



(51) International Patent Classification:

G08B 21/08 (2006.01) H04R 9/06 (2006.01)  
H04R 1/44 (2006.01)

(21) International Application Number:

PCT/US2019/055473

(22) International Filing Date:

09 October 2019 (09.10.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

16/373,609 02 April 2019 (02.04.2019) US

(72) Inventor; and

(71) Applicant: OSINAIKE, Olatunbosun [US/US]; 4507 W.  
Wilcox, Chicago, IL 60624 (US).

(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM,  
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,  
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,  
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,  
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,

KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,  
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,  
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,  
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,

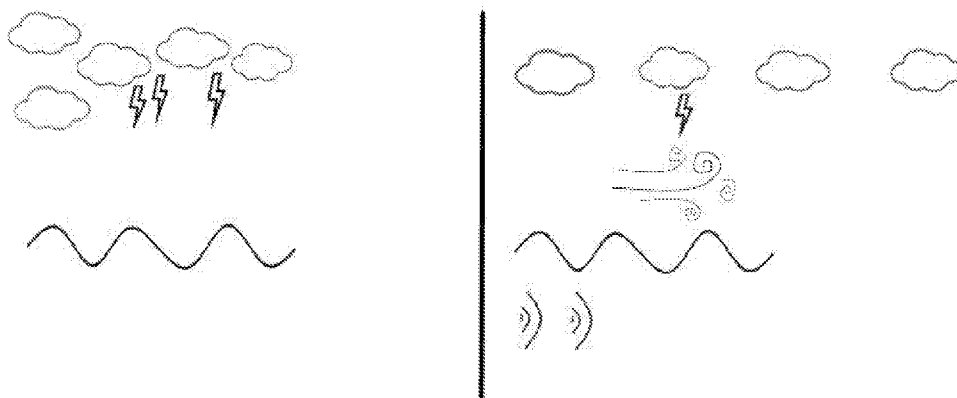
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,  
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,  
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,  
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
KM, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a  
patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

(54) Title: PROPAGATING SOUND THROUGH BODIES OF WATER TO GENERATE WIND, AND AFFECT WEATHER

Fig. 2



(57) **Abstract:** The inventor claims the process of propagating soundwaves through bodies of water, such as oceans, to produce and direct winds, for the purpose of managing aerial weather systems. Propagating soundwaves through water can generate and direct wind for many purposes. One purpose is to effectively weaken storms, by directing wind-shear against a storm's momentum, and stripping it of precipitation. Another purpose is to guide atmospheric rivers, and manually redirect clouds in the precipitation cycle. This inventive process grants methods to mitigate dangerous weather patterns, such as droughts and hurricanes. The invention introduces a new subject matter that, distinguishes it from other inventions relevant to underwater acoustics: manual processes to moderate weather.

**Published:**

- *with international search report (Art. 21(3))*
- *with amended claims (Art. 19(1))*

**PCT: Simplified Title of Invention:** Propagating sound through bodies of water to generate wind, and affect weather.

**USPTO: Title of Invention:** Process propagating sound through bodies of water, to generate and direct wind, for the purpose of moderating and affecting weather patterns.

**Technical Field**

This is an application for a utility patent, pertaining to the propagation of soundwaves, through a body of water, to moderate, adjust and control weather patterns. The subject matter of the invention groups underwater acoustics, aerodynamics and weather.

**Background**

It is a well-known scientific principle that sound travels faster in compressed liquids than in air. This is a natural law of physics, which is not patentable. However, there are many principle uses of sound in the field of underwater acoustics, that are patentable subject matter: radar, seismic exploration, and data collection to name a few. US Patent Law allows an inventor to patent newly discovered processes, and considers success against long felt but unsolved needs, sufficient consideration to justify patenting an invention.

The US is one of many countries that has long struggled to find a solution to weaken hurricanes. Additionally, climate change has made drought a considerable problem for many regions. This invention grants a process to mitigate both hurricanes and droughts, by directing wind, guiding precipitation, and affecting weather patterns.

This patent claims the invention of a process that propagates soundwaves underwater, to direct wind(s), and moderate weather patterns.

