INSIDE THE MIND OF AN INVENTOR

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Temecula California

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SNAPnSEND WEBCAM SOFTWARE

INVISCO TORNADO WHOLE HOUSE FANS

NEWINVENTIONS.US
WHERE INVENTORS CAN SELL PRODUCTS WITHOUT PATENTS

INVISCO INDUSTRIAL
HYBRID ROOFTOP VENTILATORS
FREE GRAVITY AND MOTORIZED

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ABOUT KURT SHAFER

Born in Newhall California in 1944, Kurt was brought up in the Inglewood area of Los Angeles County. He was a tinkerer at the very young age of 8 years old when he found two screws holding a hinge on his parent's kitchen oven door. He found a screwdriver and removed them. To his horror the hinge disappeared with a crash into the oven wall due to the strong spring used to hold up the door. It was a lesson he never forgot. At about 17 he was employed by Benchmaster Mfg. Co. in Gardena to help make punch presses and steel sheet metal coil cradles. That gave him the idea to make a tiny motorized scooter out of machine tool parts.

In 1967 while surfing in Torrance Beach, he dreamed up a flexible surfboard fin to help accelerate the board on a wave. Later he bought a dune buggy and made a ramp and shelf in his 2 car garage to park it over his sedan.

In 1995 the internet became a reality and he achieved a dream of getting surf pictures in his home. He invented SnapNSend, the first webcam software.

He married Darlene in 1974 and she brought him Ryan and Kimberley in 1976 and 1979 and they brought him 4 grandchildren. He now resides in Temecula California and enjoys the vineyards and casinos with Darlene.

FOREWARD

In this book I have worked to give you a look at almost all the actions an inventor takes to

1. **Determine all the parts needed to make your patent work. In this book I have two great examples. One is a weeding rake that has only TWO parts – a weeding fork and a rake. The other is an automatically closing louvered turbine with 40 blades, a top, a bottom, a base holding a shaft for rotation, a fitting under the top with two ball bearings and many more small parts. You will find a few pages that describe how I decided what the small parts should be, how they should be made and how they should work.**
2. **Create a working model of the invention (this implies that your invention is a physical thing, like a tool, but it could be a digital thing, like a program.**
3. **Investigate the need for a patent. Not all inventions must be patented. If yours can be marketed quickly and get a lot of sales fast you might want to simply sell it. If it is an improvement on another product that is patented it might be valuable to protect your improvement with a patent. In this book I have some examples. One is my garage door window kit where I found there are few patents and few sources. So I am just selling them without a patent. The other is my high performance rooftop whole house fan with a lot of competition and many patents. For this I have a patent pending.**
4. **Investigate and define the market and opportunity. Again I have very good examples. One, the whole house fan, has many sources and many big box stores so it is easier**

to estimate the market. The weeding rake, on the other hand, has no other source so there is no market data today. What is known is that there are many sources for weeding tools and for rakes.

5. **Consider the value of licensing your invention to another company. My weeding rake is a good example. Since there are many weeders and many rakes it would seem that one of those suppliers would like to license my invention. This might be a reason to get a patent OR at least, apply for one.**
6. **Get your invention on the market to sell it. I have just the solution for you with my NewInventions.US web site.**

INTRODUCTION

This book is intended to give you an insight into the mind of an inventor so that you can start inventing new products yourself. If you have ever looked at a product and said to yourself “I can make that better” then you are an inventor.

In fact, there is a specific class of patents used by the United States Patent Office called “Improvement Inventions”. These are issued more often than “original use” patents…….

Improvement patents can add something to an existing product, incorporate new technology into an old product, or find a new use for an existing product. I little known fact is that Thomas Edison was not the inventor of the light bulb nor was he an inventor of any new products. He was a prolific improvement inventor.

For an example of the best “original use” inventions, this web site is one of the best compilations -

https://interestingengineering.com/35-inventions-that-changed-the-world

For an example of “improvement inventions” we need to look into all three subcategories –

1. Incorporating new technology into an old product such as my Invisco Tornado rooftop ventilator – I added a motor and blade to the Edmonds ECOPower ventilator.
2. Finding a new use for an old product such as the use of Bag Balm -- an ointment normally used to soothe irritated cow udders -- to treat human baldness. This was granted a patent in 2001.
3. Or adding something new to an existing product. The Gillette Mach3 razor, for example, had three blades where previous razors had two.

In their book, “Innovation: The Five Disciplines for Creating What Customers Want”, authors Curtis R. Carlson and William W. Wilmot write that "smaller innovations can be extremely important, especially as one builds upon another."

In this book I am giving you a bird’s eye view of the circumstances I experienced during the time I thought about products and then thought about new versions or modifications I could make to improve the existing design.

Then, in more that one case, I describe to you how I came to dream up entirely new products the world has never seen before. You will also learn how I invented a brand new business – selling products to Australia using a .com.au web site. That endeavor led me to my second improvement invention as you will read.

INVENTIONS

1967 THE FLEXIBLE SURFBOARD FIN

I started surfing in 1960 at Torrance Beach in Southern California. It was there that I found a lot of time to think about surfboard design. Some days the waves came in sets that could be 10 minutes or more apart. So I had nothing to do while waiting except think. In those days I did some sailing. That experience showed me that when one changes the angle of the sail hanging from the mast the boat goes faster or slower. I began to imagine how that change of force might affect the speed of a surfboard going down a wave.

One must first imagine the forces on a surfboard fin. At the top where it is attached to the board the force is a push to the right or left as the board moves down the wave. The entire purpose of the fin is to prevent the tail of the board from slipping sideways. Then the tip of the board is free to slip and the stance of the surfer adjusts that slip to cause the board to move in the desired direction.

As I pondered the forces I imagined the fin being flexible and able to change angle as forces change. I imagined that the amount of force that could be applied to push the board forward would become greater if the fin angle increased, causing more of the side force to become a force pushing in the direction the board is moving.

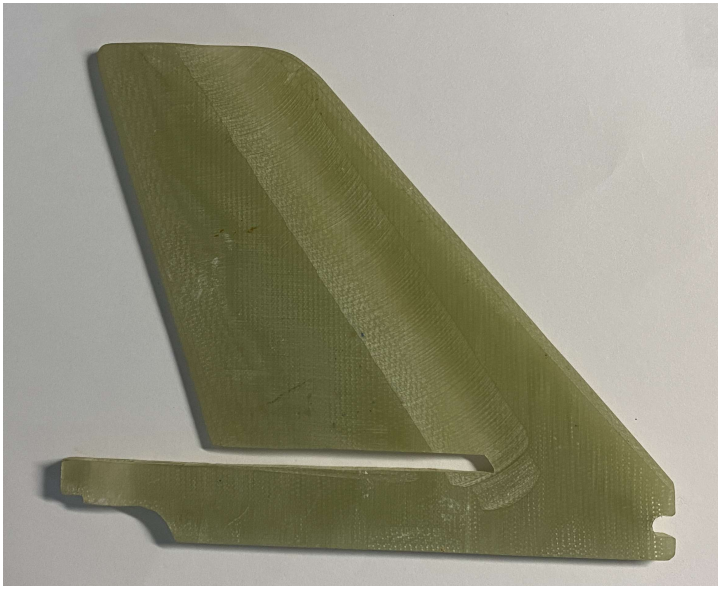
The result of this was the idea that the fin should look like a door with the hinge at the front of the fin surface. And the hinge should be a stiff spring steel to withstand small forces to stay straight like the fins are on all boards. But when the board started moving onto a steep wave the force on the side of the fin increases and at that time the fin's angle could change, converting some of the side force into forward force, accelerating the board on the face of the wave.

I decided to fabricate a fin that could bend and did so in my shop at home. I thought about mounting it on my board but I did not have the

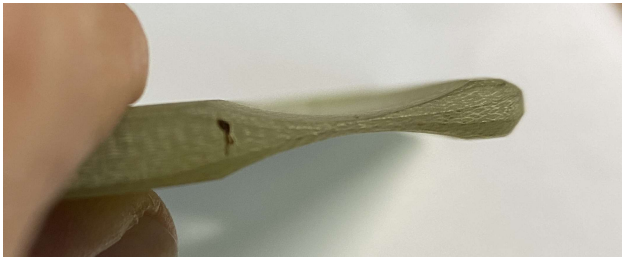
right material to make that happen. While I was working on all this I had occasion to need a repair on my board so I took it to the Jacobs Surf Board shop in Hermosa Beach. I met with Hap Jacobs and described all this to him. To my surprise he was not impressed.

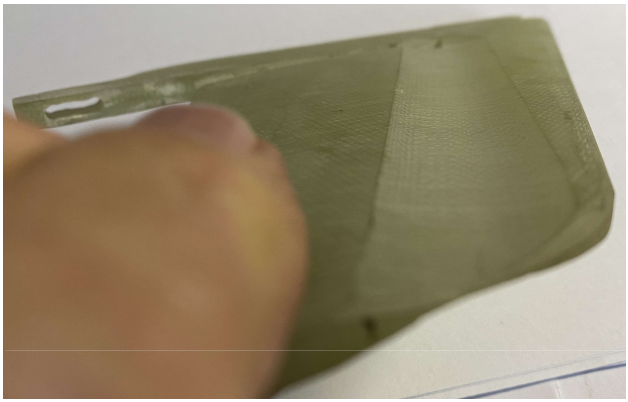
I then thought about all the actions I would need to take to make this invention popular. First, I had to make some fins for me and for others to test. Then I would need to find a popular surfer to test the idea and endorse the product. Then I would need to find a way to make many. All of this was too much for me to tackle then.

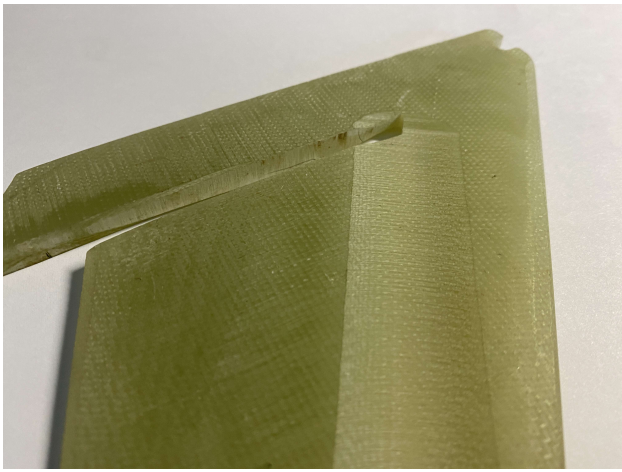
I did, however, tackle the problem by making a prototype. Here are some pictures of that work. The first action I took was to take a sheet of fiberglass that is ¼ inch thick and I tried shaping it. Here are some pictures of that effort. First – below is the whole fin so you can see I cut the base of the fin to match others that have the notch at the leading edge (right) and the thin trailing edge that accommodates a screw to hold it in the surfboard fin box. You can also see the work I did just behind the leading edge to try to make it thin enough to flex like a hinge.



Here are some more pictures of that first attempt. Below you can see that the thin section is about 1/16 inch of the ¼ inch material. The pictures under it show more views of this attempt. The result was that the fiberglass is so stiff this had no effect.



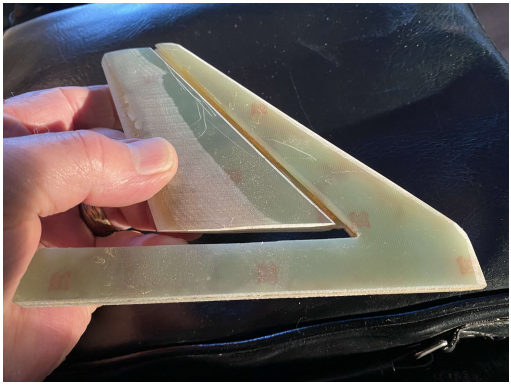




When that experiment failed, I elected to stop making the fin thinner fearing I would break it. So I went on a different direction. I found a thin firbreglass sheet that was flexible enough to be the hinge I needed. It is about 1/32 inch thick.

I glued it in between two thicker sheets to make a fin the standard ¼ inch thick. Below are pictures of this new prototype.

First, the side view. You can see the gap where the hinge is placed. The added sides are glued about 1/8 inch apart so that the flexible sheet can bend without interference. The result is perfect. The fin bends under a force of a few pounds which is the force the water should present when on a wave. Noe, the reality is that this will take many trial attempts by professional surfers in order to assess its true value. That is the action yet to be taken. I stopped work on this after Hap Jacobs expressed no interest.



And here is the view of the tip. You can see I made it by gluing 3 sheets together so the center sheet – which is thin and bendable – acts as a hinge. After laminating them I sanded the back edge to a thin tip to act like solid fins.

1974 INVISIBLE WINDOW SCREEN

Darlene and I moved into a small home in Hawthorne, California, built in the old days on a raised floor with a crawl space below. It had the old wooden sash windows – the kind that slide up and down. On the outside they all had screens to keep bugs out. I was annoyed by the screens that made the view dim. I also thought that it was useless to cover the whole window when the only opening needing a cover was the bottom where the air comes in if you open them.

This caused me to imagine a screen that was hidden at the bottom outside and came out only when the window was opened. (We never opened the tops even thought they could be lowered if we wanted to). So I began thinking about how one could hide a screen and have it come out automatically. I thought about a roll in a box. Suddenly I realized that the old pull down window shades were exactly what would work – only upside down – and pulled up by the bottom of the sash window frame.

I went to work to convert a window shade to a screen. That was easy – I cut a screen to the size of a shade, took the shade off a roller and taped the screen to the roller. But then it occurred to me that while the shade has a spring inside to help it roll back up, it also has catches to prevent it from rolling up out of control. So I took the roller apart and disabled the catch. That meant I needed a way to stop the roller from unwinding the spring.

