A Practical Guide to 'Free-Energy' Devices

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Preface

Here is a small amount of background information in order that you can understand the nature of this "***Practical Guide to Free-Energy Devices***".

I am just an ordinary person who became interested in "free-energy" as a result of a television programme entitled 'It Runs on Water' shown in the 1980s by a UK television company called 'Channel 4'. This programme has since been put on the internet and at this time can be seen at http://video.google.com/videosearch?q=It+Runs+On+Water#q=It%20Runs%20On%20Water&start=20.
From my point of view, the content of this documentary seemed to be rather unsatisfactory as it suggested quite a number of very interesting things but gave no real hard and fast specifics for the viewer to follow up on to investigate the subject further. However, it had the enormous benefit of making me aware that there was such a thing as "free-energy".

My attempts to find out more were not very successful. I bought paper copies of several of Stan Meyer's hydroxy gas patents from the Patent Office in 1986 but while they were interesting, they did not provide much in the way of additional information. Searching on the internet at that time did not produce much more in the way of practical information. Things have changed dramatically since then and there has been an enormous increase in available information. But, even today, it is relatively difficult to find direct, useful and practical information on free-energy systems and techniques. Much of the information consists of chatty, lightweight articles describing people, events and inventions in vague, broad outline terms which are almost completely lacking in specifics.

These articles have the style of saying "There is a new invention called a 'bus' which is used to carry passengers from place to place. We saw one the other day, it was painted green and blue and looked most attractive. It is driven by Joe Bloggs who wears an engaging smile and a hand-knitted sweater. Joe says that even his children could drive a bus as it is so easy to do. Joe expects to retire in six months time as he is going to take up gold prospecting." While I'm sure that an article like that is interesting, the sort of description which I would want would be: "There is a new invention called a 'bus' which is used to carry passengers from place to place. We saw one the other day, and were very impressed as it has seats for some forty-five people. It has bodywork made of pressed aluminium, a wheel at each corner of its considerable 40' x 10' structure, a five litre diesel engine made by the Bosworth Engineering Company of Newtown, and has power-assisted steering, hydraulic brakes and ……".

There are also many articles, scientific papers and books which, quite frankly, I am not able to understand as the authors think mathematically and express themselves in equations (where they frequently do not define the terms which they use in their equations, making them effectively meaningless). I do not think in mathematical equations, so I do not share in this much higher level of thinking and analysis, though I do have some of these papers on my web site for the benefit of visitors who do have the ability to understand them easily.

After a long period of searching and investigating I was beginning to gather enough information to be fairly confident of what was being done, what had already been achieved, and some of the possible background reasons for the effects which were being observed. Early in 2005 I decided that as I had encountered so much difficulty and had to put in so much effort to find out the basics of "free-energy" that it could be helpful to others if I shared what I had found out. So I wrote the first edition of this presentation and created a simple web site to make it available to others. Of course, this body of information is not static – on the contrary, it is very fast-moving. Consequently, this information digest is updated and refined typically once or twice per week. The present form of presentation is the third style of layout which has been used as the volume of material has increased.

It should be stressed that this information is what I have discovered as part of my interest in the subject and is mainly a reporting on what is being said by other people. I have not built and proved every device described – to do that would take many lifetimes, so please understand that this is just an attempt to aid your own investigation. While it can be proved that some device works as described, through independent replication and verification, the reverse is not true. If someone were to build a device and fail to get it to work as described, then the most that can honestly be said is that an unsuccessful attempt was made to replicate

it. It does not, of course, show that the original device did not operate exactly as described, just that the (possibly inept) attempt at replication, was not successful. In some instances, you will see that I have expressed the opinion that the device is not viable, or, as in the case of the 'Nitro Cell' that I do think that it does work, but as many people have tried to build it and failed to get the results described, that it can't be recommended as an investigation project.

I do not suggest that this set of information covers every possible device, nor that my description is by any means the complete and definitive statement of everything to be known on the subject. The old saying applies here: "If you think you know all the answers, then you just haven't heard all the questions!" So, this material is just an introduction to the subject and not an encyclopaedia of every known device.

I should like to thank the very large number of people who have most kindly given me their permission to reproduce details of some of their work, providing photographs, checking what I have written, suggesting additions, etc. Also those kind people who have given me permission to reproduce their own works directly on my web sites or in my documents. There seems to be a common thread of concern among many people that shows as a desire to share this information freely rather than to try to make money from selling it, and I thank these people for their generosity.

Many people hold "conspiracy theory" views and believe that there is a concerted effort to suppress this information, and more especially, to prevent free-energy devices reaching the market. Personally, I think that the bulk of this opposition is just the normal reaction of vested commercial interests. If you were making a profit of literally millions per hour, would you welcome the introduction of a system which would eventually cut your income to zero? If not, then how much would you be willing to pay someone to make sure that the present system is never changed – a million? A billion? While this opposition is definitely there and people who stand to lose money and/or power through change will continue to oppose this knowledge, and to a much greater extent, the introduction of any commercial free-energy device, this is not something which I feel is immediately relevant to this presentation, and so almost the entire focus of the information is on devices – what they do, how they are made and how they may operate when they draw additional energy from the local environment.

Let me stress again, that this set of information is not by any means the final word on the subject, but just an introduction to the subject by a single person who makes no claims to knowing all the answers. Enjoy your research – I hope you are successful in every respect.

Patrick Kelly

April 2008

A Practical Guide to 'Free-Energy' Devices

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Overview

This document contains most of what I have learned about this subject after researching it for a number of years. I am not trying to sell you anything, nor am I trying to convince you of anything. When I started looking into this subject, there was very little useful information and any that was around was buried deep in incomprehensible patents and documents. My purpose here is to make it easier for you to locate and understand some of the relevant material now available. What you believe is up to yourself and none of my business. Let me stress that almost all of the devices discussed in the following pages, are devices which I have not personally built and tested. It would take several lifetimes to do that and it would not be in any way a practical option. Consequently, although I believe everything said is fully accurate and correct, you should treat everything as being "hearsay" or opinion.

Some time ago, it was commonly believed that the world was flat and rested on the backs of four elephants and that when earthquakes shook the ground, it was the elephants getting restless. If you want to believe that, you are fully at liberty to do so, however, you can count me out as I don't believe that.

The Wright brothers were told that it was impossible for aeroplanes to fly because they were heavier than air. That was a commonly believed view. The Wright brothers watched birds flying and since, without question, birds are considerably heavier than air, it was clear that the commonly held view was plain wrong. Working from that realisation, they developed aeroplanes which flew perfectly well.

The years passed, and the technology started by the Wright brothers and their careful scientific measurements and well-reasoned theory, advanced to become the "science" of aeronautics. This science was used extensively to design and build very successful aircraft and "aeronautics" gained the aura of being a "law".

Unfortunately, somebody applied aeronautic calculations to the flight of bumblebees and discovered that according to aeronautics, bumblebees couldn't possibly fly as their wings could not generate enough lift to get them off the ground. This was a problem, as it was perfectly possible to watch bees flying in a very competent manner. So, the "laws" of aeronautics said that bees can't fly, but bees actually **do** fly.

Does that mean that the laws of aeronautics were no use? Certainly not - those "laws" had been used for years and proved their worth by producing excellent aircraft. What it did show was that the "laws" of aeronautics did not yet cover every case and needed to be extended to cover the way that bees fly, which is through lift generated by turbulent airflow.

It is **very** important to realise that what are described as scientific "laws" are just the best working theories at the present time and it is virtually certain that those "laws" will have to be upgraded and extended as further scientific observations are made and further facts discovered. Let's hope those four elephants don't get restless before we have a chance to learn a bit more!

Introduction

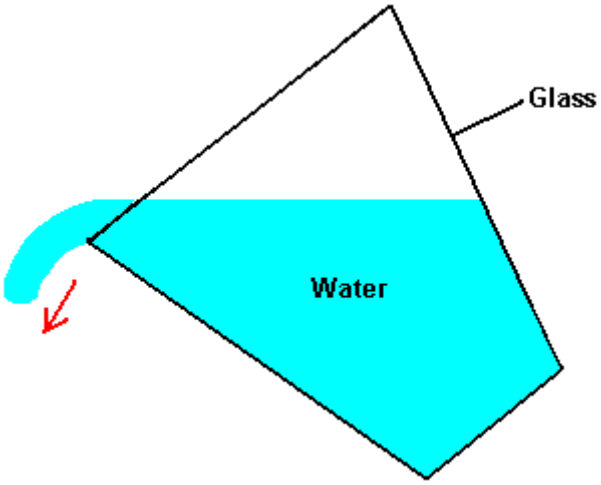
It should be stressed at this point, that this material is intended to provide you with information and only that. If you should decide, on the basis of what you read here, to build some device or other, you do so solely and entirely at your own risk and on your own responsibility. For example, if you build something in a heavy box and then drop it on your toe, then that is completely your own responsibility (you should learn to be more careful) and nobody other than yourself is in any way liable for your injury, or any loss of income caused while your toe is recovering. Let me amplify that by stating that I do not warrant that any device or system described in this document works as described, or in any other way, nor do I claim that any of the following information is useful in any way or that any device described is useful in any way or for any purpose whatsoever. Also, let me stress that I am not encouraging you to actually construct any device described here, and the fact that very detailed construction details are provided, must not be interpreted as my encouraging you to physically construct any device described in this document. You are welcome to consider this a work of fiction if you choose to do so.

I apologise if this presentation seems very elementary, but the intention is to make each description as simple as possible so that everybody can understand it, including people whose native language is not English. If you are not familiar with the basic principles of electronics, then please read the simple step-by-step electronics tutorial in Chapter 12 which is intended to help complete beginners in the subject.

At this point in time - the early years of the twenty-first century - we have reached the point where we need to realise that some of the “laws” of science do not cover every case, and while they have been very useful in the past, they do need to be extended to cover some cases which have been left out until now.

For example, suppose a bank robber broke into a bank and stole all of the cash there. How much could he take? Answer: “every coin and every note”. The limit is the sum total of all cash in the building. This is what the “Law” of Conservation of Energy is all about. What it says is very simple – you can’t take out any more than there is there in the beginning. That seems pretty straightforward, doesn’t it?

As another example, consider a glass tumbler filled completely with water. Using common sense, tell me, how much water can be poured out of the glass? For the purposes of this illustration, please take it that temperature, pressure, gravity, etc. all remain constant for the duration of the experiment.

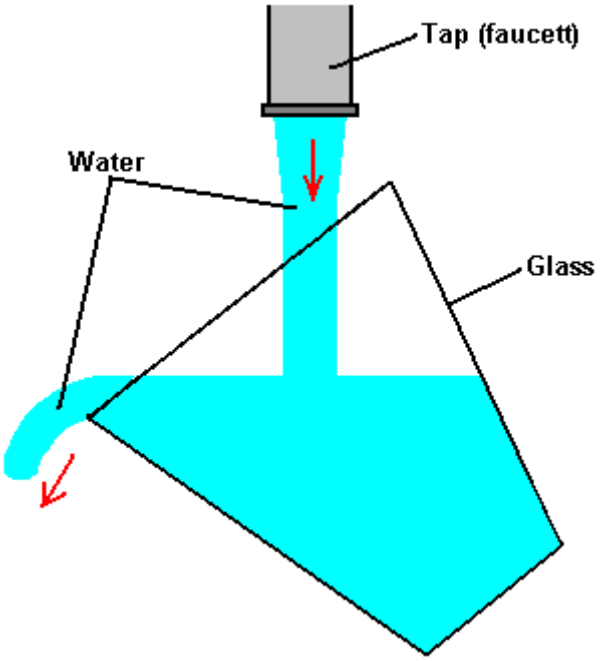


The answer is: “the exact volume contained inside the tumbler”. Agreed. This is what present day science says. To be strictly accurate, you will never be able to pour all of the water out as a small amount will remain, wetting the inside of the glass. Another way of putting this is to say that the “efficiency” of the pouring operation is not 100%. This is typical of life in general, where very few, if any, actions are 100% efficient.

So, are we agreed with current scientific thinking then – the maximum amount of water which can pour out of the tumbler is the total volume inside the tumbler? This seems simple and straightforward, doesn’t it? Science thinks so, and insists that this is the end of the story, and nothing else is possible. This arrangement is called a “closed system” as the only things being considered are the glass, the water and gravity.

Well, unfortunately for current scientific thinking, this is not the only possible situation and “closed systems” are almost unknown in the real world. Mostly, assumptions are made that the effects of anything else around will cancel out and add up to a net zero effect. This is a very convenient theory, but unfortunately it has no basis in reality.

Let’s fill our glass with water again and begin to pour it out again, but this time we position it underneath a source of flowing water:



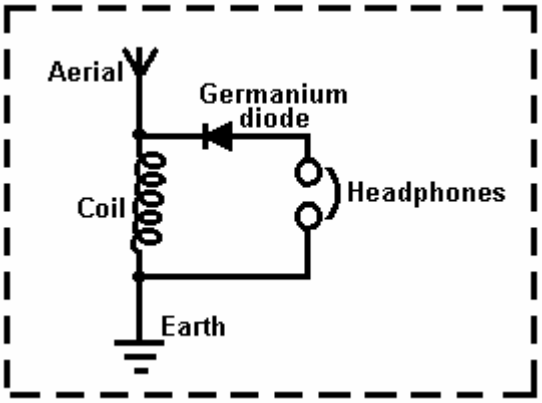
So, now, how much water can be poured out of the tumbler? Answer: “millions of times the volume of the tumbler”. But hang on a moment, haven’t we just said that the absolute limit of water poured from the tumbler has to be the volume inside the tumbler? Yes, that’s exactly what we said, and that is what current science teaching says. The bottom line here is that what current science says does in fact hold true for most of the time, but there are cases where the basic assumption of it being a “closed system” is just not true.

One popular misconception is that you can’t get more energy out of a system than you put into it. That is wrong, because the sentence was worded carefully. Let me say it again and this time, emphasise the key words: “**you** can’t get more energy out of a system than **you** put into it”. If that were true, then it would be impossible to sail a yacht all the way around the world without burning any fuel, and that has been done many times and none of the driving energy came from the crews. If it were true, then a grain mill driven by a waterwheel would not be able to produce flour as the miller certainly does not push the millstones around himself. If that were true, then nobody would build windmills, or construct solar panels, or tidal power stations.

What the statement should say is “more energy can’t be taken out of a system than is put into it” and that is a very different statement. When sailing a yacht, the wind provides the driving force which makes the trip possible. Notice that, it is the environment providing the power and not the sailors. The wind arrived without them having to do anything about it, and a lot less than 100% of the wind energy reaching the yacht actually becomes forward thrust, contributing to the voyage. A good deal of the energy arriving at the yacht ends up stretching the rigging, creating a wake, producing noise, pushing the helmsman, etc. etc. This idea of no more energy coming out of a system than goes into it, is called “The Law of Conservation of Energy” and it is perfectly right, in spite of the fact that it gets people confused.

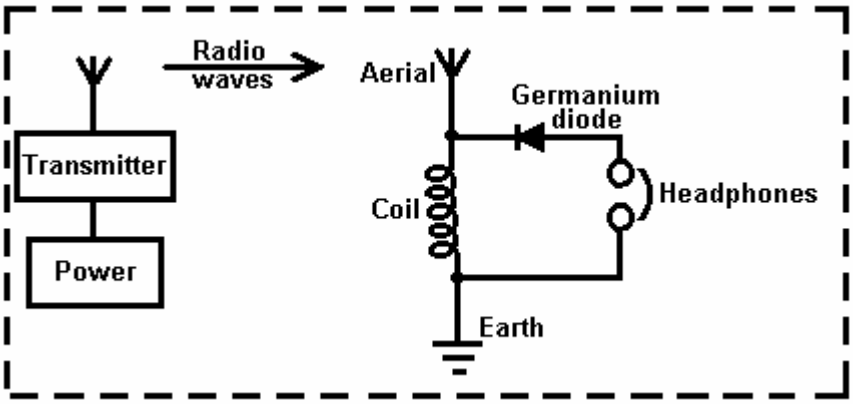
“Free-Energy Devices” or “Zero-Point Energy Devices” are the names applied to systems which appear to produce a higher output power than their input power. There is a strong tendency for people to state that such a system is not possible since it contravenes the Law of Conservation of Energy. It doesn’t. If it did, and any such system was shown to work, then the “Law” would have to be modified to include the newly observed fact. No such change is necessary, it merely depends on your point of view.

For example, consider a crystal set radio receiver:



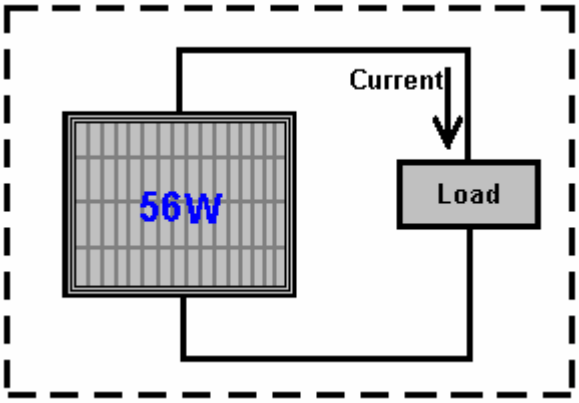
Looking at this in isolation, we appear to have a free-energy system which contradicts the Law of Conservation of Energy. It doesn't, of course, but if you do not view the whole picture, you see a device which has only passive components and yet which (when the coil is of the correct size) causes the headphones to generate vibrations which reproduce recognisable speech and music. This looks like a system which has no energy input and yet which produces an energy output. Considered in isolation, this would be a serious problem for the Law of Conservation of Energy, but when examined from a common sense point of view, it is no problem at all.

The whole picture is:

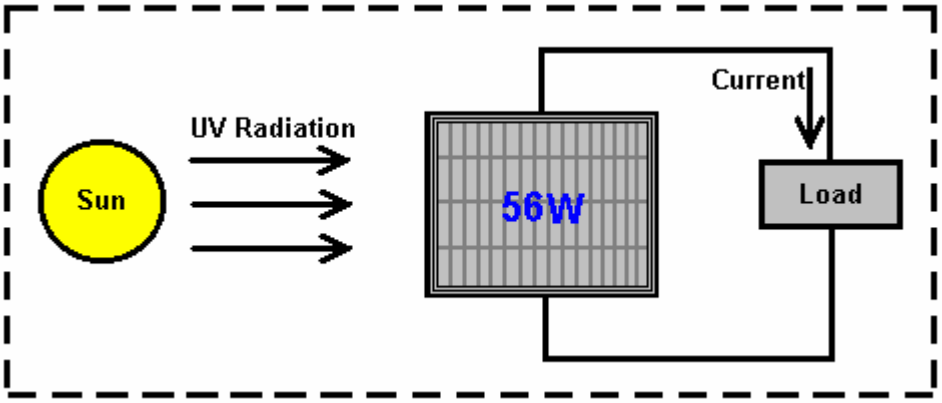


Power is supplied to a nearby transmitter which generates radio waves which in turn, induce a small voltage in the aerial of the crystal set, which in turn, powers the headphones. The power in the headphones is far, far less than the power taken to drive the transmitter. There is most definitely, no conflict with the Law of Conservation of Energy. However, there is a quantity called the "**C**oefficient **O**f **P**erformance" or "**COP**" for short. This is defined as the amount of power coming out of a system, divided by the amount of power that **the operator** has to put into that system to make it work. In the example above, while the **efficiency** of the crystal set radio is well below 100%, the **COP** is greater than 1. This is because the owner of the crystal radio set does not have to supply any power at all to make it work, and yet it outputs power in the form of sound. As the input power from the user, needed to make it work is zero, and the COP value is calculated by dividing the output power by this zero input power, the COP is actually infinity. **Efficiency** and **COP** are two different things. Efficiency can never exceed 100% and almost never gets anywhere near 100% due to the losses suffered by any practical system.

As another example, consider an electrical solar panel:



Again, viewed in isolation, this looks like (and actually **is**) a Free-Energy device if it is set up out of doors in daylight, as current is supplied to the load (radio, battery, fan, pump, or whatever) without the user providing any input power. Again, Power Out with no Power In. Try it in darkness and you find a different result because the whole picture is:



The energy which powers the solar panel comes from the sun.. Only some 17% of the energy reaching the solar panel is converted to electrical current. This is most definitely not a contravention of the Law of Conservation of Energy. This needs to be explained in greater detail. The Law of Conservation of Energy applies to closed systems, and only to closed systems. If there is energy coming in from the environment, then the Law of Conservation of Energy just does not apply, unless you take into account the energy entering the system from outside.

People sometimes speak of “over-unity” when talking about the efficiency of a system. From the point of efficiency, there is no such thing as “over-unity” as that would mean that more power was coming out of the system than the amount of power entering the system. Our trusty bank robber mentioned above would have to take out of the bank vault, more money than was actually in it, and that is a physical impossibility. There are always some losses in all practical systems, so the efficiency is always less than 100% of the power entering the system. In other words, the efficiency of any practical system is always under unity.

However, it is perfectly possible to have a system which has a greater power output than the power input which **we** have to put into it to make it work. Take the solar panel mentioned above. It has a terribly low efficiency of about 17%, **but**, we don’t have to supply it with any power to make it work. Consequently, when it is in sunlight, it’s Coefficient Of Performance (“COP”) is it’s output power (say, 50 watts) divided by the input power needed to make it work (zero watts) which is infinity. So, our humble, well-known solar panel has terrible efficiency of 17% but at the same time it has a COP of infinity.

It is now generally accepted that “Dark Matter” and “Dark Energy” form more than 80% of our universe. There is nothing sinister about the adjective “Dark” as in this context, it merely means that we cannot see it. There are many useful things which we utilise, which we can’t see, for example, radio waves, TV signals, magnetism, gravity, x-rays, etc. etc.

