

# MENTIRA

**MECHANICAL INVENTIONS & NEWS AROUND THE WORLD**

**A TECHNICAL NEWSLETTER**

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**DEPARTMENT OF MECHANICAL ENGINEERING**

**R.M.K COLLEGE OF ENGINEERING AND TECHNOLOGY**

## SOLAR POWERED INSECT ZAPPER

You can see this trend throughout mankind's history. Whenever a huge plague develops, it is spread by those pesky things we'd sooner smash under our foot than have to deal with. Insects are everywhere and while yes, I understand they serve a purpose in our environment, I can't stand mosquitoes and I don't think I'm alone. Mosquitoes are now recognized throughout the United States as one of the biggest threats because they carry many diseases to different corners of the world.

One of the best defenses against these pesky insects is to set up an insect zapper. These things are efficient not just for mosquitoes, they also attract the flies that mess up your picnic. But one of the biggest problems with these machines, despite their



usefulness, is the amount of energy required to power them. Your backyard may be free of the threat of fatal disease from mosquitoes, but you'll have an even bigger horror on your hands when you open your electricity bill.

Wouldn't it be great if you could buy one piece of technology that could zap the bugs without ever requiring you to pay a dime for the energy it used? Well, you guessed it. Now you can! With the Solar Insect Zapper installed, you can take care of annoying insects without worrying about the cost. This gadget utilizes four solar insect lights. You stake them anywhere in your ground and leave them to harness the sun's rays. Once the sun sets, the UV insect attracting bulbs automatically shut on, luring and eliminating over 100 varieties of insects with a 300-volt electric charge. Further, you can flip a switch to turn these lights from bug zappers to accent lights in a second. Don't let your home get stuck with the threat of contagious disease and a high electricity bill. Get the Solar Insect Zapper. (www.coolthings.com)

## PERSONAL SUBMARINE



The Personal Submarine is compact two-seater submersible, measuring 10.5 x 8.5 x 6.25 feet and weighing 6,600 lbs. Designed with a dual-pontoon structure and broad freeboard, it boasts superior stability, even in high sea conditions. It runs on two 3-horsepower main thrusters for fore, aft and directional control, working hand in hand with another two 3-horsepower translational thrusters that help it navigate laterally and vertically. Powered by a 120-volt battery bank, it can take you and one lucky date traversing the water at a speed of three knots.

Cabin is covered by a completely transparent 4.7-foot shell, affording you full view of the gorgeous marine sights, including corals, schools of fish, sunken treasure, Dexter's chopped-up carcasses bound in trash bags and exploding oil pipes. Four external 150-watt halogen lamps illuminate your surroundings, so you can see when a giant shark (and, maybe, a mega-octopus) is right nearby.

The pressure sphere is made from 3.25-inch thick acrylic, with climate controls and full safety features installed. Driving is done right inside the cabin, using a joystick with independent thruster controls. It has a suite of standard instrumentation and communication equipment, so you can get your lady friend back to the yacht completely safe (and ready to jump your bones).

Of course, having a powerful aphrodisiac at your disposal is never cheap. The Personal Submarine is available for \$2 million. (www.coolthings.com)



## HYDRO JETPACK



Hydro-powered jetpacks have been slowly evolving from a casual curiosity to a popular watersport. As such, it isn't surprising to see newcomers in the burgeoning space. The X-Jetpacks H3X Hydro is one of these upstart entrants, boasting both "hardcore marine engineering" and a "sports-centered design."

