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Bill Gates Patents a Device Aimed at Halting Hurricanes



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Five patent applications for technology that aims to control the weather bear the signature of a man who knows how to think big: Microsoft founder Bill Gates. The applications made public by the U.S. Patent Office last week describe floating devices that could reduce the strength of [hurricanes](#) by drawing warm water from the [ocean](#)'s surface and channeling it down to the depths through a long tube. A second tube would reverse the process and bring deep, cold water up to the surface.

The applications were filed by an entity called Searete, which is part of the company [Intellectual Ventures](#) that was founded by former Microsoft executives as an “invention business;” Bill Gates is an investor in the company. Gates is listed as one of the inventors on each hurricane-quelling patent application, along with scientists like the [geoengineering](#) expert Ken Caldeira. One of the patent applications [describes how part or all of the cost of building and maintaining the hurricane-killer ships could be raised by selling insurance to coastal residents whose risk would be reduced by using the new system](#) [[New Orleans Times-Picayune](#)].

Hurricanes draw their strength from condensation driven by heat. That condensation leads to higher wind speeds. By cooling the surface of the ocean, the plan attempts to sap energy from growing hurricanes [ABC News]. While the proposal may sound fanciful, hurricane expert Kerry Emanuel (who isn't involved in the patent effort) says that an armada of the vessels might be able to bring a hurricane down a notch. "The bottom line here is that if enough pumps are deployed, it is reasonable to expect some diminution of hurricane power." ... Cutting sea surface temperature by 4.5 degrees under the eye of a hurricane would actually kill a storm, he adds. "This would have to be done on a massive scale, but is still probably within the realm of feasibility" [USA Today].

The technology is not intended for deployment anytime soon, Intellectual Ventures employee Pablos Holman explains on the company's blog. Instead, it's an option that can be held in reserve in case global warming accelerates and produces stronger, more frequent hurricanes. "This type of technology is not something humankind would try as a 'Plan A' or 'Plan B,'" he wrote. "These inventions are a 'Plan C' where humans decide that we have exhausted all of our behavior changing and alternative energy options and need to rely on mitigation technologies. If our planet is in this severe situation, then our belief is that we should not be starting from scratch at investigating mitigation options" [New Orleans Times-Picayune].

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July 16th, 2009 10:09 AM Tags: [Bill Gates](#), [earth science](#), [geoengineering](#), [global warming](#), [green technology](#), [hurricanes](#), [natural disasters](#), [ocean](#)

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29 Responses to "Bill Gates Patents a Device Aimed at Halting Hurricanes"

1. 1. *Mike* Says:

[July 16th, 2009 at 11:39 am](#)

More human manipulation that could turn out to be bad for the Earth....Hurricanes do a lot of good things too...they have shaped many of the coastlines and islands we enjoy...as well as wash out bays and bring in new nutrients and bring rain far inland to often rain starved areas.

I say leave them alone, and humans who wish to live in the most sensitive and low lying areas know the risk and should take responsibility for it – build their homes, businesses and roadways appropriately to withstand the force of the storm.

We are not above nature and our arrogance that we can control it might just be our downfall.

2. 2. *Apo* Says:

[July 16th, 2009 at 12:42 pm](#)

Wow, this could be a really bad idea. Isn't ocean life pretty sensitive to temperature? And doesn't chaos theory have something to say about even small meteorological changes having unforeseeable effects?

3. 3. *Tom* Says:

[July 16th, 2009 at 12:52 pm](#)

I agree with both. Pushing warm water down to the depths of the ocean could be devastating to marine life. I understand they are saying this is a 'plan c' last resort kind of thing, but mankind likes to play God. If this technology does exist, someone will try to use it. Likely some government attempting to make a weapon out of it.

4. 4. *Gman* Says:

[July 16th, 2009 at 1:22 pm](#)

If Bill gets this patent. And "mankind likes to play god". Then Bill could be looked at as a God. Because he would control the use of the idea. No patent should be issued for the use of large glorified bilge pumps and how they are used. Places like NewOrleans know that they are vulnerable. They roll with the punches be it no matter how big. Personally i don't think the city should be there. Should be north of Lake Pontchartrain.