The fact of the matter is, that we are sitting in a vast field of energy which we can't see. This is the equivalent of the situation for the crystal set shown above, except that the energy field we are in is very, very much more powerful than the radio waves from a radio transmitter. The problem is, how to tap the energy which is freely available all around us, and get it to do useful work for us. It can definitely be done, but it is not easy to do.

Some people think that we will never be able to access this energy. Not very long ago, it was widely believed that nobody could ride a bicycle faster than 15 miles per hour because the wind pressure on the face of the rider would suffocate him. Today, many people cycle much faster than this without suffocating - why? - because the original negative opinion was wrong.

Not very long ago, it was thought that metal aircraft would never be able to fly because metal is so much heavier than air. Today, aircraft weighing hundreds of tons fly on a daily basis. Why? - because the original negative opinion was not correct.

It is probably worth while, at this point, to explain the basics of Zero-Point Energy. The experts in Quantum Mechanics refer to how the universe operates as "Quantum Foam". Every cubic centimetre of "empty" space is seething with energy, so much in fact, that if it were converted using Einstein's famous equation $E = mC^2$ (that is Energy = Mass x a very big number), then it would produce as much matter as can be seen by the most powerful telescope. There is actually nothing "empty" about space. So why can't we see anything there? Well, you can't actually see energy. All right then, why can't you measure the energy there? Well, two reasons actually, firstly, we have never managed to design an instrument which can measure this energy, and secondly, the energy is changing direction incredibly rapidly, billions and billions and billions of times each second.

There is so much energy there, that particles of matter just pop into existence and then pop back out again. Half of these particles have a positive charge and half of them have a negative charge, and as they are evenly spread out in three-dimensional space, the overall average voltage is zero. So, if the voltage is zero, what use is that as a source of energy? The answer to that is "none" if you leave it in it's natural state. However, it is possible to change the random nature of this energy and convert it into a source of unlimited, everlasting power which can be used for all of the things we use mains electricity for today - powering motors, lights, heaters, fans, pumps, ... you name it, the power is there for the taking.

So, how do you alter the natural state of the energy in our environment? Actually, quite easily. All that is needed is a positive charge and a negative charge, reasonably near each other. A battery will do the trick, as will a generator, as will an aerial and earth, as will an electrostatic device like a Wimshurst machine. When you generate a **Plus** and a **Minus**, the quantum foam is affected. Now, instead of entirely random plus and minus charged particles appearing everywhere, the **Plus** which you created gets surrounded by a sphere of minus charge particles popping into existence all around it. Also, the **Minus** which you created, gets surrounded by a spherical-shaped cloud of plus-charge particles popping into existence all around it. The technical term for this situation is "**broken symmetry**" which is just a fancy way of saying that the charge distribution of the quantum foam is no longer evenly distributed or "symmetrical". In passing, the fancy technical name for your **Plus** and **Minus** near each other, is a "**dipole**" which is just a techno-babble way of saying "two poles: a plus and a minus" - isn't jargon wonderful?

So, just to get it straight in your mind, when you make a battery, the chemical action inside the battery creates a Plus terminal and a Minus terminal. Those poles actually distort the universe around your battery, and causes vast streams of energy to radiate out in every direction from each pole of the battery. Why doesn't the battery run down? Because the energy is flowing from the environment and not from the battery. If you were taught basic physics or electrical theory, you will probably have been told that the battery used to power any circuit, supplies a stream of electrons which flows around the circuit. Sorry Chief - it just ain't like that at all. What really happens is that the battery forms a "dipole" which nudges the local environment into an unbalanced state which pours out energy in every direction, and some of that energy from the environment flows around the circuit attached to the battery. The energy does **not** come from the battery.

Well then, why does the battery run down, if no energy is being drawn from it to power the circuit? Ah, that is the really silly thing that we do. We create a closed-loop circuit (because that's what we have always done) where the current flows around the circuit, reaches the other battery terminal and immediately destroys the battery's "dipole". Everything stops dead in it's tracks. The environment becomes symmetrical again, the massive amount of readily available free-energy just disappears and you are back to where you started from. **But**, do not despair, our trusty battery immediately creates the Plus and Minus terminals again and the process starts all over again. This happens so rapidly that we don't see the breaks in the operation of the circuit and it is the continual recreation of the dipole which causes the battery to run down and lose it's power.

Let me say it again, the battery does **not** supply the current that powers the circuit, it never has and it never will - the current flows into the circuit from the surrounding environment.

What we really need, is a method of pulling off the power flowing in from the environment, without continually destroying the dipole which pushes the environment into supplying the power. That is the tricky bit, but it has been done. If you can do that, then you tap into an unlimited stream of inexhaustible energy, with no need to provide any input energy to keep the flow of energy going. In passing, if you want to check out the details of all of this, Lee and Yang were awarded the Nobel Prize for Physics in 1957 for this theory which was proved by experiment in that same year. This book includes circuits and devices which manage to tap this energy successfully.

Today, many people have managed to tap this energy but no commercial device is readily available for home use, though it is quite likely that there will be in the next six months as some are going through mandatory government testing for safety and reliability ahead of production being approved. This situation has been a long time coming.

The reason for this is human rather than technical. More than 3,000 Americans have produced devices or ideas for devices but none have reached commercial production due to opposition from influential people who do not want such devices freely available. One technique is to classify a device as “essential to US National Security”. If that is done, then the developer is prevented from speaking to anyone about the device, even if he has a patent. He cannot produce or sell the device even though he invented it. Consequently, you will find many patents for perfectly workable devices if you were to put in the time and effort to locate them, though most of these patents never see the light of day, having been taken by the people issuing these bogus “National Security” classifications.

The purpose of this book is to present the facts about some of these devices and more importantly, where possible, explain the background details of why and how systems of that type function. As has been said before, it is not the aim of this book to convince you of anything, just to present you with some of the facts which are not that easy to find, so that you can make up your own mind on the subject.

The science taught in schools, colleges and universities at this time, is well out of date and in serious need of being brought up to date. This has not happened for some time now as people who make massive financial profits have made it their business to prevent any significant advance for many years now. However, the internet and free sharing of information through it, is making things very difficult for them. What is it that they don’t want you to know? Well, how about the fact that you don’t have to burn a fuel to get power? Shocking, isn’t it !! Does it sound a bit mad to you? Well, stick around and start doing some thinking.

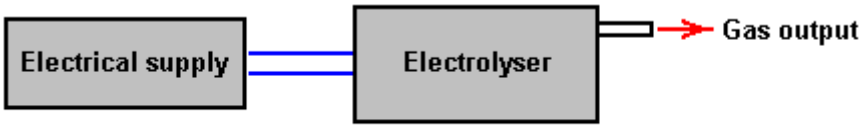
Suppose you were to cover a boat with lots of solar panels which were used to charge a large bank of batteries inside the boat. And if those batteries were used to operate electric motors turning propellers which drive the boat along. If it is sunny weather, how far could you go? As far as the boat can travel while the sun is up and if the battery bank is large, probably most of the night as well. At sun-up on the next day, you can continue your journey. Oceans have been crossed doing this. How much fuel is burned to power the boat? None !! Absolutely none at all. And yet, it is a fixed idea that you have to burn a fuel to get power.

Yes, certainly, you can get power from the chemical reaction of burning a fuel - after all, we pour fuel into the tanks of vehicles “to make them go” and we burn oil in the central heating systems of buildings. But the big question is: “Do we have to?” and the answer is “No”. So why do we do it? Because there is no alternative at present. Why is there no alternative at present? Because the people making incredibly large financial profits from selling this fuel, have seen to it that no alternative is available. We have been the suckers in this con trick for decades now, and it is time for us to snap out of it. Let’s have a look at some of the basic facts:

Let me start by presenting some of the facts about electrolysis. The electrolysis of water is performed by passing an electric current through the water, causing it to break up into hydrogen gas and oxygen gas. This process was examined in minute detail by Michael Faraday who determined the most energy efficient possible conditions for electrolysis of water. Faraday determined the amount of electric current needed to break the water apart, and his findings are accepted as a scientific standard for the process. I can see no reason for doubting Faraday’s results.

We now bump into a problem which scientists are desperate to ignore or deny, as they have the mistaken idea that it contradicts the Law of Conservation of Energy – which, of course, it doesn’t. The problem is an electrolyser design by Bob Boyce of the USA which appears to have an efficiency twelve times greater than Faraday’s maximum possible gas production. This is a terrible heresy in the scientific arena and it gets the average “by the book” scientist very up-tight and flustered. There is no need for this worry. The Law of Conservation of Energy remains intact and Faraday’s results are not challenged. However, an explanation is called for.

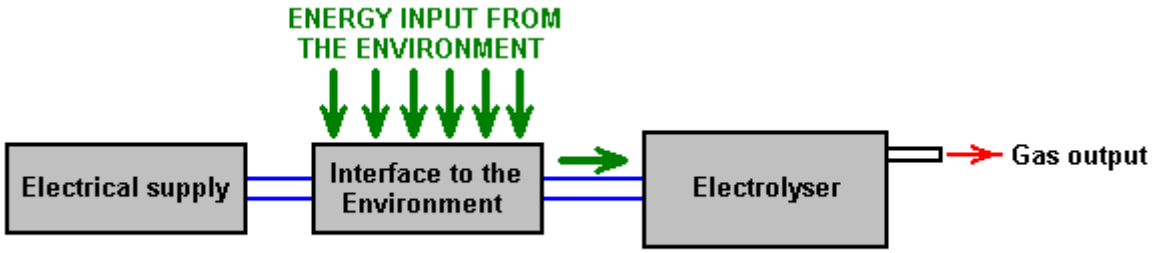
To start with, let me show the arrangement for a standard electrolyser system:



STANDARD ELECTROLYSER SYSTEM

Here, current is supplied to the electrolyser by the electrical supply. The current flow causes breakdown of the water contained in the electrolyser, resulting in the amount of gas predicted by Faraday (or less if the electrolyser is not well designed and accurately built).

Bob Boyce, who is an exceptionally intelligent, perceptive and able man, has developed a system which performs the electrolysis of water using power drawn from the environment. To a quick glance, Bob's design looks pretty much like a high-grade electrolyser (which it is) but it is a good deal more than that. The practical construction and operational details of Bob's design are shown in Chapter 10, but for here, let us just consider the operation of his system in very broad outline:



BOB BOYCE'S ELECTROLYSER SYSTEM

The very important distinction here is that the power flowing into the electrolyser and causing the water to break down and produce the gas output, is coming almost exclusively from the environment and **not** from the electrical supply. The main function of Bob's electrical supply is to power the device which draws energy in from the environment. Consequently, if you assume that the current supplied by the electrical supply is the whole of the power driving the electrolyser, then you have a real problem, because, when properly built and finely tuned, Bob's electrolyser produces up to 1,200% of Faraday's maximum efficiency production rate.

This is an illusion. Yes, the electrical input is exactly as measured. Yes, the gas output is exactly as measured. Yes, the gas output is twelve times the Faraday maximum. But Faraday's work and the Law of Conservation of Energy are not challenged in any way **because** the electrical current measured is used primarily to power the interface to the environment and nearly all of the energy used in the electrolysis process flows in from the local environment and is not measured. What we can reasonably deduce is that the energy inflow from the environment is probably about twelve times the amount of power drawn from the electrical supply.

At this point in time, we do not have any equipment which can measure this environmental energy. We are in the same position as people were with electrical current five hundred years ago – there was just no equipment around which could be used to make the measurement. That, of course, does not means that electrical current did not exist at that time, just that we had not developed any equipment capable of performing measurement of that current. Today, we know that this environmental energy exists because we can see the effects it causes such as running Bob's electrolyser, charging batteries, etc. but we can't measure it directly because it vibrates at right-angles to the direction that electrical current vibrates in. Electrical current is said to vibrate "transversely" while this zero-point energy vibrates "longitudinally", and so has no effect on instruments which respond transversely such as ammeters, voltmeters, etc.

Bob Boyce's 101-plate electrolyser produces anything up to 100 litres of gas per minute, and that rate of production is able to power internal combustion engines of low capacity. The vehicle alternator is perfectly capable of powering Bob's system, so the result is a vehicle which appears to run with water as the only fuel. This is not the case, nor is it correct to say that the engine is powered by the gas produced. Yes, it does utilise that gas when running, but the power running the vehicle is coming directly from the environment as an inexhaustible supply. In the same way, a steam engine does not run on water. Yes, it does utilise water in the process, but the power that runs a steam engine comes from burning the coal and not from the water.

Chapter 1: Magnet Power

One thing which we are told, is that permanent magnets can't do any work. Oh yes, magnets can support themselves against the pull of gravity when they stick on your refrigerator, but, we are told, they can't do any work. Really?

What exactly is a permanent magnet? Well, if you take a piece of suitable material like 'soft' iron, put it inside a coil of wire and drive a strong electrical current through the coil, then that converts the iron into a permanent magnet. What length of time does the current need to be in the coil to make the magnet? Less than one hundredth of a second. How long can the resulting magnet support its own weight against gravity? Years and years. Does that not strike you as strange? See how long you can support your own body weight against gravity before you get tired. Years and years? No. Months, then? No. Days, even? No.

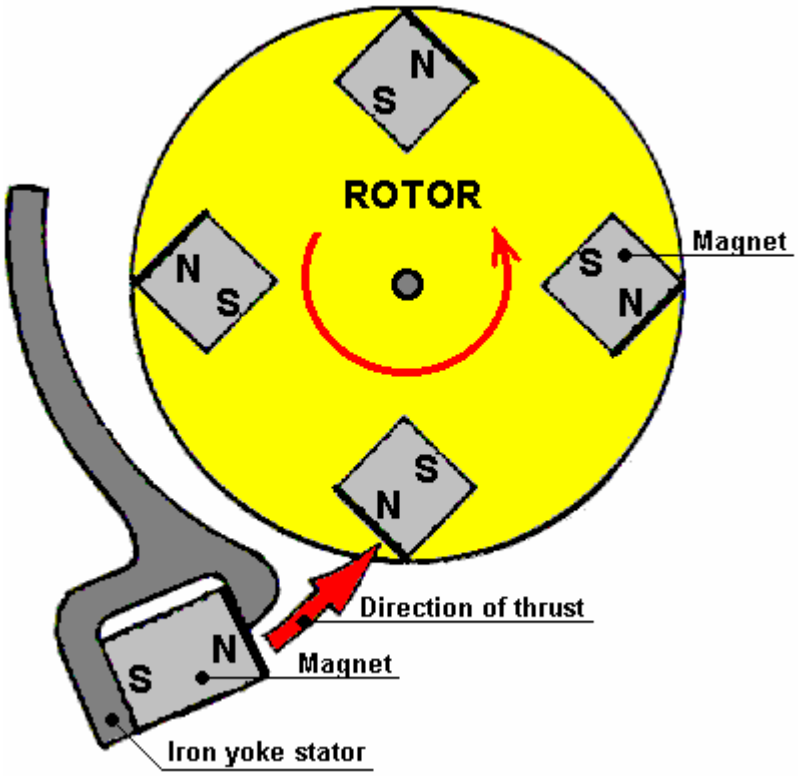
Well if you can't do it, how come the magnet can? Are you suggesting that a single pulse for a minute fraction of a second can pump enough energy into the piece of iron to power it for years? That doesn't seem very logical, does it? So, how does the magnet do it?

Well, the answer is that the magnet does not actually exert any power at all. In the same way that a solar panel does not put any effort into producing electricity, the power of a magnet flows from the environment and not from the magnet. The electrical pulse which creates the magnet, aligns the atoms inside the iron and creates a magnetic "dipole" which has the same effect that the electrical "dipole" of a battery does. It polarises the quantum environment surrounding it and causes great streams of energy flow around itself. One of the attributes of this energy flow is what we call "magnetism" and that allows the magnet to stick to the door of your refrigerator and defy gravity for years on end.

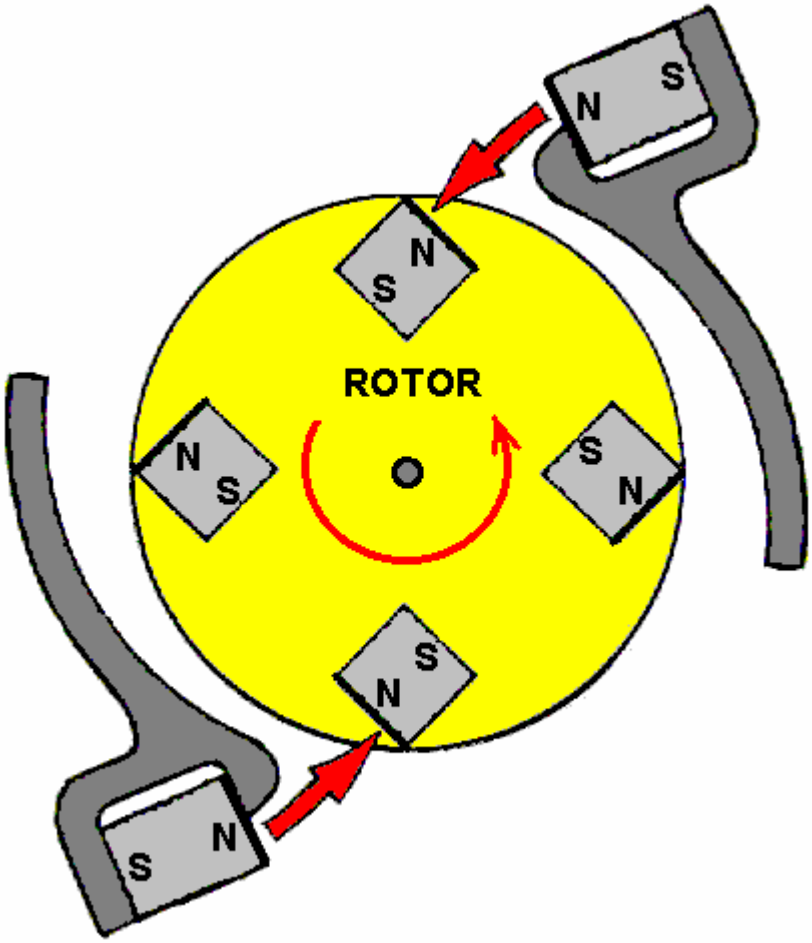
Unlike the battery, we do not put it in a position where it immediately destroys its own dipole, so as a result, energy flows around the magnet, pretty much indefinitely. We are told that permanent magnets can't be used to do useful work. That is not true.

This is a picture of a Chinese man, Shenhe Wang, who has designed and built an electrical generator of five kilowatt capacity. This generator is powered by permanent magnets and so uses no fuel to run. It has been demonstrated publicly, and two of these generators have just successfully completed the Chinese government's mandatory six-month "reliability and safety" testing programme in April 2008. One large Chinese consortium has started buying up coal-fired electricity generating stations in China in order to refurbish them with pollution-free large versions of Wang's generator. Several companies are competing for the rights to manufacture home-power versions of less than 10 kW capacity.

It is not particularly easy to arrange permanent magnets in a pattern which can provide a continuous force in a single direction, as there tends to be a point where the forces of attraction and repulsion balance and produce a position in which the rotor settles down and sticks. There are various ways to avoid this happening. It is possible to modify the magnetic field by diverting it through a soft iron component. An example of this is John Bedini's simple design shown here:



In John's design, the magnetic field of the stator magnet is altered by the iron yoke and this smothers the repulsion which would normally occur between the North pole of the stator magnet and the North pole of each rotor magnet as it gets close to the stator magnet. This arrangement allows the rotor magnets to receive a push as they pass by the stator magnet, producing a repeating thrust to keep the rotor rotating. To increase the power, there does not appear to be any reason why there should not be two stators as shown here:



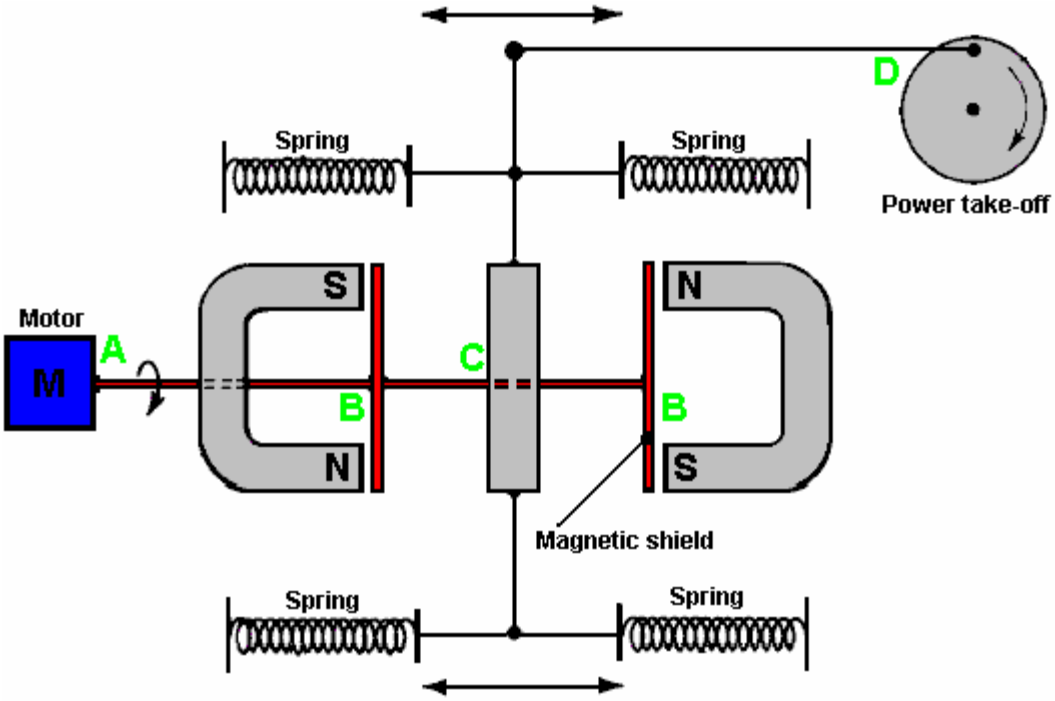
There does not appear to be any reason why several of these rotor/stator assemblies should not be attached to a single shaft to increase the power applied to the shaft and allow an increased level of useful work to be

performed by the device, but this style of magnet motor rotates only slowly and should be considered a "proof of concept" device rather than a serious drive motor.

