Meg Section #5

Notes:

A newman motor device may be able to extend the battery range by using BACK EMF spike harvesting.

A search for equivalent transistor to 2n3904 to find similar matching transistors

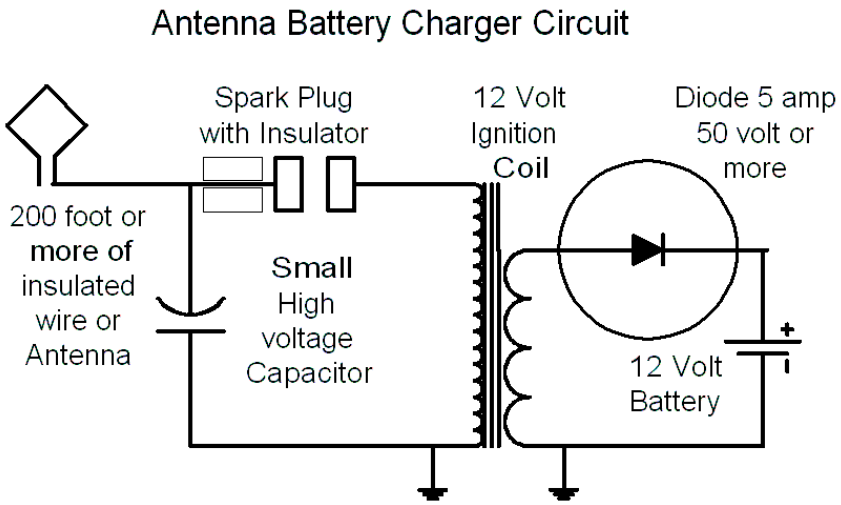
he 555 will deliver 200mA to a load but the chip gets extremely hot (12v supply). The answer is to use a buffer transistor. For 200mA, use a BC547 or equivalent .

As you turn the potentiometer counterclockwise the frequency will increase, going well into the high end audio range.

Complete Book on 555 Timer Circuits:
http://www.ibiblio.org/kuphaldt/electricCircuits/Exper/EXP_8.html

Capacitor Discharging Ideas:

Once switched on, a relay connects and disconnects the capacitor from the power supply at regular intervals which are adjusted by the knob. Video at:
http://hackaday.com/2012/05/22/automatic-capacitor-charger-lets-you-have-fun-with-sparks/



Additional Sources of Videos:
https://www.youtube.com/watch?v=QOC-1X61bC0

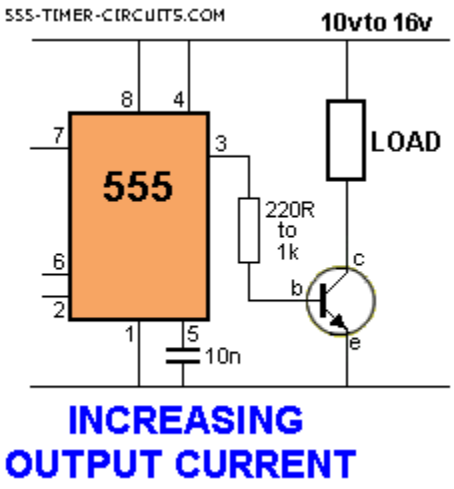
Review further: Newman motor charging battery.

Below is a video showing a rotating motor charging a battery pack
https://www.youtube.com/watch?v=oyzFk3KV3rw

Magnets in the motor are spinning the motor. This is the same concept used when you place magnets w/coils next to a spinning motor.

Could a revolving wheel provide same static electricity as 200 ft of line?

The 555 will deliver 200mA to a load but the chip gets extremely hot (12v supply). The answer is to use a buffer transistor.



For 200mA, use a BC547 or equivalent.
For 500mA use a BC337 or equivalent
For 1A, use a TIP31 or equivalent.
For 3A - 5A use a BD679 or equivalent with heatsink
For 5A to 10A use TIP3055 with heatsink

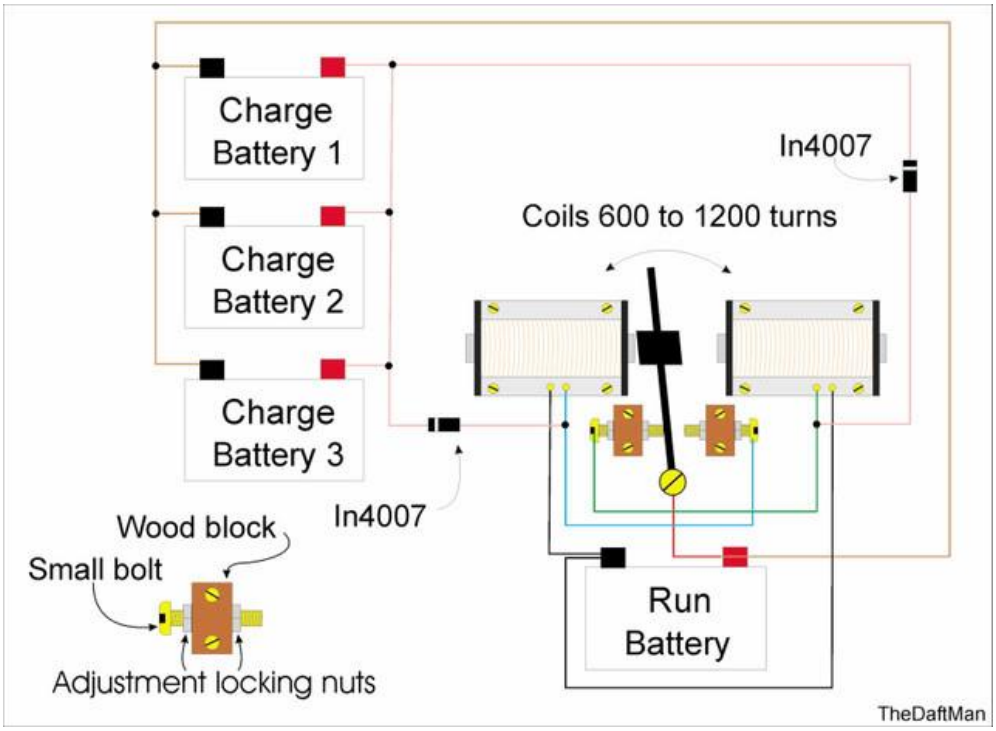
Negative Ions charging battery – could also be used against revolving wheel.
http://www.youtube.com/watch?v=qjfYJudVnaw