The solution to that came from the design of the box to hold the rolled screen. I had been working with aluminum tubes and they come in square sizes. I cut a slot in the corner of a 1-1/2 inch tube so the screen could unroll out through the slot. I then made ends that hold the spring loaded roller inside. I put a length of metal plate on the free end of the screen to allow it to be attached to the bottom of the sash window frame. When finished the screen could not retract into the box.

I was successful in making several of these for our home in Hawthorne and then made some for my mother's home in Palos Verdes. Hers were mounted vertically for her sliding windows. But there was a design challenge that I decided to ignore – the gap between the screen edge and the edge of the window when opened. I know I could fashion some track for the edge to slide it but I decided to not pursue that detail so I never made it into a salable product.

Along the way I decided to go to the Patent Office in downtown Los Angeles to do a patent search (there was no internet in 1974). I discovered that the first patent for "Invisible Window Screen" was granted in the late 1800s!

1983 PARKING RAMP OVER CAR FOR DUNE BUGGY

Darlene and I moved to a planned community in Manhattan Beach with nice attached 2 story townhomes. But the rules included one that did not allow a 3rd vehicle to be parked anywhere. We had a classic Meyers Manx dune buggy and then we had two cars. There was no room in our garage for a 3rd vehicle.

One day I was in the garage pondering a solution when I looked at the space above my sedan. I realized that there was enough room to build a shelf over the front of the car that would be strong enough to support the back end of the dune buggy. I could drive my car in and out with no problem. But how to get the buggy up? I could see that if the shelf were about 3-1/2 feet up then I could make ramps going down and out the garage door. Then I could lift the ramps with a winch up to clear space for the car. I wanted the ramps to be as long as possible so they were the lowest slope as possible. I built two ramps that were long but just short enough to be lifted over the garage door so the door could be opened. (it was a tiltup door, not roll up). Then, to maximize its length and reduce the slope I added another 5 feet to the length using strong hinges. I put vertical board under the hinge end to hold the whole ramp straight. Here is a picture of the ramp in the air. What is not obvious is that the ceiling joists are higher than the average garage. Note the ramps are 2x6 lumber 2 wide with cross supports under them and 2x4 lumber on edge on each side to strengthen them. The result is a U shape that is very sturdy. You can see a white rope at the upper left that is one of the 2 connected to a 4x4 running across both ramps below them to enable them to be winched up high. You can see that the garage door is just clearing the bottom of the ramps. The winch is a 12 volt boat winch that is very affordable. It is mounted up to the right and pulls the rope through 2 pulleys just above the rope. The weight of the buggy was mostly in the back where the engine is – about 450 pounds per tire. The shelf holding the buggy is on 4 4x4 posts attached to both

the concrete floor and the rafters. Then 4x4s run across front and back. You can see them held with ½ ich bolts. Then more 2x6s are under each tire. The entire assembly was strong enough to enable one to drive the buggy up the ramp backwards but I put a 2nd winch at the back to pull it up. The cute little girl is Kimberley who is, in 2021, grown with 2 cuties herself.

1995 WEBCAM SOFTWARE

The internet brought a new perspective to our lives. And it offered a way to get pictures from far away into our rooms. It gave me the medium I needed to achieve a long time goal – to see the surf at the beach without driving to it. I had called a company that offered security cameras to ask the cost of putting a camera at the beach and sending the image by wireless antennas to my home 2 miles from the beach. They quoted $10,000. I passed on that.

But the internet was free! So I looked at the webcams of the day – Netscape's Fishcam – was one. USC had a Tommy Trojan Statuecam. I called USC and learned their IT department had created the software for their camera. I went to SC and met Carl Sutter, one of the IT experts. Carl and I discussed the process needed to create a commercial webcam software program.

Now, technically I did not invent webcam software. What I did was IMPROVE the software of the day to make it affordable and commercially available. However, I did invent the addition of pan tilt and zoom to the software.

I those days in order to get a picture on a web site one had to use 3 different programs in this sequence:

1. Open a program to tell a camera to snap a picture.
2. Open another program to tell the computer to dial the internet on your phone line.
3. Open another program to tell the computer to send the picture via File Transfer Protocol (FTP) to your internet site.

Carl estimated he could create such a program for $3000. I agreed to pay him for that.

During the time he was writing the program I called Sean Collins in Huntington Beach, the brilliant oceanographer who opened Surfline.com. Sean's office was in the building with the clock tower

overlooking HB pier and the surf. I told him about my webcam software and he was excited. He said “I was going to have to email pictures to my ISP in Boston” (ISP is internet service provider). I met with him and he bought the first program I ever sold.

Sean asked if I could add a feature – the ability to control a pan, tilt and zoom system to control the camera better. Pelco makes the entire camera system and has a detailed interface description that Carl followed. The Pelco system allowed us to program the camera to go to any angle and then stop and set any zoom distance before taking pictures. Sean was impressed and that started a long working relationship. Here is a reprint of a page at Surfline.com that commemorated that historic event.

Making history

The first live camera, or "surf cam" as they've become known by a generation of Net-savvy waveriders, was setup by our late founder Sean Collins in Huntington Beach for the 1996 U.S. Open. Using a closed circuit video security camera and a computer program called "Snap and Send," every five minutes the program would take a single frame from the camera record and upload it to whatever place you'd instructed it. Presto: A live webcam view of the beach, pretty impressive for 1996. Since then our network of live cameras has grown to over 200 and the quality has steadily increased to 4K (although shhhh, that's still under wraps here at the office).

I coined the term SnapNSend and filed a trademark application for that term. I was sent letters from the most famous camera companies at the time warning me they would take me to court to fight my right to the trademark. I ignored them all and got the TM in 2016.

Between 2016 and 2019 I sold several copies of SnapNSend all over the world.

1999 WEBCAM AND SOLAR SYSTEM FOR REMOTE POLE MOUNT

The United States Postal Service IT manager was Gil Lugo. He was in charge of monitoring all their construction sites. He contacted me to ask if I could supply him with computer systems and cameras and pan, tilt and zoom systems (PTZ) for his sites. He explained he felt it would be valuable for managers to be able to see real time progress as it happened.

The first project was for a site in Philadelphia and the challenge was to provide solar power to the camera system because there was no electricity wired to the pole located in the position needed for best views. The contract required that I design a rack mounted solar panel assembly and an enclosure large enough to contain 3 batteries the size of car batteries, a solar charge controller to convert the solar panel output to battery charge voltage and an inverter to take the 12 volt battery power and convert it to 110 volts AC for the camera, the wireless transmitter and receiver and the PTZ system.

2004 WEBCAM 50 FOOT MAST ON A TRAILER

Mr. Lugo gave me another challenge in 2004. The USPS was building a new site in Santa Monica CA and it was very small. He only had a 10 ft by 10 ft pad available and he wanted a temporary pole mounted there that could be removed after construction was completed. We decided that a trailer would be the best method to transport a mast in and out.

As an inventor I always paid close attention to materials and to assemblies that I could see the materials used for various purposes. Steel trailers is an example of a commodity that has been in our lives forever. I knew that there were a variety ways to use steel and my preference is always to use angle irons or U shaped metal.

I then thought about how I could make this trailer sit solidly once driven to the location. I decided to use telescoping legs at all 4 corners. I found tubing that is square and found two sizes that fit closely one inside the other. I drilled holes so that each could be pinned with ½ inch diameter bolts at just the right height.

The mast was a challenge. But first, I designed a fork to pull the trailer that was connected to the trailer via removable bolts. The fork was 4 feet long so I had 14 feet of length for the mast to lie down for transport. The plan was to have the mast top at least 50 feet up. So the mast was in 4 sections each 14 feet long so that once extended the sections would be 12 feet each. Added to the trailer height of 24 inches the top is exactly 50 feet.

WHOLE HOUSE FAN FROM HVAC BLOWER

I found out that I could get used HVAC system blowers at a very low cost. I also discovered that the average blower puts out a very good air flow – usually 1,500 cubic feet of air per minute (CFM). I learned that most HVAC systems are thrown in the trash because of failures in other parts leaving the good blower intact. I called many HVAC contractors and learned the name of a man who spent all his time recycling HVAC systems. I contacted him and he agreed to sell me used blowers for $10 each. (Recycling centers paid him just $5 or less per blower).

I then discovered a detail when testing these blowers – they are called squirrel cage blowers because the air moving part looks like a squirrel cage rotating running tube. Here is a picture of one.

You can see the round blower that is the “squirrel cage”. It sucks air in through both sides and blows it out the square opening. When I first turned one on it moved very little air. I found out that blowers like this are designed to be loaded with a lot of back pressure – remember that they push air through long ducts that run in walls and ceilings and attics to distribute air throughout a house. So I had to install a plate over the output to give the fan back pressure. When I did so the output flow increased dramatically. In fact, the opening is about 14 inches by 14 inches and I had to install plates that covered over ½ of that opening. I used the plate as a hinge point for a flap that acted as a damper to prevent air from moving back through the blower when it was off.

In 2008 QuietCool’s 1500 CFM model price was $699 plus tax. I was able to make my 1500 CFM fan for a cost under $100 and sell it for $500. In October of 2008 I sold 6 units on EBay.

2010 IMPROVED WHOLE HOUSE FAN INFINITELY VARIABLE SPEED

I realized that I needed to build a larger range of models to add to the 1500 CFM model. I investigated motors and found that the most modern motors were Electronically Commutated Brushless DC motors (ECM). Many suppliers of whole house fans offered two ranges of models, one based on PCM motors and the other on ECMs. PCMs are less expensive than EC motors so the prices were more attractive, but in use they take more electric power. EC motors have the very attractive feature of being able to run at low speeds and at the same time low input power.

I realized that I could offer the first whole house fan on the market with infinitely variable speeds from nearly off up to full speed. As an example, QuietCool has always offered 2 speeds and has never offered infinitely variable speeds. It was not until about 2017 that any company offered many speeds and Airscape in Oregon is the one to come out with a 10 speed fan.

My idea paid off for me in 2014 when I was in competition with QuietCool for a fan for a homeowner in Southern California. She knew I had the best speed control and she liked that. She asked the QC salesman “do you have variable speeds?” To which he replied “yes, maam, we have 2 speeds”. She bought mine.

2012 WHOLE HOUSE FAN AUTOMATIC SPEED CONTROL

I began to imagine a way to control the speed of my fans based on the temperature of the room. I imagined it could be run at full speed when the room is 80 degrees or more and then gradually reduce speed as it approached 70 degrees. I met with a good friend, Kurt Rasmussen, in Torrance California to talk about how to make an electronic circuit to do this work. He came up with a brilliant circuit that worked perfectly.

The challenge was this – the motor runs at full speed at an input voltage of 10 volts DC. It slows down linearly with lower voltage until at 0 VDC it is off. So Kurt's circuit was designed to put out 10 volts when the room temperature is 80 degrees or higher and then as the room fell under 80 the output voltage would follow this rule- at 74 degrees the voltage would be 2 volts to run the motor slowly and take minimum power. At 78 degrees the voltage is half way from 2 to 10 or 6 volts.

WHOLE HOUSE FAN WEB SITE FOR AUSTRALIA

I decided to look into the market for whole house fans down under in case it could make my business operate all year. The market in America tended to start up in spring and die down in fall. Australia is the reverse. That market starts up in our fall and dies down in our spring. So I opened up http://Invisco.com.au in 2012. I offered my unique variable speed fan. In those days the largest competition was from Breezepower. They were importing the big ceiling mounted fans from Triangle Engineering in Arkansas. I was offering a much quieter whole house fan that mounts in the attic, not the ceiling.

2015 DISTRIBUTORSHIP FOR AUSTRALIA

It took a few years but in 2015 I landed my first order. Then I had to find parts there to avoid high shipping costs. I started by looking for duct. That search led me to CSR Edmonds in North Ryde, just outside Sydney. I gave them a request for quote for various sizes of ducting and that query caught the attention of their Export Sales Manager, Allan Ramsay. Allan called to ask what I was doing. I explained that I was a ventilation expert in America who just sold a system to an Australian homeowner.

Allan was interested and we talked for some time and he told me he needed help in America to distribute their rooftop ventilation products here. He flew to California to attend a trade show with me and to get to know me better. The result was that he gave me a contract to be their distributor here. I opened up the web site http://EdmondsUSA.com and started calling sales representatives to help sell the fans to the US market.

In looking at his market I saw that the major suppliers here are Greenheck, LorenCook, and others. I called the reps for each company and within a few months had signed on reps in 27 states.. Edmonds was the first in history to invent a hybrid ventilator. They made the blades straight and vertical rotating under a hat. They called that a Hurricane. Then they went a step further and inserted a motor under the hat to rotate the turbine blades. That caused the blades to pull more air up and out of buildings.

But the Edmonds engineers made a critical design decision – they elected to maximize the free gravity air flow at the expense of powered air flow. They did not want to put a motor and propeller in the way of the free air flow. The result is that their design cannot pull air when the static pressure is above 0.11 inches of water. (static pressure is a measure of the resistance to air flow – an example is trying to suck air from an entirely closed building – if there is no way for external air to enter the building the fan cannot move any air.)

HYBRID ROOFTOP VENTILATOR FOR BUILDINGS

This offered me the opportunity to improve the design by adding a motor and blade inside the throat and eliminating the motor that rotates the top. I did so and branded it the Tornado. The first design I landed is on the roof of a new gymnasium designed for the Los Angeles suburb of Studio City. There are 8 rooftops used.

I have been amazed that it is taking so long for the Studio City job to start. I met with James Shwe of Maroko and Shwe in 2015 and he was so impressed with the hybrid concept that he immediately embraced it and designed it in to his work for Studio City. But it was not until 2020 that the job came out for bid by Los Angeles. And that was the same time that covid hit. The job got two contactors to bid on it but Los Angeles buyers wanted 3. They shelved the project to wait until covid subsided. Hard to imagine that here in December of 2021 nothing has progressed.

My experience with the Edmonds hybrid caused me to decide to improve on it by adding a motor and a propeller blade to make its performance much better. The result is my Tornado that can pull air in static pressures far above the 0.11 that Edmonds falls apart.