Like the Flyboard and the Jetovator, the contraption bolts on to a jetski and uses the watercraft's propulsion to send the rider high up

the air. Unlike most current products that are sold as kits, however, it ships as ready to go as possible, requiring minimal assembly on the user's part to get things up and running. Billed as a "true sport jetpack," the X-Jetpacks H3X Hydro

boasts the ability to produce more power and more height compared to its competitors, along with the smoothest hydro jet channels available that deliver a ride with minimal vibrations. You ride it while being harnessed to a body saddle that hitches from behind, stabilizing your body naturally (no crotch harness) while giving you complete freedom up front. Features include marine alloy sandcast water



channels, a wide roll bar frame, composite fiber saddle, a six-point padded harness (shoulders, hips and thighs), custom-engineered nozzles, and a solid nylon 66 torsion bar. It only runs with high-propulsion personal watercrafts, such as Seadoo and equally-powerful models from Yamaha and Kawasaki. Control is a two-person job, however one operator manages the throttle and power from the jetski, while the rider controls the direction and an le of flight. The X-Jetpacks H3X Hydro is available now, with prices starting at \$9,499. [www.coolthings.com](http://www.coolthings.com)

## CLM 2 FLOATING SHELF

The CLM 2 is a levitating display shelf that lets you make objects of all sorts look like

they're floating a few inches up in the air. It's awesome.

Simply set an item down on top of the floating disc and,

boom, it's immediately got that David Blaine magic going

on. Made by Crealev, this is, basically, the exact same tech

that the company employs to make objects levitate in

museums and product booths (and, we're guessing, the

same tech used in this levitating lamp). And it's seriously powerful, able to buoy up

items as heavy as 22 pounds. Look at this video from Brasspup to see how much weight it can

handle: The Crealev CLM 2 consists of a non-floating base that you lay down on a surface and a carrier

disc that will float on top of the base. Without any additional weight, the disc can float at a height of 3.4

inches from the base, going down slightly for every extra heft that gets added onto it. With the maximum

22 pounds load on, it can float a single inch off the ground; at half of that, it will float at a height of 1.9

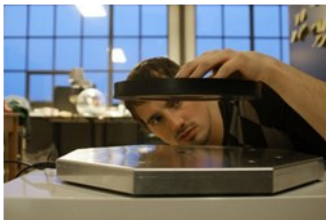
inches. To set up, simply plug the base into a wall outlet, then put the carrier a short height on top of it

with the rubber side down. At the right height and position, the base and the carrier will lock in, leaving

your floating magical disc ready for action. Oh yeah, these things contain powerful magnets, so best not

put the wallet with your credit cards on that thing. Everything else under the weight limit (like a tablet

stand with your iPad in it), however, should be fair game. [www.coolthings.com](http://www.coolthings.com)



## MOTORIZED MONOCYCLE

Given that it's not street-legal, we're not sure where you're supposed to ride this Motorized Monocycle. Put me on one, though, and I'd gladly pay the ticket just so I can trot around the neighborhood on it.

Sporting a 67-inch outer wheel that does all the rolling on the ground to propel you forward, it's one awesome-looking recreational ride.



Since you sit inside the wheel, it uses minimal horizontal space, allowing you to use it to squeeze into narrow alleys like its nobody's busin.

Powered by a 31cc,

four-stroke engine, the Motorized Monocycle can transport you around town illegally at speeds of up to 25 mph. Steering is performed by leaning to one side, with brakes available right on the handlebar. It features cushioned seats, padded foot-rests and a fiberglass body for durable performance. The giant-wheeled vehicle can handle riders up to 6'3" tall, provided

they weigh between 110 and 275 lbs. (there's a minimum weight to ensure counterbalance during acceleration and braking). While it won't handle bumpy terrain, it can wield its single-wheeled awesomeness over dense flat surfaces like pavement and grass. It can run up to two hours on just half-a-gallon of fuel. Sure, cops will likely stop you if they catch you riding the Motorized Monocycle into the supermarket parking lot. In case that happens, we suggest charming them with your gift of gab, bribing them with mini-donuts or offering to let them play around with your monocycle while you pick up your grocery. If that last one doesn't work, tough luck. It's available from **Hammacher Schlemmer** for \$13,000.