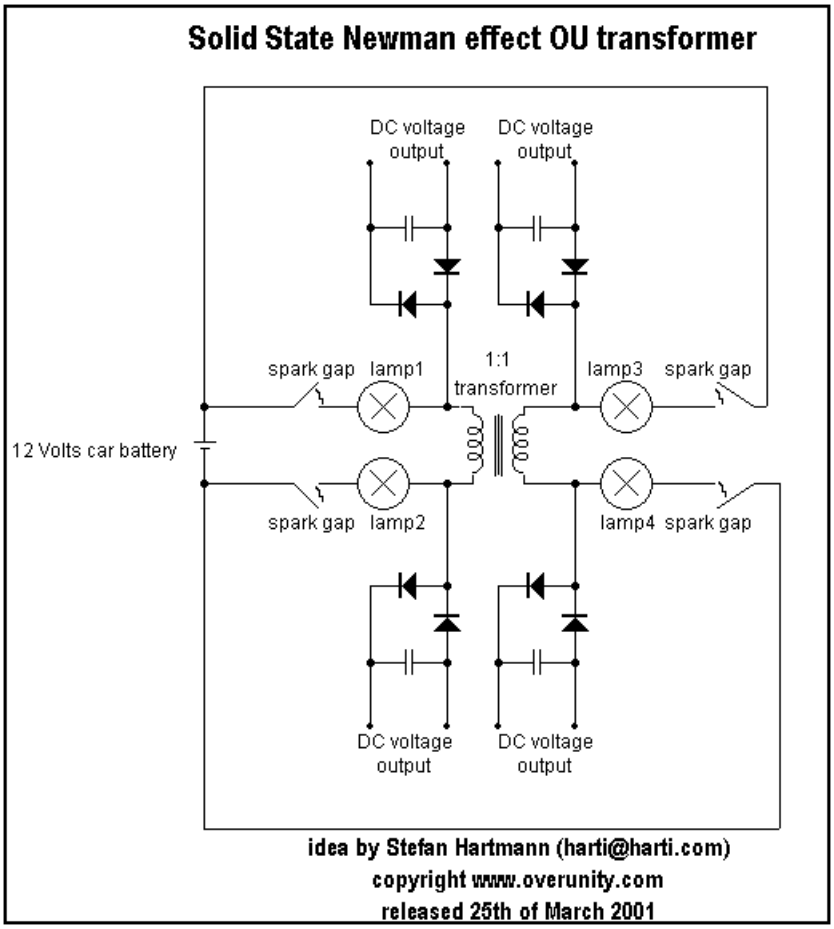
Additional video
http://www.instructables.com/id/How-to-Shock-Anything-Fry-Electronics-with-a-Tou/

hat Wiley did at the ripe old age of 12 or 13 was hook a spark plug to the end of the wire and then run the ground end (where the threads are) into a 12 volt coil off an old A Model, but any old coil will do. The bottom connector or the coil that used to go to the points is hooked to the positive side of the battery. The negative side of the battery is hooked to a good earth ground and a 1 to 3 KV capacitor (a few picofarred type like those found in the horizontal section of a television chassis) is hooked from ground back to the wire where the top of the spark plug is connected. That's it! Nothing should be touching ground except the ground post of the battery. Wiley was using about 200 feet of insulated wire and it will completely charge a 12 volt deep cycle every 2 or 3 days! A thousand feet

of wire will do it a lot quicker but the voltages approach lethal levels.

What is behind this feat is that a very long wire acts like a capacitor and builds a charge on the wire. When a few thousand volts are reached, it will discharge by "sparking" across the spark plug. The spark plug delivers the charge to the coil that down converts it to a few hundred volts and pulses the battery, kind of "squirting" a charge into it. The weather controls how much static electricity is in the air. Wind and super cold air seem to really make you think you can weld with this thing! I hooked a small neon bulb to a full wave loop on a winter night when it was snowing with a high wind and the bulb burned continuously all night long! The higher you get the wire off the ground the better. The wire has to be completely insulated. It doesn't seem to make any difference whether you lay it out in a straight line or weave it back and forth. Length is the thing here, not size. Old phone wire, old coax from the cable company anything that is insulated and long will do the job. I use my Ham radio antennas as they are up and long already. this thing will weld the fillings in your teeth together if you are not careful with it!