There are many other designs of permanent magnet motor, but before showing some of them, it is probably worth discussing what useful work can be performed by the rotating shaft of a permanent magnet motor. With a home-built permanent magnet motor, where cheap components have been used and the quality of workmanship may not be all that great (though that is most definitely not the case with some home construction), the shaft power may not be very high. Generating electrical power is a common goal, and that can be achieved by causing permanent magnets to pass by coils of wire. The closer to the wire coils, the greater the power generated in those coils. Unfortunately, doing this creates magnetic drag and that drag increases with the amount of electrical current being drawn from the coils.

There are ways to reduce this drag on the shaft rotation. One way is to use an Ecklin-Brown style of electrical generator, where the shaft rotation does not move magnets past coils, but instead, moves a magnetic screen which alternatively blocks and restores a magnetic path through the generating coils. A commercially available material called “mu-metal” is particularly good as magnetic shield material and a piece shaped like a plus sign is used in the Ecklin-Brown generator.

John W. Ecklin was granted US Patent Number 3,879,622 on 29th March 1974. The patent is for a magnet/electric motor generator which produces an output greater than the input necessary to run it. There are two styles of operation. The main illustration for the first is:

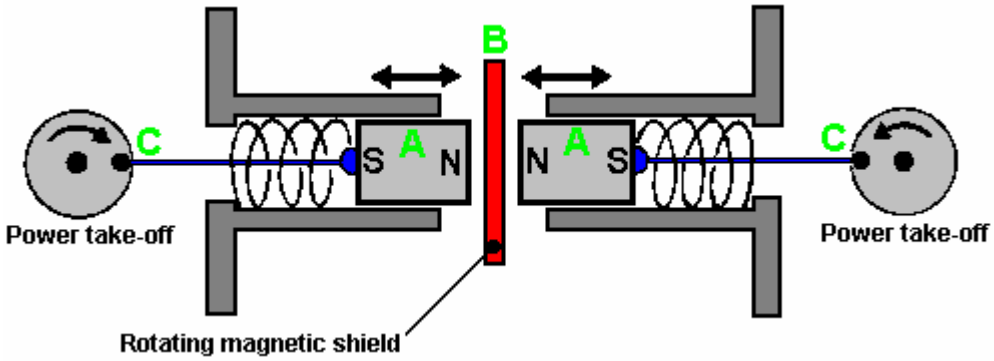


Here, the (clever) idea is to use a small low-power motor to rotate a magnetic shield to mask the pull of two magnets. This causes a fluctuating magnet field which is used to rotate a generator drive.

In the diagram above, the motor at point ‘A’ rotates the shaft and shielding strips at point ‘B”. These rectangular mu-metal strips form a very conductive path for the magnetic lines of force when they are lined up with the ends of the magnets and they effectively shut off the magnet pull in the area of point ‘C’. At point ‘C’, the spring-loaded traveller is pulled to the left when the right-hand magnet is shielded and the left hand magnet is not shielded. When the motor shaft rotates further, the traveller is pulled to the right when the left-hand magnet is shielded and the right hand magnet is not shielded. This oscillation is passed by mechanical linkage to point ‘D’ where it is used to rotate a shaft used to power a generator.

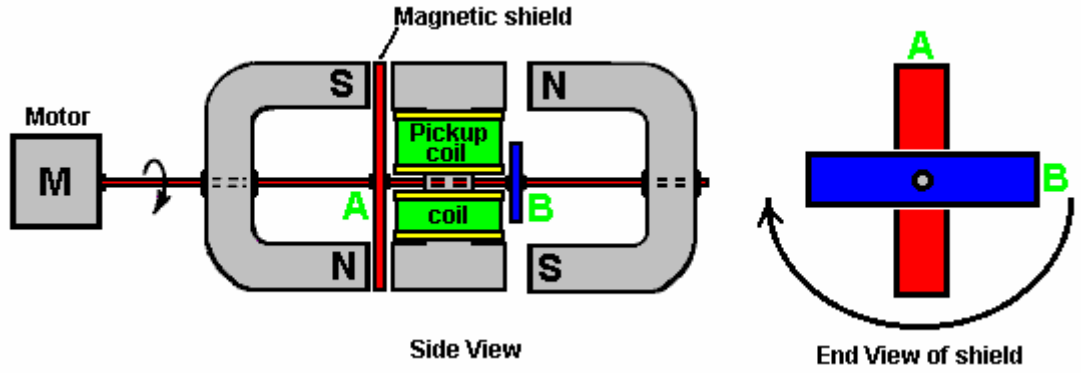
As the effort needed to rotate the magnetic shield is relatively low, it is claimed that the output exceeds the input and so can be used to power the motor which rotates the magnetic shield.

The second method for exploiting the idea is shown in the patent as:



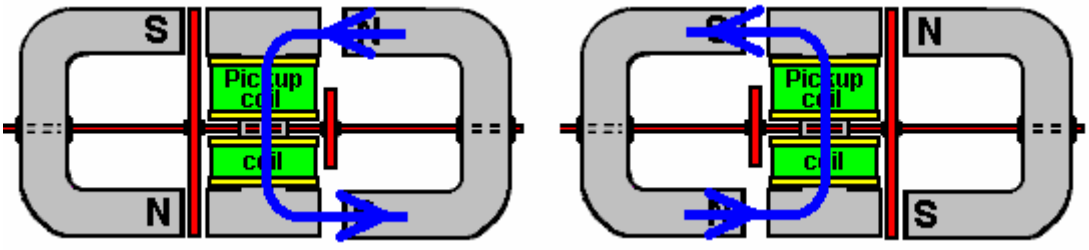
Here, the same shielding idea is utilised to produce a reciprocating movement which is then converted to two rotary motions to drive two generators. The pair of magnets 'A' are placed in a housing and pressed towards each other by two springs. When the springs are fully extended, they are just clear of the magnetic shield 'B'. When a small electric motor (not shown in the diagram) moves the magnetic shield out of the way, the two magnets are strongly repelled from each other as their North poles are close together. This compresses the springs and through the linkages at 'C' they turn two shafts to generate output power.

A modification of this idea is the **Ecklin-Brown Generator**. In this arrangement, the movable magnetic shielding arrangement provides a direct electrical output rather than a mechanical movement:



Here, the same motor and rotating magnetic shield arrangement is used, but the magnetic lines of force are blocked from flowing through a central I-piece. This I-piece is made of laminated iron slivers and has a pickup coil or coils wound around it.

The device operates as follows:



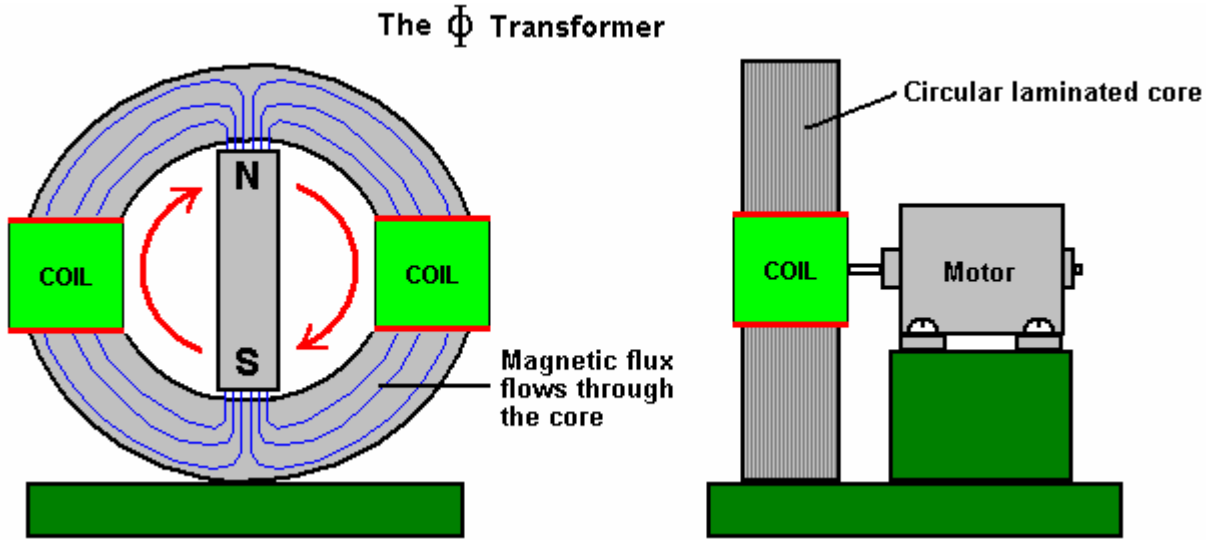
In the position shown on the left, the magnetic lines of force flow **downwards** through the pickup coils. When the motor shaft has rotated a further ninety degrees, the situation on the right occurs and there, the magnetic lines of force flow **upwards** through the pickup coils. This is shown by the blue arrows in the diagram. This reversal of magnetic flux takes place four times for every rotation of the motor shaft.

While the Ecklin-Brown design assumes that an electric motor is used to rotate the mu-metal shield, there does not seem to be any reason why the rotation should not be done with a permanent magnet motor.

Another effective power take-off system is that used by the “Phi Transformer” (“Phi” is pronounced “Fi”). In this design, the magnetic drag is reduced by containing the magnetic flux in a laminated iron ring or “toroid”. Again, the design expects an electric motor to be used to spin the rotor, but there does not seem to be any great reason why a permanent magnet motor should not be used instead.

Toroidal shapes are clearly important in many devices which pull in additional energy from the environment, even to the extent that Bob Boyce warns against the high-frequency sequential pulsing of coils wound on a toroid yoke, producing a rotating magnetic field as unpredictable surge events can generate some 10,000 amps of additional current which will burn out the circuit components and can very well trigger a radiant energy build up which can create a lightning strike. Bob himself has been hit by just such a lightning strike and he is lucky to have survived. Lesser systems such as the toroid transformer used in Bob’s electrolyser system are safe even though they generate a power gain. So the many toroidal system designs are definitely worth examining.

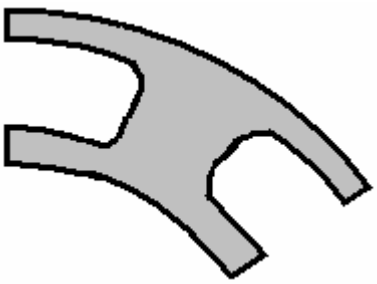
One of these is the “Phi-Transformer” which looks like a somewhat similar arrangement to the MEG described in Chapter 3. However, it operates in quite a different way:



Here, lines of magnetic flux coming from a permanent magnet are channelled through a laminated yoke which is effectively a circular mains transformer core. The difference is in the fact that instead of electronically driving a coil to alter the flux coming from the permanent magnet, in this system the magnet is rotated by a small motor.

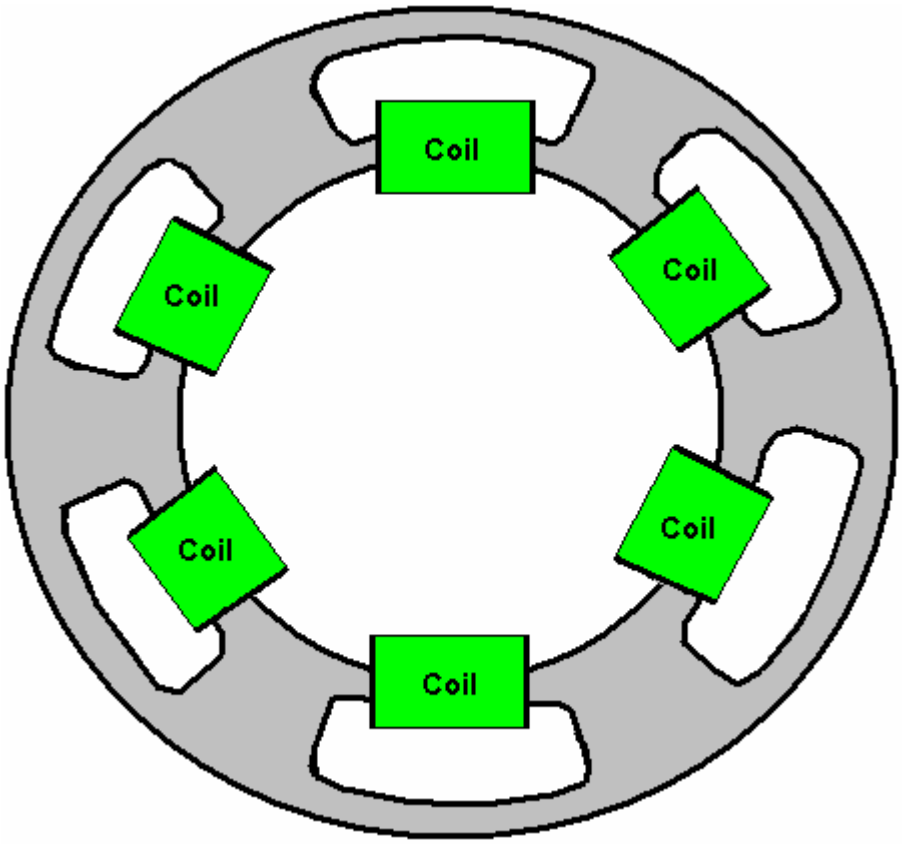
The performance of this device is impressive. The power required to rotate the magnet is not unduly affected by the current drawn from the coils. The flux is channelled through the laminated iron core and in tests an output of 1200 watts for an input of 140 watts has been achieved, and that is a COP of 8.5 which is very respectable, especially for such a simple device.

At http://jnaudin.free.fr/html/dsqromg2.htm a generator design by Dave Squires is shown, dated 1999. All attempts to contact Dave Squires have been unsuccessful, so it is not known if the information there is from tests on a device which has actually been built or if it is just a theoretical design, though it is likely that it was not built at that time. The design is almost identical to the Phi Transformer. A central core is produced by casting the shape shown below, using an amorphous iron powder / epoxy mix. However, as the operating frequency is low at only 50 Hz or 60 Hz, there does not seem to be any reason why normal transformer laminations should not be used, in which case six sets of shims shaped like this:

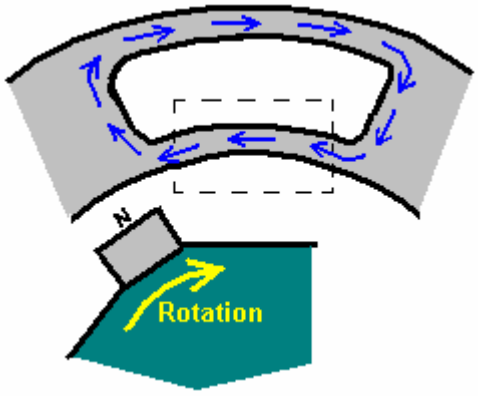


which would make the winding of the coils very much easier as standard bobbins could be slotted into place as the core yoke is being assembled.

However, the complete core is shaped like this with coils placed in the slots:

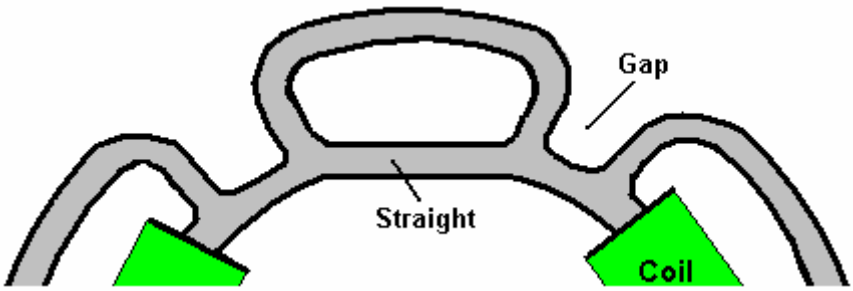


The thinking behind this arrangement is that the “back-EMF” magnetic flux which normally causes Lenz Law opposition to the free rotation of the magnets around the toroid, is diverted around behind the coil and turned so that instead of hindering the rotation, it actually assists it:

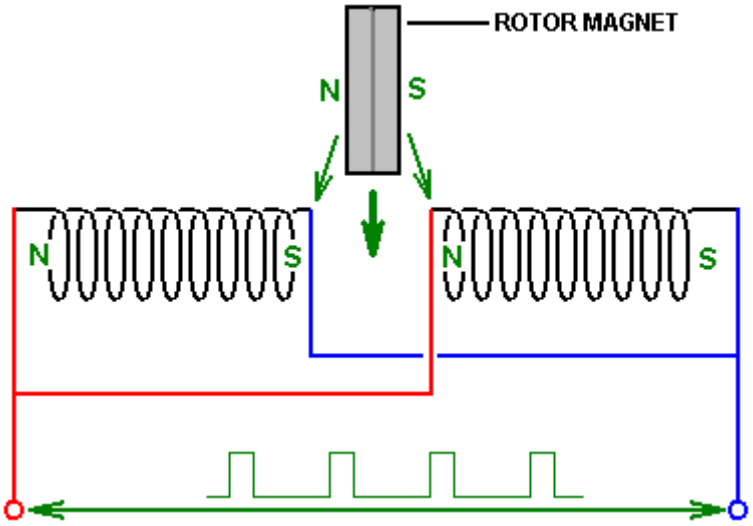


The speed of rotation is quoted as being 1,000 rpm for 50 Hz and 1,200 rpm for 60 Hz. The coil windings are suggested as being 180 turns of AWG 14 (16 SWG) for 120 volts AC, at a supposed current of 100 amps, which is seems unrealistic as the maximum current for that size of wire is quoted as being 5.9 amps. The magnets are 2 inches long, 1 inch deep neodymium set into a circular rotor of 12 inch diameter. There can, of course, be more than one rotor on a single shaft, and the number of turns would be doubled for 240 volts AC output.

The yoke on which the coils are wound is effectively a series of toroids, though admittedly, not exactly circular is shape. An alternative shape which might be considered would be as shown below where the section carrying the magnetic flux for any one coil is more isolated from the other toroids. It is not clear if making the section which passes through the coil, straight rather than curved, so I will leave that detail to people who are expert in magnetics.

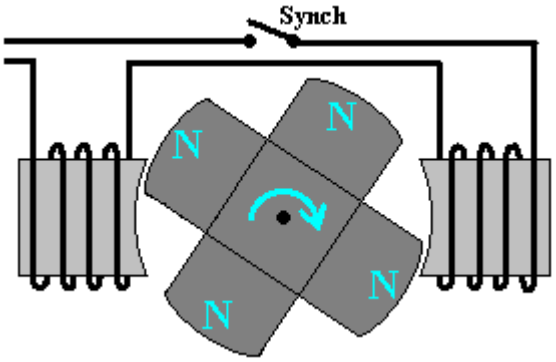


This design concept has been tested by one or two people and while magnetic drag was reduced, it did not reach zero. One arrangement suggested by Garry Stanley and verified by Stefan Hartman in October 2003 is:



Here, two identical coils are wired in parallel and driven by a pulsed DC voltage. When they are powered up a strong attraction is created between these stationary coils and the permanent magnet fixed to a rotating disc positioned between the coils. This attraction causes the rotor to rotate, moving the magnet into the space between the coils. If nothing were changed, then the magnet would overshoot the centre of the coils and then experience a pull backwards towards the coils. To avoid this, the electrical power is cut as soon as the magnet passes the centre of the coils. This produces a large voltage of the opposite polarity in the coil and that has two beneficial effects. The first effect is that the poles of the coils are reversed and instead of dragging the magnet backwards, the coils actually push the magnet onwards. The second effect is that the voltage pulse can be directed through diodes to pass that “back EMF” power pulse back to charge a battery, regaining some of the electrical power used to drive the rotor.

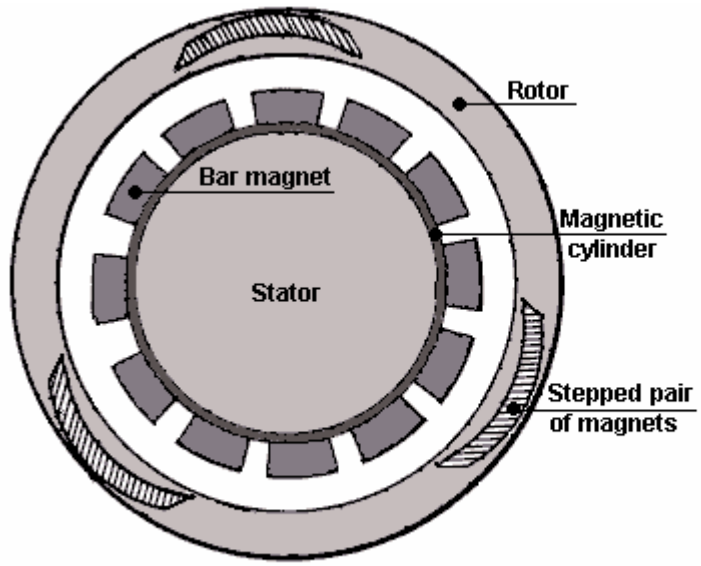
While this looks like a new motor arrangement, it is actually a variation of the motor designed by the late Robert Adams of New Zealand and described in Chapter 2:



The only physical difference is that the coils are wired in series rather than in parallel, that is, in a daisy chain rather than wired directly across each other. The non-obvious difference is that the Adams motor is driven by

the power of the permanent magnets being attracted to the metal cores of the coils and the power applied to prevent the backwards drag when the rotor magnet has passed the centre of the coil.