Mr. Osinaike's invention requires a crucial, necessary inventive step, which is not described in any prior art. Mr. Osinaike's invention depends on the choice to propagate soundwaves underwater, in order to shift and carry the air above the water. This is an inventive, non-obvious step, that distinguishes the inventor's concept from prior art. Patent Law requires that for prior art to prevent an invention from being patentable, it must sufficiently describe the claimed invention in such a manner that the invention would be obvious to a person with ordinary skill in the subject matter. Mr. Osinaike claims there is no prior art that makes the claimed processes obvious. Furthermore, the many failed attempts to weaken hurricanes demonstrate the new, useful, and non-obvious nature of the invention.

**Invention Disclosure**

Sound travels at a much faster speed within a liquid than within gas.

Simply propagating sound through air, against a cloud or storm system, would not be as effective at mitigating and moderating weather patterns, as the claimed invention. Sound is less capable of shifting the molecules of air, as the molecules are further apart, and less compressed, than a liquid. It would take a tremendously loud, and possibly unbearable, propagation of sound in air, to have an effect on the weather.

The propagation of sound under water takes advantage of the compressed nature of the liquid. By propagating the sound within a body of water, the liquid medium is able to transfer the energy of the sound more rapidly, and efficiently. Sound causes water to move in the direction the sound is being propagated. The propagation of sound in water causes motion, forming compressions and rarefactions through the liquid. These waves are capable of shifting pockets of air between their peaks and troughs. Additionally, as sound is propagated through the liquid body of water, additional water evaporates, inheriting momentum from the propagation of sound, and creating a larger gust of wind to affect the weather.

The transfer of the sound's momentum through the water is sufficient to direct wind shear powerful enough to weaken storms, guide clouds and precipitation, and affect various other weather patterns.

**Description of Figures/Drawings; Best Mode Description**

**Figure 1:** The first drawing demonstrates the first claimed process of the patent, propagating sound through a body of water to generate wind. The figure demonstrates how propagating sound within a body of water, shifts pockets of air between the waves of water, as well as causes water to evaporate, forming ‘directed wind(s),’ which can be used to affect weather patterns.

- 1) Process to produce, propel and direct wind(s), by propagating sound through a body of water, for the purpose of affecting weather patterns.
  - a. By propagating sound through a body of water, the sound forces the water to move in the direction(s) the sound is being applied.
  - b. The propagation of sound creates compressions and rarefactions in the water, waves, which subsequently shift pockets of air in the direction they travel.
  - c. Additional water evaporates due to the propagation of sound through the water. This vapor travels in the same direction the sound is applied, and creates a larger gust of wind to affect weather.
  - d. The shifting pockets of air, and the evaporating water, behave as directional winds, produced and guided by the propagation of sound. This wind can be utilized to affect weather patterns, as lower winds shift air systems higher in the altitude, and along the same altitude.

The second and third drawings combine to illustrate the second claim, that propagating sound underwater can generate sufficient wind shear to weaken a storm system.

**Figure 2:** The second drawing illustrates the second claim from a horizontal view, how directed winds can be utilized as wind shear, to strip precipitation from a storm system.

**Figure 3:** The third drawing, also demonstrates the second claim, from an aerial view, demonstrating the propagation of sound in directions counter-current to a storm’s angular momentum, as well as outward from the eye of the storm.

- 2) Process to produce and direct wind shear, for the purpose of weakening storm systems, by propagating sound through a body of water.
  - a. Wind propelled by propagating sound within a body of water (claim 1), can be directed against a storm system, such as a hurricane.

- b. Directing winds against a storm can weaken the storm system, by stripping the storm of clouds and precipitation, preventing the storm from maintaining precipitation/rain.
- c. The best method is to apply the sound and wind counter-current to the storm's torque and rotation. Another method is to apply the sound and wind outward from the center of the storm.
- d. Although the best method may be to apply the sound in a direction counter-current to the storm's rotation, the sound may be propagated in any direction(s) necessary to strip the storm of precipitation, based on various geographical and meteorological factors around the storm, like for example, simultaneous storms.

**Figure 4:** The fourth drawing illustrates the third claim, how propagating sound through a body of water, can produce winds, which are used to shift and guide precipitation systems. The drawing illustrates the concept from a horizontal view. In the image, the winds carry the precipitous clouds from the 'left' side of the water, to the 'right,' to demonstrate the effect of the propagation of sound under water.