I informed James Shwe, the engineer on Studio City, that I had improved the fan and he added Invisco to his drawings. It took until 2020 for the city of Los Angeles to finally get to asking for bids for construction. But covid hit and delayed the entire process. Even today, 12-22-21, they have not rebid.

But the best news is that the quote was for 8 units at an average of $3000 each or $24,000 and the profit is almost exactly 50% or $12,000.

2019 SPLIT NUT FOR DRAIN PLUMBING

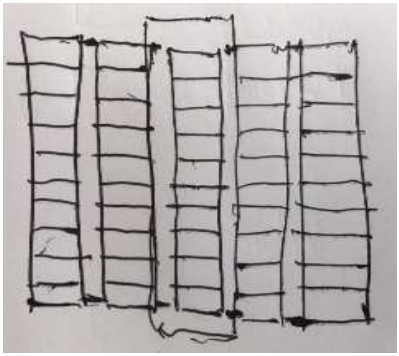
If you have ever worked under a sink on the drain and plumbing and water pipes you have experienced the large nut used to tighten the nearly 2 inch diameter main drain pipe. It is a thin nut, just 1-8 to 3/16 inch thick, and it threads up to just under the sink drain hole to make the drain water tight.

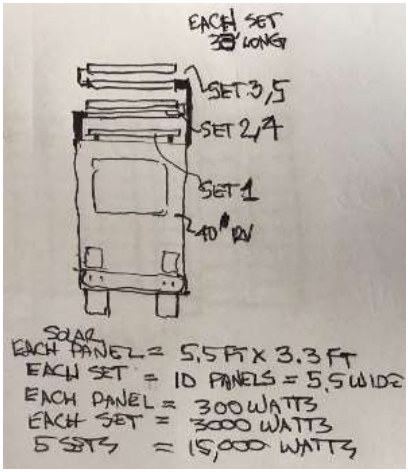
One day I was working on one that had water pipes going up inside. The result was that I could not take the nut off without taking the trouble to shut of the water – both cold and hot – and disconnecting the water pipes from the drain pipe assembly. It was at that moment that a new product came to mind – a nut in two pieces that was held together by screws on each side through small flanges. That would solve the problem of having to dismantle water pipes to remove and replace the nut.

2019 MOTOR HOME SOLAR POWERED

If you have thought about owning a motor home that never needs gasoline, you will want to see this. You can have a powerful 300 HP electric motor and 15,000 watts of solar power panels and a compact battery bank all mounted on and in a 40 foot motor home. You can have an accelerator pedal that will energize the motor and give you more torque at low speeds than any gas engine. Below are the key components of this design.

SOLAR PANEL ARRAY





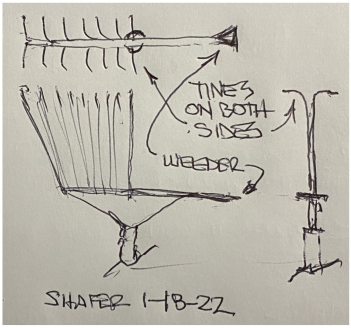
This is my first draft of the look with the rv in the center.
This design uses banks of solar panels that are on hinged motorized arms so that when opened they offer a peak power of 15,000 watts to recharge the RV batteries.

This end view shows the solar panel banks folded over the RV roof for transportation.

Most motor homes have gas engines that are about 300 horsepower. Below is a very good electric motor that is also 300 HP. This is not

much different in size from a gas engine. It can be mounted in the RV engine compartment and, when fitted with a custom connector, can drive the same drive train as the gas engine. The cost of a motor like this is about $5000 used. New ones are more than twice that price but AC motors have very few moving parts so they are VERY reliable.

RAKE WITH WEEDER



I was outside trying to cope with the weeds growing in our back yard. I had the usual weeding fork with a short handle so I was down on my knees. Then I had to stand up to get my grass rake to rake the cut weeds. I suddenly noticed that it would be easy to attach the weeder to the rake so I could have a long handle on the weeder and have both tools ready at all times. Above is my first prototype. The idea worked perfectly. I have since decided that the rake needs to be 2 sided and on one half and the weeding fork on the other half so that I can rake next to a wall or fence in either direction. So above you can see my drawing of the two sided rake.

Here is the weeder I was using on my knees.

2019 RAKE FOR PEBBLES AND SMALL ROCKS

Darlene and I moved into a home with landscaping that is mostly small rocks like those in the picture of the weeding rake above. I had to move a lot of them to expand a patio in back. I could use a shovel and a wheel barrow but that was a lot of work and a pain in the back. I did not need to lift them but simply move them from one place to another. I just happened to have a sturdy hand truck and I looked at the bottom plate that lifts boxes. I turned it over so the wheels were up in the air and the plate was down on the rocks.

I discovered that it was perfect for scraping the small rocks up and dragging them to another spot. I then thought to bend some sheet metal for curved ends to catch more rocks. Here is the result – this will scoop far more rocks than any shovel could ever lift. The toolbox on the top was attached so as to hold weights to cause the blade to dig in deeper.

SHED FOR TIGHT SPACES

Above is a perfect example of a tight space. This is a 4 ft wide space and the homeowner wanted a 12 ft shed with doors on each end. I thought of a way to make the walls in such a way as to enable them to be installed entirely from inside.

The result is a shed that can be built in between two walls or a wall and a fence or a home and a wall. It is built in sections I call modules. Each one is based on a 4 foot wide by 8 foot high standard sheet of exterior wall board.

Now – the story about my shed - I needed a shed in my yard so I did what most people do – I bought a shed that is 8 feet deep and 10 feet wide from Lowes. It was made in - you guessed it – China. It is super thin sheet steel and has what seemed like 1000 screws and nuts to hold braces on each wall and on the ceiling and to hold the edges of the thin walls and ceiling together. I had to have a helper inside while I put the screws though the little holes for the helper to attach the nut and lockwasher. It was a nightmare.

SHED WITH POPUP ROOF

In 2019 I was called by a homeowner in a community with 5 foot block walls and a homeowner's association that would not allow a shed there higher than the walls. He wanted a shed that would let him stand up and he is over 6 feet tall. So he needed a shed with a roof that would pop up when he opens the door and lower when he leaves.

I invented just that. I knew that there are electric push rods one can buy that can push a lot of weight. Some are used in cars for trunk lids. So I bought 4 and put them on each corner of the roof. I attached wires to a switch at the door and to a 12 volt battery so when the door is open the 12 volts goes to the push rods. Here is a picture of the assembly.

2019 SHARK PROTECTION DRONE

Drones are perfect for watching for sharks and other predators from the air. A personal drone can be programmed to fly around the owner who is out in the ocean swimming or surfing or body boarding to look for large objects in the water. If one is in view the drone can alert the owner.

An extension of this design is to broadcast a video to the owner's smart watch or cell phone to show the owner where the fish is relative to the owner's location.

CHRISTMAS DECORATION FOR ROOF

I got the idea to make a rooftop decoration that would look just like the famous star of Christmas. Here is a very good picture that shows the star as I recall it from my youth.

I decided to make it very tall and I wanted it to be higher than the peak of our roof. I decided to use copper tubing that is easy to get at the store and then to use the LED light strips to simulate the rays of light emanating from the center. You can see from the picture that the center vertical light is about 2 times the length of the crossing light and the 4 rays that are tilted at 45 degrees are about ½ the length of the cross ray.

I decided to make the center 8 feet long, the cross 4 feet and the rays each 1 foot long (using 2 2 foot pipes). I drilled a ¼ inch hole in the center of the 4 foot and 2 foot pipes and one at 3 feet down from the top end of the 8 foot pipe. I used a ¼-20 screw and nut to hold them together. Then I added a plastic ring about 20 inches in diameter to hold them all at 90 and 45 degrees to each other.

Here is a picture of the assembly in 2018 in daylight and at night.

You can see the assembly is crude but at night it does not show – only the light shows. Now that I am looking at the picture at night I realize that the top section is longer than it should be. The original rendition above has the top length the same as the two side lengths.

You can see the roof line in the top picture – that is the edge of the top of the 2nd story. I mounted the star post on two galvanized steel pipes each 12 feet long so I could get this star above the 27 foot high 2 story peak. The challenge was to get that long pipe up. I used a pulley at the peak and a long rope to pull the assembly up and then I wired the pole to a ring attached to the eave at the peak.

DUNE BUGGY BODY LIFT

I bought a Meyers Manx dune buggy in the 70s and over the years improved it with a new stronger clutch and a new cam and polished and ported heads. It had a single 2 barrel carburetor on an old manifold.

I upgradeD it to dual Weber carbs but found that they would not fit under the rear fenders . So I decided to lift the rear fenders by removing the body and putting in spacers from the front to the rear between the body and the frame.

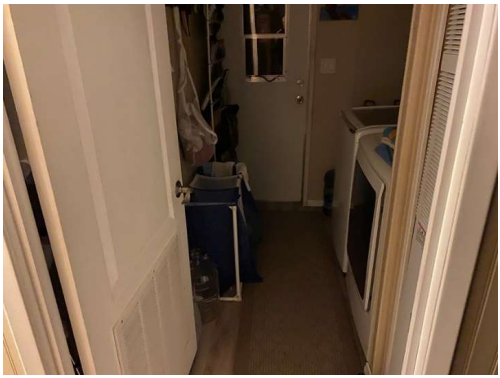
It was easy to unbolt the body – it was held by about 10 bolts, 5 on each side. This was a good idea because I discovered a lot of rusted metal in the floor pan that needed repair. Then I designed the perfect wedge shaped aluminum to run the full length of the gap from front to back. I paid a local welder to take aluminum channel that has ¼ inch thickness and is 4 inches wide and 2 inches high and cut it in half at an angle. The body and frame meet over a roughly 5 foot long length with the front 16 inches turned in about 6 inches. So we started with a 5 foot long channel and cut it so one end is ½ inches high (on the 4 inch side) and the other is 2 inches. The two pieces were then welded so one end is 4 inches high and the other 1 inch high.

Below is a picture of it between the body and the frame. You can see the right end is bent to follow the angle of the frame. ¼-20 tapped holes are ready for screws to hold the body. The bottom edge has identical tapped holes for screws going up through the frame below.

MFD HOME WHOLE HOUSE FAN

After selling whole house fans for years Darlene and I moved into a manufactured home. So I focused on what the home has already that I might be able to use. I realized that the forced air system is mounted in a service room that is between the hallway and the side door. The air is pulled through a door in the hallway and blown through ducts under the house to each room. I noticed that the service room exterior door has a window.

It then occurred to me that if I opened the exterior window and closed off the air flow from the hallway then exterior air would be sucked into the service room and then blown into each room. VOILA – a method to pull cool outside air in using the existing HVAC blower! Below is a picture of my service room. You can see the door in front is the hall door with louvred opening at the bottom for air from the hall. The door at the rear is the exterior door with a window.The HVAC system is to the right where air is pulled into the duct system. I used a simple sheet of stiff paper to cut off air flow thru the door.



In order to maximize the effectiveness of this design it is best to put a larger window in the outside door. The ideal window is a swinging one that hinges on the left and is 18 by 18 inches just like the opening in the hall door above. This invention has led me to invent another – that is a way to eliminate the opening in this hall door. See the description of Mfd Home Ceiling Air Return.

MFD HOME CEILING AIR RETURN

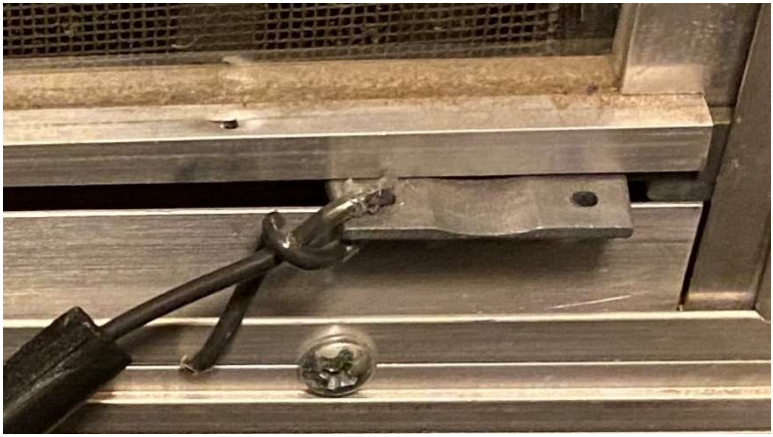
Most mobile homes have side entrances that have a washer, dryer and the HVAC forced air unit installed. The door to the room separates this “service room” from a hallway and it has a large opening with louvres to allow air to flow from the home to the HVAC. The result is that the sound of the FAU blower comes right out the door into the living space. Some mobile homes have the dining area very near the door. Most mobile homes have a space between the ceiling and the roof that is a very small attic space. That space can be used for air return instead of using the hallway. So it is simple to put openings in the ceilings of rooms and an opening in the ceiling of the “service room” so that air can move without going through the door. Then the door can be changed to a quiet solid door.

This offers the ideal way to now use the FAU as a whole house fan to pull cool air in through the service room exterior door and circulate it through out the home. Most service rooms have a window in the door but some windows are not as large as would be appropriate for use as a source of air. As an example, a standard design has an 18 inch by 18 inch opening in the door but just a 12 inch by 12 inch window in the door. That is 324 square inches vs 144. So the best action is to replace the door with a window that will open to at least 300 square inches.

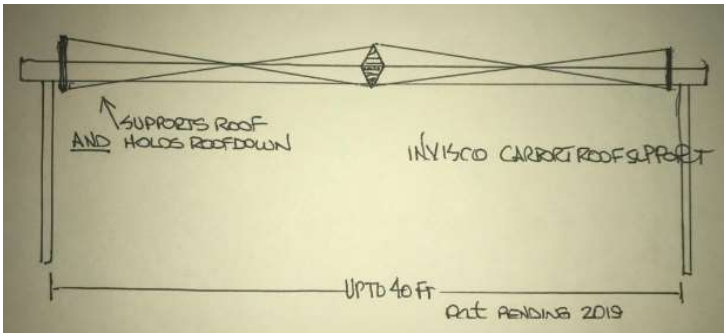
In the home I am using as an example both doors are 30 inches wide. The exterior door has a metal sash window with a stationary top that is 12 by 12 and a raisable bottom that is 12 by 12. The ideal door will have a stationary top of 18 by 18 and a raisable bottom of 18 by 18. Or the door could have an “inswing” window that is 18 by 18 inches.