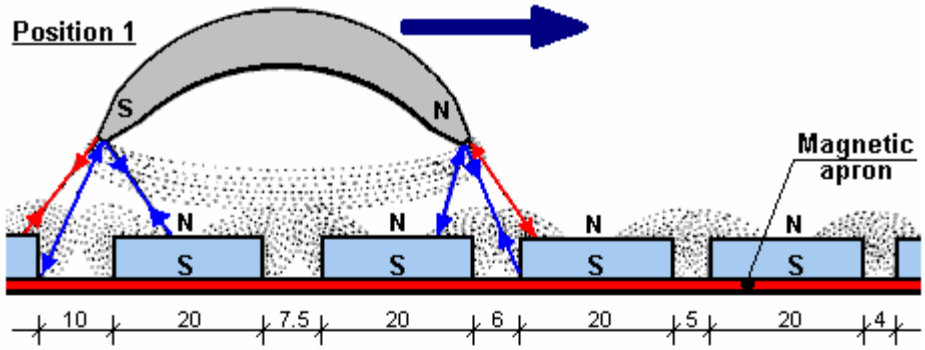
Howard Johnson. Returning to permanent magnet motors themselves, one of the top names in this field is Howard Johnson. Howard built, demonstrated and gained US patent 4,151,431 on 24th April 1979, from a highly sceptical patent office for, his design of a permanent magnet motor. He used powerful but very expensive Cobalt/Samarium magnets to increase the power output and demonstrated the motor principles for the Spring 1980 edition of *Science and Mechanics* magazine. His motor configuration is shown here:



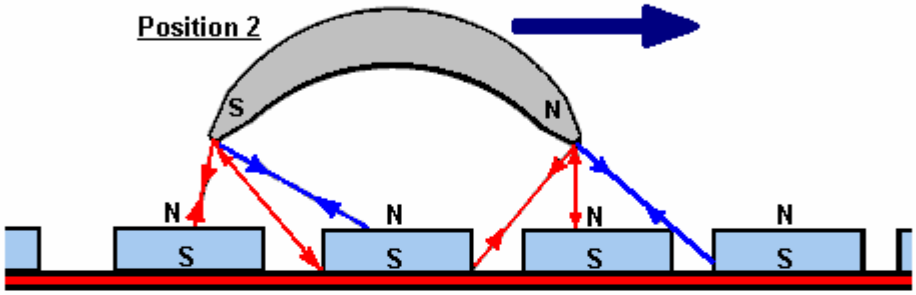
Note that the gaps between the magnets are not a constant width.

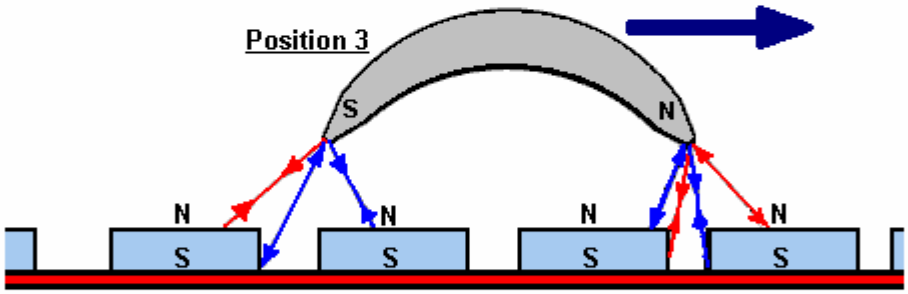
The point that he makes is that the magnetic flux of his motor is always unbalanced, thus producing a continuous rotational drive. The rotor magnets are joined in stepped pairs, connected by a non-magnetic yoke. The stator magnets are placed on a mu-metal apron cylinder. Mu-metal is very highly conductive to magnetic flux (and is expensive). The patent states that the armature magnet is 3.125" (79.4 mm) long and the stator magnets are 1" (25.4 mm) wide, 0.25" (6 mm) deep and 4" (100 mm) long. It also states that the rotor magnet pairs are **not** set at 120 degrees apart but are staggered slightly to smooth out the magnetic forces on the rotor. It also states that the air gap between the magnets of the rotor and the stator are a compromise in that the greater the gap, the smoother the running but the lower the power. So, a gap is chosen to give the greatest power at an acceptable level of vibration.
Howard considers permanent magnets to be room-temperature superconductors. Presumably, he sees magnetic material as having electron spin directions in random directions so that their net magnetic field is near zero until the electron spins are aligned by the magnetising process which then creates an overall net permanent magnetic field, maintained by the superconductive electrical flow.

The magnet arrangement is shown here, with the inter-magnet gaps assessed from the drawing in Howard's patent:

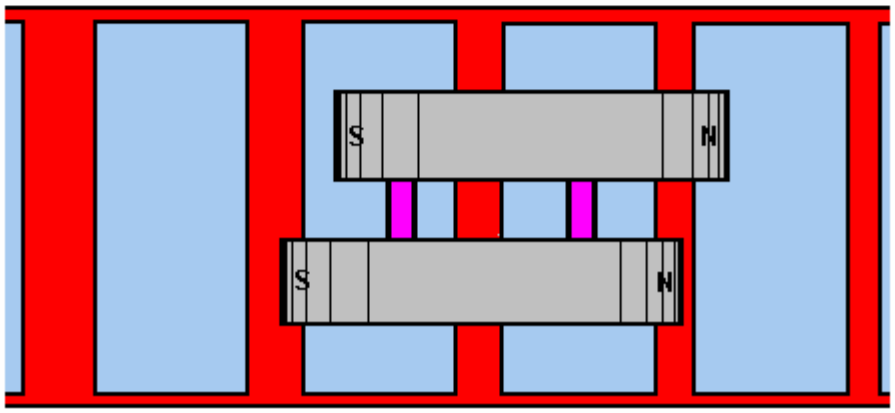


Note that Howard Johnson did not draw the inter-magnet gaps as equal distances





SIDE VIEWS



TOP VIEW

Howard made measurements of the magnetic field strengths and these are shown in the following table:

Measurements taken at the North and South poles of the armature magnet shows that there is a constant off-balance situation.

"Zero" Air Gap
SOUTH POLE of Armature over:

Spaces (Repulsion)	Stator Magnets (Attraction)
925	1650
675	2220
600	2200
500	2175
375	2325
300	2275
525	2150
600	2275
450	1800
550	1700
575	1825
400	2050
475	2150
6,950 Gauss	26,775 Gauss

1/8" Air Gap
SOUTH POLE of Armature over:

Spaces (Repulsion)	Stator Magnets (Attraction)
950	1250
550	1175
650	1150
650	1150
800	1150
600	1175
750	1150
700	1200
800	1100
850	1150
650	975
850	1250
675	1350
9,475 Gauss	15,225 Gauss

33,725 Gauss (Total)

24,700 Gauss (Total)

9,025 Gauss (Difference)

"Zero" Air Gap
SOUTH POLE of Armature over:

Spaces (Repulsion)	Stator Magnets (Attraction)
750	1600
700	1450
850	1500
1175	1600
950	1400
900	1400
950	1575
800	1350
1050	1550
1000	950
850	1700
800	1900
550	1400
11,325 Gauss	19,375 Gauss

3/8" Air Gap
SOUTH POLE of Armature over:

Spaces (Repulsion)	Stator Magnets (Attraction)
875	1100
950	1450
950	1400
925	1375
925	1350
950	1450
925	1350
925	1350
1000	1350
925	1100
875	1250
775	1275
600	1300
11,800 Gauss	17,100 Gauss

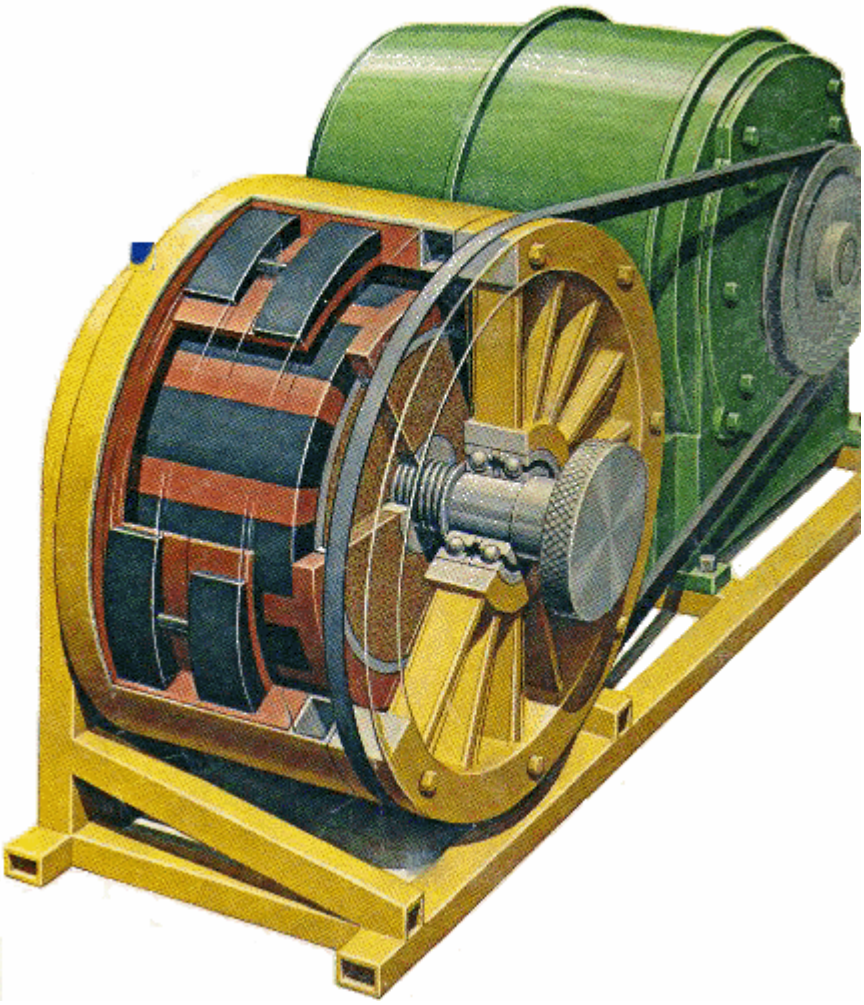
30,700 Gauss (Total)

28,700 Gauss (Total)

2,000 Gauss (Difference)

the magazine article can be seen at http://newebmasters.com/freeenergy/sm-pg48.html.

An artist's impression of the completed motor-generator set-up with a cut-away section is shown here:



The Carousel Permanent Magnet Motor/Generator: US Patent 5,625,241 presents the specific details of a simple electrical generator powered by permanent magnets alone. This generator can also be used as a motor. The construction is not particularly complicated:

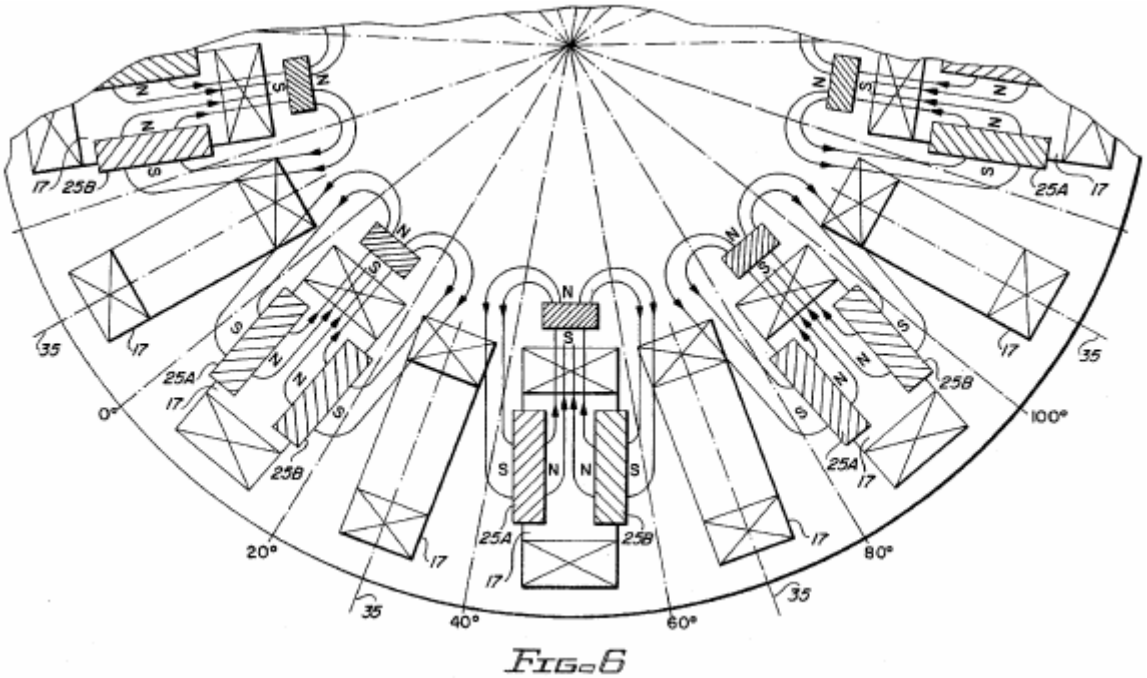


FIG. 6

It uses an arrangement where permanent magnets are associated with every second coil set around the rotor. Operation is self-powered and the magnet arrangement is clearly defined:

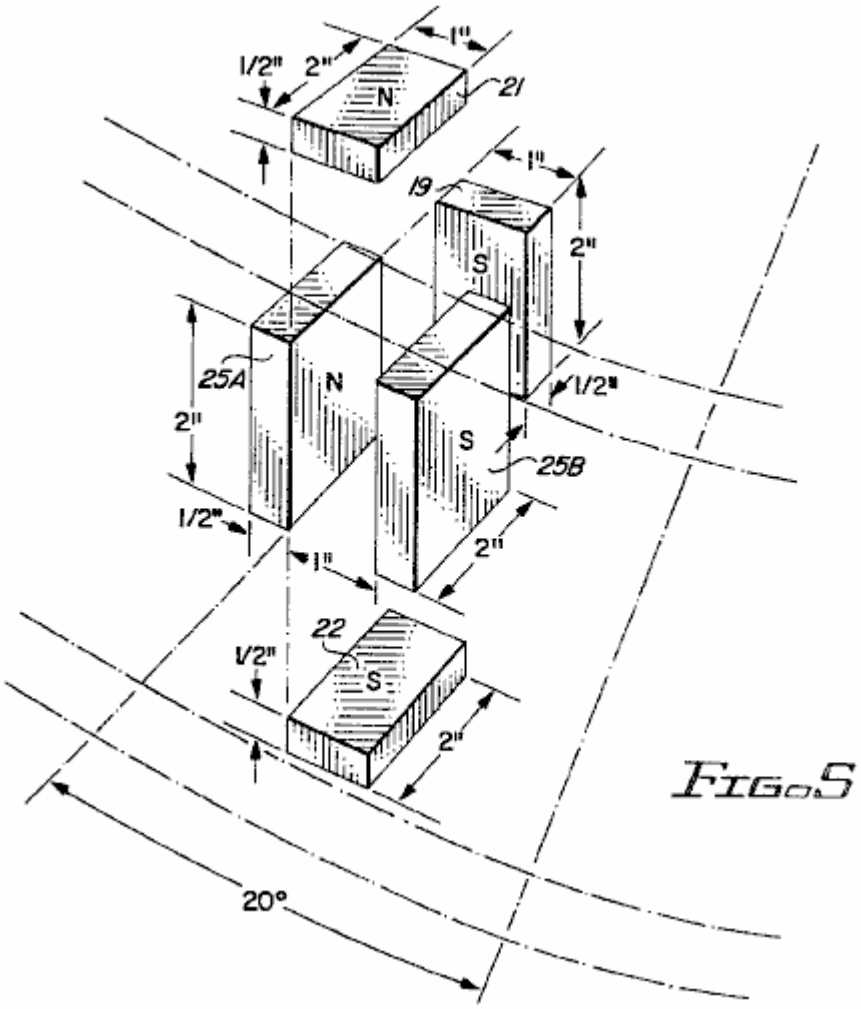


FIG. 5

As are the possible arrangements of the pick-up coils, both high-power, low voltage wiring:

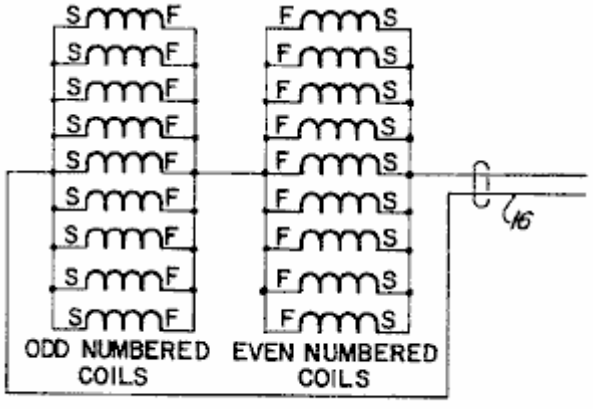


FIG. 8

And high voltage low power connections:

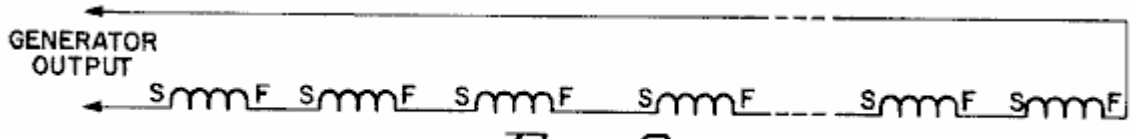


FIG. 9

And the physical arrangement of the device is not particularly complicated:

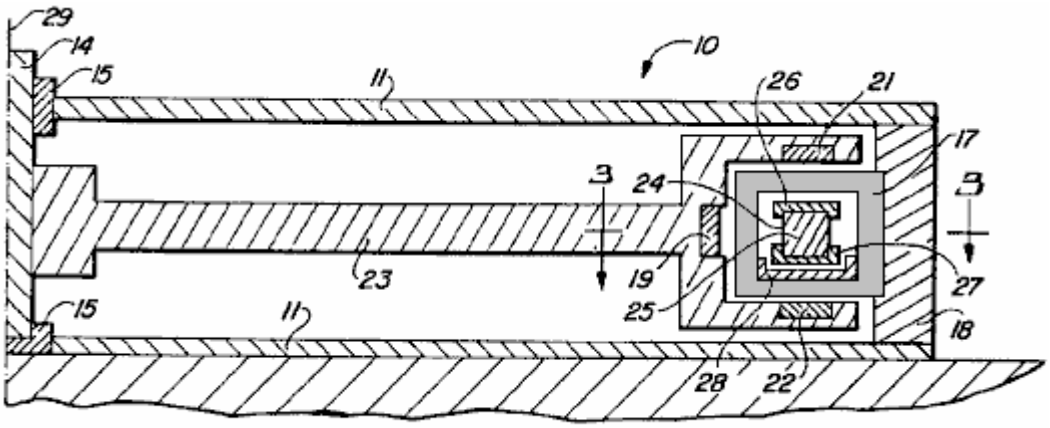
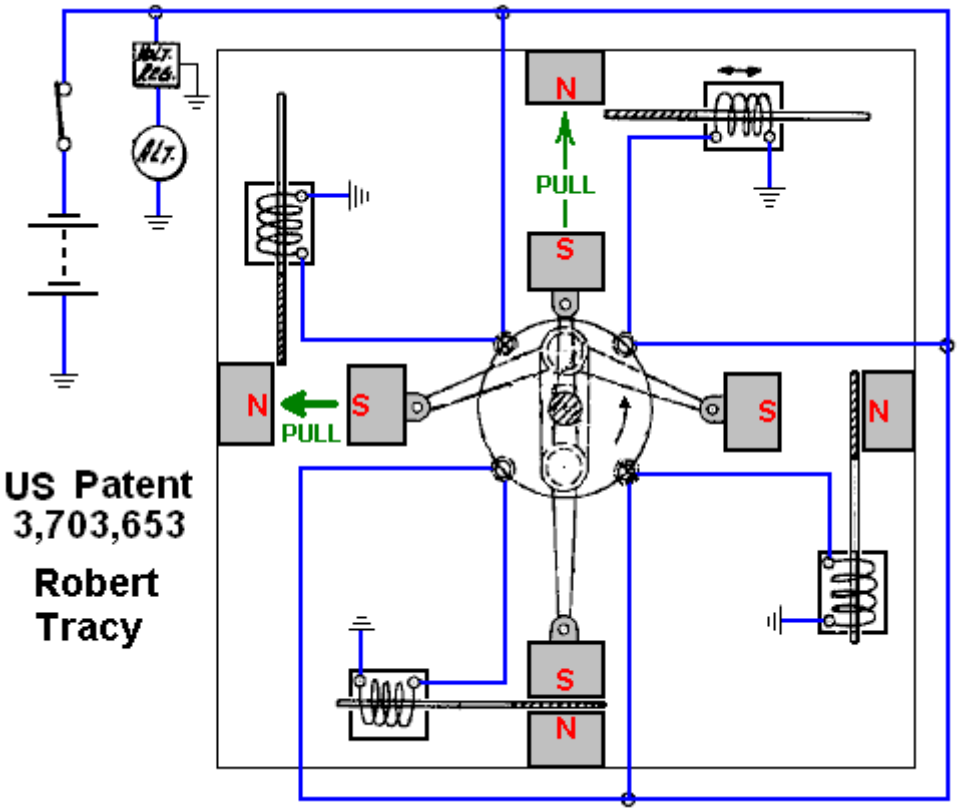


FIG. 2

This is a patent which is definitely worth reading and considering, especially since it is not a complicated presentation on the part of the authors, Harold Ewing, Russell Chapman and David Porter. This seemingly very effective generator appears to be overlooked at the present time.