5. 5. [Auto Solar Energy](#) Says:
[July 16th, 2009 at 3:13 pm](#)

Playing with the weather could cause Changes in the sea currents and produce more problems than it solves.

The huracans are natural forces and they are required to balance the weather on the earth. If humans trying to be God changes this, this natural forces will go to some other place, and get discharged in other form.

Maybe stopping one huracan near US can produce another somewhere else. Or produce some cold wave, ... or some heat wave... or other things

Changing the weather is a bad idea!

[AutoSolarEnergy.com](#)

6. 6. [Michael C](#) Says:
[July 16th, 2009 at 3:30 pm](#)

Could this idea be used in reverse? Maybe not, you would simply need a big space power station to beam microwaves down on the ocean to heat the surface.

I don't care for the "insurance" part – suppose that your house is washed away in spite of the hurricane buster. The money would be better spent reinforcing your home or moving to a safer area.

If you pay your insurance – accidents can happen.

7. 7. [torres](#) Says:
[July 16th, 2009 at 7:43 pm](#)

Agreed with everyone, this is not a good idea. I live in FL; the plants, animals, and humans actually require the rain that hurricanes bring. Some years they are the only things keeping this tropical paradise from becoming a dessicated sand bar. A device like Searete's would destroy this ecosystem totally. Among other concerns....

8. 8. [darth malicus](#) Says:
[July 16th, 2009 at 9:36 pm](#)

yeah i think thats a bad idea on any level, every one is right, the earth needs balance and it will achieve it on its own, weather we like it or not, the damage to the ocean will be catastrophically huge, causing currents to change, and I'm, not talking about localy or anything, whean dealing with the ocean one change on one side will have an equall effect on the oposite side if the currents get messed up, the ecosystem of the entire planet will go up in smoke but you know what, I think we have allready just turned our planet into "spaceship earth" I'm not too sure we can actually go back to our planet being its own living organisim ever again I think any meddling around is going to have disasterous effects, the only thing people can control is who gets hurt by it, I say leave the hurricanes where they are and put the politicians and people like gates at the shore and let them see whos boss once and for all

9. 9. [eikelein](#) Says:
[July 16th, 2009 at 11:00 pm](#)

Yeah right!

Pumping warm surface water in the depth will not "likely", it will definitely make even the depth of the oceans a death zone like shallower areas of the seas already are!

Insurance against the mass-idiocy to move right to (or build houses) where hurricanes are likely to strike? What a ridiculous idea; just like settling in low-lying flood planes of river beds. And when disaster strikes they scream for public help; when the insurance company goes bankrupt after a "big one" we have the next bailout?. Gimme a break.

But having a patent enables Bill G. to sue the shirt of anybody who might ever have a similarly risky idea. Sounds a lot like some of Micro\$ofts business practices.

10. 10. [Willis Linn](#) Says:
[July 16th, 2009 at 11:23 pm](#)

Patents like this are only playthings to Gates, with the rising world temperatures low laying coastal areas today will be almost certainly home to fish. Saving these areas are not the goal, saving whatever is left is the real concern of Big Money and World Governments and not out of the goodness of their hearts. If you live in Florida or New York City it is time to plan finding higher ground and then maybe some of you will be left to worry about all those new super storms.

11. 11. *Chris* Says:
[July 17th, 2009 at 1:04 am](#)

If our population continues to grow I feel that we'd need to control more things about our habitat.

12. 12. *Nick* Says:
[July 17th, 2009 at 3:42 am](#)

Blue Screen of Death was bad enough. Now we get to look forward to the Blue Hurricane of Death?

13. 13. *Claire* Says:
[July 17th, 2009 at 10:01 am](#)

The more man manipulates nature, either directly or indirectly, the worse things get.

Playing God has never been a wise course of action; there are always unintended consequences either in the short run or the long run. Genetically modified foods, genetically spliced creatures, weather manipulation, nanotechnology – especially the branch dedicated to creating hybrids – will all become our downfall.