MFD HOME WINDOW LIFT HANDLE

The home we bought has a door off the service room with a window that I imagine is fairly common to these homes. It is a modern aluminum framed sash window – one that has a fixed top section and a raisable bottom window with a screen outside. The window has two spring loaded locks – one on each bottom corner. This required that one used two hands to unlock and raise the window. That was uber annoying. So I decided to install a cable from one lock to the other so that I can pull both locks in with one hand and raise the window. Below you can see the result. It is not fancy but works perfectly. I drilled a small hole in each lock tab for the wire and then put a larger rubber tube on the wire to make it easier to pull.



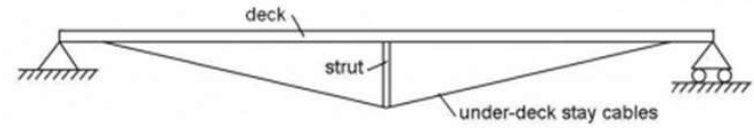
CARPORT POST ELIMINATOR



Almost all manufactured houses have roofs on each side with one edge connected to the main structure and the other edge supported by posts. The posts are attached firmly to the roof and to the ground below because they are designed to prevent the roof from falling but also must prevent the roof from lifting in a strong updraft.

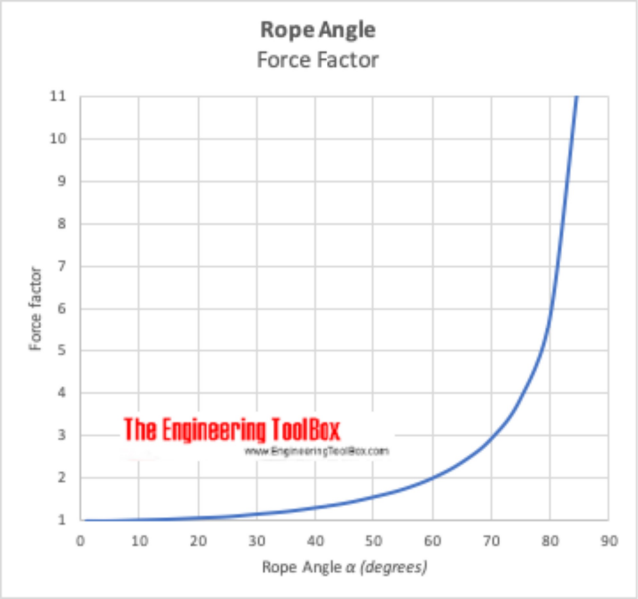
Most homes have post pairs spaced about 8 feet apart. Many homes have these roofs as long as 30 to 50 feet long. The roofs are very light so if the edge were strong then just two posts would hold it up – one at each end. So the challenge was to find a way to strengthen the edge.

One can see a perfect example of how to stiffen a span when you look at a suspension bridge. Here is one.



The suspension cable exerts sufficient pressure up the center strut to hold any reasonable load. The under-deck cable holds the strut up due to its ability to withstand tension forces. The tension force in the cable is much larger than the weight on the deck because of the narrow angle at which the the cable meets the deck. As an example, if the cable were at a 45 degree angle (the strut length the same as the distance from the strut to the cable end point) then the tension is 1.404 times the weight of whatever is on the deck center.

Here is a graph that shows the force factor versus the angle.



As you can see if the rope is at 60 degrees it is 2 times the weight. In the drawing of the deck above the angle is more like 70 degrees so the tension is 3 times the weight.

This roof support invention needs the angle to be much greater. The practical installation of a cable on the edge of a roof really requires that the cable be about as high as a 6 inch wide board. And the cable needs to be 20-30 feet long from the center strut to the end connection. That is 6 inches in up to 360 inches. That is 1.66 percent or, in degrees of angle that is close to 1 degree.

Now, if the roof weight at the center of the cable is 100 lbs then the tension in the cable is calculated by dividing 100 lbs by the sine of 1 degree which is .017 so the result is very close to 5000 lbs.

Going to the data on the web site https://www.engineeringtoolbox.com/wire-rope-strength-d_1518.html , we find that the strength of “Bright wire, uncoated, fiber core (FC) wire rope, improved plow steel (IPS)” stranded cable (6 strand by 19 wire)

when ¼ inch diameter is 5,480 pounds “minimum breaking strength” but only 1100 pounds “safe load “. 3/8 diameter has a min brkg strength of 12,200 lbs.

Now, looking at the safety of this design, we can see that this roof edge is not expected to have any human load on it and so it is not necessary to use the “safe load”criteria. In this case I would opt for the 3/8 diameter.

These carport roofs are subjected to both top loads and bottom loads. As a result we must design this brace with a v shape to hold the edge up and an inverted v to hold it down.

Above is what I designed for my carport roof. The end connections have high forces to the left and the right but not up or down. The method for tensioning is to use standard cable turnbuckles like this one-

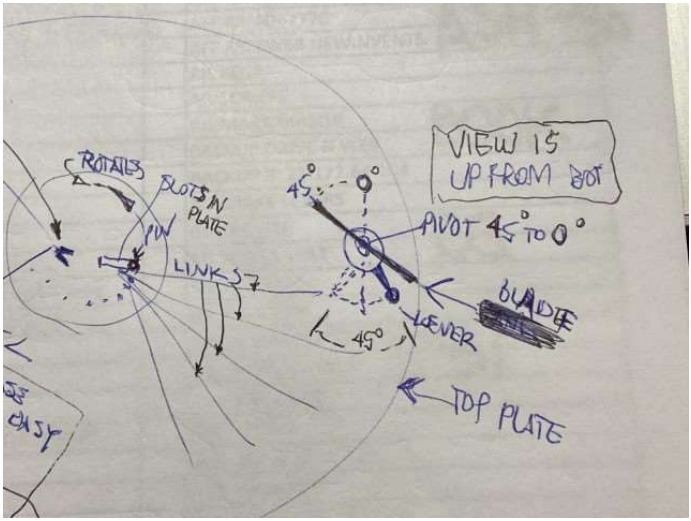
ROOFTOP VENT TURBINE CLOSES LIKE DAMPER

Engineers at CSR Edmonds in North Ryde, Australia, came up with a brilliant design for a high air flow rain hat for their product line. It is similar to the “whirlybird” round rain hat found all over the United States but it has purely vertical turbine blades around the perimeter of a rotating cylinder with a rain proof top. Here is a picture of their “Hurricane”.

The blades catch even the slight breezes and then cause the top to rotate. If there is any rain the blades deflect the rain from entering the top. Note the bottom of the blades are attached to a ring that is spaced out from the bottom throat.

In 2021 I decided to imagine a way to close this top so air cannot flow in or out. Here are the thought processes that I used to come up with a totally new invention.

First, I knew that the blades could be rotated so that they could make a wall around the perimeter. Here is my first drawing of this possible implementation.

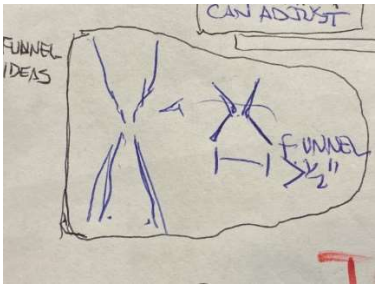


I started with this top view of one blade at a 45 degree angle. When you look at the picture on the last page you can see that the blades are not that angle but more like 20-30 degrees from where they would be as a wall. In any case, 45 degrees is a good starting point. I then added pivots on top and bottom and a lever for some control rod. The lever converts a rotation force to a linear force back and forth. Then I imagined a link to push the lever out to open the gaps and pull the lever in to close the gaps between the blades.

Next I needed to imagine a way to move the lever in and out from some mechanism in the center of the rotating top. I started with a slot in a plate and a pin at the end of a link. This fixes the link at both ends – the link would have a hole at the blade end to fit over a pin at the top of the lever. It would have a pin at the other end to fit in the slot. The lever will need supports at each end but I left that detail for later.

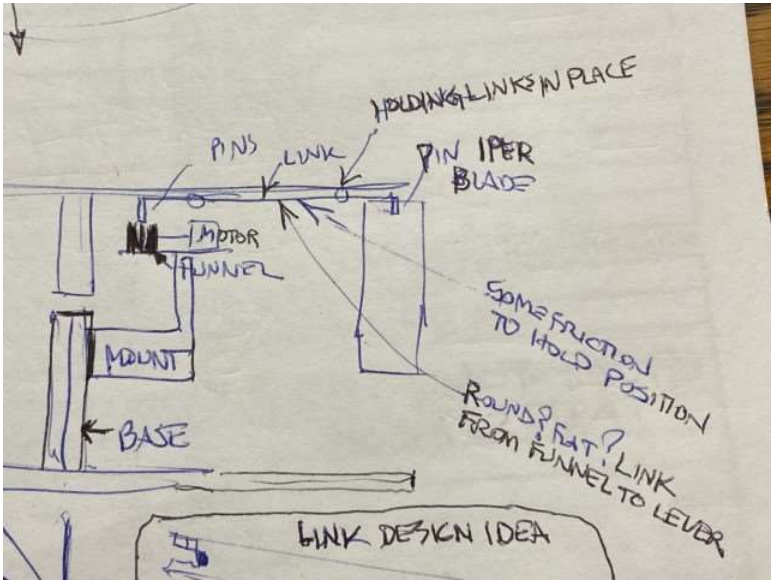
Now I imagined I needed a way to move that pin in the link in and out. I also knew that there will be about 40 links and pins and slots – one for each blade. I imagined an angled metal plate that could move in and out to push each pin as it passes the plate. Then I thought there might need to be two plates, one on one side to push the pin out, one on the other

side of the pin to pull the pin in. This is what I called a “funnel”. Here is my first drawing.



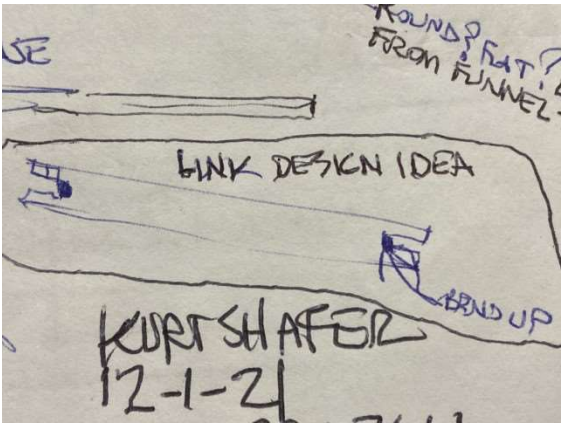
I imagined it would have an opening of about ½ inch and I drew it with openings on each end but later realized it will only need to be opened on one end because the turbine will never rotate more than one direction.

I then imagined a motor and mechanism to hold the funnel and move it in and out. Here is my first drawing of that.



I knew that the motor and funnel would need to be mounted to the base of the assembly since the top is rotating around the base. So you

can see the motor is positioned to move the funnel in and out to rotate the blades to closed or open position. You can see that I drew a first link design idea. Here is that detail.



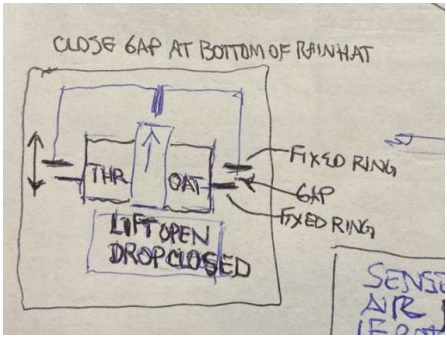
You can see that I imagined that the “pins” that I mention above are now part of this link and are simply bent up or down to mate with the blade’s lever and the funnel. This minimizes the task of making a link with pins. It depends on a support method – which now causes me to imagine that the link will be supported by the blade lever and the plate at the center. This makes the entire assembly as simple as possible. Note that the drawing says “bend up” but now we know it is “bend down”.

Another detail that I imagined is that the funnel needs the top to be rotating in order for it to work. So I imagined I would need an air flow monitor or a rotation sensor to enable the motor control to work. Upon reflection now as I write this I think the funnel can be sized in such a way as to work independent of rotation movement. That is, it can be in either the in or out position at all times whether the top is moving or not. So I will shelve this thought for now.

Next, I realized that there is a gap at the bottom of the blade assembly. You can see it in the picture – here is a close up.

That gap allows the top to rotate. In order for this design to be complete this gap must be closed. You can see that there is a metal plate at the bottom to which the blades attach. I imagined that if the entire assembly of blades were moved up or down then another plate could be attached below this plate so if the top were lowered the gap would be closed.

This resulted in the idea that the shaft on which the top rotates could be lifted or lowered. Here is my first drawing of that idea.



You can see that I add a “fixed ring” to the outside of the throat just under the ring at the base of the blades. Lifting the shaft opens the gap, dropping it closes the gap.

GARAGE DOOR WINDOW KIT

I had a home with a 2 car garage and the door faced east so the sun was shining on it all morning. I decided to put windows in the door like other homes have. My door was a thin steel sheet that was embossed with the look of frames and rectangles. Across the top section there were 8 embossed window frames with no windows. I measured them and decided to install plexiglass windows. My first design used 2 parts – the plexiglass and a thin metal frame cut from aluminum sheet. I drilled holes in each corner for mounting screws.