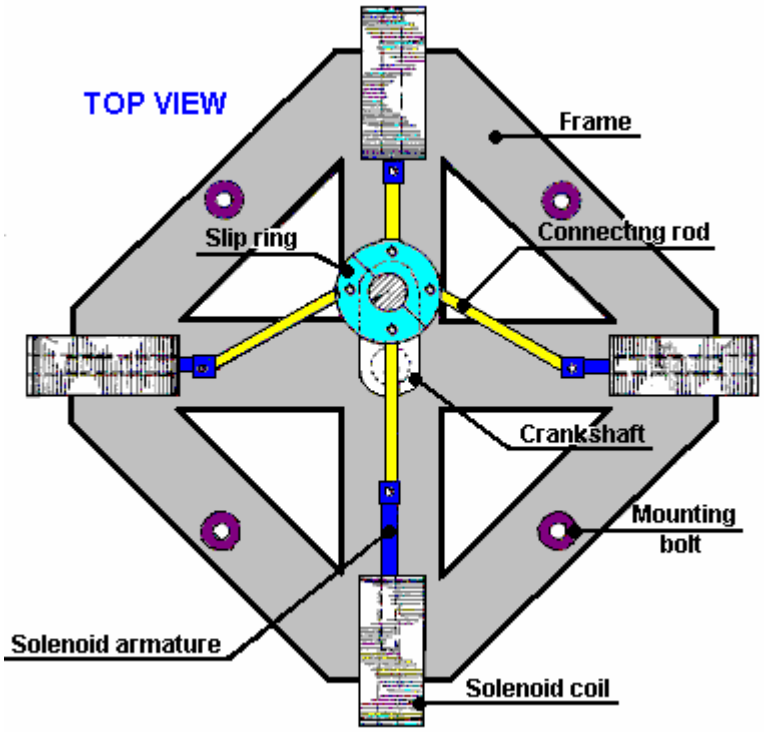
It seems quite clear that permanent magnet motors are a wholly viable option for the home constructor and they are capable of substantial power outputs over long periods.

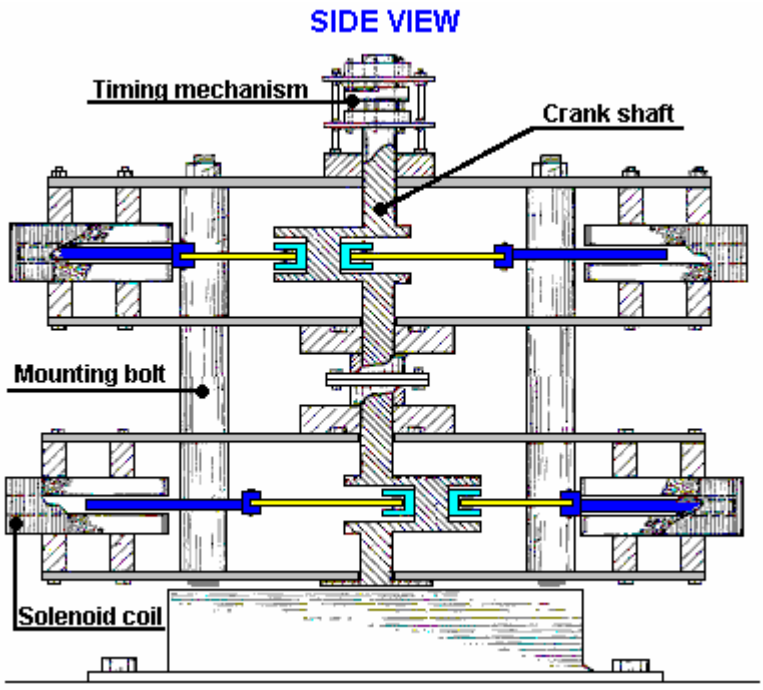
The Robert Tracy Magnet Motor. Some people have opted for permanent magnet motors where the field is shielded at the appropriate moment by a moving component of the motor. Robert Tracy was awarded US Patent Number 3,703,653 on 21st November 1972 for a "Reciprocating Motor with Motion Conversion Means". His device uses magnetic shields placed between pairs of permanent magnets at the appropriate point in the rotation of the motor shaft:



The Ben Teal Motor. Motors of this kind are capable of considerable power output. The very simple motor, originally built by Ben Teal using wood as the main construction material, was awarded US Patent Number

4,093,880 in June 1978. He found that, using his hands, he could not stop the motor shaft turning in spite of it being such a very simple motor design:

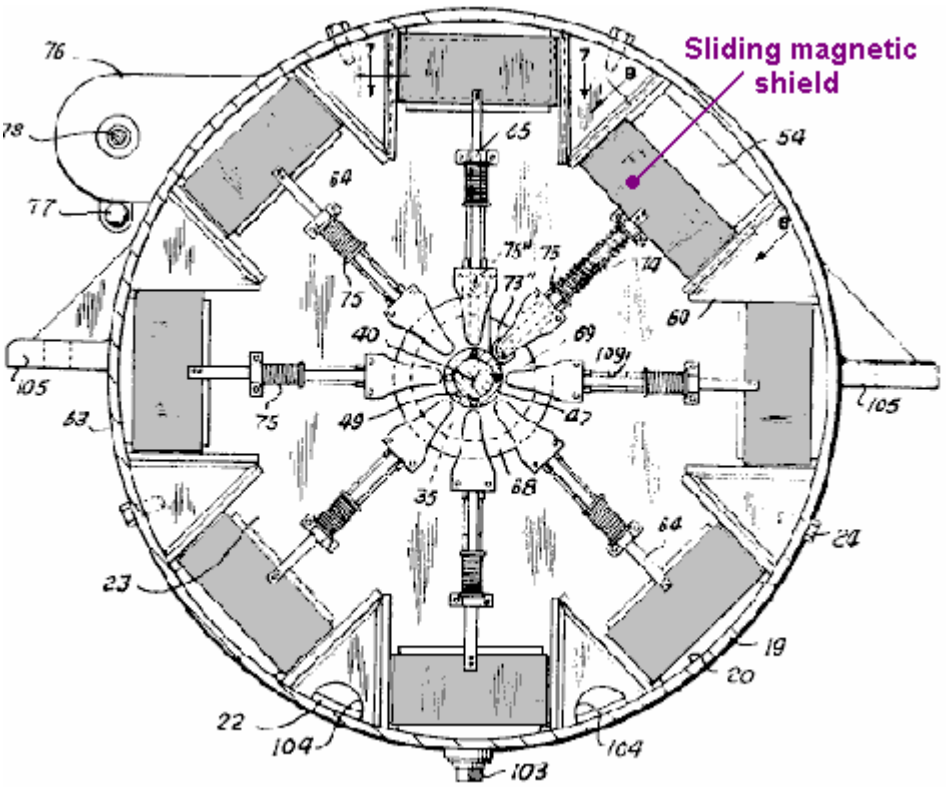




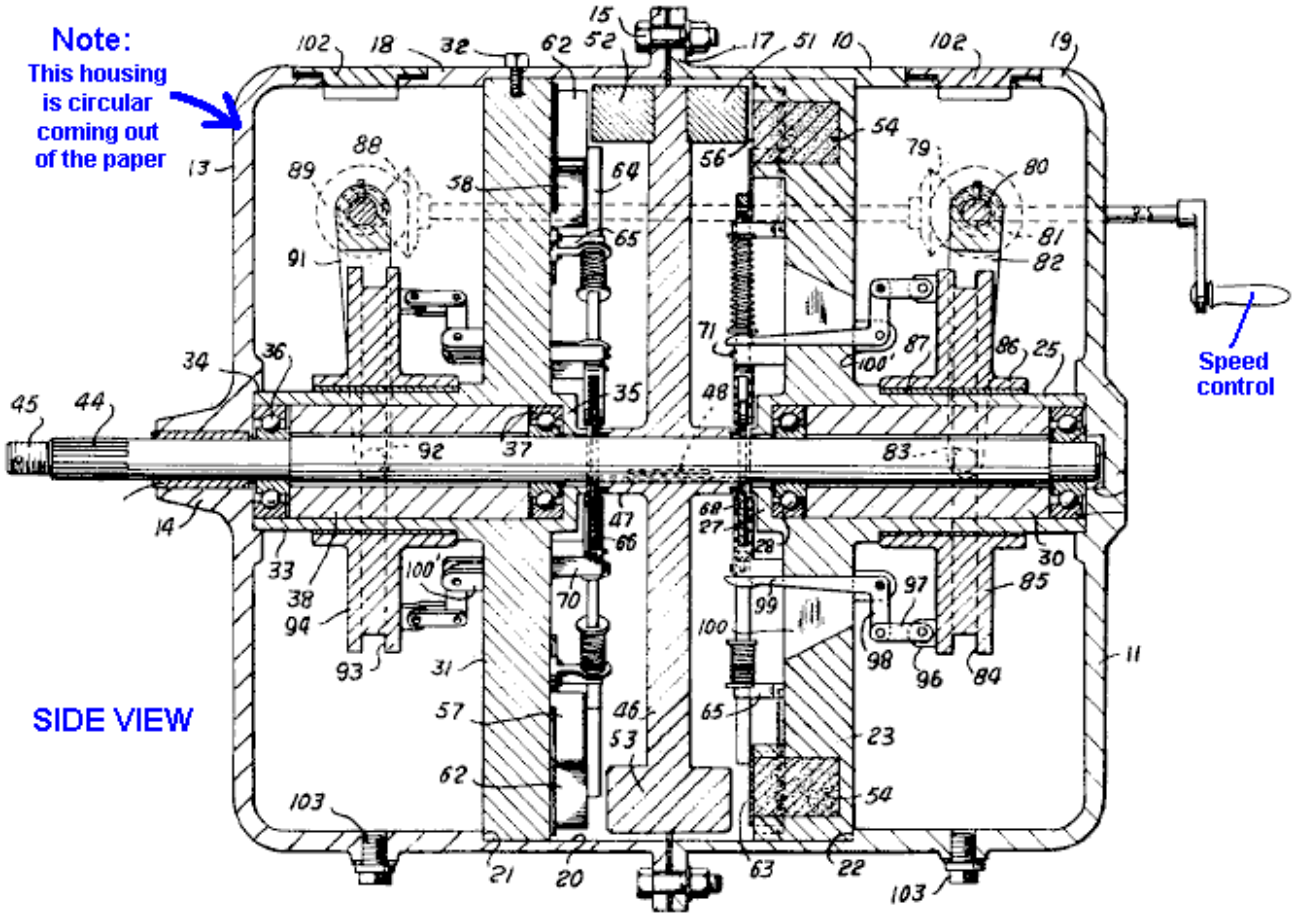
The motor operation is as simple as possible with just four switches made from springy metal, pushed by a cam on the rotor shaft. Each switch just powers it's electromagnet when it needs to pull and disconnects it when the pull is completed. The resulting motor is very powerful and very simple. Additional power can be had by just stacking one or more additional layers on top of each other. The above diagram shows two layers stacked on top of one another. Only one set of four switches and one cam is needed no matter how many layers are used, as the solenoids vertically above each other are wired together in parallel as they pull at the same time.

The power delivered by the Teal motor is an indication of the potential power of a permanent magnet motor which operates in a rather similar way by moving magnetic shields to get a reciprocating movement.

James E. Jines and James W. Jines were awarded US Patent 3,469,130 on 23rd September 1969 “Means for Shielding and Unshielding Permanent Magnets and Magnetic Motors Utilising the Same” and which is in the Appendix. This magnet motor design uses selective shielding of the drive magnets to produce a continuous force in one direction. It also has a mechanical arrangement to progressively adjust the shielding to adjust the power of the motor.



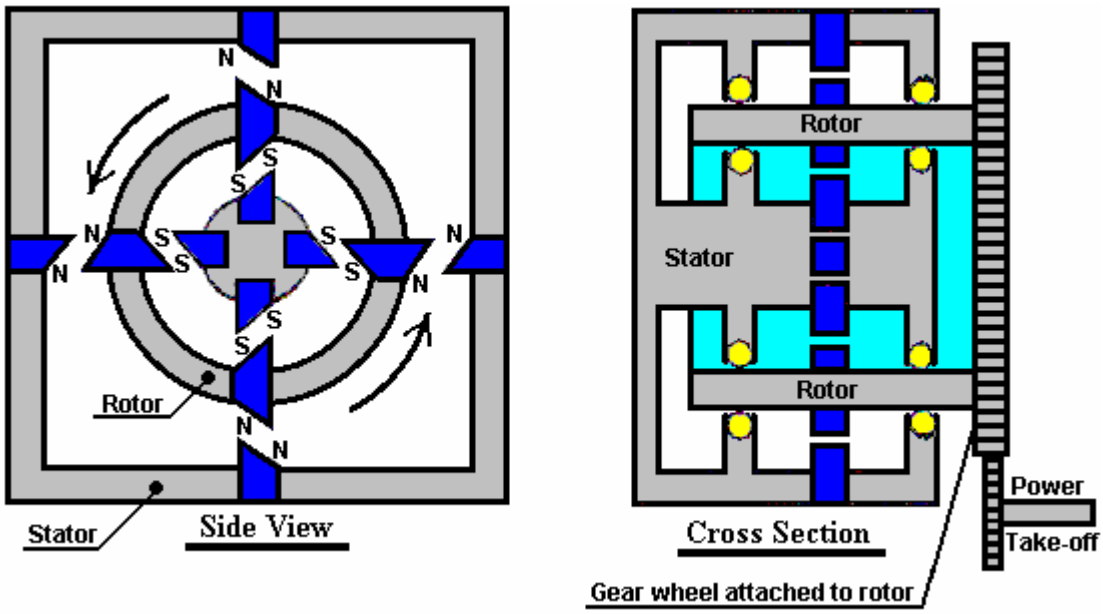
END VIEW



SIDE VIEW

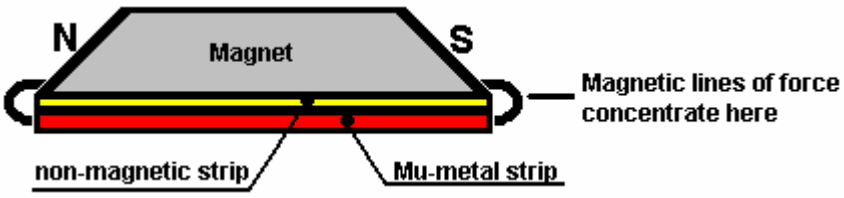
This is a very interesting design of magnetic motor, especially since it does not call for any materials which are not readily available from many suppliers. It also has the advantage of not needing any form of exact adjustment or balancing of magnetic forces to make it operate.

Invention Intelligence (India). The following design for a permanent magnet motor was published in the April 1977 issue of 'Invention Intelligence' in India:



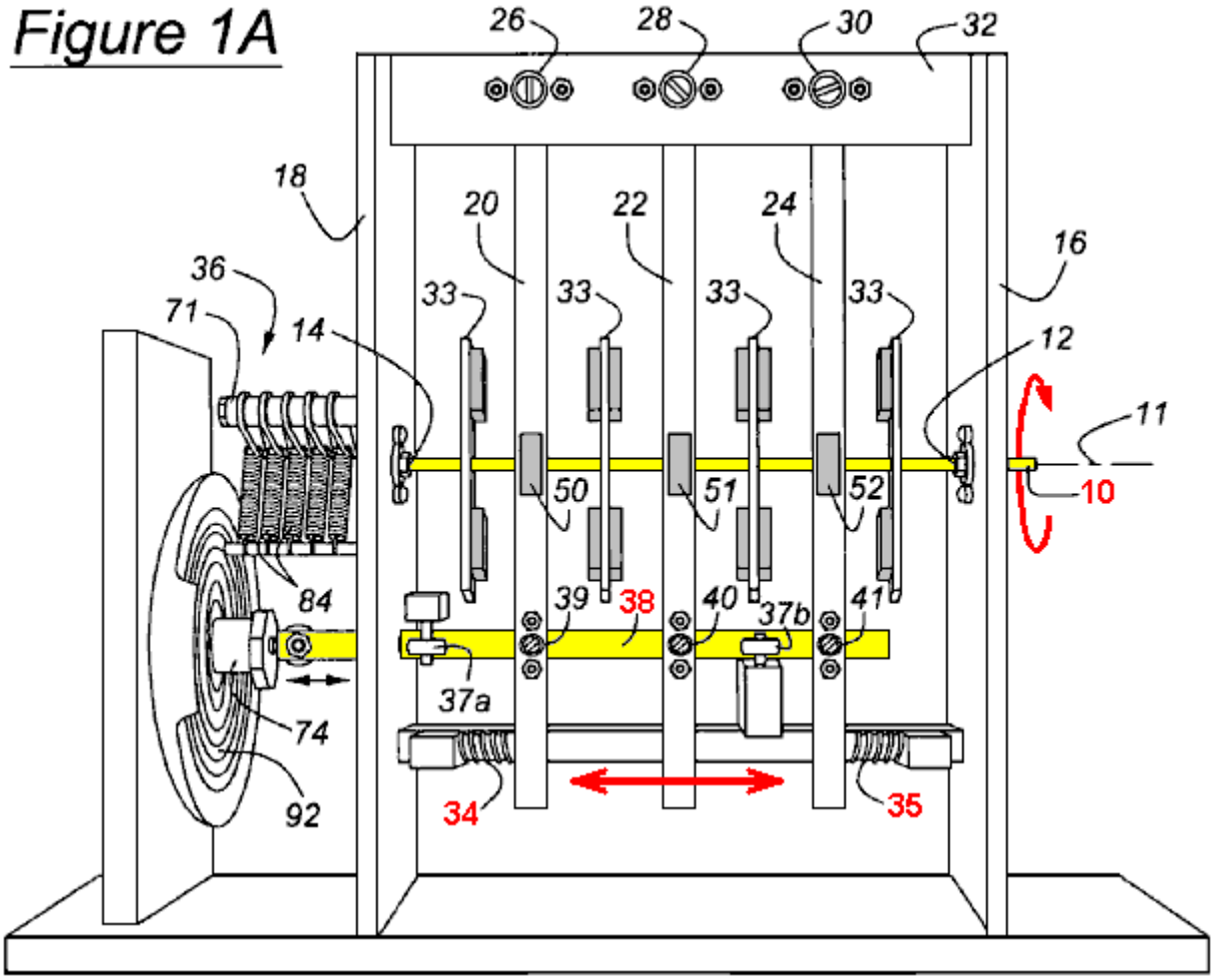
This design relies on the magnetic field of a magnet being distorted by having the pole faces angled at 45 degrees. In the diagram, the magnets are shown in blue and they are mounted in a non-magnetic stator and rotor material shown in grey. The rotor is mounted on two ball races shown in yellow. The theory is that the repulsing forces of the four North-North outer magnet pairs along with the repulsing forces of the four inner South-South magnet pairs should be continuously greater than the North-South attracting forces, thus giving continuous rotation.

It appears most likely that this design is just a theory and that a working model has never been constructed. However, it is possible that this system might work very well, so the information is presented here for interest and possible experimentation. It might be remarked that making the magnet face have a 45 degree angle may well not skew the magnetic field sufficiently to give a big enough imbalance to provide significant drive power. One way to increase the effect might be to use a mu-metal strip along the back of each magnet. Mu-metal is an expensive material which conducts magnetic lines of force in a phenomenal way and so soaks up any magnetism near it:

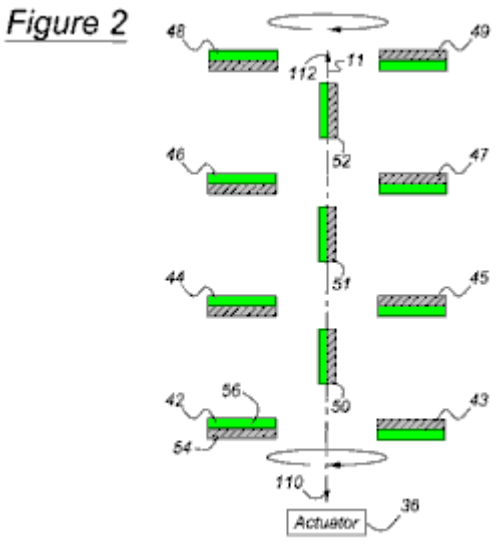


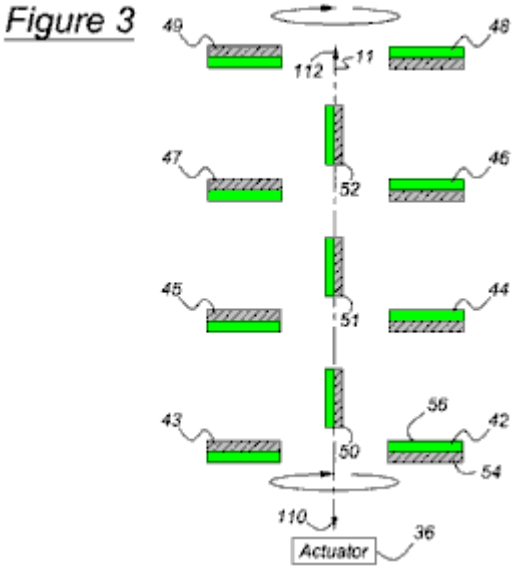
To recap: the underlying principle of the power of magnets is that each permanent magnet mentioned here, has two magnetic poles (one "North" and one "South" pole) and these poles being of opposite type and near each other, form a "dipole". This dipole unbalances the quantum environment around the magnet, causing continuous streams of energy to flow out in every direction from the magnet. These streams of energy are not what we see as lines of magnetic force, and to date, nobody has managed to design any piece of equipment which responds to that energy and which can be used to measure it. At this point in time, all we can do to estimate the energy flow is to divert it into a battery and then assess the battery charge by measuring the length of time that the battery can power a load from the energy which it received. This is a very crude method, but it does work.