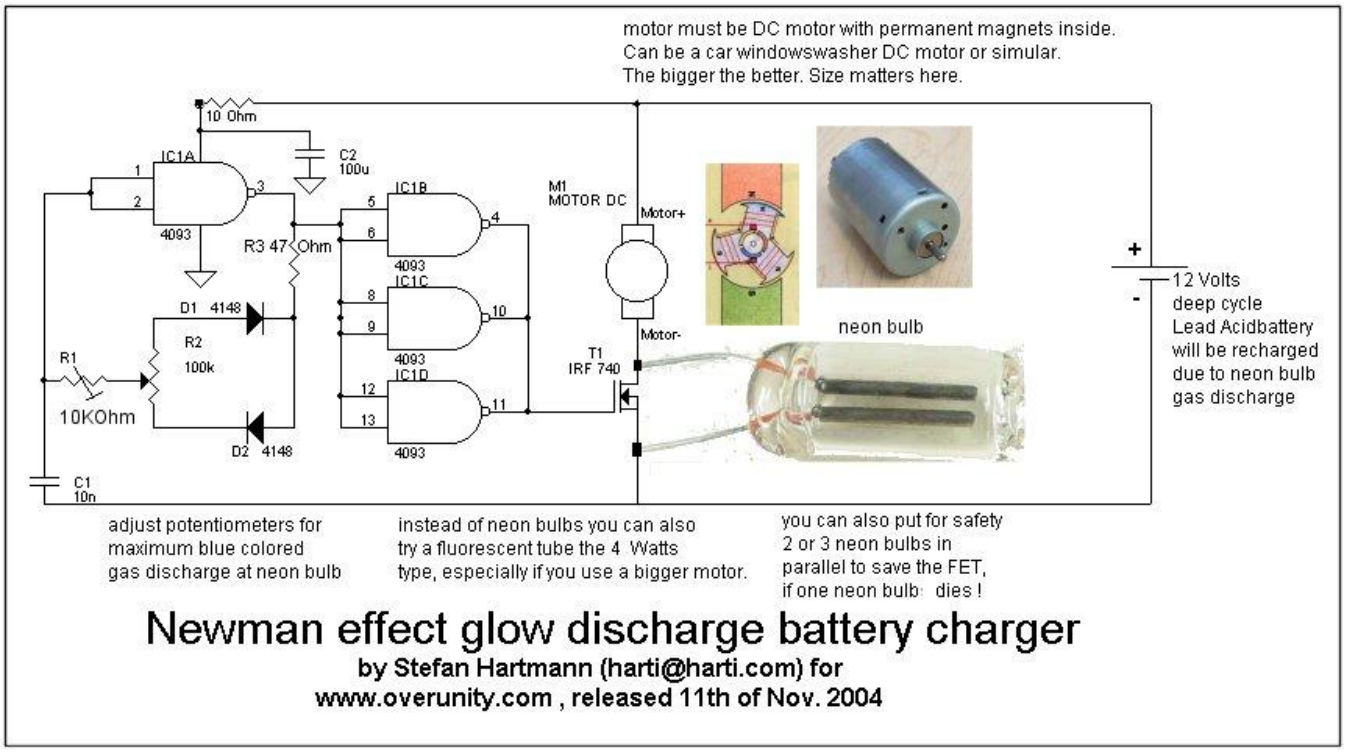
Note: A spark gap can be created with wire spread out over a distance and a spark plug.

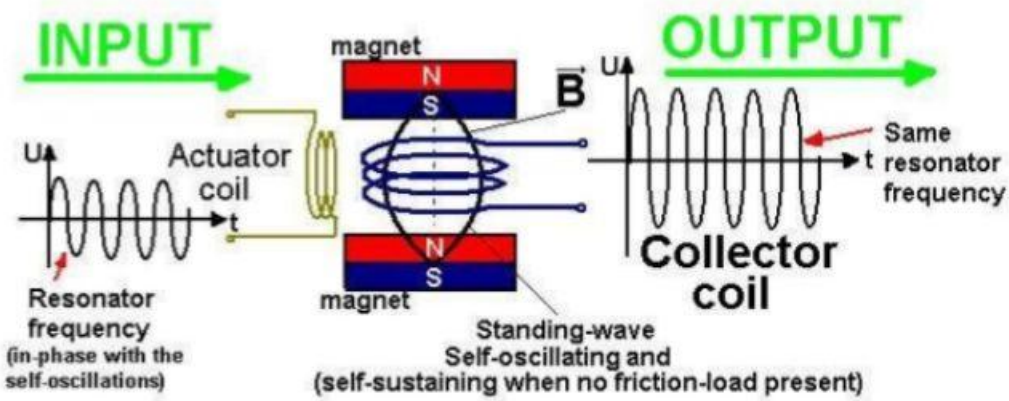
Additional Info: Called: The Capacitive Battery Charger

http://rs79.vrx.net/interests/alt.energy/hygroelectric/

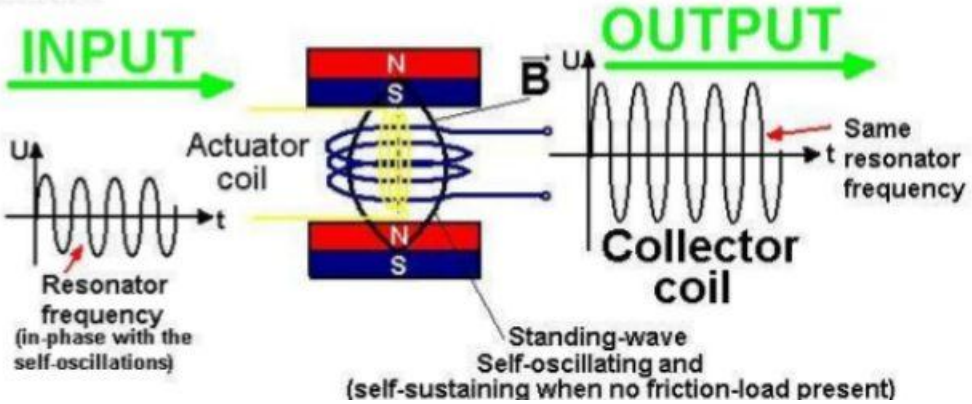
http://www.angelfire.com/ak5/energy21/capacitorcharger.htm