Like Lucifer's envy of God's power, we will ultimately pay the price. I just hope I'm not alive to see it all unfold.

14. 14. *YouRang* Says:
[July 17th, 2009 at 10:40 am](#)

What the hoped for financing for this "invention" (coastal residents subsidizing the device) fails to recognize is that coastal residents treat hurricane destruction as a way to remodel on the installment plan (insurance premiums and sticking it to the rest of us).

15. 15. *SteveC* Says:
[July 17th, 2009 at 10:58 am](#)

Just what does he think that warm water at the bottom of the ocean will do? Melt all that frozen methane of course! This will release a more powerful greenhouse gas into the atmosphere (Methane has 20x more greenhouse effect than CO2). This is the law of unintended consequences at work. How 'bout we get serious about global warming and try to reduce our carbon footprint?

16. 16. *Gadfly* Says:
[July 17th, 2009 at 12:46 pm](#)

I wouldn't worry about this for fear it will work — I think it's pretty unlikely. The hurricane expert in the article said something about an armada of pump ships bringing a hurricane down a "notch" or words to that effect. So everyone worried about the good that hurricanes do should relax. We're talking, at best, like dropping by a category or two (?), not eliminating the hurricane completely. And as to the impact on the ecosystem, there is no way this is going to impact the oceans of the world and their ecology — more like a relatively small area probably in or close to the eye. A big 'cane can cover thousands of square miles. How many pump ships do you think can practically, and affordably, be built? This is interesting conceptually, kind of like Santa Claus, but hardly worth worrying about.

17. 17. *earthbutcher* Says:
[July 17th, 2009 at 12:50 pm](#)

Nice kneejerk responses, people. You're following a science blog and that's the best you can come up with?

As much as some of you disdain Microsoft, Bill Gates and his scientists are not idiots. They too understand the law of unintended consequences.

LEARN TO READ. They realize this is plan 'C' – that is, when global warming is so bad, there are numerous category-5 hurricanes, and they aren't stopping at destroying only the coastal inhabitations. This also suggests that this is more brain-storming than actual concern for money-making, because by the time we're begging for hurricane mitigation, the patents will have expired.

As for Claire, who abhors the manipulation of nature...I trust that you aren't eating any farm-grown food, or taking any man-made medicine? Because, you know, God will get all up in your face for not suffering like he wants you to.

The more man manipulates nature...the worse things get.
Playing God has never been a wise course of action...

18. *NicoleW* Says:
[July 17th, 2009 at 1:31 pm](#)

What we really need to do is stop the federal government from encouraging population growth and additional construction in at-risk areas with federal insurance subsidies, so that future hurricanes are less destructive, not more.

How about paying people to move inland instead and making New Orleans a place people visit, not live, like Disney World? This would be a nice change from the frequent destruction and rebuilding of coastal areas, wasting resources again and again.

19. *NickL* Says:
[July 17th, 2009 at 2:53 pm](#)

This is scary stuff. people aren't thinking through the long term ramifications of their stupid ideas. The equilibrium of the atmosphere is maintained, occasionally, by hurricanes. Of course, being the idiots we are, people live in the regular path of these regulators. Even if we could, interchanging the warm surface water with the colder abyssal water would probably reduce storm severity but would also change the basic characteristics of the entire ocean basin, and consequently, the entire atmospheric character of the world in ways that haven't been considered.

A better solution is for those people who simply must live in these danger zones to build houses and buildings that are very storm proof.

20. *Brian* Says:
[July 17th, 2009 at 8:04 pm](#)

A lot of the posters here have talk generally about the unintended consequences, and that's good. I'd like to get more specific though.

Here are my concerns:

Hurricanes are a major transport mechanism for moving heat away from the tropics. Ultimately the heat cycle is trying to balance the cooler poles with the warmer equator. Nature can't ever finish the job because more heat keeps pumping in from the sun, always warming the equatorial zone more than everywhere else.