Stephen Kundel's Magnet Motor. Stephen Kundel's motor design is shown in full detail in his patent which is shown on page A - 968 of the Appendix. It uses a simple oscillating motion to position the "stator" magnets so that they provide a continuous rotational force on the output shaft:



Here, the yellow arm marked **38**, rocks to the right and left, pushed by a solenoid coil **74**. There is no obvious reason why this rocking motion could not be achieved by a mechanical linkage connected to the rotating output shaft **10**. The three arms **20**, **22** and **24**, being pivoted at their upper points, are pushed into a central position by the springs **34** and **35**. The magnets **50**, **51** and **52**, are moved by these arms, causing a continuous rotation of the output drive shaft **10**. The movement of these magnets avoids the position where the magnets reach a point of equilibrium and lock into a single position.



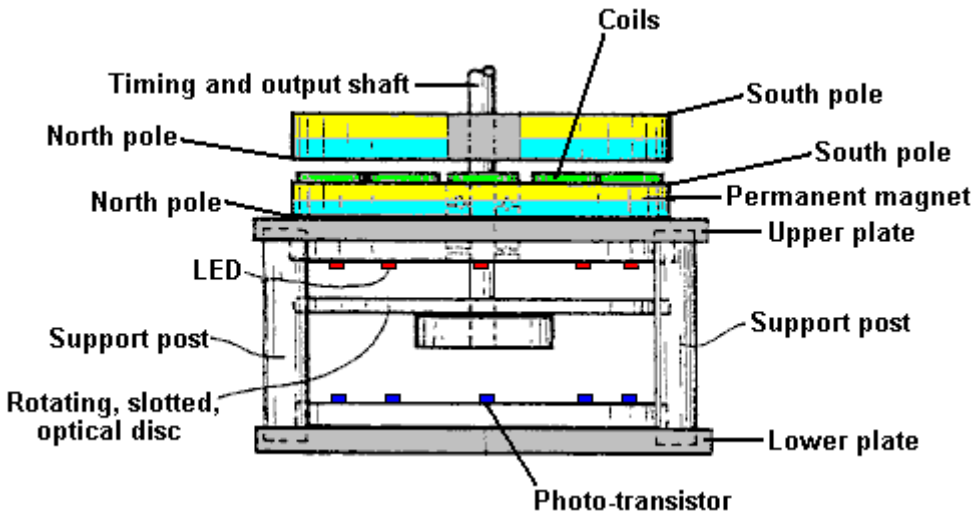


Figures 2 and 3 show the position of the magnets, with the Figure 3 position showing a point in the output shaft rotation which is 180 degrees (half a turn) further on than the position shown in Figure 2.

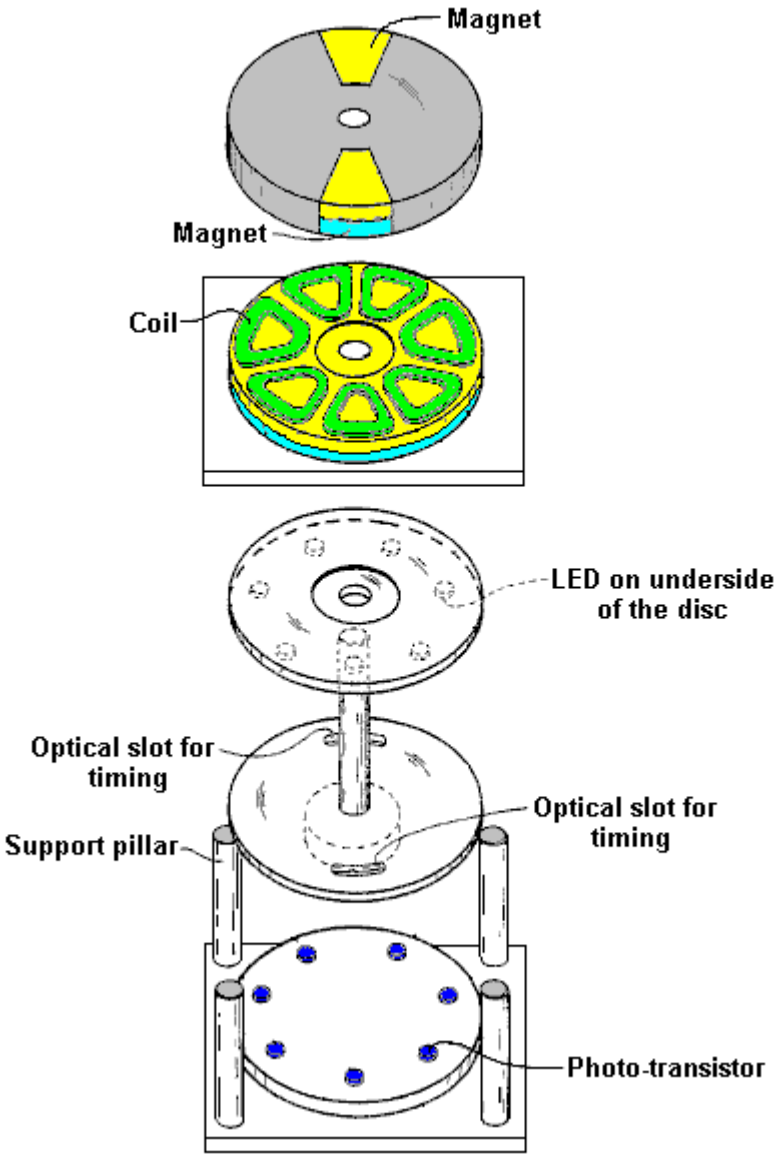
Some other, more powerful magnet arrangements which can be used with this design are shown in the full patent in the Appendix.

Charles "Joe" Flynn's Magnet Motor. Patent US 5,455,474 dated 3rd October 1995 gives details of this interesting design. It says: "This invention relates to a method of producing useful energy with magnets as the driving force and represents an important improvement over known constructions and it is one which is simpler to construct, can be made to be self starting, is easier to adjust, and is less likely to get out of adjustment. The present construction is also relatively easy to control, is relatively stable and produces an amazing amount of output energy considering the source of driving energy that is used. The present construction makes use of permanent magnets as the source of driving energy but shows a novel means of controlling the magnetic interaction or coupling between the magnet members and in a manner which is relatively rugged, produces a substantial amount of output energy and torque, and in a device capable of being used to generate substantial amounts of energy."

The patent describes more than one motor. The first one is like this when seen from the side:

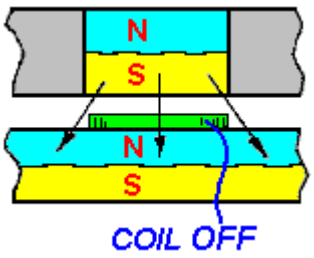


An exploded view, shows the different parts clearly:

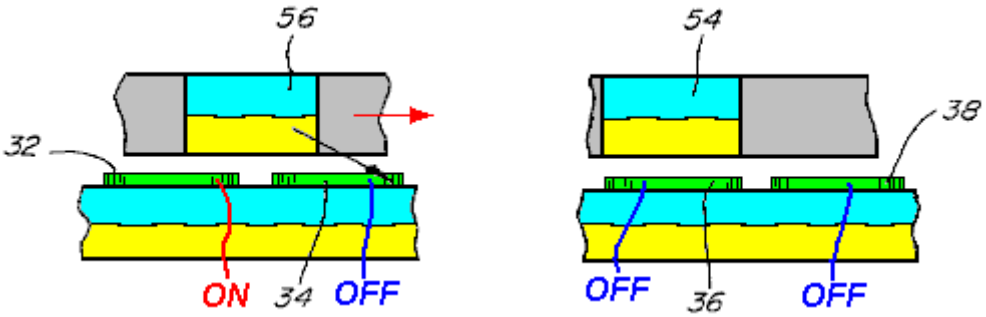


This construction is relatively simple and yet the operation is powerful. The power is provided by three magnets, shown shaded in blue and yellow. The lower magnet is in the form of a disc with the poles arranged on the large, circular, flat faces. This is the stator magnet which does not move. Positioned above it is a disc made of non-magnetic material (shaded in grey) and which has two magnets embedded in it. This disc is the rotor and is attached to the central vertical shaft.

Normally, the rotor would not rotate, but between the two discs there is a ring of seven coils which are used to modify the magnetic fields and produce powerful rotation. The powering up of these coils is very simple and it is arranged by shining a beam of Infra Red light from one of the Light-Emitting Diodes through a slot in an optical-timing disc attached to the rotating shaft. The LEDs and the photo-transistors are aligned with the centres of the seven coils. The position and width of the slot controls which photo-transistor gets switched on and for how long it remains powered up. This is a very neat and compact arrangement. The really interesting part of the design is how the coils modify the magnetic fields to produce the output power of the device. The orientation of the magnet poles can be swapped over, provided that this is done for all three magnets.



Shown here is the situation when one of the top magnets **54** has rotated to be above one of the coils **26** which is not yet powered up. The South pole of magnet **54** is attracted to the North pole which is the entire upper face of magnet **24** as shown by the three arrows. If a voltage is applied to coil **26**, then this magnetic coupling is disrupted and altered. If any torque is developed as a result of the coil being powered up, then it will be developed to either side of the coil **26**. If coil **26** is not powered up, then there will be full attraction between magnets **24** and **54** and no rotational force will be produced. You will notice that there are two rotating magnets (an even number) and seven coils (an odd number) so when one of the rotor magnets is above a coil, then the other isn't. This staggering of the two positions is essential for generating rotational torque.

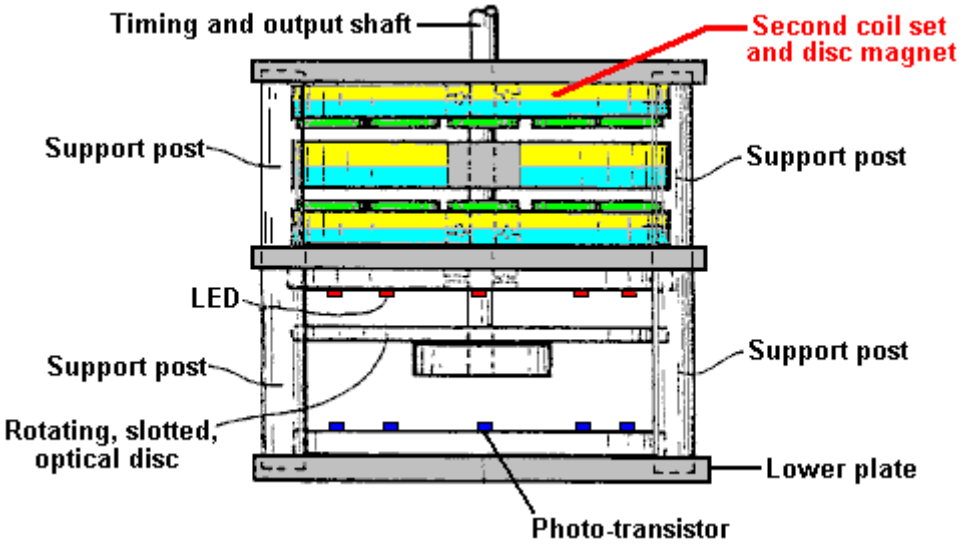


This diagram shows a piece from both sides of the rotor disc, to explain the operation of the coils. On the left, magnet **56** overlaps coil **32** and coil **34**. Coil **32** is powered up and this breaks the magnetic link on the left hand side of magnet **56**. But, coil **34** is not powered up, so the attraction between magnet **56** and the disc magnet under the coils remains. Even though this attraction is at a downward angle, it creates a push on the rotor, driving it towards the right as shown by the red arrow.

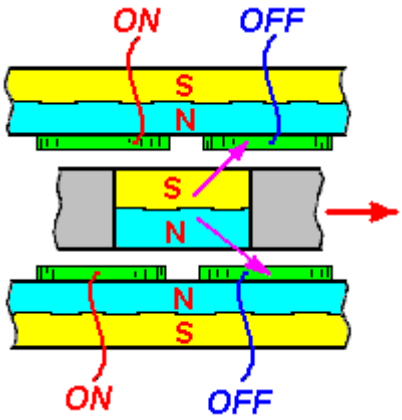
While this is happening, the situation around the other side of the rotor disc, is shown on the right. Here, magnet **54** is above coil **36** and that coil is not powered up, so there is no resulting drive in either direction. The adjacent coil **38** is also not powered up and so has no effect on the rotation. This method of operation is **very** close to that of the motor design of Robert Adams described in the next chapter. It is important to understand that this method of operation is nothing like that of the John Bedini pulsers where the rotation of a disc is caused by the electrical pulse applied to a coil. Instead, here, the coil acts as a magnetic shield, being provided with the minimum possible power to do its job. The coil is, in effect, a shield which has no moving parts, and so is a very clever mechanism for overcoming the tendency for the rotor magnets locking on to the stator magnets and preventing rotation.

At any moment, six of the seven coils are inactive, so in effect, just one coil is powered. This is not a major current drain. It is important to understand that the power of this motor is provided by the permanent magnets pulling towards each other. Each of the two magnets applies a horizontal pull on the rotor every seventh of a turn, that is, every 51.1 degrees in the rotation. As the coils are an uneven number, the rotor gets a magnetic pull every 25.5 degrees in the rotation, first from one rotor magnet and then from the other rotor magnet.

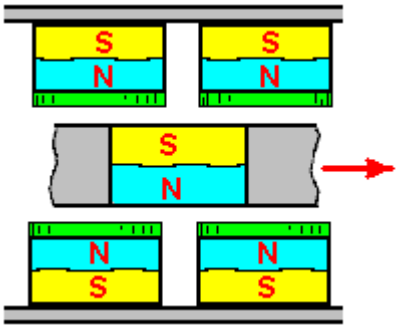
It follows then, that the power of the motor can be increased by adding more magnets. The first step in this search for additional power is to add a second disc magnet and coils on the other side of the rotor, so that there is a second pull on the magnet. This has the added advantage that it balances the downwards pull of the first disc magnet with an upward pull, giving an enhanced and balanced horizontal thrust as shown here:



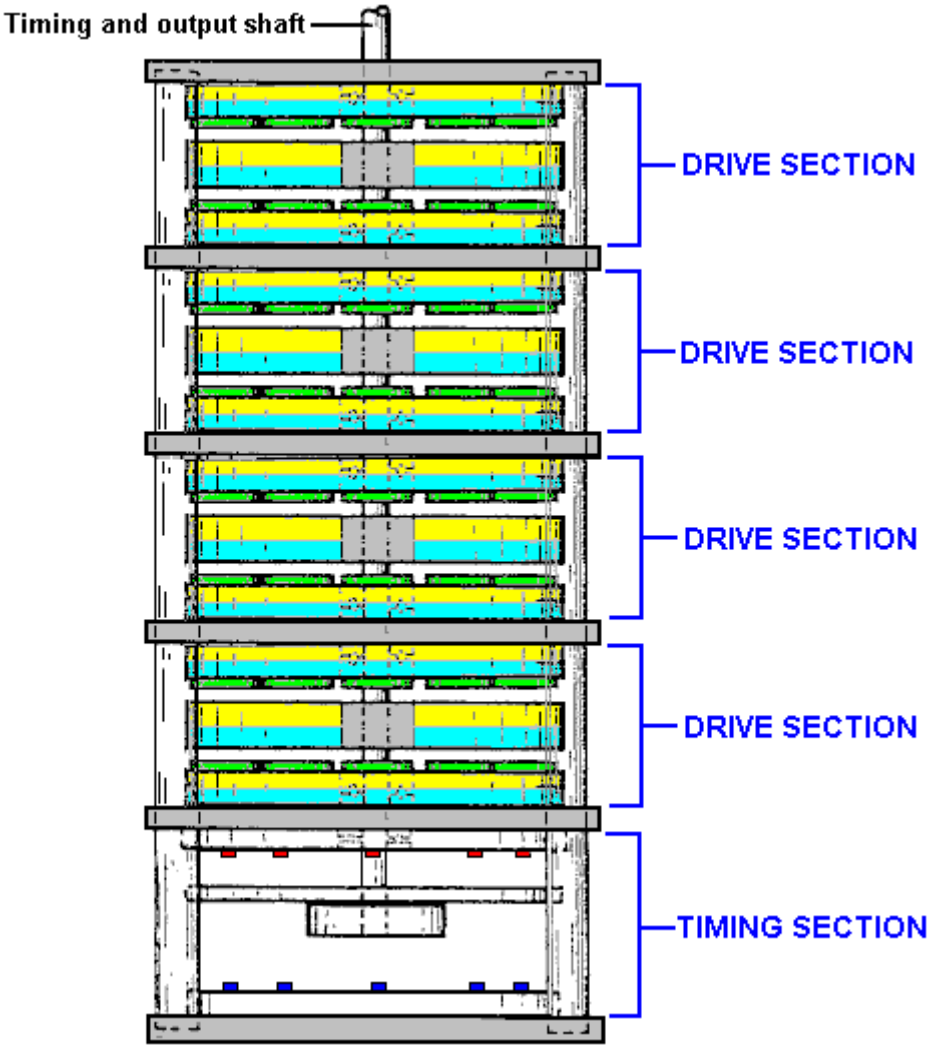
The coil switching with the additional layer of coils is shown here:



This produces a larger horizontal thrust. While this design goes for optimum performance, I suggest that a much more simple form of construction with a ring of standard circular neodymium magnets could be used instead of one large disc magnet, and ordinary circular coils placed on top of the circular magnets:



To increase the power of the output shaft further again, additional sets of magnets and coils can be added as shown here:



It should be remembered that the timing section shown above could be replaced by a NE555 timer circuit which generates a steady stream of On / Off pulses. When those pulses are fed to the coils, the motor rotates, slaving itself to the pulse rate. This gives an immediate speed control for the motor as well as avoiding the need for the precise positioning of the slotted disc which allows the LEDs to shine directly on to the phototransistors at the appropriate instant. If that approach is taken, then the timing section shown above would be omitted.

The circuitry that Charles specifies for powering the coils to block the magnetic fields of the permanent magnets uses MOSFETs and is shown here:

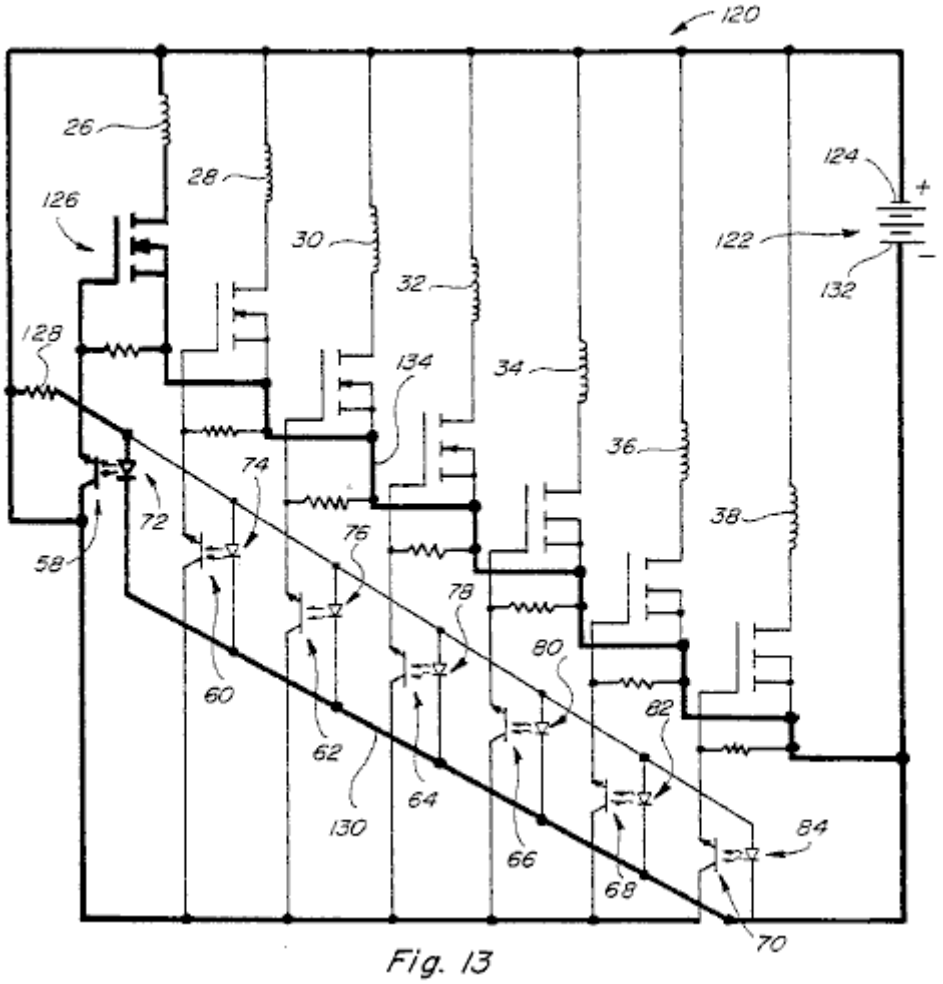
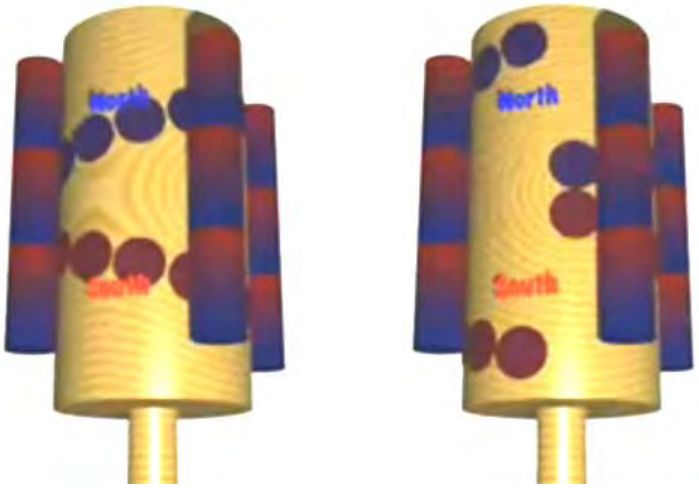


Fig. 13

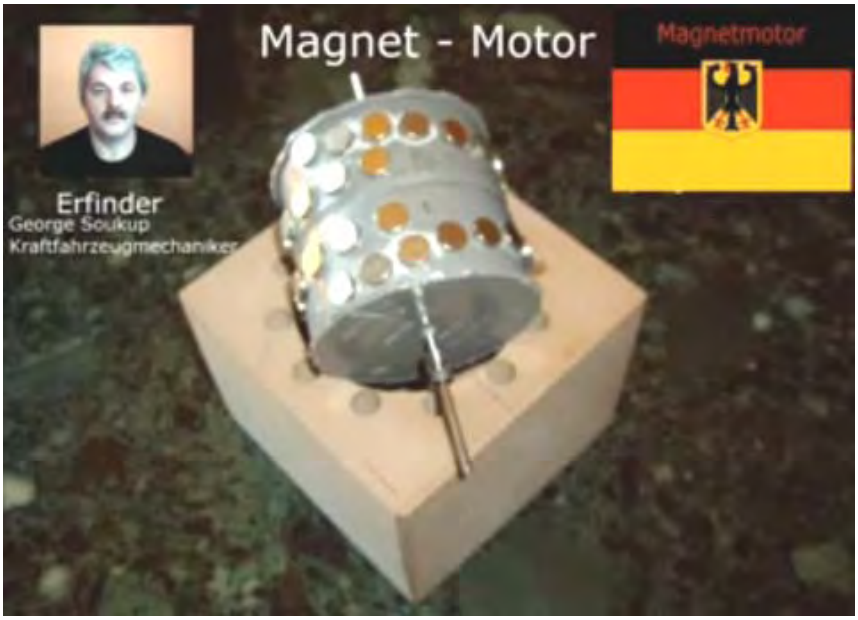
In this patent, Charles Flynn remarks that this magnet motor can be used for almost any purpose where a motor or engine drive is required and where the amount of energy available or required to produce the driving force may vary little to nil. Charles has produced motors of this type which are capable of rotating at very high speed - 20,000 rpm and with substantial torque. Lesser speeds can also be produced, and the motor can be made to be self-starting. Because of the low power required to operate the device applicant has been able to operate the motor using just a nine volt, off-the-shelf battery.

