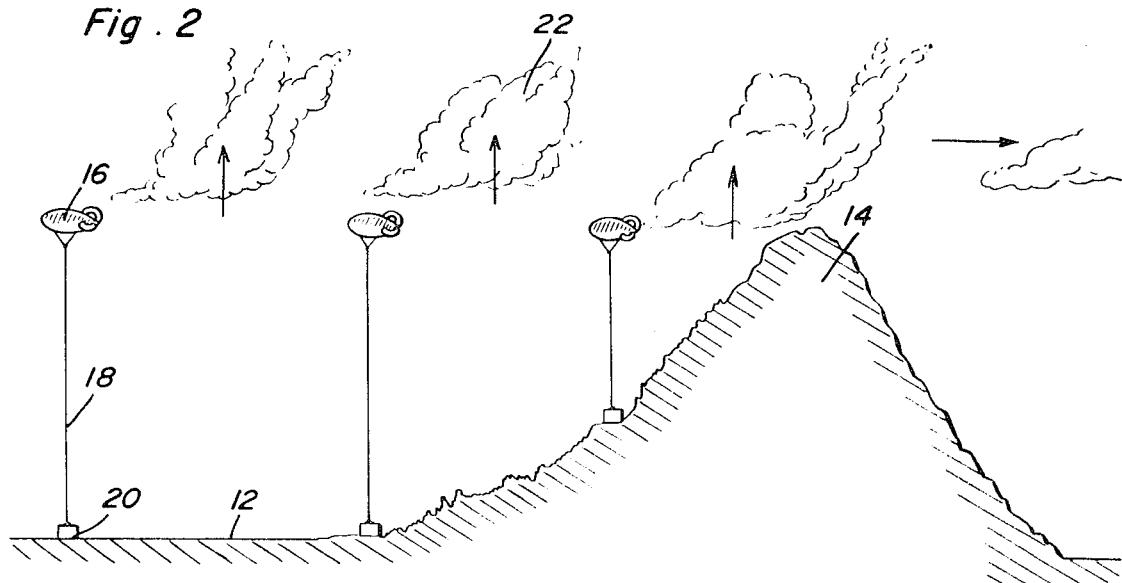
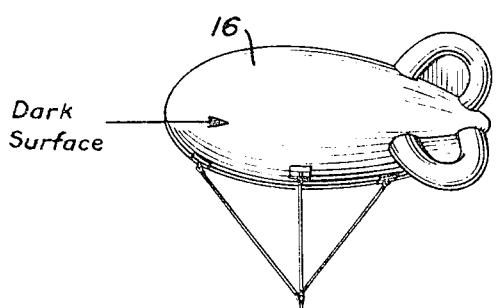


Fig. 3



Samuel R. Carter, Jr.
INVENTOR.

BY *Clarence A. O'Brien
and Harvey B. Jacobson*
Attorney

SOLAR TEMPERATURE INVERSION DEVICE

This invention relates to a method for artificially altering naturally occurring atmospheric phenomena that is detrimental to human existence and more particularly to an artificial method of dispersing pollution trapping cloud covers.

Over many regions of the earth, stationary cloud covers arise because of mountain ranges, stationary fronts and other physical or atmospheric conditions. These cloud covers have created serious health hazards since they cause concentration of air pollutants therebelow. This condition is particularly worrisome for example in regions surrounding the San Bernardino Mountains. It is therefore a primary object of the present invention to provide artificial means for dispersing stationary clouds or cloud covers trapped by physical means or atmospheric conditions.

In accordance with the present invention, a stationary cloud cover is dispersed by anchoring and positioning a plurality of balloons at an elevation just above the cloud cover to radiate heat and produce a thermal updraft causing a change in the cloud formation so as to subject the clouds to the dispersal effects of air currents and winds.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a schematic side view of a region to which the system of the present invention is applied prior to dispersal of a stationary cloud cover.

FIG. 2 is a view similar to FIG. 1 during dispersal of the cloud cover.

FIG. 3 is an enlarged side elevational view of one of the balloons illustrated in FIGS. 1 and 2.

Referring now to the drawings in detail, FIG. 1 illustrates a stationary cloud cover generally denoted by reference numeral 10 trapped above an affected region 12 by a mountain 14 as one type of trap. As a result of this condition, a concentration of air pollutants such as smoke and smog occurs over the region 12 which may be detrimental to the health and well being of the inhabitants of the region. This condition can be alleviated by radically changing the cloud formation thereby subjecting the cloud to the natural dispersal effects of air currents and winds.