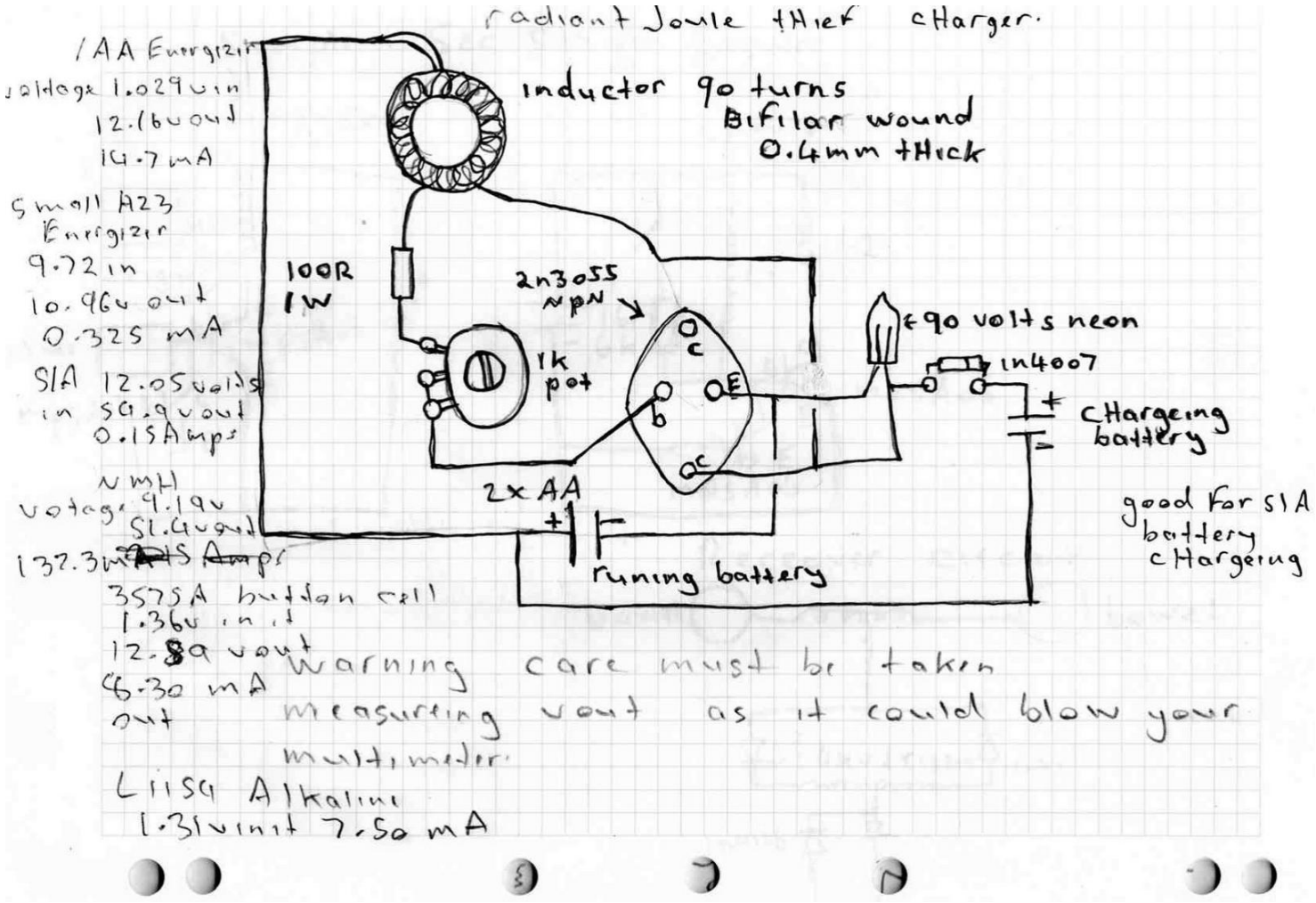
Above links are for battery charger using earth energy.



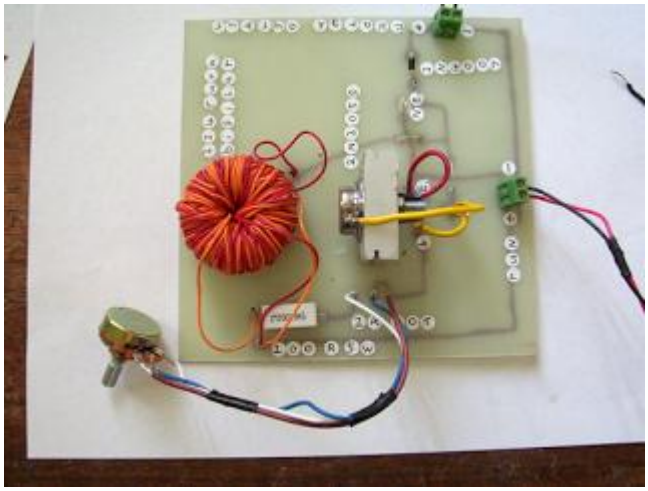


Better:





Notes on Joule Thief Research



i used to get bad head aches and stuff playing with air core coils so be careful putting higher volts in them..i once put so much in to my coil it cut my radio off 10 feet away and i almost blacked out.. so i killed the power and i was in a state of confusion for like 2 hours after that.. it took a long nap to fix me.
so be careful!!

Above is the latest radiant energy battery charger joule thief circuit I built from youtube video, the coil I wound 114 turns bifilar wound onto the core I got from xxxx electronics for around $9
and on one of my tests I adjusted the circuits 1k pot till the neon lite up and no heating was felt in the power transistor since ive put it on a heatsink, a thick heatsink but when I used my 12 volts sla battery with just over 10 volts left in it I got over 131 volts out from it, 14 times more output than I did get from the input ill conduct more tests and put them down here , to see what outputs I can get from various inputs .

the 12 volts 7.2 amp hour rechargeable sla battery with just over 10 volts left in it I got over 131 dc volts output from the latest joule thief circiut.
Here are the results for various batteries and voltage inputs
1aa battery 1.5 volts type 1.04 volts left in it I got 7.55 volts output from the joule thief
a23 energizer battery 12 volts type had 9.62 volts left in it and I got an unusual reading of 4.23 volts out a voltage loss
yellow click rechargeable 1.5 volts battery, 1.09 volts left in it I got 1.20 volts out from the radiant energy battery charger joule thief.
Ag13 button cell battery 0.397 volts left in it I got 01.3 millivolts out of it
L1154 button cell 1.304 volts left in it I got 4.50 volts out of it through the joule thief circiut.

Ag10 button cell battery it had 1.16 volts left in it I got 4.3 volts out of it through the joule thief circiut.
357a button cell battery with 1.359 volts left in it I got 5.55 volts out of it from the joule thief circuit.