Asymmetrical Magnet Motor. At the present time there is an interesting video on the internet, showing a magnet motor http://www.youtube.com/watch?v=7tdWkn1m-4w&feature=related. This motor is built on the "V" style of magnet placement which has two sets of permanent magnets spaced like this:



This style of magnet arrangement (North magnets shown in blue and South in red) has a locking point where the switch from wide spacing to narrow spacing occurs and this causes the rotation to stop there.

The implementation shown in this video has the V magnets spaced rather more widely apart as shown here:



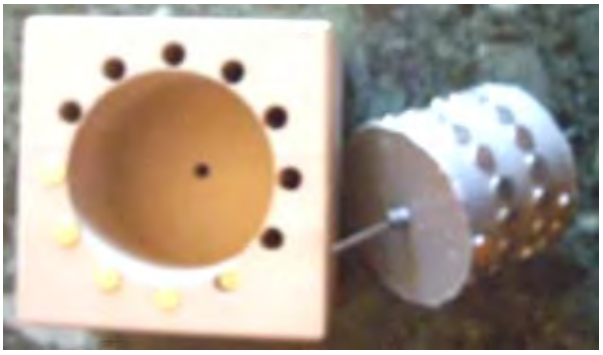
The taper is much less pronounced with an inner gap some four times greater than the gap to the outer ring. It also appears that the last inner magnet has a greater gap around the drum than the remaining ring of magnets.

The housing is very simple looking, with an evenly spaced ring of twelve holes to take long magnets with alternating North and South magnetised areas along their length:

The housing has considerable clearance for the drum and magnets. The rear shaft bearing is just set into the back of the housing:

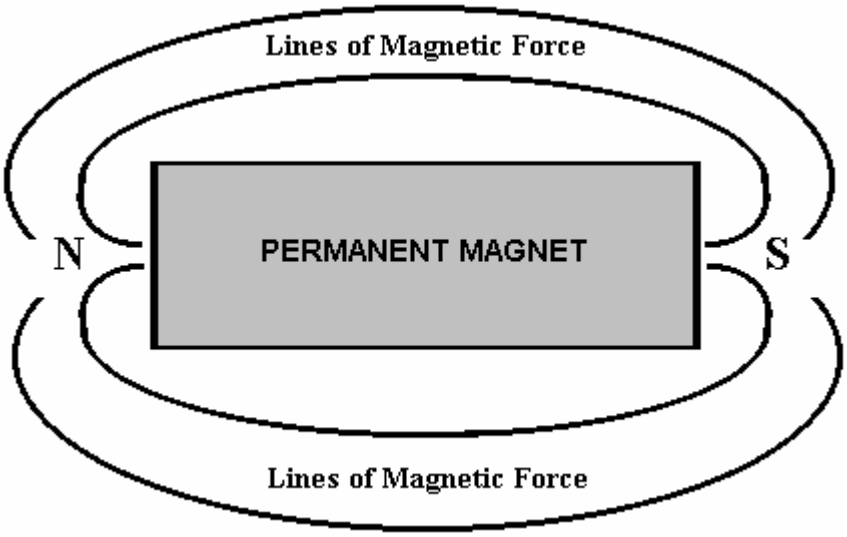
The front has two sheets of acrylic, one to hold the insert magnets in place and one to provide the shaft's front bearing support:

As there is no commentary with the video it is a little difficult to pick up all of the details, but it seems that positioning stator magnets allows the motor to overcome the normal sticking point of the typical V-motor arrangement. The video shows various arrangements including the non-symmetrical grouping shown here where four or five consecutive magnets are used and the remaining slots left empty:

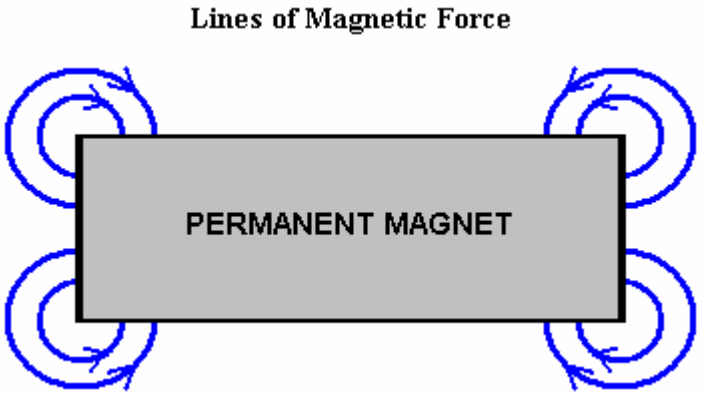


This looks like a design which might be worth investigating further as the implementation shown in the video appears to operate very well.

Lines of Magnetic Force. In passing, schools currently teach that the field surrounding a bar magnet is like this:

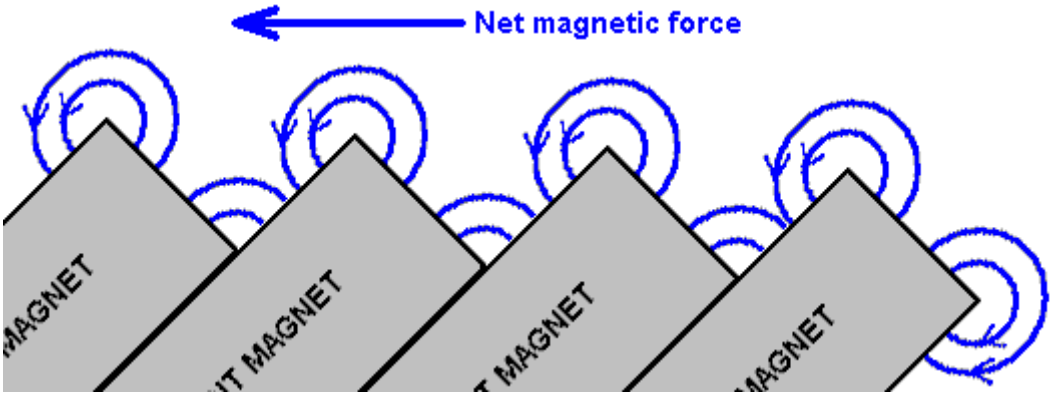


This is deduced by scattering iron filings on a sheet of paper held near the magnet. Unfortunately, that is not a correct deduction as the iron filings distort the magnetic field by their presence, each becoming a miniature magnet in its own right. More careful measurement shows that the field actually produced by a bar magnet is like this:



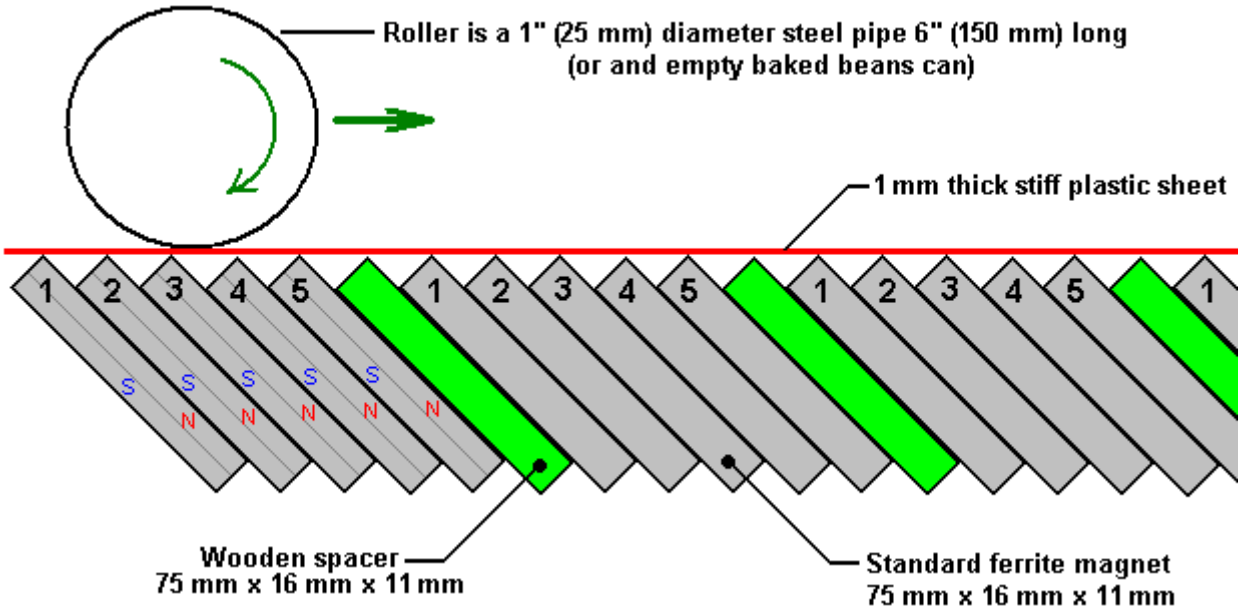
There are many lines of force, although the sketches shown above only show two. The important factor is that there is a circling field at each corner of a typical bar magnet.

It follows then that if a row of magnets is placed at a an angle, then there will be a resulting net field in a single direction. For example, if the magnets are rotated forty five degrees counter clockwise, then the result could be like this:



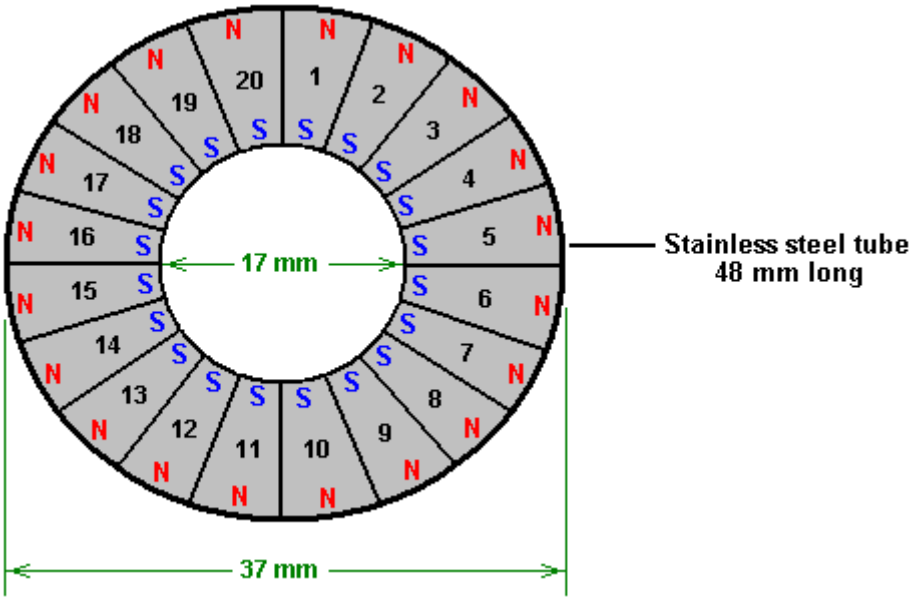
Here, the opposing corners of the magnets are lower down and so there should be a net magnetic force thrust path. I have not tested this myself, but the supposition seems reasonable. If it tests out to be correct, then placing the angled magnets in a ring rather than a straight line, should create a motor stator which has a continuous one-way net field in a circular path. Placing a similar ring of angled magnets around the circumference of a rotor disc, should therefore give a strong rotary movement of the rotor shaft - in other words, a very simple permanent magnet motor.

Steele Braden has experimented very extensively with this arrangement of magnets and it is his experience that each magnet in a set of this kind, affects the field of the following magnet. This effect is progressive and by the fifth magnet, the magnetic push is no longer near enough to the horizontal to be fully effective. This is overcome by putting a non-magnetic wooden spacer between sets of five magnets as shown here:



This gives transport of the rolling ferrous cylinder without any input power being required. There is no limit to the length of the magnetic strip along which the metal cylinder rolls but the cylinder weight of 325 grams is essential for the inertial effect in keeping the cylinder rolling. With just a ferrous roller, the effect is not powerful. The magnets used by Steele for the track are standard ferrite magnets 75 mm long. This length does not show in the side-view diagram above as it runs away into the distance as does the length of the metal cylinder. The cylinder needs to overlap at least three magnets and the rolling effect causes the cylinder to appear to have only one magnetic pole The magnets have a North pole on one face and a South pole on the opposing face and when they are stacked as shown, they are pulled together by the magnetic effect. Serious experimenters can contact Steele at stebra@value.net.nz for sharing of results or discussing observed effects.

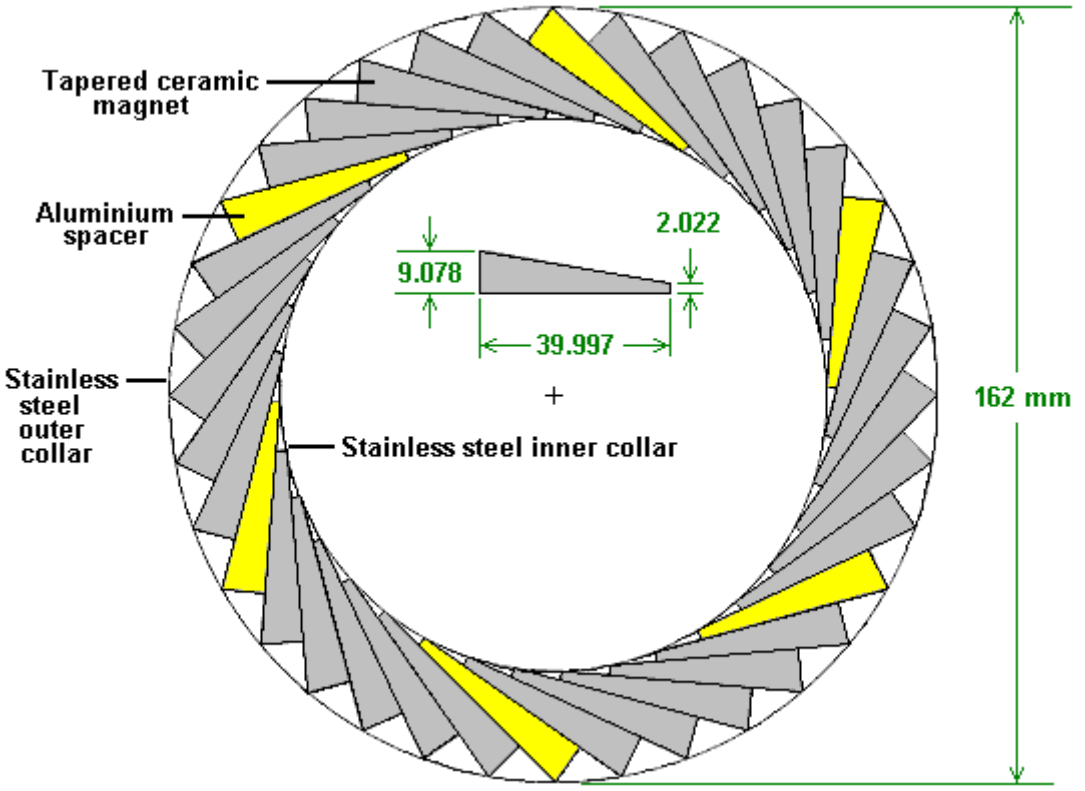
Steele has also experimented with a magnetic roller constructed from twenty wedge-shaped magnets 48 mm long and stacked inside a stainless steel tube. This produces a high-performance roller but getting magnets which are wedge-shaped is not easy nor are they cheap:

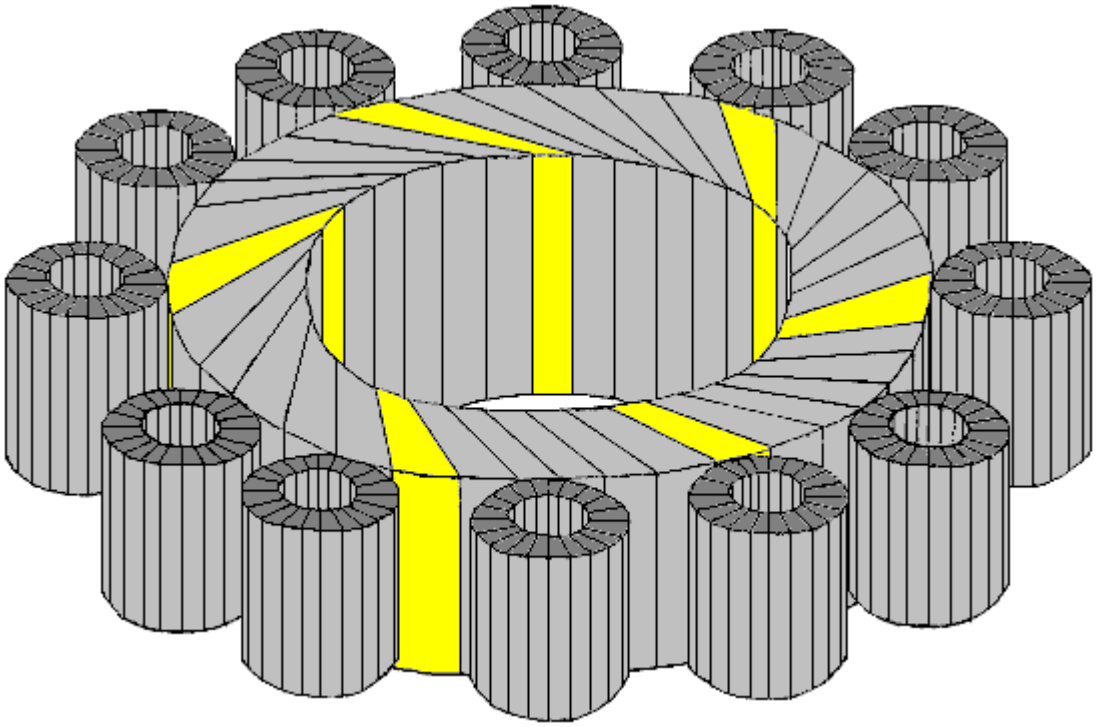


Permanent magnet motors have a Coefficient Of Performance ("COP") of infinity as they produce output power and the user does not have to provide any input power to make them operate. Remember, COP is defined as Output Power divided by the Input Power **which has to be provided by the user** to make the device operate. In the following chapter, we will be considering pulsed systems, where the user has to provide input pulses to make the device operate. This prevents these devices from having a COP of infinity and instead, we are looking for any device which has a COP greater than one. However, any device with COP>1 has the potential of becoming self-powered, and if that can be arranged, then the COP does in fact become infinity by definition, as the user no longer needs to supply any input power.