If you curb or kill the hurricanes, what happens to that heat? Is the weather system stable with higher global differentials, or do new phenomena appear? Maybe you get more tornados, powerful thunderstorms or lots of mini hurricanes or something?

Others have talked about moving water. Therefore I'll not go into that in detail, other than to emphasize that rainfall often means life itself, especially in parts of the world that experience the monsoon season.

The other heat-based dependency is the global ocean current cycle, aka the global conveyor belt. My understanding is that this is entirely driven by heat differentials. If you even out the heat distribution of ocean water, meaning deep water is no longer cold(er) and surface water is no longer warm(er), do you risk shutting down the global conveyor belt? Perhaps it just alters the circulation patterns.

This would be a climactic shock of the highest order. Whole continents could have their weather dramatically rearranged. Civilizations rise and fall on such changes. It's not necessarily bad everywhere, or even most places, but do you want to be one of the losers when the climactic dice are rolled? No one does.

21. *Concerned* Says:
[July 18th, 2009 at 10:10 pm](#)

I agree that trying to manipulate climate and play God is dangerous. But on the other hand, planning ahead and looking for hurricane mitigation methods is not a bad idea. Mankind is not perfect. We bring harm to the planet through our actions but I am sure there is potential in us to change and do good if there is the will.

We need more data. Simulation programmes or worst case scenario actouts and making sure it is safe before we can justify

start using this device.
May God be with us.

22. 22. *pat hudson* Says:
[July 19th, 2009 at 1:19 pm](#)

Leave it to Bill Gates to waste his money on stupid BS. If I had that kind of dough I would have my own space program.

23. 23. *Marcus* Says:
[July 19th, 2009 at 9:41 pm](#)

The technology, if successful, could also be easily converted to strengthen hurricanes. Of course a great humanitarian god like Bill would never let that happen.

Global Warming justifies anything rich people want to do to save us.

24. 24. *Jen* Says:
[July 20th, 2009 at 3:55 am](#)

Get real. There is no 'God' to play or worry about pleasing. This archaic god philosophy holds back progress for mankind.

Bill has only good intentions with this project.

25. 25. *jeri meaux* Says:
[July 20th, 2009 at 7:26 pm](#)

I work for an intellectual property office at a large university and I know of several instances where an inventor only patented a technology so that it could be used free by those who needed it. If he hadn't patented his inventions, someone else could steal it, patent it and then charge folks for it. Hopefully that's what Gates is interested in here.

Also--don't worry about the ecosystem. If this technology works (a big if) it would only decrease the high winds but leave most of the rain. It would be done in such a small area for such a short time that local sealife could handle the temporary change

Maybe it could be actually be reversed and create low intensity storms where we need them?

26. 26. *shaking head* Says:
[July 21st, 2009 at 3:31 am](#)

I agree with the first comment by mike

27. 27. *Mitch* Says:
[July 21st, 2009 at 3:38 am](#)

Well if it runs on windows vista, then nature doesn't have a thing to worry about

28. 28. *Illumianti Slayer* Says:
[July 27th, 2009 at 6:18 pm](#)

I agree with Mike also, however I find mitch's comment hysterical !

BILL'Y BOY, you can't even get a simple PC program to run without thousands of repairs and updates, why don't you leave the weather to someone who knows what thier doing ,remember the commercial from the late 70's !

It's NOT Nice to fool with Mother nature !

29. 29. *Gary Anson* Says:
[March 26th, 2010 at 6:22 pm](#)

It's highly probably Bill has never even seen this research, other than to sign his name to some paperwork. He funds these efforts. He doesn't do the actual research/development.

What's so wrong with playing God,,and who says we're PLAYING?

Bill made an investment decision when he bought dos 30 years ago and turned it into Micro-Soft. Personally, I wish he'd been more interested in what Xerox was doing.

Manipulating weather is a mega project, like building a hydro power damn across the straits of Gibraltar. I expect if we were ever to develop this idea, it would be made under the auspices of an international entity,,but a billionaire manipulating world weather WOULD make an interesting Bond flick.

GAry 7

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