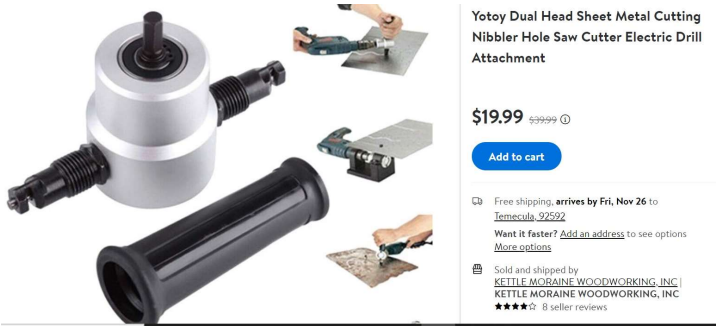
Then I cut the metal door to make openings that were 10 inches high and 14 inches wide. My frames were 12 inches high and 16 inches wide. I cut the plexiglass to the same as the frame, 12 by 16. I painted the frame brown to match my garage trim color. Here is the result.

After this work I started selling kits. The kits have been quite popular and I realized that the cost of making the metal frame was of no value. So I modified the kit so that the plexiglass now gets painted around the edge to look like a frame. The result is a kit that is very affordable and easier to install.

About installation, it is worth noting that my original design required screws and nuts to hold the windows in place. I realized that installing rivet nuts would make installation much easier. Below is the tool used to squeeze the rivet nuts in the holes that are drilled.

And speaking of tools, the first time I cut my door (the only time) I used a pneumatic tool called a nibbler. That required that I had an air compressor and the nibbler used so much air that it took me a long time between compressor cycles. That was tough to do. I later realized I can

use a nibbler designed to be driven by a simple electric drill. Below are pictures of both the rivet nut tool and the nibbler.



I have taken some pics of the rivet nut as I set it. Here they are. First the nut and a threaded mandrel used to pull it. Next the nut on the mandrel in the tool. Next the nut pulled to squeeze into the hole.



HYBRID ROOFTOP VENTILATOR FOR BUILDINGS

In 2015 I was in touch with a company in Australia to ask them about part for whole house fans in the country. I had obtained an order from an Aussie for a whole house fan. The company, CSR Edmonds, made excellent parts and they also made a unique rooftop ventilator they called Hurricane. Then, their engineers decided to add a motor to their Hurricane to add powered air flow. Since the design offers both free gravity air flow and powered air flow they called it a hybrid.

In this picture you can see that the engineers made the decision to rotate the turbine top to use it to move motorized air rather than installing a motorized propeller. Their logic was the propeller would degrade the free gravity air flow.

That decision resulted in a design that fails to pull air in any significant static pressure. I decided to improve the design by inserting a motor and propeller. The result is the highest performance hybrid rooftop in history.

SLOT MACHINE BUTTON PUSHER

If you have ever spent any time playing slot machines you know that sitting at the machine and pushing the button every second or two can be a mind numbing experience. I decided one day to invent a motorized button pushing machine.

In order for it to be useful it has to be small and light and be able to grip the metal around the button so one does not need to hold it in place. Here is a picture of a button. The cashout voucher is there so I can know the dimension of the sides of the button. The dimension is 1-3/4 inches from top to bottom of the metal edge surrounding the button.

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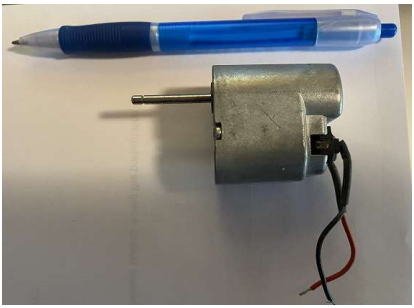
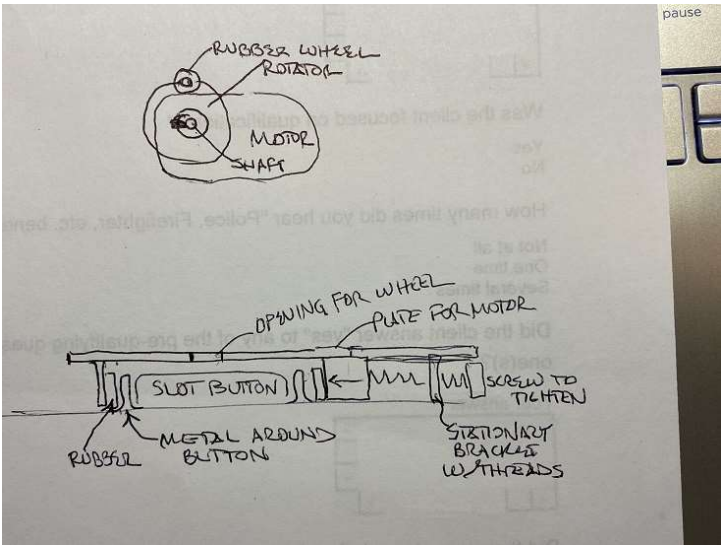
Next I needed to think of a way to push the button down. For that I purchased a small motor that runs on 12 volts DC. Shown is a motor with a gear so the shaft turns very slowly.



Then I need a bracket to clamp the motor over the button. Here is my idea for that –



The motor will have a rotating disk with a small rubber wheel to push the button. The bracket will have rubber glued to two edges – one stationary and the other movable to squeeze the rubber sides against the button's metal edges. Then the motor will rotate the rubber wheel at a slow rate to push it every second or so.

AUTOMATIC WINDOW OPENER

Some whole house fan owners want to remotely turn on their fan as they are driving home to cool the house before arriving. At least one window must be open for the fan to pull in the cool outside air. Leaving a window open can be a problem if it is on the ground floor and accessible from the street.

The solution is to have a motorized window opener and closer that will hold the window closed (like it is locked) only until the whole house fan is turned on. This is best accomplished using modern 12 volt DC powered push rods. Here is a picture of one.

At the right end you can see the motor and a grey end box that has gears in it to make the rod at the left end move out to push or pull a load. So below you can see it mounted on a window sill with the left end attached to the sill and the right end (the rod) attached to the window. The advantage is that the window can be left unlocked and cannot be moved without the motor being supplied with power.

Below you can see how the window can be opened but only enough to let air in, not a person. The motors turn both ways depending on the polarity of the DC voltage applied. There are two wires, one red and one black. So if the voltage is +10 to the red wire and 0 to the black the rod moves out. If reversed the rod pulls in. The best part is that the strength of the pull and push are the same. And they are strong!

In my design the motor is energized by a control circuit that is started by a sensor in the home's whole house fan system. When the whole house fan turns on the sensor sends a signal to the control to open the window. When the fan is turned off the control reverses the polarity to the push rod to push the window closed.

REMOTE TRAILER STEERING

As you know if you have ever towed a trailer the challenge is when trying to back it into a position like a driveway or parking spot. The task is foreign and unlike any other driving challenge. The trailer always seems to go the wrong way. One must turn the front wheels to point in the opposite direction of the destination of the trailer. When done right, the front wheels are turned to the left as an example, the back of your car goes to the left, but the trailer goes to the right.

The solution to this dilemma is to put steerable wheels on the trailer and steer them using feedback from the car steering direction. So, as an example, if you want the trailer to move to the right as you back up and you want to follow it with your car you would turn the car to the right to back up to the right. With the proper control design, the trailer wheels would turn to the right (when looking back at them). The angle to which they would turn would be proportional to the angle you turn the car wheels. In this way one should be able to move the trailer in a nearly perfect circle of any diameter.

WALKER MOTORIZED

SURFBOARD THAT FOLDS IN 3

PATENT APPLICATION

You will find that this formal application contains specific sections (This was written by Jeff Furr in Ohio in 2016).

The sections are

1. Title
2. Background - Field of the Invention
3. Background - Description of Prior Art
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Here is the formal application

Title of Invention

HYBRID ROOFTOP VENTILATOR

BACKGROUND

1. Field of the Invention

This invention relates generally to cooling and ventilation systems for building structures, and more particularly, relates to a hybrid gravity or hot air ventilator that can be installed on the top of any structure that needs ventilation through the roof.

2. Description of Prior Art

Gravity ventilators have been traditionally made with a rain proof top that has sides that require the air to go down before it can go up. This restricts the air flow and reduces the amount of air that can be vented. There has never been a hybrid with a motor and blade and vertical blade turbine top. There have been motor and blade fans and there have been gravity ventilators.

It is thus the object of present invention to provide a rain proof turbine design which will overcome the disadvantages of the prior art systems.

There is still room for improvement in the art.

SUMMARY OF THE INVENTION

In one aspect, the preferred embodiment of the present invention provides a hybrid gravity and hot air ventilation system that combines both rain proofing and high air flow performance. This system comprises of a turbine rain hat rotating on a central shaft that is mounted on a three or four legged base. The system has a fan blade on a motor that is centered by mounting brackets. Inside the top turbine hat is an assembly that includes two sealed ball bearings spaced vertically to ensure rigidity and a needle thrust bearing at the top of the shaft to reduce friction as the top rotates on the bottom support and shaft. This allows it to rotate when air flows through it. The turbine blades are at an angle to the air flow for the purpose of causing the turbine to turn with the air flow or with wind so that rain cannot enter the interior.

Hybrid is taken from the auto world, where a car can run on battery for free (if the charging was solar) or fossil fuel at a cost. In fans it means air flows from the force of gravity and wind for free or from electricity at a cost.

The current invention is more efficient, effective and functional than the current art.

Brief Description of the Drawings

Without restricting the full scope of this invention, the preferred form of this invention is illustrated in the following drawings:

Fig 1 is a schematic of a hybrid rooftop ventilation system.

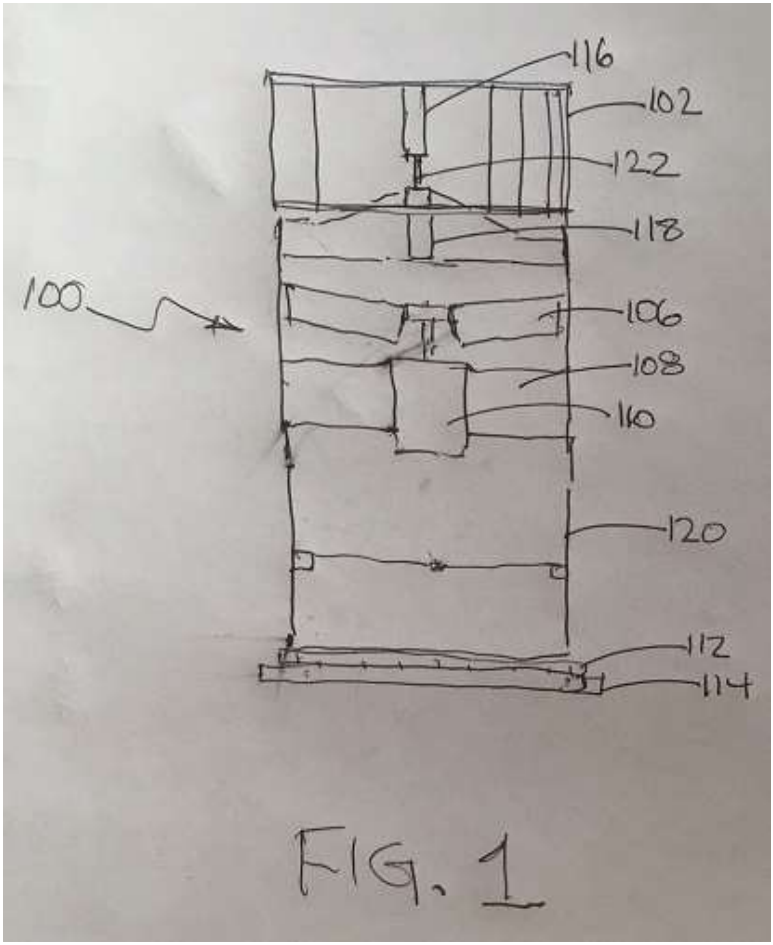

FIG. 1

DESCRIPTION OF THE PREFERRED EMBODIMENT

There are a number of significant design features and improvements incorporated within the invention.

The current invention is directed to a hybrid rooftop mounted whole house fan system 100. The house fan system 100 provides a gravity and hot air ventilation system that combines both rain proofing and high air flow performance. Hybrid is taken from the auto world, where a car can run on battery for free (if the charging was solar) or fossil fuel

at a cost. In fans it means air flows from the force of gravity and wind for free or from electricity at a cost.

FIG. 1 is a schematic illustration of a rooftop mounted whole house fan system 100 of the preferred embodiment of the present invention.

As shown in FIG. 1, the system 100 generally comprises of a fan blade 106 on a motor 110 that is centered by mounting brackets 108. Below the fan is the damper 120 and below that is the frame 114 and cube core grille 112.

On top of the fan is the turbine rain hat 102 with a ball bearing assembly 116 attached in the center. Below that is the mounting assembly 118 that has a shaft 122 in the center that slips into the ball bearings in the top.

The turbine rain hat 102 rotates on the shaft 122 that is mounted on a three or four legged base. Inside the top turbine hat 102 is the ball bearing assembly 118 that includes as least two sealed ball bearings spaced vertically to ensure rigidity and a needle thrust bearing at the top of the shaft to reduce friction as the top rotates on the bottom support and shaft. This allows it to rotate when air flows through it. The turbine blades 106 are at an angle to the air flow for the purpose of causing the system 100 to turn with the air flow or with wind so that rain cannot enter the interior.

One such application is as a whole house fan.

While the methods disclosed herein have been described and shown with reference to particular steps performed in a particular order, it is understood that these steps may be combined, sub-divided, or reordered to form an equivalent method without departing from the teachings of the embodiments. Accordingly, unless specifically indicated herein, the order and grouping of the steps is not a limitation of the embodiments. Furthermore, methods and mechanisms of the embodiments will sometimes be described in singular form for clarity. However, some embodiments may include multiple iterations of a method or multiple variations of a mechanism unless noted otherwise.

For example, when a connection is disclosed in one embodiment, the scope of the embodiment is intended to also cover the use of multiple connections.