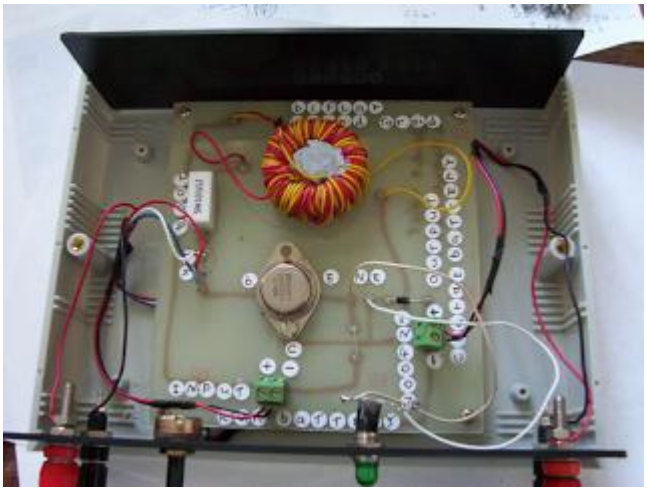
Latest joule thief circiut test . with the potentiometer turned up I adjusted it till the neon come on and then I adjusted it to the max and the voltage reading was over 145 volts and the neon stayed lite and when I turned it down it still stayed lite like it was getting extra voltage all of a sudden . and the circiut unlike the other dident even make that high to low pitch sound , when I adjusted it fully up and down so I don't know why . so after I got the neon lite it stayed on when I turned the pot full down and back up again . and no heat was felt in the transistor after the quick test.

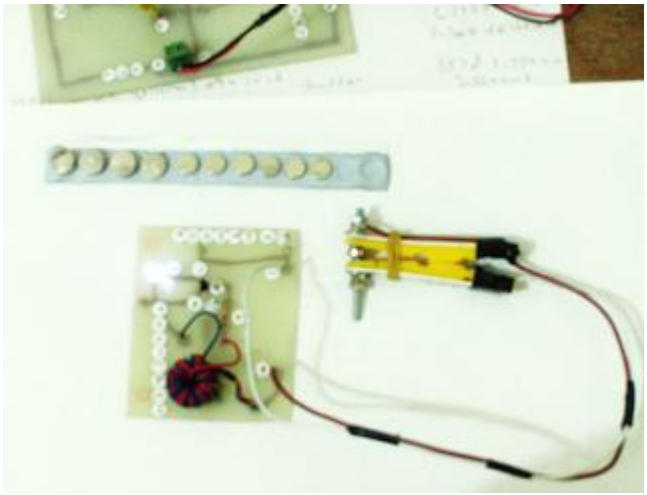
With the 1k pot set to highest resistance the voltage output was 132.6 volts and the neon is not lit till I turned the pot resistance down to a level where the voltage has increased to around 137.0 volts, and voltage rises around here again to 145.7 with the neon still lit. Turning the pot resistance down the neon dims at around 91.0 volts and when turn the pot down more to decrease the resistance of the pot more , the neon gets bright again like its getting more voltage and the circuit then squeals like a camera photflash circuit charging up its high voltage photo flash capacitor.The voltage was then 96.8 volts and climbing. And by reducing the resistance more circuit appears to squeal more, and the neon is still lit bright even when the voltage is at 93.6 volts. And when I turn the pot up to increase resistance neon got brighter at 73.9 volts, and the voltage rose to 99.8 volts turning pot up more to increase resistance neon got brighter at 152.8 volts to 153.5 volts and when pot was back at full resistance the voltage was then 159.4 volts then it dropped to 135.5 volts.
Note that when the pot resistance was turned down to the point that the neon comes on neon stayed lite all the time despite getting dim here and there then going bright again during the adjustments and the neon never went out again despite adjusting the pot fully to the end either way during the tests the only way to make the neon go out is to disconnect the battery lead , the test can be started again by turning the pot up full, then connect the battery lead then slowly reduce the pots resistance till the neon lights again .
Ive recharged my sla battery up to 12.48 volts and then I fired up both joule thiefs and found that even with my latest radiant battery charger joule thief im getting less voltage output for more voltage input and before it was more voltage output from less voltage input and since the latest tests the battery has gone from 12.48 to 12.1 volts I used .47 volts so far , this is getting strange and dureing the testing the voltage output did go over 100 volts but dident make it to the higher voltage I got before I topped up the 12 volts slr battery. As for the fluro bulb it only lit up a little bit more but not fully so I need more current or voltage to light it fully

First joule theif battery charging tests . results
Button cell battery ag13 battery brand name sun king this battery had only 00.6 volts left in it , I used my first joule thief battery charger to tests it and after a count of 20 it gained enough power to power one of my small joule thief circuits it now has 1.48 volts in it for charging for 20 seconds .

I tried to charge 2 other button cell batteries but they are to far gone and lose charge fast I decided to try and recharge this tiny watch battery out of one of my watches and its been flat for ages so after 3 seconds of charging , it got hot so I let it cool down and I tested it on a small joule thief circuit and it got enough power in it to light the led so it worked 3 seconds was the fastest charging time for such a small battery now my watch is going again. And I didnt get the details of this battery and measure its charge left and after I charged it for 3 seconds .

The 2 button cells that couldn't be charged I charged them for a count of twenty like the other one but when I turned the potentiometer





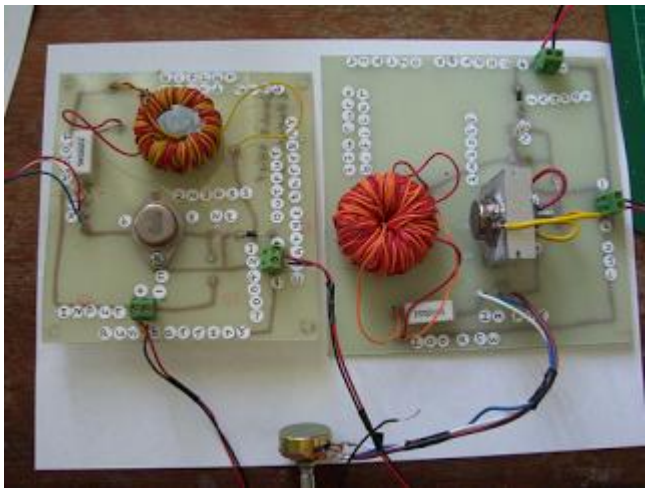
up towards the full to try get more voltage into it, it reverse charged so I ended up with a negative charge when I measured its voltage but still it kept going down so id say they are to dead or no good at all . it was a good thing I halted the charge time for my tiny watch battery after 3 seconds when it started to get hot otherwise it may of exploded but now its perfect ill note the day I charged it up today monday may 24th 2010 just before 7 o clock in the evening I think lets see how long its lasts for till it runs flat .