In order to artificially disperse the cloud cover, a plurality of buoyant balloons 16 are anchored by cables 18 and ground anchors 20 at spaced locations adjacent to the cloud trapping mountain 14. The height of these balloons is adjusted to elevations just above the cloud cover 10 as shown in FIG. 1.

As more clearly seen in FIG. 3, each of the balloons 16 is provided with a dark external surface adapted to absorb heat radiated from the sun 18 as diagrammatically shown in FIG. 1. Thus, heat will be radiated from the balloons producing a thermal updraft.

As a result of the thermal updraft produced by the balloons 16, the cloud formation is changed so that the cloud cover 10 shown as a strato-cumulus formation in FIG. 1, will be converted into cumulus or cumulus-nimbus cloud formations 22 as shown in FIG. 2. The cloud formations 22 will as a result of a thermal updraft extend above the cloud trapping mountain 14 so as to be affected by the cloud dispersing effects of air currents and wind. Accordingly, smog and smoke and other air pollutants otherwise concentrated over the region 12 may be dispersed.

It will be apparent that the foregoing method will be applicable to cloud covers also rendered stationary as a result of various atmospheric conditions such as stationary fronts. For the purposes of the present invention, it has been found that the balloons should be approximately 100 feet long and 50 feet in diameter and should be spaced apart between 100 and 200 feet approximately. Also, while it has been found that sufficient heat to produce the thermal updrafts will be radiated from balloons that have dark surfaces for absorbing the heat radiated from the sun, heat may be radiated at a higher rate

from the balloon devices if desired by utilizing solar energy heaters as boosters.

The benefits of the present invention will become apparent as soon as an opening is formed in a cloud cover being treated, permitting the sun rays to pass through and produce thermal currents because of localize heating. Further, the method may also be useful in dispersing airborne aerosol concentrations in general in addition to moisture bearing clouds, such as smoke or smog and other atmospheric pollutants producing a "green housing" effect over an affected region.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A method of dispersing an airborne concentration of aerosols at a predetermined elevation above an affected region on the surface of the earth, comprising the steps of: anchoring a plurality of atmospheric buoyant devices at horizontally spaced locations over the affected region; adjusting the heights of said buoyant devices closely above said predetermined elevation; and radiating heat from said buoyant devices to artificially produce thermal updrafts.

2. The method of claim 1 wherein said airborne concentration of aerosols is smoke or smog.

3. A method of dispersing an airborne concentration of aerosols at a predetermined elevation above an affected region on the surface of the earth, comprising the steps of: anchoring atmospheric buoyant devices at spaced locations on the affected region; adjusting the heights of said buoyant devices closely above said predetermined elevation; and radiating heat from said buoyant devices to artificially produce a thermal updraft, the heat radiated from the buoyant devices being of solar origin.

4. The method of claim 3 wherein said airborne concentration of aerosols is a stationary cloud cover.

5. The method of claim 4 wherein the cloud cover is changed from strato-cumulus to cumulus and cumulus-nimbus formations by said thermal updraft.

6. The method of claim 5 wherein said buoyant devices are black colored balloons spaced apart by 100 to 200 feet approximately.

7. The method of claim 6 wherein said cloud cover is trapped by a mountain.

8. The method of claim 4 wherein said cloud cover is trapped by a mountain.

9. The method of claim 4 wherein said cloud cover is trapped by atmospheric trapping means.

10. A method of dispersing an airborne concentration of aerosols at a predetermined elevation above an affected region on the surface of the earth, comprising the steps of: anchoring atmospheric buoyant devices at spaced locations on the affected region; adjusting the heights of said buoyant devices closely above said predetermined elevation; and radiating heat from said buoyant devices to artificially produce a thermal updraft, said buoyant devices being dark colored balloons spaced apart by 100 to 200 feet approximately.

11. A method for artificially dispersing naturally occurring concentrations of aerosols at a predetermined elevation above an affected region on the surface of the earth, comprising the steps of: positioning a plurality of buoyant balloons at substantially stationary, horizontally spaced locations over the affected region; vertically adjusting the elevations of said balloons above said predetermined elevation; and emitting heat energy from said balloons at said vertically adjusted elevations to produce terminal updrafts.

12. The method of claim 11 wherein the heat energy emitted is of solar origin.

13. The method of claim 11 wherein said balloons are horizontally spaced apart by more than 100 feet.