- 3) Process to transport water vapor, clouds, precipitation, and atmospheric rivers in a desired direction(s), by propagating sound through a body of water.
  - a. Propagating sound within water can generate and direct wind (claim 1) that affects weather patterns. These winds carry their own moisture.
  - b. The lower winds being directed by the propagation of sound, then also shift clouds and air systems higher in the atmosphere, or along the same altitude.
  - c. This process may be utilized to guide precipitation systems, and adjust precipitation cycles.

**Figure 5:** The fifth drawing illustrates the fourth claim, that propagating sound underwater can be used to slow waters, and mitigate winds, propelled by prior propagation of sound.

- 4) Process to slow waters, and mitigate directed winds, propelled by prior propagation of sound, by propagating sound through a body of water, counter current or adjacent to the original propagation.

**Potential Use**

It is a known scientific concept that propagating sound in water generates motion: rarefactions and compressions. Patent Law allows inventors to patent new, inventive uses for known scientific processes. The invention utilizes sound's quicker and more efficient energy transfer in compressed liquids, and claims a new use for the principle.

The invention introduces a new subject matter compared to prior art in underwater acoustics: moderating weather patterns. By propagating sound within sea water, the invented processes grant an opportunity for humanity to guide and alter weather patterns, by generating and directing the wind(s).

Hurricanes are known to decrease in strength if enough wind shear effects a storm, opposite of their momentum. However, wind shear is often a factor of chance, and the intersection of uncontrolled weather patterns, which determine whether a storm will become stronger or weaker. This invention gives humanity a manual process of generating wind, so that practitioners can produce wind shear to strip a storm of its momentum and precipitation. Directing waters and wind with soundwaves grants a method to interfere in hazardous weather events.

For stripping a hurricane of its precipitation, the best mode involves directing the sound in a direction counter to the hurricane's spin. So, in the Northern Hemisphere, where hurricanes spin counter-clockwise, you would apply the sound to direct the water and wind at a clock-wise tangent against the storm. Another method might apply the soundwaves in multiple direction away from the eye, in effect, pushing the precipitation out from the center of the storm, in 360 degrees. However, depending on various meteorological and geographic factors, the sound might be propagated in directions that are not necessarily counter-current to the hurricane's rotation, to weaken a storm.

This invention also grants a process to direct moist air and precipitation to preferential regions, rather than relying on the natural precipitation cycle. For example, while East of the United States is susceptible to hurricanes and storms, the West is more at risk of drought. Using soundwaves to direct the movement of clouds and precipitation can mitigate risk of drought in the Western States, by shifting rain clouds from the Western Pacific Ocean to the Eastern Pacific

Ocean, (towards the Western United States). The invention grants a manual process to direct atmospheric rivers and precipitation.

Utilizing soundwaves to guide wind(s) and affect weather patterns is a novel, useful, and non-obvious invention.

The invention is novel because no prior invention, to Mr. Osinaike's knowledge, disclosed a process to control aerial weather patterns, by applying soundwaves under water. The United States, along with other countries, has experimented with multiple research initiatives and experiments in attempts to weaken hurricanes. Project Cirrus, Project Baton, and Project Storm-Fury were all attempts to weaken hurricanes that eventually were canceled. Project Cirrus attempted to weaken hurricanes by dropping crushed dry ice into the clouds. Project Baton seeded storms with other chemicals and dry ice. Project Storm-fury attempted to use silver iodide. These projects were also novel attempts to solve a complex problem. Unfortunately, they failed, but they demonstrated an understanding of the necessity to defend the country from a dangerous force of nature.

This invention is novel because it capitalizes on a law of physics in an inventive way, to give our country and other nations, a manual way to weaken storms.

The invention is also useful. Weakening hurricanes and resolving drought are both issues of priority. Both storms and drought have a tremendous effect on agriculture and infrastructure. Hurricanes can damage infrastructure at a dangerous rate in their peak seasons, which leads to tremendous construction and repair costs. On the other hand, drought can also be damaging to infrastructure. If a city, suffering from drought, draws too much water from underground aquifers, this reliance can cause soil to sink, which poses risk to infrastructure. So, there are risks on both sides of climate change. This invention is useful because it helps mitigate risks due to climate change.

The invention is non-obvious as well. Prior art had not described the invention in a manner that the inventive nature of this invention was obvious, prior to Mr. Osinaike's disclosure.