Ive seen and saved a youtube video on the a23 12 volts energizer and the man dismantled one and it had no carbon and carbon rods in it but it had 8 unmarked button cell batteries in it. my a23 energizer I tried to charge it up more as it was just over the ten volts in it but I managed to get just over 11 volts into it and the voltage was dropping so something was wrong inside it , so I dismantled it and indeed found 8 button cells inside it one had green corrosion around it and its voltage wasnt steady it appeared to climb slowly and the rest all had over one volts in them and I measure everyone of them and also I was able to power my small joule thief with them and get the 3.3 volts led to light up to they will come in handy to .Below is a picture of one of my smaller joule thief circuits built from a schematic from the net I designed the printed circuit board for it and notice the modified plastic cloths line peg, I use that to hold button cells for testing and the strip of blue tac at the top is my button cell holder. Most of the batteries on the strip of blue tac was from inside the small 12 volts a23 energizer battery.

One of my a23 energizer button cells was getting a bit low it had a measured charge of only 1.179 volts left in it. this made the joule thief led dim so I used my larger radiant joule thief battery charger and charged it up till it got hot , then I re measured that battery s

voltage and it worked , I successfully charged it up to 1.346 volts and it now works better and the joule thief white 3.3 volts led is brighter now.

Below is my 2 radiant battery charger joule thief circiuts the one on the left without a heatsink is the one I used to seccessfully charge my a23 energizer button cell up with. Which was one of 8 button cells found inside the 12 volts a23 energizer battery.



ere is the joule thief used to test my button cells out after I successfully recharged them.

Here's my battery charger joule thief all installed into a circuit box.

Below is the front view, notice the 12 volts green light at the front panel that is modified to house a neon globe inside it.

While looking through my electronics parts draws I found another 7 or 8 more button batteries and some had charge still on them and some I recharged successfully and 2 couldn't be charged anyhow a few small ones took a little zapping to get them to take a charge so maybe if they are got some sulphate in them if not then why did it take so long to get them to except a charge.?

Yesterday I found another button battery cell and after a few seconds charging it started to get warm so I stopped it before it got to hot otherwise it would explode
Now I have 24 button cell batteries.

Below is a picture of the bright white with pink flash of a photo flash capacitor neon circuit test
The outputs of my battery charger joule thief run to the 330 volts photo flash capacitor, and across its leads I placed a neon bulb, loosely so every so long you hear a spark jump but cant see it unless the neon leg is getting pulled in by the high voltage attraction then a short time after that the flash occurs, so if the neon is rated at 90 volts then the cap charge may be the same till it charges up more I filmed this then put it onto my pc and then I had to slow it down so much to capture the super fast flash then pause it then take a picture of it to load back onto my pc.

ive soldered one of the neon legs to one of the high voltage 330 volts photo flash capacitor legs and the other neon leg I had it just nearly touching the other capacitor terminal but I didn't get the arc and flash after it like I got before .
next test was running one of my jumper leads to a folded peace of aluminum foil and back to the hv capacitor and the other lead I ran to the other hv cap leg to a pencil and when the neon at the 330 volts 2200uf photo flash cap come on I gently touched the lead pencil tip to the foil edge where its folded and I got flashes etc and tiny holes melted through it and when I tried to unfold the foil it was stuck like it was spot welded , and there sure was this horrible smell made by spot welding aluminum foil.

Next experiment was running the leads from the capacitor to 2x 316 grade stainless steel bolts in a jar of tap water to create any electrolysis effects and I got very fine misty vapours come up to the top of the water and no bubbles and even when the bolts slipped together I was still getting it and even when they are apart to, and the further apart the bolts are the lower the frequency of sound is emitted from the battery charger joule thief and the closer the bolt electrodes are the higher the frequency of the sound the circuit emits gets ,

My watch battery I charged before has stopped I guess the charge didn't last long enough, I charged it on the 24th may 2010 and it lasted till today at 8past 8 , either in the morning or last night , so it lasted a week only im gona try re charging it again . Also today at the shops I went to the place they do watches and shoes and there was thousands of button cells inside this Perspex box even large ones next to it , but no one was there to answer my questions about them .
Ive recharged my watch battery again today but I was charging it the wrong way around so I got it right after that now my watch is running again so ill see how long its lasts for this time.
Today is June the 1st 2010 so lets see if it lasts a week, also if it lasts longer then it may be the reverse charging that contributed to the extra running time before I charged it right

I scored a packet of free button cell batteries including large lithium cells and a few small 12 volts pencil batteries for free from 2 places in Armadale that also replace watch batteries, they have thousands of them and I counted what they gave me in total I had 85 batteries mostly button cells and ive successfully recharged them all except some lithium large button cells so also my 25 batteries I had it makes 110 batteries in total including the few large lithium cells that couldn't be charged or revived at all some of the batteries still had power in them to .

Half the button cell batteries couldn't maintain there charge and went flat overnight
So I recharged them again so ill soon check to see if they hold there charge this time also I dismantled a lithium battery it has a thin white membrane that reacts with water and foams up and also a thicker black membrane with what looks like very thin silver wire looking cross patterns on its sides and when I dismantled that battery it sure stunk inside it to
Today Tuesday June 8th 2010 I decided to use my 4 rechargeable batteries from my camera to power my radiant joule thief battery charger, to restore my 12 volts 7.2 amps an hour 20 hour sla battery, and so after an hour or so I used a pair of tweezers to short out the battery terminal and I got some sparks where I didn't before that, so I left the joule thief battery charger running all day today and now when I plug in the battery charger the red charging led light doesn't go to green after a short charge that's trickle charge, when green its still on red so im looking forward to how it goes when fully charged then in the green when its charged so if I get plenty sparks when I short the battery terminals then I can say the battery has been revived .

My 12 volts sla battery appears to still have a tiny bit of sulphate on its plates as its voltage dropped 0.7 volts over night so when the battery is low and needs topping up ill put it back on the joule thief circuit.

From above related

STEVENS RADIANT JOULE THIEF BATTERY CHARGER CIRCUIT TESTS AND RESULTS SUNDAY MAY 9TH 2010.