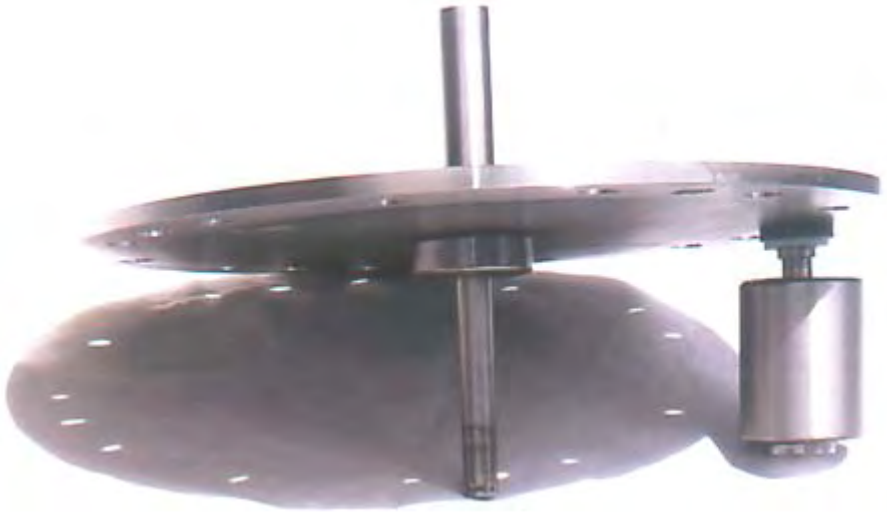
The examples of permanent magnet motors and motor-generators mentioned above, have generally been of the type where there is a stationary "stator" and a rotating "rotor". It should be understood that the arrangement of magnets on the "stator" do not necessarily have to be stationary. Some motor designs do not have a stator, but instead have two or more rotors. This allows the magnets which would have been on the stator to be in position to provide thrust to the output rotor, and then move out of the way so as not to retard the rotor movement. The Bowman magnet motor is one of this type, though admittedly, it uses one stator magnet to get it started and it has two subsidiary small rotors which carry the magnets which would normally be on a stator. A search on the web will provide the details of many permanent magnet motor designs.

The next step with Steele Braden's system is to arrange the magnetic track so that it forms a continuous circular path, and have more than one roller. It needs to be stressed that to date, this has not been successful and it is still a matter of research and development. To create a compact motor, tapered ceramic magnets have been used. This causes the magnets to fit together closely as shown here:

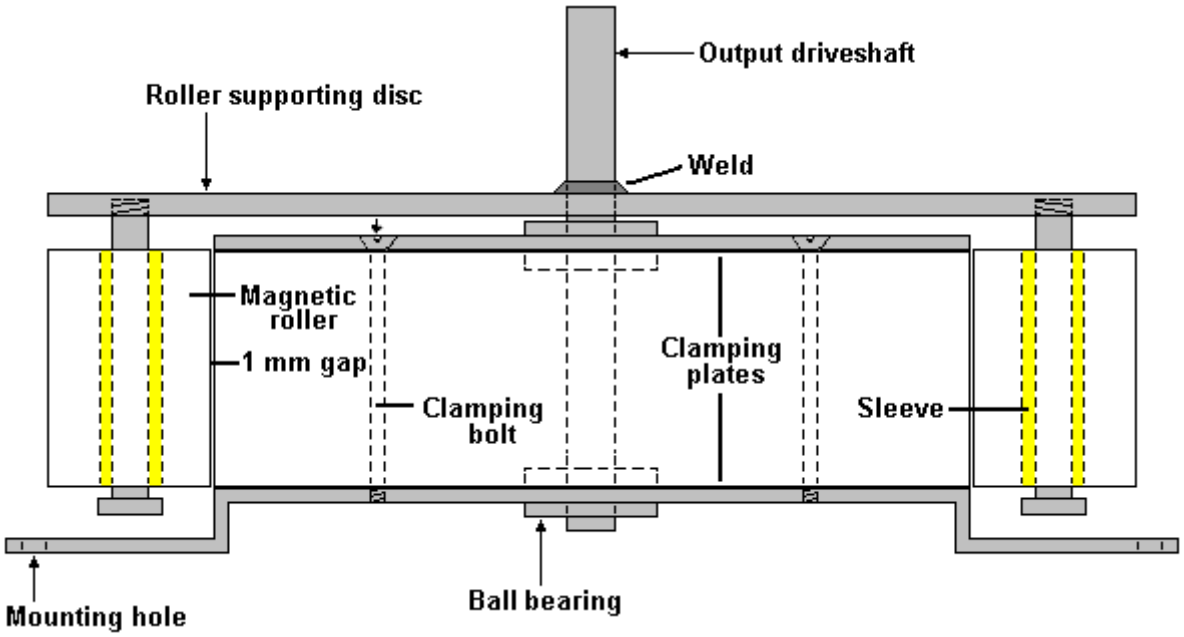

Tapered ceramic magnet
Aluminium spacer
Stainless steel outer collar
Stainless steel inner collar
9.078
2.022
39.997
162 mm




S



This arrangement uses twelve of the 37 mm diameter cylindrical rollers, each of which contains twenty tapered magnets as shown in the diagram above. The photograph above shows the rotor plate with one of the twelve rollers attached. The motor housing is as shown here:



The motor is arranged so that the twelve magnetic rollers are bolted to a metal disc welded to the rotor shaft. The rollers run around the magnetic path driving the output shaft. The bolts holding the rollers in place are made to be a loose fit on a sleeve made of a material of a type which has a low rotational friction. At the start, the rollers roll in direct contact with the outer stainless steel sleeve, but as the rotation speed increases, the resulting outward pressure causes the rollers to press outwards on their bearings, creating the 1 mm gap shown in the diagram. In the version shown in the photograph above, the bolts holding the rollers in place

are secured by nuts but a preferred arrangement is where the holes in the rotor disc are tapped to take the roller bolts directly.

James Roney has posted a number of video on his magnetic experiments. One of these is located at http://www.youtube.com/watch?v=H6bE9TzetSA&annotation_id=annotation_234168&feature=iv and shows his method of magnetic shielding which produces a permanent magnet which appears to have only one magnetic pole. This effectively overcomes the back-drag of a stator magnet when a rotor magnet passes by it. James demonstrates the construction which he is using at present, which has a neodymium magnet surrounded by several other materials. He says:

The outer shielding is "flashing material" which is commonly sold in hardware stores in the US.I have no idea of it's exact composition. This simple demonstration, which I first posted on 21st January 2008, shows just how effective one-way shielding is in producing a net gain. Here, you see two specially shielded magnets being moved close together. When the two shielded faces are pushed together there is no magnetic effect but when they are reversed and the opposing two faces are pushed towards each other there is a sizeable magnetic push which moves the stationary magnet away. It is this thrust which is the making a fuel-less permanent magnet motor using any one of a number of different possible designs. My long-awaited video showing the method of magnetic shielding which I use.

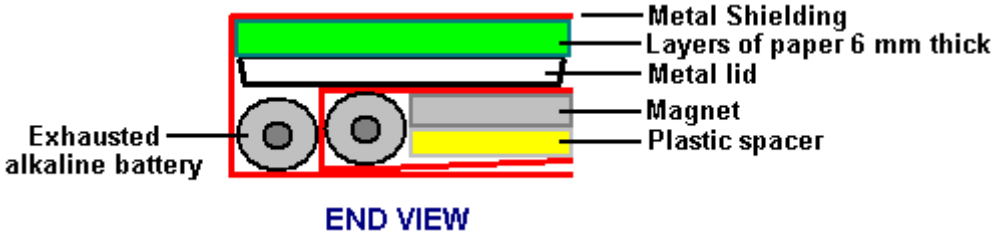
However, shielding is just the half of it and the other half is the exact position of the stator and the angle of approach of the incoming magnets. At all times, only like poles are used as the primary pole, which means that the magnets approaching the stator will be two like poles which must be able to pass close by each other. This approach is what I call "the back door" to my stator, where one of the like poles has been heavily shielded. However, if you provide too much shielding on the stator magnet, then the rotor magnet will be attracted to the heavy metal of that shielding and that would cause a braking effect, opposing the rotation of the rotor. To neutralise this effect we can allow some of the "like pole" to pass through the shielding. When the right amount of magnetism passes through the shielding it exactly balances the attraction of the rotor magnet to the metallic shielding of the stator magnet, allowing unhindered movement of the rotor as it passes the stator magnet.

As soon as the rotor magnet has passed "the back door" of the stator magnet, and moved into the unshielded area, the like poles of the stator magnet and the rotor magnet repel each other, giving the rotor a strong push in it's direction of rotation. This, of course, is immediately repeated by the next rotor magnet, providing the rotational drive for the motor. The turning force is enormous, even on this small scale, and if scaled up, would have enough power to drive a car or power a home.

When you take this two-dimensional layout and turn it into a three-dimensional layout (by placing several rotors on the same shaft) you get a tremendous amount of thrust, capable of handling heavy loads and still keep working with the greatest of ease. Best of all, there is only one moving part and it is 99% friction free.

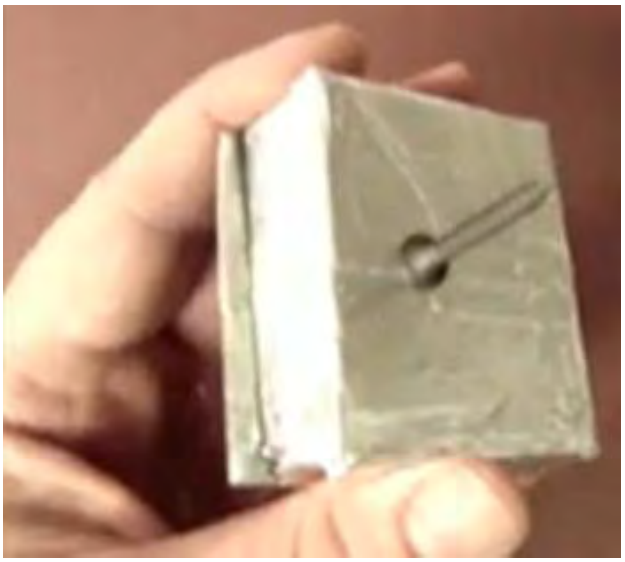
Having the stator long and thin, unlike typical bucket magnets which do not work in this case, this allows for a long 3-inch (75 mm) pass over the stator before the rotor magnet receives its strong push from the stator magnet, spinning the rotor and driving the next rotor magnet across the shielded part of the stator magnet, allowing the process to repeat indefinitely, producing a fuel-less permanent magnet motor.

Our thanks go to James for sharing his design information freely like this. He invites everybody to copy and repost his videos as the web hosting sites, such as YouTube, repeatedly take his videos down. Due to this repeated opposition to this information from James, it is quite possible that by the time you read this, the video pointed to by the above link will no longer be available at that address. The details from his videos are as follows:



END VIEW

The magnet used is a Grade 52 strength neodymium magnet 2" x 1" x 1/4" (50 mm x 25 mm x 6 mm) and it is encased in five different types of material in order to give it modified magnetic characteristics. The completed set of materials is wrapped in the silver aluminium adhesive tape used for ductwork construction and so, looks like this:



In this picture, a steel screw is shown held on one face by the residual magnetic field but that screw falls off the back face as there is not enough magnetism there to hold it in place.

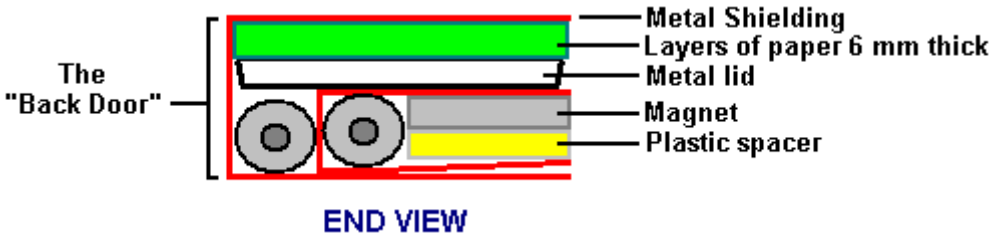
Underneath the tape are two shells made from any thin magnetic metal material. James uses thin flashing metal as that is readily available and is easy to bend into shape. As the objective is to encase the magnet on three sides, the metal is cut and bent like this:

The resulting shape is not unlike a book. There are two of these metal casings, one inside the other. Each of these casings contains an alkaline battery inside it. James stresses that these batteries need to be fully discharged in case a short-circuit develops inside the casing.

The inner casing contains the magnet and the 1/4” (6 mm) plastic spacer supplied with the magnet, making an overall thickness of 1/2” (12 mm), placed up against the alkaline battery which has a 14 mm diameter, which means that the lower face of the inner casing is not quite parallel with the upper face. In the diagram, the metal casing is shown in red.

Outside that metal casing, there is a second alkaline battery and above it, there is a 2” (50 mm) diameter shallow metal cap from a container:

Between the metal cap and the upper metallic case there is a 1/4" (6 mm) layer of sheets of paper as shown here:



James stresses that the spacers made of plastic and paper can be made of almost any non-magnetic material **except** aluminium which has unusual magnetic properties. The shielded magnet can be used in two different ways, either in attraction or repulsion. The repulsion mode is slightly more powerful than the attraction mode, but some permanent magnet motors built using it have found that the magnets lost their magnetisation after some three months of continuous operation. Using the attraction method (where the rotor magnet pole is selected to be opposite to the stator magnetic pole) is nearly as powerful and never causes the magnets to get depleted. James demonstrates the attraction mode in one of his videos:

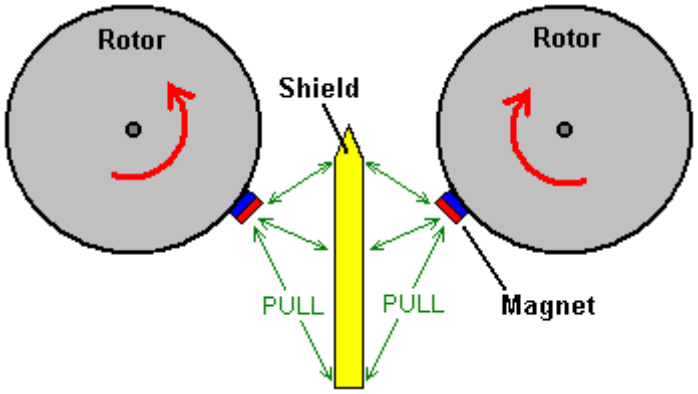
This view is looking vertically downwards on a horizontally mounted bicycle wheel which has six magnets attached to the rim. The first two magnets are Grade 52 neodymium 1" x 1" x 1/4" (25 mm x 25 mm x 6 mm) with plastic spacers glued to them. The following four magnets are the same but have a 1" diameter 1/4" thick circular neodymium magnet placed on top of them. This magnetic attraction setup is demonstrated to accelerate the wheel from a stationary position.

However, in my opinion, this video is not very satisfactory in that it is conceivable that the view is not vertical but horizontal and the rotation taking place due to the weight imbalance of the wheel, as the wheel is restrained immediately after it has stopped instead of allowing time to show that no reverse motion occurs. Also, no information is given as to why the six magnets are not identical, nor why the whole of the rim did not have magnets attached to it, demonstrating continuous rotation.

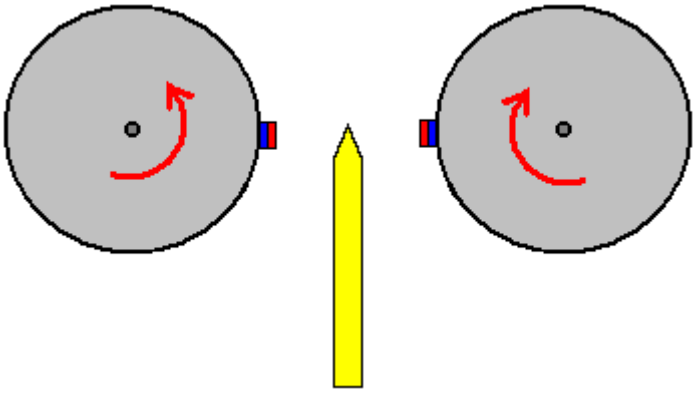
It might be remarked that a wheel of this type is probably a little light for a magnetic rotor as there is considerable advantage in having sufficient rotor weight to generate the momentum needed to carry the rotor past any magnetic sticking point. I can also be remarked that the wheel really needs to be balanced by having an equivalent set of six magnets on the opposite side of the wheel rim, and that placing additional shielded stator magnets at an odd number of positions around the wheel would give a steady powering of the rotor even with only two sets of six rim magnets on the rotor.

The Twin Rotor Suggestion. When you are considering shielding magnets using iron or steel, you need to remember that fridge magnets stick to refrigerators because the refrigerators are made of steel. This demonstrates the fact that there is an attraction between magnets and iron or steel. Consequently, if a magnet is shielded with steel so that it blocks the whole of the magnetic field of the magnet, a second magnet will be attracted to that metal shielding material. At http://www.youtube.com/watch?v=vUcWn1x3Tss there is, at the present time, a video by “magneticveil” where he proposes the use of this feature of simple shielding in the construction of a magnet motor.

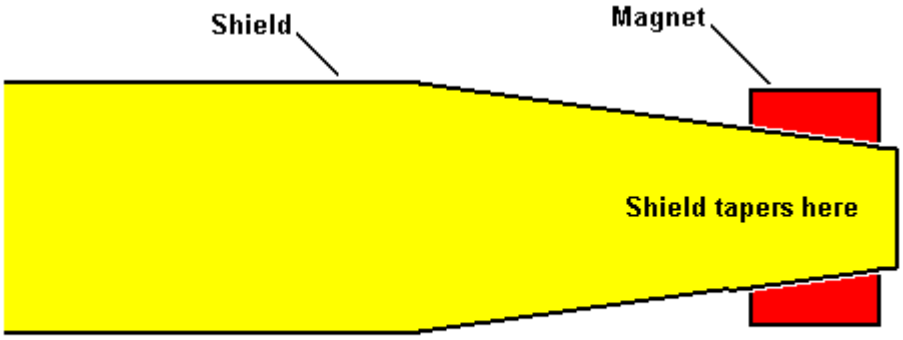
He suggests using two rotors geared together. The rotors have magnets on them, but for the purposes of explanation, just one pair of magnets are shown here:



Each magnet is attracted to the metal shield material between the rotors. This causes the rotors to rotate in the direction shown by the red arrows. The magnets are drawn to the nearest point to the shield which they can reach as shown here:



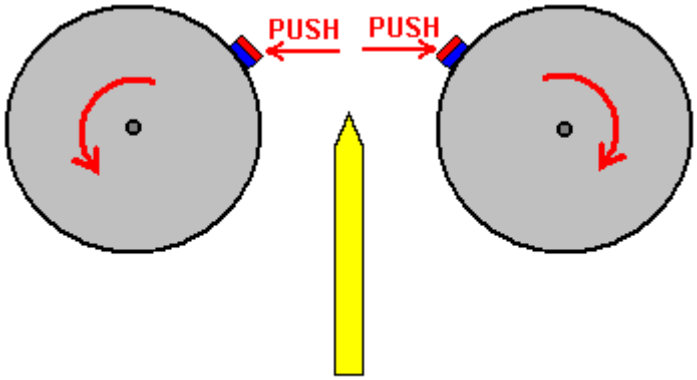
At this point you would expect the rotors to stop moving and lock into a stationary position. However, the interesting idea is to adjust the shape of the shield like this:



SIDE VIEW

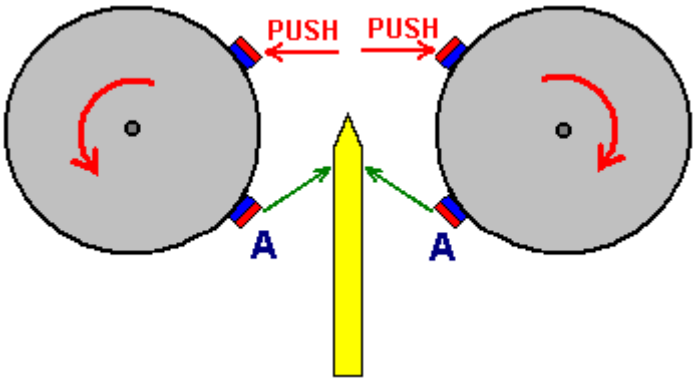
At the end of the shield, its width is reduced and tapered so that the magnetic field from the magnet behind it exactly matches the attraction of the magnet on the near side of the shield. This has the effect of giving a completely neutral zone at the tip of the shield, with neither an attraction or a repulsion in that region. The degree of tapering depends on the strength of the magnets, the thickness and material of the shield and the spacing between the magnets and the shield, and it needs to be discovered by experiment.

This neutral zone stops there being a major pull between the magnets and the shield, and so momentum carries the rotors on past the end of the shield. This produces a situation like this:



TOP VIEW

Here, the magnets have moved past the shield and are repelling each other strongly. They are beyond the axles of the rotors, so the repelling force produces a turning effect on each rotor. This is the situation with just one pair of magnets, but each rotor will have many magnets on it. This produces an additional turning effect. Consider just one other pair of magnets, in the same position as our first diagram:



The pull between the magnets “A” and the shield, adds to the rotation caused by the push between the unshielded magnets. This arrangement of magnets and shield should allow continuous rotation of both rotors and the motor can be stopped by removing the shield.

It should be noted that this arrangement uses magnets in repulsion mode. That is, the outward-facing poles of the magnets on both rotors are the same. There have been reports of permanent magnet motors where the magnets were in repulsion mode, and while these motors ran well, it was found that after about three

months, the magnets lost their magnetisation. If at all possible, magnets should be used in their attraction mode. This is not possible in the above twin-rotor arrangement, so if one is being constructed, it might be a good idea to arrange the physical construction in such a way that the rotor magnets can easily be removed. This allows remagnetisation of the magnets, or alternatively, their replacement if very cheap types are used.

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