**Claims**

- 1) Process to produce, propel and direct wind(s), by propagating sound through a body of water, for the purpose of affecting weather patterns.
- 2) Process to produce and direct wind shear, for the purpose of weakening storm systems, by propagating sound through a body of water.
- 3) Process to transport water vapor, clouds, precipitation, and atmospheric rivers in a desired direction(s), by propagating sound through a body of water.
- 4) Process to slow waters, and mitigate directed winds, propelled by prior propagation of sound, by propagating sound through a body of water, counter current or adjacent to the original propagation.

## AMENDED CLAIMS

received by the International Bureau on 13 February 2020 (13.02.2020)

**Amended Claims**

- 1) Process to modify weather patterns, comprising steps:

Propagating sound through a body of water,

Causing water to evaporate,

Where evaporating water inherits directional momentum from the propagation of the sound,

And directed water vapor behaves as wind, shifting weather patterns in the atmosphere above the water.

- 2) Process to modify weather patterns, comprising steps:

Propagating sound through a body of water,

Near a storm system,

Causing water to evaporate,

Where evaporating water inherits directional momentum from the propagation of the sound,

And directed water vapor behaves as wind, shifting the precipitation of the storm.

- 3) Process to modify weather patterns, comprising steps:

Propagating sound through a body of water,

Causing water to evaporate,

Where evaporating water inherits directional momentum from the propagation of the sound,

And directed water vapor behaves as wind, shifting additional moisture, precipitation, cloud systems in the atmosphere above the water.

- 4) Process to modify weather patterns, comprising steps:

Propagating sound through a body of water,

In multiple directions,

Causing water to evaporate,

Where evaporating water inherits directional momentum from the propagation of the sound,

And directed water vapor behaves as wind, shifting weather patterns in the atmosphere above the water.