THE RADIANT JOULE THIEF CIRCUIT I BUILT FROM A CIRCUIT SCHEMATIC FEATURED ON A YOUTUBE VIDEO AND HERE ARE THE RESULTS SO FAR

WITH A AA SIZE ENERGIZER BATTERY, WITH A MEASURE VOLTAGE OF ONLY 1.029 VOLTS LEFT IN IT I GOT AN OUTPUT FROM THE RADIANT JOULE THIEF BATTERY CHARGER OF 12.16 VOLTS @14.7 MILLI AMPS.

TEST 2 USING A SMALL A23 ENERGIZER BATTERY WITH A MEASURED VOLTAGE OF 9.72 VOLTS IN IT I GOT 10.96 VOLTS OUT FROM THE CIRCUIT @0.325 MILLI AMPS.

TEST 3 I USED A FULLY CHARGED NIMH RECHARGEABLE 9 VOLTS BATTERY WITH A MEASURED CHARGE OF 9.19 VOLTS DC IN IT AND I GOT 51.4 VOLTS @137.3 MILLI AMPS OUTPUT FROM THE RADIANT JOULE THIEF BATTERY CHARGER CIRCUIT.

TEST 4 I USED A 3575A BUTTON CELL BATTERY WITH A MEASURED CHARGE OF 1.36 VOLTS IN IT AND I GOT 12.59 VOLTS OUT @8.30 MILLI AMPS.

TEST 5 I USED AN L1154 BUTTON CELL BATTERY WITH 1.31 VOLTS MEASURED IN IT AND I GOT AN OUTPUT OF 12.90 VOLTS @7.50 MILLI AMPS.

WITH AN SLR BATTERY WITH A VOLTAGE OF 12 VOLTS LEFT IN IT I GOT 54.9 VOLTS OUTPUT @0.15 AMPS.

HERE IS THE SIMPLIFIED DRAWING I BIULT THE RADIANT JOULE THIEF BATTERY CHARGER BY. THE INDUCTOR I WOUND SO MANY TURNS TILL IT WAS TO FULL TO WIND ANYMORE BUT I BROUGHT 2X 5 OR 6 METER LENGHTS OF STRANDED COPER WIRE UNKNOWN GAUGE FROM DICKSMITHS ELECTRONICS INSULATED WIRE AND I WOUND MOST OF IT ON EXCEPT I THINK A FEW FEET LEFT OVER. THE LATEST TEST I USED MY PENCIL ENERGIZER BATTERY BUT I DIDENT REMEASURE THE VOLTS IN IT, I POWERD THE RADIANT ENERGY JOULE THIEF WITH IT AND AT THE OUTPUTS I PUT A 2200 UF ELECTROLYTIC CAPACITOR RATED AT 50 VOLTS AND I RAM MY MULTIMETER LEADS FROM IT AND GOT UP TO BEFORE I STOPPED 35.8 VOLTS , AND THAT'S THE CHARGE BEING FED INTO THE CAPACITOR TO , BEFORE THAT I WAS GETTING 27.8 VOLTS BUT AS THE CAPACITOR WAS CHARGEING PAST THE HALF WAY MARK THE VOLTAGE CLIMB WAS SLOWING DOWN, MAYBE DUE TO THE VOLTAGE FROM THE BATTERY GETTING LOW. ILL HAVE TO REMEASURE IT AND DO THE TEST AGAIN IN MORE DETAIL.
SHORTING THE CAPACITOR GAVE A SNAP NOISE AND SPARKS.

I TRIED IT AGAIN CHARGING IT SO FAR BUT THIS TIME I DUMPED THE CAPACITOR CHARGE BACK INTO THE INPUT AND THIS ILLUMINATED THE NEON FOR A SECOND BEFORE THE CAP CHARGE WENT DOWN

NEXT EXPERIMENT WAS DIFFERENT I HAD THE OUTPUTS TO MY METER SET TO 200 MILLIVOLTS RANGE AND THE NEGATIVE INPUT I HAD MY A23 ENERGIZER NEGATIVE SITTING ON THE NEGATIVE INPUT AND THE TOP POSITIVE WELL MY FIN GER WAS ON IT ONLY AS FOR THE POSITIVE INPUT IT WAS RUN TO A RECTANGLE PEACE OF CIRCUIT

BOARD ON THE END OF A WIRE HELD IN THE AIR BY AN ALIGATER CLIP WITH MY OTHER HAND AND THE READINGS WAS CLIMBING AT A FASTER RATE I GOT O 47.2 MILLIVOLTS BEFORE I STOPPED IT I WAS GETTING POWER AT A GOOD RATE FROM NO WHERE WITH AN OPEN CIRCIUT HERE BUT I WAS ALSO HOLDING THE BATTERY CASE TO WHILE DOING THE EXPERIMENT.

I JUST REPEATED THESE TESTS AND GOT A TOTALLY DIFFERENT RESULT NOW I WONDER IF SOMETHING ELSE CAME INTO PLAY OUT THERE THAT MAY EXPLAIN THE SUDDENT GOOD RESULTS I GOT BEFORE.

I TRIED THE RADIANT JOULE THIEF BATTERY CHARGER FREE ENERGY EXPERIMENT AGAIN BUT GOT JUST OVER 11 MILLIVOLTS SO I SO I PUT THE 2200UF ELECTROLYTIC CAPACITOR RATED AT 50 VOLTS ACROSS THE RADIANT JOULE THEIF BATTERY CHARGER OUTPUTS WHICH RAN TO MY MULTIMETER SET TO THE 200 MILLIVOLTS RANGE. AND THE READING WENT UP AND THIS TIME I SHORTED OUT THE ELCTRO AND WHILE FILMING IT IT WENT TO ZERO BUT ALSO I HAD THE A23 ENERGIZER SITTING NEGATIVE ON TOP OF THE POSITIVE INPUT OF THE JOULE THIEF CIRCUIT AND MY RIGHT HAND WAS HOLDING IT AND I PUT MY RIGHT HAND FINGER ON TOP OF IT AS TO USE MY BODY BUT IT STILL FORMS AN OPEN CIRCUIT AND THE VOLTAGE WENT UP PAST THE 50 MILLIVOLTS RANGE.