Certain features of the embodiments, which may have been, for clarity, described in the context of separate embodiments, may also be provided in various combinations in a single embodiment. Conversely, various features of the embodiments, which may have been, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable sub- combination. Embodiments described in conjunction with specific examples are presented by way of example, and not limitation. Moreover, it is evident that many alternatives, modifications, and variations will be apparent to those skilled in the art. It is to be understood that other embodiments may be utilized and structural changes may be made without departing from the scope of the embodiments.

Therefore, 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.

Claims

That which is claimed is:

1. A rooftop ventilation system comprising:

A fan with multiple blades and a motor and brackets to center the motor and a damper to prevent air from moving through when the motor is off with a frame and grille to cover the bottom of the damper.

2. A rooftop ventilation system according to claim 1 further comprising;

Having a top with a turbine assembly that rotates on ball bearings with a shaft.

3. A rooftop ventilation system according to claim 2 further comprising;

Where the shaft can be removed for shipping.

4. A rooftop ventilation system according to claim 1 further comprising;

Having a turbine rain hat.

5. A rooftop ventilation system according to claim 1 further comprising;

Where the fan blades are angled.

6. A rooftop ventilation system according to claim 1 further comprising;

Where the motor is centered by mounting brackets.

7. A rooftop ventilation system according to claim 1 further comprising;

Having the damper below the fan.

8. A rooftop ventilation system according to claim 7 further comprising;

Having the frame and cube core grille be below the damper.

9. A rooftop ventilation system according to claim 1 further comprising;

Having a turbine rain hat with a ball bearing assembly attached in the center.

10. A rooftop ventilation system according to claim 9 further comprising;

Having the ball bearing assembly have a shaft in the center that slips into the ball bearings.

11. A rooftop ventilation system according to claim 10 further comprising;

Having the turbine rain hat rotate on the shaft.

12. A rooftop ventilation system according to claim 11 further comprising;

Having the shaft mounted on a base.

13. A rooftop ventilation system comprising:

A fan with multiple blades where the blades are angled and a motor and brackets to center the motor and a damper to prevent air from moving through when the motor is off with a frame and grille to cover the bottom of the damper, having a top with a turbine assembly that rotates on ball bearings with a shaft.

14. A rooftop ventilation system according to claim 13 further comprising;

Having the shaft be removable.

15. A rooftop ventilation system according to claim 13 further comprising;

Where the motor is centered by mounting brackets.

16. A rooftop ventilation system according to claim 13 further comprising;

Having the damper below the fan and having the frame and cube core grille be below the damper.

17. A rooftop ventilation system according to claim 13 further comprising;

Having a turbine rain hat with a ball bearing assembly with a shaft in the center that slips into the ball bearings.

18. A rooftop ventilation system according to claim 17 further comprising;

Having the turbine rain hat rotate on the shaft.

19. A rooftop ventilation system according to claim 18 further comprising;

Having the shaft mounted on a base.

20. A rooftop ventilation system according to claim 19 further comprising;

Having the base have a plurality of legs.

Abstract of the Disclosure

A hybrid rooftop mounted fan assembly made from a turbine rain hat, a motor and propeller and a damper and frame and grill that is specifically designed for installation on the top of roofs of all types of construction. The system generally includes an assembly of a solid rainproof top and vertical blades at an angle to the radius to cause the turbine to rotate when air flows up and out and when wind hits it from the outside. The system is generally comprised of a fan blade on a motor that is centered by mounting brackets. Below the fan is a damper and below that is the frame and cube core grille.

6 Creative Thinking Habits of Thomas Edison

The legendary career of inventor Thomas Alva Edison illustrates how creativity can be cultivated by anyone, in any industry. His work methods reveal that the true keys to unlocking creativity are learned traits — namely perseverance and an open-minded approach to learning. A shrewd businessman, Edison used his creativity not only in developing new inventions but also in bringing them to market and winning out financially over competitors.

Edison was granted 1,093 patents for inventions that ranged from the lightbulb, typewriter, electric pen, phonograph, motion picture camera and alkaline storage battery — to the talking doll and a concrete house that could be built in one day from a cast-iron mold. When he died in 1931, he left 3500 notebooks which are preserved today in the temperature-controlled vaults of the West Orange Laboratory Archives at the Edison National Historic Site in New Jersey.

The notebooks read like a turbulent brainstorm and present a verbal and visual biography of Edison's mind at work. Spanning most of his six-decade career, the notebooks are yielding fresh clues as to how Edison, who had virtually no formal education, could achieve such an astounding inventive record that is still unrivaled. The notebooks illustrate how Edison conceived his ideas from their earliest inceptions and show in great detail how he developed and implemented them. Following are some of Edison's

creative-thinking strategies, which you might bend to your will.

1. Quantity.

For starters, Edison believed to discover a good idea you had to generate many ideas. Out of quantity comes quality. He set idea quotas for all his workers. His own quota was one minor invention every 10 days and a major invention every six months. It took over 50,000 experiments to invent the alkaline storage cell battery and 9000 to perfect the lightbulb. Edison looked at creativity as simply good, honest, hard work. Genius, he once said, is 99% perspiration and 1% inspiration. For every brilliant idea he had there was a dud like the horse-drawn contraption that would collect snow and ice in the winter and compress it into blocks that families could use in the summer as a refrigerant, or the perpetual cigar which consisted of a hollow tube with a spring clip that moved tobacco forward as it burned. Although the cigar was a marketing failure, its companion product, the cigar lighter, was a marketing success.

Increasing your idea production requires conscious effort. A specific quota focuses your energy in a competitive way that guarantees fluency and flexibility of thought. By causing us to exert effort, it allows us to generate more imaginative alternatives than we otherwise would.

Initial ideas are usually poorer in quality than later ideas. Just as water must run from a faucet for a while to be crystal-clear, cool and free of particles, so thought must

flow before it becomes creative. Early ideas are usually not true ideas. Exactly why this is so is not known, but one hypothesis is that familiar and safe responses lie closest to the surface of our consciousness and therefore are naturally thought of first. Creative thinking depends on continuing the flow of ideas long enough to purge the common, habitual ones and produce the unusual and imaginative.

A way to guarantee productivity of your creative thought is to give yourself an idea quota. For example, an idea quota of 40 ideas if you're looking for ideas alone or a quota 120 ideas if a group is brainstorming for ideas. By forcing yourself to come up with 40 ideas, you put your internal critic on hold and write everything down, including the obvious and weak. The first third will be the same-old, same-old ideas you always get. The second third will be more interesting and the last third will show more insight, curiosity and complexity.

2. Challenge all assumptions.

Edison felt his lack of formal education was, in fact, "his blessing." This enabled him to approach his work of invention with far fewer assumptions than his more educated competitors, which included many theoretical scientists, renowned Ph.D.s, and engineers. He approached any idea or experience with wild enthusiasm and would try anything out of the ordinary, including even making phonograph needles out of compressed rainforest nuts and clamping his teeth onto a phonograph horn to use as a hearing aid, feeling the sound vibrate through his jaw. This wild enthusiasm inspired him to consistently challenge assumptions.

He felt that in some ways too much education corrupted people by prompting them to make so many assumptions that they were unable to see many of nature's great possibilities. When Edison created a "system" of practical lighting, he conceived of wiring his circuits in parallel and of using high-resistance filaments in his bulbs, two things that were not considered possible by scientific experts, in fact, were not considered at all because they were assumed to be totally incompatible until Edison put them together.

Before Edison hired a research assistant, he would invite the candidate over for a bowl of soup. If the person seasoned the soup before tasting it, Edison would not hire the candidate. He did not want people who had so many built-in assumptions into their everyday life, that they would even assume the soup is not properly seasoned. He wanted people who consistently challenged assumptions and tried different things.

An easy way to challenge assumptions is to simply reverse them and try to make the reversal work. The guidelines are:

- List your assumptions about a subject.
- Challenge your fundamental assumptions by reversing them. Write down the opposite of each assumption.
- Ask yourself how to accomplish each reversal. List as many useful viewpoints as you can.

3. Nothing is wasted.

When an experiment failed, Edison would always ask what the failure revealed and would enthusiastically record what he had learned. His notebooks contain pages of material on what he learned from his abortive ideas, including his many experiments on will power (he conducted countless experiments with rubber tubes extended from his forehead trying to will the physical movement of a pendulum). Once when an assistant asked why he continued to persist trying to discover a long-lasting filament for the light bulb after failing thousands of times, Edison explained that he didn't understand the question. In his mind he hadn't failed once. Instead, he said he discovered thousands of things that didn't work. Finally, he completed Patent 251,539 for the light bulb that ensured his fame and fortune.

He had an enormous talent for appropriating ideas that may have failed in one instance and using them for something else. For example, when it became clear in 1900 that an iron-ore mining venture in which Edison was financially committed was failing and on the brink of bankruptcy, he spent a weekend studying the company's resources and came up with a detailed plan to redirect the company's efforts toward the manufacture of Portland cement, which could capitalize on the same equipment, materials and distribution systems of the iron-ore company.

4. Record your ideas.

Edison relentlessly recorded and illustrated every problem worked on in his notebooks. Whenever he succeeded with a new idea, Edison would review his

notebooks to rethink ideas and inventions he's abandoned in the past in the light of what he'd recently learned. If he was mentally blocked working on a new idea, he would review his notebooks to see if there was some thought or insight that could trigger a new approach. For example, Edison's unsuccessful work to develop an undersea telegraph cable ultimately led to a breakthrough on a telephone transmitter. He took the principle for the unsuccessful undersea telegraph cable — variable resistence — and incorporated it into the design of a telephone transmitter that adapted to the changing sound waves of the caller's voice. This technique instantly became the industry standard.

Edison would often jot down his observations of the natural world, failed patents and research papers written by other inventors, and ideas others had come up with in other fields. He would also routinely comb a wide variety of diverse publications for novel ideas that sparked his interest and record them in his notebooks. He advised his assistants to make it a habit to keep on the lookout for novel and interesting ideas that others have used successfully on other problems in other fields. To Edison, your idea needs to be original only in its adaptation to the problem you are working on.

Edison's lesson is to record your ideas and other novel ideas in a notebook — call it "The Bright Ideas Notebook." When confronted with a problem, review your notebook and look for ways to cross-fertilize ideas, techniques and conceptual models by transferring them from one problem to the next.

5. Constantly improve your ideas and products and the ideas and products of others.

Contrary to popular belief, Edison did not invent the light bulb: his genius, rather, was to perfect the bulb as a consumer item. Edison also studied all his inventions and ideas as springboards for other inventions and ideas in their own right. To Edison, the telephone (sounds transmitted) suggested the phonograph (sounds recorded), which suggested motion pictures (images recorded). Simple, in retrospect, isn't it? Genius usually is.

Einstein believed that every new idea is some addition or modification to something that already exists. You take a subject and manipulate or change it into something else. There are nine principal ways you can manipulate a subject. These ways were first formally suggested by Alex Osborn, the father of brainstorming, and later arranged by Bob Eberle into the mnemonic SCAMPER.

S = Substitute
C = Combine
A = Adapt
M = Magnify = Modify
P = Put to other uses
E = Eliminate
R = Rearrange = Reverse

You isolate the subject you want to think about and ask the checklist of SCAMPER questions to see what new ideas and thoughts emerge. Think about any subject from improving the ordinary paperclip to reorganizing

your corporation and apply the "Scamper" checklist of questions. You'll find that ideas start popping up almost involuntarily, as you ask:

- Can you substitute something?
- Can you combine your subject with something else?
- Can you adapt something to your subject?
- Can you magnify or add to it?
- Can you modify or change it in some fashion?
- Can you put it to some other use?
- Can you eliminate something from it?
- Can you rearrange it?
- What happens when you reverse it?

Edison was tireless in his persistence to change a subject into something else through "trial and error" until he found the idea that worked. In Edison's laboratory there is a staggering display of hundreds of phonograph horns of every shape, size and material. Some are round, square, angular, thin, short, squat while others are curved and as long as six feet tall. This collection of rejected ideas is a visual testament to Edison's approach to creativity — which was, in essence, to try out every possible design he could possibly conceive of. Once asked to describe the key to creativity, he reportedly said to never quit working on your subject until you get what you're after.

6. Be exploratory.

Whenever Edison was working on something and found something else "interesting," he would drop everything else and explore it. In developing the electric light Edison and his assistants decided to use platinum for the filament, but it stayed lit only briefly and was scarce and expensive. One day Edison absentmindedly rolled some lampblack in his fingers while working with a platinum filament. He looked at the twisted piece of lampblack and got his "Eureka" moment — why not try to use carbon for the filament. His first carbon bulb burned for thirteen hours with the power of thirty candles; a few days later he got it up to one hundred hours by twisting and shaping the filament like a horseshoe.

The interesting aspect of carbon to Edison was the fact that he could twist it like rope. Edison was not the first person in his lab to notice that you could twist carbon, but he was the first to pursue it. Whenever Edison found something interesting, he would explore it intellectually before he applied his emotions and prejudices. The others working on the light bulb had emotionally decided that the filament should be platinum and were blind to the "interesting" aspects of carbon. They lacked the will to explore carbon, once they had made a decision that platinum was the answer.

Finally, if you want to become more creative, start acting like you are creative. Suppose that you wanted to be an artist: You would begin behaving like an artist by painting every day. You may not become another Vincent Van Gogh, but you'll become more of an artist than someone who has never tried. Similarly, to

increase your creativity start acting like Thomas Edison. Cultivate the following creative-thinking habits:

- When looking for ideas, create lots of ideas.
- Consistently challenge assumptions.
- Record your ideas and the ideas of others in a notebook.
- Learn from your failures and the failures of others.
- Constantly look for ways to improve your ideas and products and the ideas and products of others.
- Be exploratory.

You may not become the next Thomas Edison but you'll become much more creative than someone who has never tried.

Most Prolific Inventors in the World

It is astounding to see how many inventions and patents some inventors have. Here is a compilation of the top inventors in history from Wikipedia.

https://en.wikipedia.org/wiki/List_of_prolific_inventors

Below is only the introductory paragraph so to see the entire list go to the link above.