Fig. 1

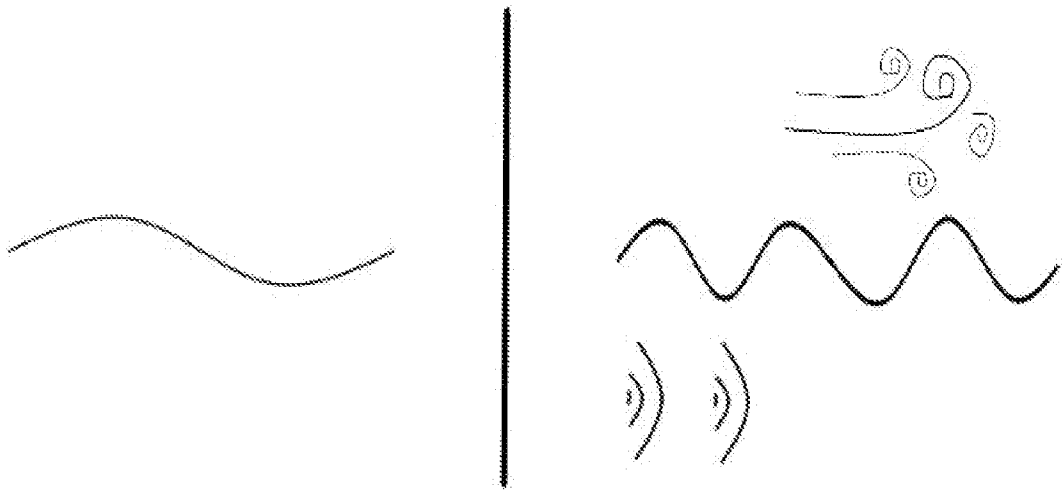


Fig. 2

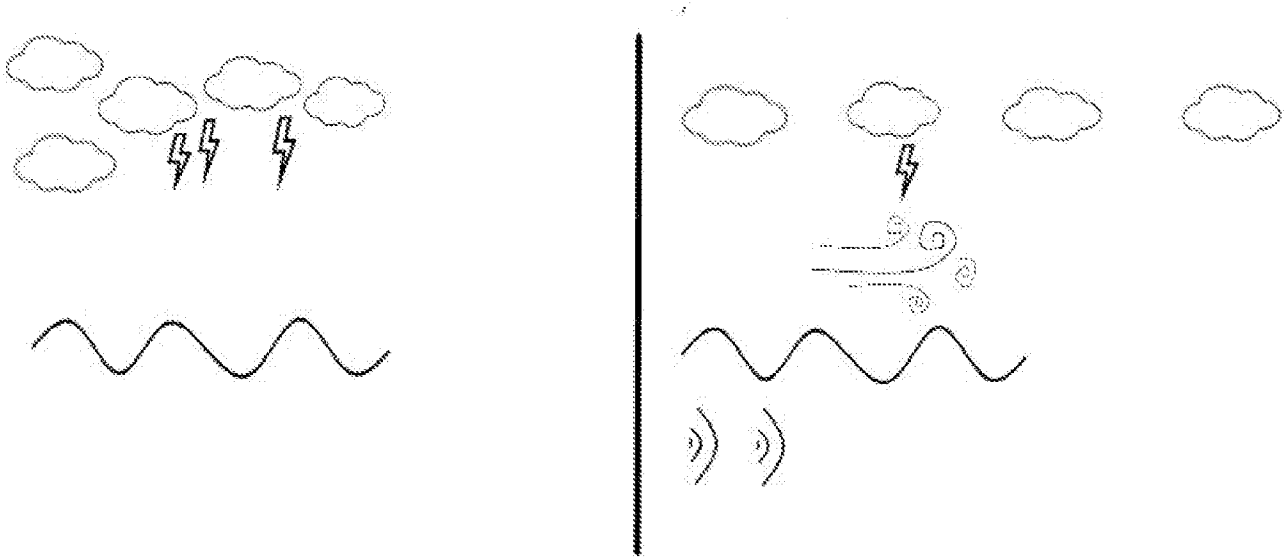


Fig. 3

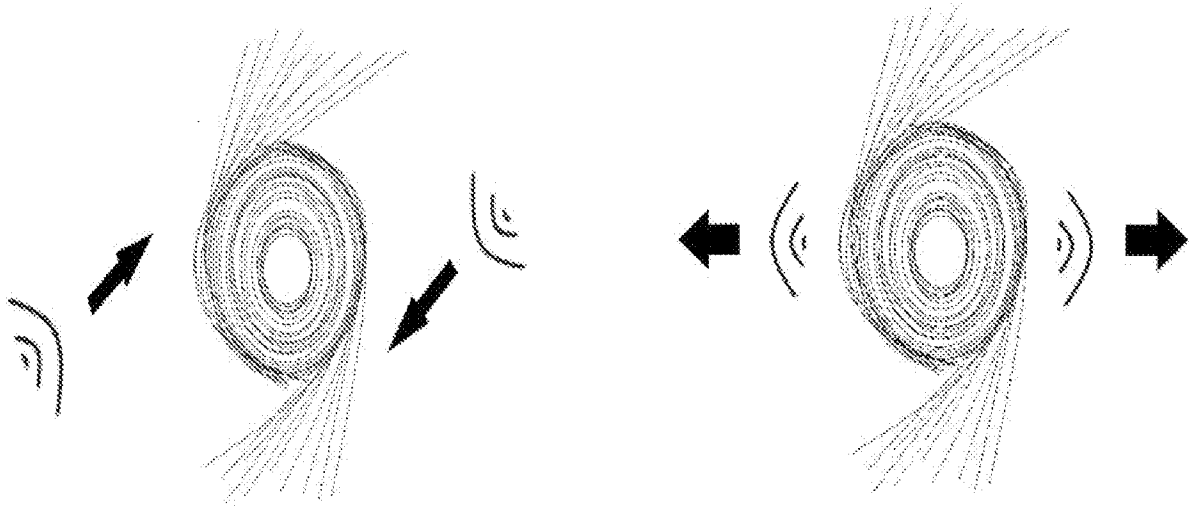


Fig. 4

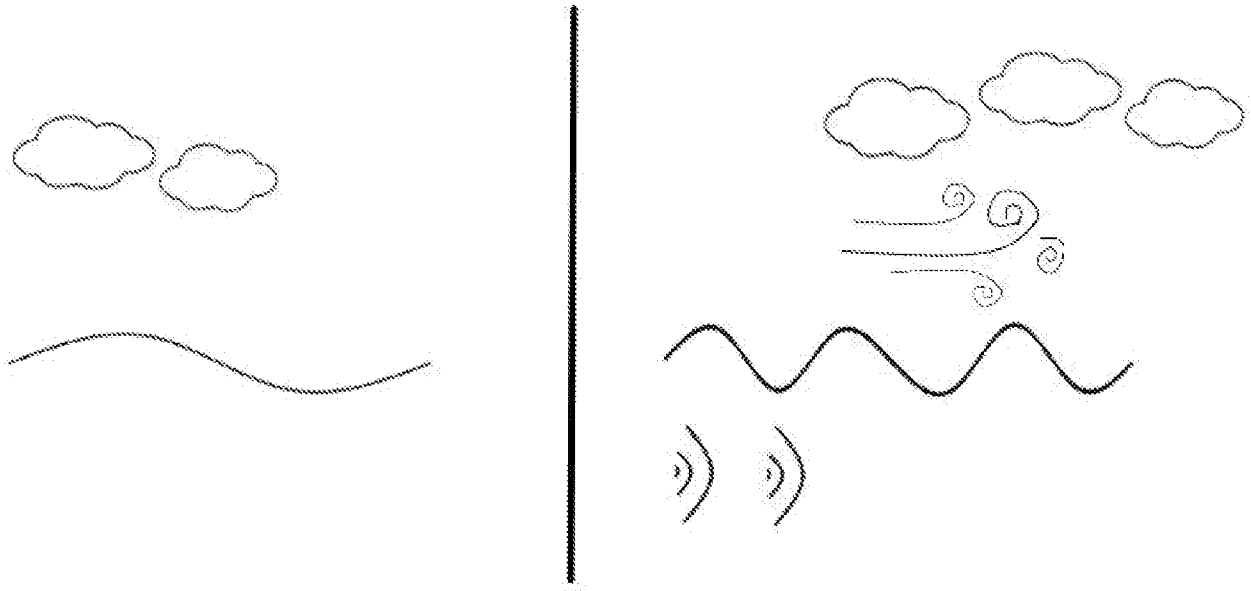
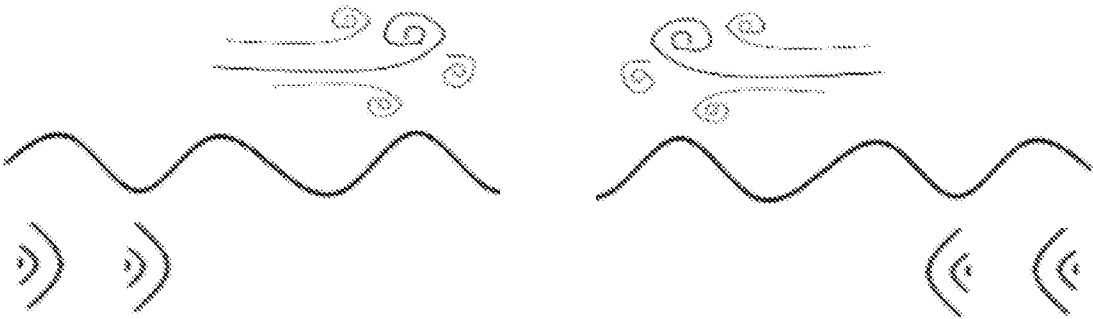


Fig. 5



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 19/55473

## A. CLASSIFICATION OF SUBJECT MATTER

IPC - G08B 21/08, H04R 1/44, H04R 9/06 (2019.01)

CPC - G08B 21/082, H04R 1/44, H04R 9/06, G09B 23/14

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | US 5,012,457 A (MITCHELL et al.) 30 April 1991 (30.04.1991), entire document       | 1-4                   |
| A         | US 3,670,299 A (KAHN) 13 June 1972 (13.06.1972), entire document                   | 1-4                   |
| A         | US 5,117,403 A (EBERL et al.) 26 May 1992 (26.05.1992), entire document            | 1-4                   |
| A         | US 4,839,871 A (MASSEY) 13 June 1989 (13.06.1989), entire document                 | 1-4                   |
| A         | US 2016/0212526 A1 (APPLE, INC. et al.) 21 July 2016 (21.07.2016), entire document | 1-4                   |

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"D" document cited by the applicant in the international application

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

14 NOVEMBER 2019

Date of mailing of the international search report

27 DEC 2019

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents  
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-8300

Authorized officer

Lee Young

Telephone No. PCT Helpdesk: 571-272-4300