([www.coolthings.com](http://www.coolthings.com))



## POWERFLASK CHARGER

Instead of holding drinks for your instant libations, though, it's a gadget charger, ready to replenish your USB-charging devices any time the need comes up. The PowerFlask is a portable charger packing a 13,000 mAh lithium-ion battery inside the erstwhile drinking flask frame. It comes with two USB slots for charging your gadgets and one microUSB slot for recharging, along with two 30-pin iPhone cables, a USB to microUSB cable and a USB to dual micro-USB cable. According to the product page, it should charge three gadgets (using the dual micro-USB cable for one port and a regular cable on the other port) at the same time with no problem, so you can plug in your phone, your other phone and the cute girl you met at the DMV's phone while waiting in line. And, yes, it can charge your iPad, too, apart from lighting the way in a pinch with two built-in flashlight LEDs on top. Unless you return to your unsavory boozing habits and need that space for a flask of whiskey, the PowerFlask should end up a finding a place in your daily on-the-go stash with no problems. It's available now, priced at \$89.95.



## SEA BREACHER



Remember the Seabreacher X, that personal submarine decked to look and run like a shark while on water? Yeah, it's pretty special. Except you're scared of sharks. In fact, you intentionally stay away from the TV and the internet during Shark Week. Maybe the Seabreacher Y, a personal sub that looks like a killer whale, will be more suited to your tastes. Made by Innespace, the watercraft doesn't just have the external appearance of the Orcinus Orca, it breaches and submerges similar to one, too. That way, you can use it both for sightseeing underwater and scaring people away from your side of the beach. Very handy. The Seabreacher Y is a luxury personal sub-



mersible that measures 17.5 x 3.5 x 4.75 feet and weighs 1,450 pounds. Sporting a 255 hp supercharged Rotax axial flow engine, it can push underwater at a rate of 25 mph and hydroplane at speeds of up to 50 mph. Just like Innespace's other watercrafts, it can perform tricks on the water, including sky-hops, dives and rolls. From what we can tell, this isn't the kind of submersible you take to great depths, though -- you need to stay close to the surface to allow the snorkel on the dorsal fin to supply a steady stream of air to the engine. The two-person cockpit is covered by a tinted half-inch-thick acrylic canopy, keeping the driver and passenger protected the entire time. Foot pedals let you control steering, with throttled twin-levers operating the pectoral fins (which allow the sub to perform its tricks). It comes with full instrumentation on the dash, including a speedometer, a tachometer, engine and air pressure gauges, and an LCD showing live video from the camera mounted on the fin.

Hammacher Schlemmer is currently selling the Seabreacher Y. Price starts at \$100,000. ([www.coolthings.com](http://www.coolthings.com))

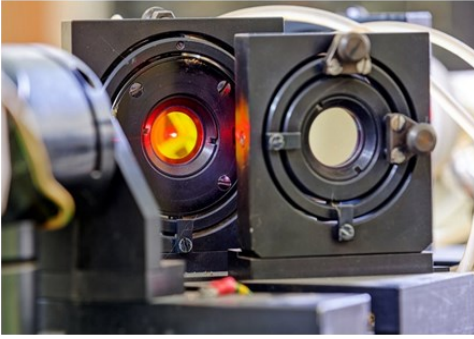
## LIGHT SLEEPER BEAMS HYPNOTIC LIGHTS

Having problems sleeping? Tried every solution in the book? sleeping with the light on. Huh?!? Well, not the big, bright light in your room. Instead, you can try finding slumber by turning on the LightSleeper, a small lamp that projects a soft glowing light that's supposed to soothe your troubled mind to sleep. Sporting a form factor that resembles a webcam, the rest-inducing lamp is designed to sit on your nightstand. It turns on with a gentle tap, at which point it begins projecting a soft, low light onto your ceiling. All you have to do is follow the light with your eyes as it moves in a circular motion, eventually sending you off to dreamland. The Lightsleeper runs for a half-hour then automatically shuts itself down, confident that its gentle, trance-inducing movements has successfully sent you into a temporary coma. An onboard rechargeable battery lets it lull you into sleep for an entire week. Does it work? We'll never really know until a good amount of people have tried it, although the company claims to have tested it successfully with numerous subjects for the last several months. One thing's certain, though. Girls will freak out when they see what looks like a webcam on your bedside table. I suggest hiding it in a drawer and pulling it out right before you hit the bunk. Currently available as a risk-free trial (money-back for 14 days), throngs of restless individuals in the UK can get the LightSleeper for £125 (\$210) directly from the website. International insomniacs will have to wait till next year.