Thomas Alva Edison was widely known as America's most prolific inventor, even after his death in 1931.[Info 1] He held a total of 1,093 U.S. patents (1,084 utility patents and 9 design patents).[Info 2] In 2003, his patent count was exceeded by Japanese inventor Shunpei Yamazaki. On February 26, 2008, Yamazaki's patent count was exceeded by Australian inventor Kia Silverbrook.[Info 3] In 2017, Silverbrook's patent count was exceeded by Yamazaki.

Here is the paragraph that introduces the long list

Worldwide utility patents

Inventors with 200 or more worldwide utility patents are shown in the following table. While in many cases this is the number of utility patents granted by the USPTO, it may include utility patents granted by other countries, as noted by the source references for an inventor.

Inventor	#	From	Company
Shunpei Yamazaki	5967	Japan	Semiconductor Energy Lab
Kia Silverbrook	4747	Aust	Silverbrook Research
Kangguo Cheng	2563	USA	IBM

Lowell L. Wood, Jr.	1973	USA	Intellectual Ventures
Roderick A. Hyde	1879	USA	Intellectual Ventures
Jun Koyama	1444	Japan	Semiconductor Energy Lab
Gurtej Sandhu	1387	USA	Micron
Paul Lapstun	1299	Austr	Silverbrook Research
Clarence T. Tegreene	1236	USA	Intellectual Ventures
Shou-Shan Fan	1221	China	Hon Hai
Leonard Forbes	1108	USA	Micron
Edward K. Y. Jung	1104	USA	Intellectual Ventures
Alexander Reznicek	1104	USA	IBM
Thomas Edison	1084	USA	Thomas Edison
Rick Allen Hamilton II	1041	USA	IBM
Donald E. Weder	1000	USA	Weder Family Trust
George Albert Lyon	993	Canada	Lyon George Albert
Jordin T. Kare	980	USA	Intellectual Ventures
Michael J. Sullivan	976	USA	Acushnet Holdings
Jay S. Walker	971	USA	Walker Digital
John F. O'Connor	949	USA	William H. Miner
Melvin De Groote	925	USA	Petrolite
Nathan Myhrvold	896	USA	Intellectual Ventures
Ahmadreza Rofougaran	896	USA	Broadcom
Francis H. Richards	894	USA	Francis H. Richards
Mark Malamud	882	USA	Intellectual Ventures
Jason K. Resch	879	USA	IBM
Robert W. Lord	861	USA	Intellectual Ventures
Royce A. Levien	852	USA	Intellectual Ventures
Sarbajit K. Rakshit	851	India	IBM
William H. Eby	837	USA	Monsanto
Muriel Y. Ishikawa	834	USA	Intellectual Ventures
Michael K. Gschwind	828	USA	IBM
Ruilong Xie	815	USA	IBM
Clifford A. Pickover	797	USA	IBM
Warren Farnworth	774	USA	Micron
Salman Akram	774	USA	Micron

Chih-Chao Yang	770	USA	IBM
Devendra K. Sadana	761	USA	IBM
Esmael H. Dinan	760	USA	Ofinno
SungDuck Chun	757	South Korea	LG
Jeyhan Karaoguz	755	USA	Broadcom
Carleton Ellis	753	USA	Ellis Foster Co
Ali Khakifirooz	742	USA	IBM
John M. Santosuosso	732	USA	IBM
Bruce B. Doris	731	USA	IBM
Hideo Ando	726	Japan	Toshiba
George Spector	722	USA	George Spector
Austin L. Gurney	717	USA	Genentech
Tetsujiro Kondo	700	Japan	Sony
Elihu Thomson	696	USA	GE
Eric C. Leuthardt	664	USA	Intellectual Ventures
Irwin Gerszberg	661	USA	AT&T
Gregory J. Boss	659	USA	IBM
William I. Wood	653	USA	Genentech
Simon R. Walmsley	651	Australia	Silverbrook Research
Paul S. Henry	641	USA	AT&T
Lisa Seacat DeLuca	636	USA	IBM
Edward J. Nowak	635	USA	IBM
Audrey D. Goddard	626	USA	Genentech
Kie Y. Ahn	614	USA	Micron
Jean-Philippe Vasseur	614	France	Cisco Systems
Jerome H. Lemelson	606	USA	Jerome Lemelson
Tadahiro Ohmi	597	Japan	Tadahiro Ohmi
BÃ©la BarÃ©nyi	595	Austria	Daimler
Anthony K. Stamper	581	USA	IBM
Paul J. Godowski	579	USA	Genentech
Jeffrey P. Gambino	577	USA	IBM
Stuart C. Salter	576	USA	Ford
Artur Fischer	570	Germany	Artur Fischer
Ronald S. Cok	567	USA	Kodak

Victoria Y. H. Wood	566	USA	Intellectual Ventures
Robert S. Langer	566	USA	MIT
Kai-Li Jiang	566	China	Hon Hai
Lawrence A. Clevenger	563	USA	IBM
Frederick A. Ware	555	USA	Rambus
Farhad Barzegar	552	USA	AT&T
Louis L. Hsu	551	Taiwan	IBM
Belgacem Haba	540	USA	Tessera
Pouya Hashemi	540	USA	IBM
Edwin H. Land	535	USA	Polaroid
Thomas M. Willis III	525	USA	AT&T
Henri Dreyfus	524	Switzerland	Henri Dreyfus
Muhammad A. Kazmi	524	Sweden	Ericsson
Tenko Yamashita	522	USA	IBM
Mark I. Gardner	520	USA	AMD
Valentina Salapura	517	USA	IBM
Clyde C. Farmer	513	USA	Westinghouse Air Brake
Heinz Focke	512	Germany	Focke & Co.
Ravi K. Arimilli	508	USA	IBM
Stephen E. Terry	507	USA	InterDigital
Louis H. Morin	503	USA	Louis H. Morin
Tobin A. King	501	Australia	Silverbrook Research
Brian M. O'Connell	492	USA	IBM
James M. Hart	488	USA	General Motors
Robert S. Chau	488	USA	Intel
John L. Melanson	487	USA	Cirrus Logic
Jack A. Mandelman	481	USA	IBM
Michael (S.) Tsirkin	472	USA	Red Hat
Brent A. Anderson	468	USA	IBM
Jack T. Kavalieros	467	USA	Intel
Robert Bennett	464	USA	AT&T
Zhijun Cai	459	USA	BlackBerry
Donald J. Barnickel	459	USA	AT&T
Vincent J. Zimmer	457	USA	Intel

Assaf Natanzon	456	Israel	Dell EMC
Eberhard Ammermann	452	Germany	BASF
Eric J. Brandwine	451	USA	Amazon
Thomas E. Murray	449	USA	Thomas E. Murray
Hongyong Zhang	440	Japan	Semiconductor Energy Lab
Scott H. Wittkopp	437	USA	General Motors
James E. Bostick	434	USA	IBM
Xuemin (Sherman) Chen	433	USA	Broadcom
Gary W. Grube	429	USA	IBM
Bengt Lindoff	427	Sweden	Ericsson
John Hays Hammond, Jr.	417	USA	John Hays Hammond, Jr.
Hossein Eslambolchi	417	USA	AT&T
Paul Marinier	415	USA	InterDigital
John M. Ganci	415	USA	IBM
Cary L. Bates	414	USA	IBM
Qinghua Li	414	USA	Intel
Wilhelm Brandes	411	Germany	Bayer
Greg R. Dhuse	411	USA	IBM
Timothy J. Slegel	411	USA	IBM
Dean L. Kamen	404	USA	DEKA
Stanford R. Ovshinsky	400	USA	Energy Conversion Devices
Jeffrey E. Stahmann	399	USA	Cardiac Pacemakers
Akira Nakazawa	393	Australia	Silverbrook Research
Paul W. Dent	393	USA	Ericsson
Bor Z. Jang	390	USA	Nanotek Instruments
Paul K. Dellock	389	USA	Ford
Josef Theurer	388	Austria	Plasser & Theurer
David V. Horak	388	USA	IBM
Andrew J. Ouderkirk	387	USA	3M
Philip D. Nguyen	387	USA	Halliburton
Wael W. Diab	386	USA	Broadcom
Wesley B. Legette	383	USA	IBM
Hans-Joachim Santel	377	Germany	Bayer

Elizabeth A. Sweeney	376	USA	Intellectual Ventures
William Daniel Hillis	375	USA	Intellectual Ventures
Gisela Lorenz	374	Germany	BASF
Norman M. Berry	374	Australia	Silverbrook Research
Carl J. Radens	374	USA	IBM
Paul R. Bastide	373	USA	IBM
Andrew D. Baptist	373	USA	IBM
Patrick J. O'Sullivan	372	Ireland	IBM
Hanson S. Gifford III	372	USA	Medtronic
George P. Liang	371	USA	Kratos
Garry R. Jackson	367	Australia	Silverbrook Research
Robert Baldemair	366	Sweden	Ericsson
Stefan Parkvall	364	Sweden	Ericsson
Steven L. Teig	362	USA	Cadence Design Systems
George Westinghouse	361	USA	George Westinghouse
Keith R. Walker	359	USA	IBM
Ajith K. Kumar	358	USA	GE
Mark W. Kroll	357	USA	Pacesetter
Aruna Zhamu	356	USA	Nanotek Instruments
Siddharth S. Oroskar	354	USA	Sprint
Christopher B. Locke	353	UK	KCI
Daniel J. Winarski	351	USA	IBM
Kulvir S. Bhogal	351	USA	IBM
Robert R. Schmidt	350	Germany	Bayer
Chung-Lung (Kevin) Shum	349	USA	IBM
Eric J. Horvitz	347	USA	Microsoft
Zvi Or-Bach	342	USA	MonolithIC 3D Inc.
Carlos Cordeiro	341	USA	Intel
Jasinder P. Singh	338	USA	Sprint
Brian S. Doyle	338	USA	Intel
Christian P. Jacobi	336	USA	IBM
Jennifer L. Hillman	332	USA	Incyte
Cyprian E. Uzoh	331	USA	Invensas
Sandeep R. Patil	330	India	IBM
Choonghyun Lee	324	USA	IBM

Frank J. Viola	323	USA	Covidien
Liang Liu	322	China	Hon Hai
Jong-Kae J. Fwu	321	USA	Intel
Martin G. Keen	321	USA	IBM
Victor S. Moore	317	USA	IBM
Hyukjin Chae	315	South Korea	LG
Corville O. Allen	311	USA	IBM
Victoria Smith	308	USA	Genentech
Michael L. Fripp	308	USA	Halliburton
Ned M. Smith	308	USA	Intel
Dorin Comaniciu	306	USA	Siemens
Ramachandra Divakaruni	305	USA	IBM
Alexei V. Davydov	303	Russia	Intel
Ravi Pillarisetty	302	USA	Intel
Hui Zang	301	USA	GlobalFoundries
Daniel C. Edelstein	301	USA	IBM
Robert G. LeTourneau	299	USA	LeTourneau Technologies
Troy A. Manning	299	USA	Micron
Brent Keeth	297	USA	Micron
Madhusudan K. Iyengar	296	USA	IBM
Adam Heller	294	USA	Abbott Laboratories
William R. Tonti	292	USA	IBM
Kiseon Ryu	292	South Korea	LG
Sheldon K. Meredith	292	USA	AT&T
Zine-Eddine Boutaghou	290	USA	Seagate Technology
Christopher J. Dawson	290	USA	IBM
Jeffrey W. Sleight	288	USA	IBM
Nathan J. Peterson	287	USA	Lenovo
Xin Miao	286	USA	IBM
Takeshi Chujoh	285	Japan	Toshiba
Michael A. Rothman	284	USA	Intel
Altug Koker	284	USA	Intel

Rajiv V. Joshi	279	USA	IBM
Jung-Fu T. Cheng	279	USA	Ericsson
Craig E. Hampel	279	USA	Rambus
Su Liu	279	USA	IBM
Bran Ferren	278	USA	Intellectual Ventures
Marko Radosavljevic	278	USA	Intel
Craig M. Trim	277	USA	IBM
Vinodh Gopal	276	USA	Intel
Diana Pani	275	Canada	InterDigital
Ilya Volvovski	275	USA	IBM
Abhishek R. Appu	274	USA	Intel
Jeongki Kim	273	South Korea	LG
Manu J. Kurian	273	USA	Bank of America
Robert P. Loce	272	USA	Xerox
Elmoustapha Ould-Ahmed-Vall	272	USA	Intel
Gary D. Cudak	268	USA	Lenovo
Aaron K. Baughman	268	USA	IBM
Hartley Owen	267	USA	Mobil
Imad Libbus	267	USA	Cardiac Pacemakers
Eran Steinberg	267	USA	FotoNation
Justin Lewis	267	USA	Google
David C. Gibbon	267	USA	AT&T
Joydeep Ray	267	USA	Intel
Olga Bandman	266	USA	Incyte
Burkay Donderici	266	USA	Halliburton
Al Chakra	265	USA	IBM
Yuan Y. Zhu	263	China	Intel
Gilbert M. Wolrich	262	USA	Intel
Austin G. Walters	262	USA	Capital One
Sreekar Marupaduga	262	USA	Sprint
Matthew B. Trevathan	260	USA	IBM
Kyungmin Park	260	USA	Ofinno
Jonathan D. Dunne	260	Ireland	IBM