## MOST POWERFUL LASER BEAM



Scientists from Japan's Osaka University just fired the most powerful laser ever. Using a device called the LFX (short for Laser for Fast Ignition Experiments), the team produced a laser containing a whopping 2 petawatts (that's 15 zeroes), an energy equivalent to around 1,000 times the entire world's electricity consumption. Remember that weaponized laser the US Navy was using to blast drones and boats with one hit during tests? That was a 30-kilowatt laser, so you can imagine just how strong this beam actually is. Obviously, a laser that powerful will require huge amounts of power, right? Apparently, not the case, as the LFX only used a few hundred Joules

for this particular test – the same amount of power a microwave uses for a few seconds of operation. Instead, the powerful beam was generated by boosting the signal through a series of amplifying devices (basically, glass lamps that look like fluorescent tubes) inside the LFX's 300-plus-foot length and concentrating it to 1 pico-second (one-trillionth of a second), eventually leading to the crazy output levels. Yes, the laser only fired for a tiny fraction of a second, but it's definitely impressive all the same. (www.coolthings.com)

## PORTABLE FIRE EXTINGUISHER

Scientists have long been experimenting with using sound waves to stop fires. So far, though, no one's been able to shrink the devices capable of squashing a blaze into a truly portable size. Until now, that is, with the new Sound-Blasting Fire Extinguisher created by a pair of undergrads from George Mason University.



Engineering students Viet Tran and Seth Robertson are behind the invention, which floods a site of fire with low-frequency sound waves in the 30 to 60 hertz range to agitate the air around the

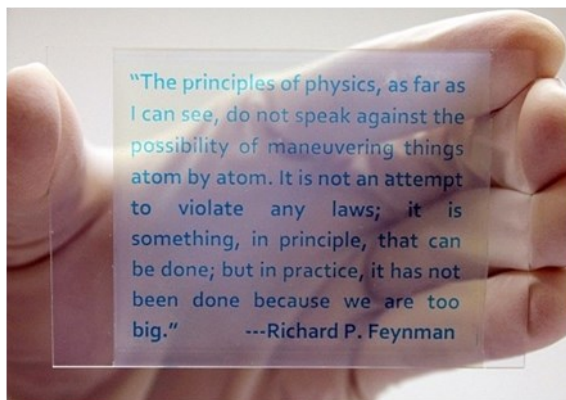


flames. Yes, that thump-thump bass sound qualifies in that low frequency range, so it's not that far-fetched to imagine your favorite hip-hop record squelching fires (maybe, just a little far-fetched). The Sound-Blasting Fire Extinguisher consists of a large handheld gun (about the size of a giant megaphone) that's connected to a device strapped to a person's body, allowing it to be carried around in a portable manner. It's also reasonably light at 20 pounds total weight for all components, so even puny weaklings should be able to use it without much trouble. Since it releases nothing but sound waves, it gains a distinct advantage

over existing firefighting solutions, removing the harsh chemicals involved in fire extinguishers and the soaking-wet collateral damage that inevitably occurs wherever water is involved. The duo believes their design, once properly scaled, can be mounted to drones as a safer alternative for containing forest fires and urban blazes. For now, the device can only put out small fires started using an alcohol accelerant, with the duo looking to pursue further development in using it to stop other types of fire. (www.coolthings.com)