Yoshihiro Kikuchi	258	Japan	Toshiba
Harry (Tom) Graef	256	USA	Diebold Nixdorf
Santokh S. Badesha	256	USA	Xerox
Stephen G. Perlman	256	USA	Rearden
John A. Colgrove	255	USA	Pure Storage
Robert J. Stacey	255	USA	Intel
Johnny M. Shieh	254	USA	IBM
Daniel Larsson	253	Sweden	Ericsson
Iana Siomina	252	Sweden	Ericsson
Ning Li	251	USA	IBM
Stephen M. Trimberger	250	USA	Xilinx
James R. Kraemer	249	USA	IBM
Marco Pistoia	249	USA	IBM
Dale W. Malik	248	USA	AT&T
Benzion Landa	247	Israel	Savin
Louis B. Rosenberg	246	USA	Immersion
Nobuyuki Taniguchi	245	Japan	Minolta
Gerald F. McBrearty	244	USA	IBM
Gilbert W. Dewey	244	USA	Intel
Ilyas Mohammed	243	USA	Tessera
Rhonda L. Childress	242	USA	IBM
Philip S. Yu	241	USA	IBM
Robert C. Valentine	241	Israel	Intel
Seung H. Kang	240	USA	Qualcomm
Thomas J. Kennedy III	240	USA	Callaway
Johan Rune	240	Sweden	Ericsson
Chen Zhang	238	USA	IBM
Vijay Narayanan	238	USA	IBM
Matthew V. Metz	237	USA	Intel
Mark A. Horowitz	236	USA	Rambus
Vivek K. De	236	USA	Intel
S. Christopher Gladwin	235	USA	IBM
Martin Langhammer	232	UK	Altera
David M. Durham	231	USA	Intel
Michael A. Guillorn	230	USA	IBM

Neelakantan Sundaresan	228	USA	eBay
James W. Seaman	227	USA	IBM
Timothy M. Robinson	227	UK	KCI
Dureseti Chidambarrao	225	USA	IBM
Mukta Ghate Farooq	225	USA	IBM
Anand S. Murthy	225	USA	Intel
Matthew N. Sharifi	224	Switzerland	Google
James H. Pratt	224	USA	AT&T
Steven J. Simske	222	USA	HP
Rajarshi Gupta	222	USA	Qualcomm
Maulik K. Shah	221	USA	Sprint
Paul Ian Mackey	220	Australia	Silverbrook Research
Kunal R. Parekh	220	USA	Micron
Gilbert A. Neiger	220	USA	Intel
Omer R. Koseoglu	220	Saudi Arabia	Saudi Aramco
Vijay Ekambaram	220	India	IBM
Shogo Mochizuki	220	USA	IBM
Gunnar Mildh	219	Sweden	Ericsson
Sebastian T. Ventrone	218	USA	IBM
Fredrik Gunnarsson	218	Sweden	Ericsson
Solomon B. Trainin	218	Israel	Intel
Yingda Dong	217	USA	SanDisk
John C. Mese	217	USA	Lenovo
Robert T. Love	216	USA	Motorola
Alexander A. Maltsev	216	Russia	Intel
Jed H. Rankin	215	USA	IBM
Hua Zhou	215	USA	Fujitsu
Jonathan J. Hull	214	USA	Ricoh
Shuji Nakamura	214	USA	UC Santa Barbara
Anil Agiwal	214	South Korea	Samsung
Carlos M. Pignataro	214	USA	Cisco Systems
Bruce B. Pedersen	213	USA	Altera

Dung Q. Nguyen	213	USA	IBM
Arup Bhattacharyya	213	USA	Micron
Gregory J. McAvoy	212	Ireland	Silverbrook Research
Sergey Y. Shumarayev	212	USA	Altera
Lin Sun	212	USA	IBM
Michael K. Bugenhagen	210	USA	Lumen Technologies
Paul W. Coteus	210	USA	IBM
Jonathan D. Bradbury	207	USA	IBM
Jeremy R. Fox	207	USA	IBM
Emily H. Qi	206	USA	Intel
Robert E. Fischell	206	USA	Angel Medical Systems
Akira Goda	206	USA	Micron
Hiroshi (You) Yoshioka	205	Japan	Toshiba
Patrick B. Usoro	205	USA	General Motors
Scott B. Herner	203	USA	SanDisk
Robert E. Loredo	203	USA	IBM
Manish Motwani	203	USA	IBM
Jian Gao	203	China	Dell EMC
Sadeg M. Faris	202	USA	Reveo
Shipeng Li	202	USA	Microsoft
Christopher J. Hardee	202	USA	IBM

NEW INVENTIONS WEB SITE

After years of trying to land patents and paying a lot of money to IdeaBuyer.com to attract the attention of big box stores like Home Depot and Lowes, I realized that there is another way to get my inventions out to the public.

I decided to invent my own store so I started by looking into the domain name “newinventions.com” only to discover that it is already owned by one of those people who buy up popular domains so they can sell them later for some exorbitant price. In this case the domain is available for a price that is stated as minimum $2000.

So I bought the domain newinventions.us for a few dollars and have opened it up to sell my inventions. I will start with these –

1. Whole House Fans
2. Garage Door Window Kits
3. Weeding Rake
4. Rock Rake
5. Carport Post Eliminator.

If you have an invention that you have built and can reproduce at a good cost and you would like to post it on my web site please send me the details to NewInventions@invisco.com and I will post it for you for no upfront cost. All I ask is that you let me keep 20% of the retail price you charge on each sale.

In addition to this free ad posting I will post a new product post on the web site FreeWebStore.com where I now sell other inventions. All you need to do is include your retail price for me to post and your zip code for shipping estimates. Be sure to indicate the size and weight of the shipping container.

If your invention is a digital product that needs no shipping that is even easier. Also indicate any guarantee. A good example of a guarantee is mine on my garage door windows. I promise that they are unbreakable and if one is broken I replace it at no cost to the customer. I even pay postage.

MORE ABOUT NEWINVENTIONS.US AND THE STORE

FreeWebStore.com is an excellent place to post products for sale. EBay is also very good but they charge more in percentage than FWS.

Here is my post for my garage door window kit - https://invisco.fwscart.com/8_Garage_door_windows_UNBREAKABLE/p6459166_20997552.aspx

You will see that today, 1-9-22, the price is $160.00 – but that might change. Over Christmas I offered the same 8 windows for just $128.00

One detail about FWS you need to focus on is shipping. They charge a modest amount to add shipping calculations to your store. So far I have avoided that by including an average shipping price to the retail price.

IDEA BUYER EXPERIENCE

Idea Buyer in Ohio was started by an entrepreneur, Eric Corl, in 2007. They made an excellent proposal to me in 2016 when I showed them my new rooftop whole house fan.

Here is the contract they offered:

OBJECTIVES:

1. **PROFESSIONAL MATERIALS**
   Build the business.

   A. Professional Packaging (UPC Code, DUNS Number)
   B. Professional EDI Compliance Setup
   C. Professional Logo Design/Branding
   D. Professional Patent Filing

2. **BUSINESS MATERIALS**
   Prepare for both licensing and manufacturing.

   A. Manufacturing Quotes & Retail Pricing
   B. Licensing Audit to Support Royalty Rate
   C. Margins (wholesale and retail) & Gross Sales Projections
   D. Integration Case (physical location in store and geographic location)

3. **BUSINESS PAPERWORK**
   Outline the terms for distributors and retailers.

   A. Distribution Stipulations
   B. Create Licensing Paperwork (Exclusivity, Non-Exclusivity, Term, Renewal, etc.)
   C. Create Purchase Order Paperwork (Minimum purchase, Down Payment, Term, etc.)

4. **TARGET COMPANY IDENTIFICATION & OUTREACH**

Setup appointments to generate licensing deals or purchase orders.

Target Retailers with $100 Million+ in Sales Looking for Products Like This:
WALMART (11,088 Stores), TARGET (1,916 Stores), MENARDS (285 Stores), SEARS (858 Stores), KMART (1,221 Stores), MEIJER (200 Stores), COSTCO (323 Stores), LOWES (1,750 Stores), HOME DEPOT (2,248 Stores), TRUE VALUE (5,000+ Stores), ACE HARDWARE (4,077 Stores), DO IT BEST (3,800 Stores), TRACTOR SUPPLY COMPANY (1,488 Stores), HARBOR FREIGHT (700 Stores), AMCE TOOLS (10 Stores), FASTENAL (2,683 Stores), GRAINGER (330 Stores), HD SUPPLY (550 Stores), NORTHERN TOOL & EQUIPMENT (95 Stores), MSC INDUSTRIAL SUPPLY CO (100 Stores), AMAZON.

Target Manufacturers with $50 Million+ in Sales Looking for Products Like This:
SUNNO INC., AMETEK, NEW YORK BLOWER COMPANY, BREEZA INDUSTRIAL, R.L CRAIG COMPANY, CS UNITEC COMPANY.

A. Discuss Licensing and Purchase Order Opportunities.
B. Negotiate Licensing and Purchase Order Terms.

5. **PUBLICITY**

Line up interviews and publicity for you and your product.

A. Professional Press Package
B. Press Release and Social Syndication to generate buzz
C. Interviews and Reviews of the Product Featuring You (Forbes, Entrepreneur, Fast Company, Inc., etc)

~~**OPTION A:**~~
0% success fee of net profits generated by Idea Buyer.
Estimated Cost of Project: $29,500.00

OPTION B:
5% success fee of net profits generated by Idea Buyer.

- In exchange, your contribution will be reduced by 36%.
- We will contribute $10,000.00 in services.
- Your contribution: $19,500.00

OPTION C:
15% success fee of net profits generated by Idea Buyer.

- In exchange, your contribution will be reduced by 69%.
- We will contribute $19,000.00 in services.
- Your contribution: $10,500.00

I made the decision to engage their services for Option C so I had to come up with $10,500.00

I paid them in November of 2016 with the understanding that they would complete the contract in under 24 months. During the contract period they emailed their big box buyer contacts regularly but not often enough, especially during the spring and summer months when the market was at its peak.

They also connected me with a patent lawyer, Jeff Furr, in Ohio. He embarked on writing a formal patent application which was filed in 2017. This activity was paid for by IdeaBuyer.

I was not surprised to find that by November of 2018 they had not fulfilled more than 7 of the 14 action items they had proposed. In early 2019 I decided to take the task over so I sorted their list of big box stores in order of the likelihood of them working with me. Here is the result of that sort.

	2016
STORE NAME	**NO. STORES**
WALMART	**11088**
TRUE VALUE	**5000**
ACE HARDWARE	**4077**
DO IT BEST	**3800**
FASTENAL	**2683**
HOME DEPOT	**2248**

TARGET	**1916**
LOWES	**1750**
TRACTOR SUPPLY COMPANY	**1488**
KMART	**1221**
SEARS	**858**
HARBOR FREIGHT	700
HD SUPPLY	550
GRAINGER	330
COSTCO	323
MENARDS	285
MEIJER	200
MSC INDUSTRIAL SUPPLY CO	100
NORTHERN TOOL & EQUIPMENT	95
ACME TOOLS	10
	38722

As you can see I highlighted the top 12 stores in order of number of stores. Then I made a hit list of stores based on my knowledge of their position in the whole house fan market space.

I know that Home Depot is one of the most experienced in the market because they sell whole house fans for QuietCool and others. Lowes is similar but does not have QuietCool.

Walmart, True Value and Ace were not known to sell whole house fans. DoItBest and Fastenal are also not

players. Target and Kmart were also not known to sell whole house fans. Sears is not well known for whole house fans but they do sell them.

So I started with Home Depot, Lowes and Tractor Supply. What I found was that Tractor was the easiest to locate buyers and get their phones. So I worked with the key buyer. I recommend that if you want to be in a store you start there as well IF your invention is well suited to the store's normal products.

Below are my inventions that you can purchase

3. PARKING RAMP OVER CAR FOR BUGGY
5. WEBCAM AND SOLAR SYSTEM
6. WEBCAM 50 FOOT MAST ON A TRAILER
7. 2008 WHOLE HOUSE FAN
8. 2012 WHOLE HOUSE FAN SPEED CONTROL
10. 2012 AUSTRALIA WHOLE HOUSE FAN WEB SITE
11. 2015 DISTRIBUTORSHIP FOR AUSTRALIA
12. 2016 FIRST HYBRID ROOFTOP VENT
13. 2019 SPLIT NUT FOR DRAIN PLUMBING
14. 2019 SOLAR POWERED MOTOR HOME
15. 2019 WEEDING RAKE
16. 2019 ROCK RAKE
17. 2019 SHED FOR TIGHT SPACES
18. 2019 SHED WITH POPUP ROOF
19. 2019 SHARK PROTECTION DRONE
20. 2020 NEW CHRISTMAS DECORATION
21. 2007 DUNE BUGGY BODY LIFT
22. 2017 MFD HOME WHOLE HOUSE FAN
23. MFD HOME WINDOW LIFT HANDLE
24. CARPORT POST ELIMINATOR
25. MOBILE HOME WHOLE HOUSE FAN
26. GARAGE DOOR WINDOW KIT
27. HYBRID ROOFTOP VENTILATOR FOR INDUSTRY
28. ROOFTOP WHOLE HOUSE FAN

Here are the inventions that are available and for sale.

1. **2008 WHOLE HOUSE FAN S**
2. **2012 WHOLE HOUSE FAN SPEED CONTROL S**
3. **2010 IMPROVED WHOLE HOUSE FAN S**
4. **2016 FIRST HYBRID ROOFTOP VENT S**
5. **2019 WEEDING RAKE S**
6. **2019 SHED FOR TIGHT SPACES S**
7. **2019 SHED WITH POPUP ROOF S**
8. **2020 NEW CHRISTMAS DECORATION S**
9. **2007 DUNE BUGGY BODY LIFT S**

10. **2016 MFD HOME WINDOW LIFT HANDLE S**
11. **2020 CARPORT POST ELIMINATOR S**
12. **2019 GARAGE DOOR WINDOW KIT S**

These are web sites for some of the above.
1,2&3 http://thorwaldsonwholehousefans.com/
4 http://inviscoindustrial.com/
5 rake tbd
6 shed tbd
7 https://shedhaspopuproof.com/
8 christmas tbd
9 http://invisco.com/inventions/1971-meyers-manx-dune-buggy/
10 handle tbd
11 CARPORT POST ELIMINATOR
12 https://garagedoorwindowkit.com/

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Appendix