## ERASABLE AND REWRITABLE PAPER

Despite the many talks about a paperless office over the years, the pulp product remains an indispensable part of our daily lives. And from the looks of things, it isn't likely to be going away any time soon. Instead of looking for more ways to eliminate paper, chemists from the University of California, Riverside (UCR) decided to take steps to improve it, instead. Unlike regular paper that's rendered unusable after it's been printed on, the newly-developed prototype paper can have all of its contents erased, rendering it completely blank and available for printing on once again. That way, all those reports you print out won't need to be shredded and disposed of after their usefulness has passed – you simply erase the print and use the same sheets all over again. The rewritable paper



isn't used the same way as ordinary paper. For one, you don't actually print on it using ink from a printer. Instead, it requires an ultraviolet printing process, where the paper is exposed to UV light to create the impressions on the sheet. For erasing, the sheet needs to simply be exposed to a heat of 115 °C, which will cause the impressions to disappear and leave the paper completely blank. It uses the technology of redox dyes to accomplish this feat (the paper is, basically, coated with it), whose color-switching properties enable the unique printing process. Each sheet is constructed as a film made from plastic and glass, with enough of the active material to allow it to be printed and erased up to 20 times, without any significant loss in contrast or resolution. You can read the complete report from the science journal, Nature.

([www.coolthings.com](http://www.coolthings.com))

## WATER INTO FUEL



One of the big motivations for exploring alternative forms of energy is the eventual scarcity of hydrocarbon fuels. Simply put, the well will probably dry up at some point. What do we do then? A German company called Sunfire claims to have developed a process that will allow them to manufacture hydrocarbon fuels using just water and carbon dioxide. The Dresden-based operation recently unveiled a machine that uses its "Power to Liquid" technology, which performs the conversion through a combination of the Fischer-Tropsch process and solid electrolyzer cells. Under this system, water is turned to steam using electricity from renewable sources (e.g. solar, wind, tides), which is then treated to remove oxygen and produce hydrogen

gas. With hydrogen now isolated, Sunfire's machine will then proceed to harvest carbon dioxide gas from the atmosphere, which it distills into carbon monoxide. The two resultant gases are then synthesized into high-purity fuel using the aforementioned Fischer-Tropsch process, allowing the machine to create very specific hydrocarbon molecules that, when suspended in water, can transform into gasoline and diesel. Any excess heat generated by the machine is put back to produce even more steam, giving the machine an efficiency rate of 70 percent. At this stage, the machine Sunfire created, paid for in part by Germany's Federal Ministry of Education and Research, is only for demonstration and feasibility purposes. While it does work, production is limited to a barrel of fuel per day, a far cry from an average oil rig, which can crank out 200 to 300 barrels within the same period of time.

([www.coolthings.com](http://www.coolthings.com))

# FACTS ABOUT BILL GATES

- ◆ Bill Gates' full name is William Henry Gates III.
- ◆ The first computer program that Bill Gates wrote was a tic-tac-toe game. The game was played in a 2 player format where the computer was the opponent.
- ◆ Bill Gates is known to keep his word. In school he bragged to his teachers that he would be a millionaire by the time he was 30. Not only did he keep his word but he was a billionaire by 31.
- ◆ Bill Gates' kids often tease him by singing the song 'Billionaire' by Bruno Mars and Travis McCoy.
- ◆ Bill Gates never graduated from college, instead founding Microsoft with his friend Paul Allen in 1975. He was just 20 years old when he founded Microsoft.
- ◆ Bill Gates is very active on Twitter but not on Facebook, despite Mark Zuckerberg and he reportedly getting along well. The main reason he cites for his absence from the social network? "The friend requests got out of hand..."
- ◆ If Bill Gates was a country; he would be the 37th richest country on earth! Face that he is one of the richest persons in the world is not unknown but Bill Gates stood at number one position on the Forbes list from 1995 to 2009 except in 2008 where he was pushed to number 3. He continues to hold second place to Carlos Slim 2010 onwards.
- ◆ Bill Gates earns nearly 250 US Dollars every second. That's about 20 million dollars a day and 7.2 Billion dollars a year! Bill Gates can pay off the entire United States debt in less than 10 years.
- ◆ Bill Gates loves travelling and visits India almost every year for the upliftment of the poor.
- ◆ And here comes the clincher: If Microsoft Windows' users can claim just 1 dollar for every time their computers hang because of Microsoft Windows, Bill Gates will be bankrupt in 3 days!

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