REVIEW I FILMED IT ON MY HANDY CAM THE RADIANT BATTERY CHARGER JOULE THIEF POSITIVE INPUT RUNS TO A COPER RECTANGLE CIRCIUTBOARD, SITTING ON MY DESK TO ACT AS A RADIANT ENERGY RECEAVER.
THE NEGATIVE INPUT HAS THE A23 ENERGIZER SITTING ON IT SO ITS NEGATIVE IS ON THE WIRE AND AS I HOLD MY RIGHT HAND FINGER ON TOP OF THE BATTERY THE OUTPUT WITH THE 2200UF ELECTROLYTIC 50 VOLTS CAPACITOR WHICH WAS SHORTED OUT TO ZERO CHARGES UP AND THE MULTIMETER SET TO 200 MILLIVOLTS RANGE READINGS CLIMB PAST THE 50 MILLIVOLTS RANGE.

MY NEXT PLANNED RADIANT JOULE THIEF BATTERY CHARGER WILL BE USED WITH IT TO TRY PUSH THE MILLIVOLTS PAST THE 1 VOLTS RANGE

USING BOTH RADIANT JOULE THIEF BATTERY CHARGERS AT THE SAME TIME, I VIRTUALLY HAVE 2 ANTENNAS THE COPPER BOARD AND MYSELF.

WITH MY RADIANT JOULE THIEF BATTERY CHARGER LEFT SITTING ON MY DESK OVER NIGHT WITH THE BATTERY NOT BEING USED, IT HAD GENERATED A TOTAL CHARGE OF 152.1 MILLIVOLTS ALL BY ITSELF

LAST NIGHT I NOTICED THE MILLI VOLTS WAS CLIMBING BY ITSELF SO I LEFT IT AND JUST FOUND OUT WHEN I TURNED THE MULTIMETER ON ITS CHARGE WAS THEN 152.1 MILLIVOLTS. ITS NOWHERE NEAR WHAT I WANT BUT ILL WORK ON IT ANYHOW.

I RE TESTED THE RADIANT JOULE THIEF BATTERY CHARGER I CHARGED UP MY 2200UF ELECTROLYTIC CAPACITOR TO PAST ITS VOLTAGE RATING OF 50 VOLTS BEFORE THE TRANSISTOR COOKED AND THE BATTERY POSITIVE GOT HOT. NOW WHEN I HAD IT HOOKED UP I HAD MY METER ONLY ON THE 20 VOLTS DC RANGE SO WHEN I SWITCHED IT TO 200 VOLTS RANGE I INSTANTLY GOT OVER 71 VOLTS READING ON A 50 VOLTS 2200 UF ELECTROLYTIC CAPACITOR THE CIRCUIT APPEARED TO SUCK THE 10. +? VOLTS LEFT IN THE 12 VOLTS 7.2 AMP HOUR 20 HOUR SLA BATTERY SO MUCH IT HEATED UP ITS POSITIVE TERMINAL AND COOKED THE TRANSISTOR, ALSO THE CAPACITOR CHARGE I CAN FEEL WITH MY FINGERS AS I WAS HOLDING A WIRE ON IT THAT HAD COME OFF AND MY FINGERS WAS TOUCHING THE OTHER CAPACITOR LEG TO. I THOUGHT I HAD MY CAMERA ON STILL BUT DIDENT AND I WAS NARRATING IT FOR NOTHING.

IT LOOKS LIKE FREE ENERGY FROM THE AIR JUST AINT ENOUGH TO POWER A JOULE THIEF EVEN LETTING IT GENERATE BY ITSELF JUST OVER 0.904 VOLTS AINT ENOUGH.

READ THE NEXT ARTICLE TO KNOW MORE

Jule Theif Battery Charger:

Step 1: Parts and Pieces

Parts for the charger include:
2N3904 NPN transistor
1K ohm resistor
Toroid transformer core
Magnet wire
Diode

SPST Switch (not pictured)

A word about some of the parts:
The toroid core can be any size, but nothing fancy or big is needed. A small toroid is probably better just because it is more compact. Only one toroid is used in the circuit, but two are pictured for size reference.
The diode can be just about any diode, but the lower the forward voltage drop, the better. Germanium diodes work the best. To find the forward voltage drop, simply hook a diode up to a battery, and measure the difference in voltage with and without the diode in the circuit. If the voltage drop is about equal to the voltage being supplied, make sure the diode isn't hooked up backwards.

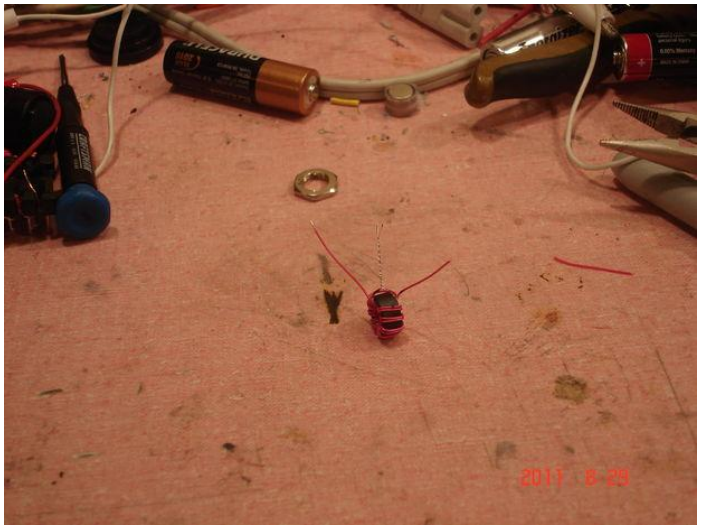
Step 2: Make the Transformer

The toroid transformer needs to be wound first. Cut two pieces of magnet wire to roughly equal length. About three feet each is plenty for a small toroid. Next, wind them parellel to eachother around the toroid transformer core, making sure at no point the wires cross. glue can be used to secure the wires to the core so the transformer does not unwind. The number of coils is not a big deal, as long as each wire has an equal number of coils, and each wire is wound around 10 or

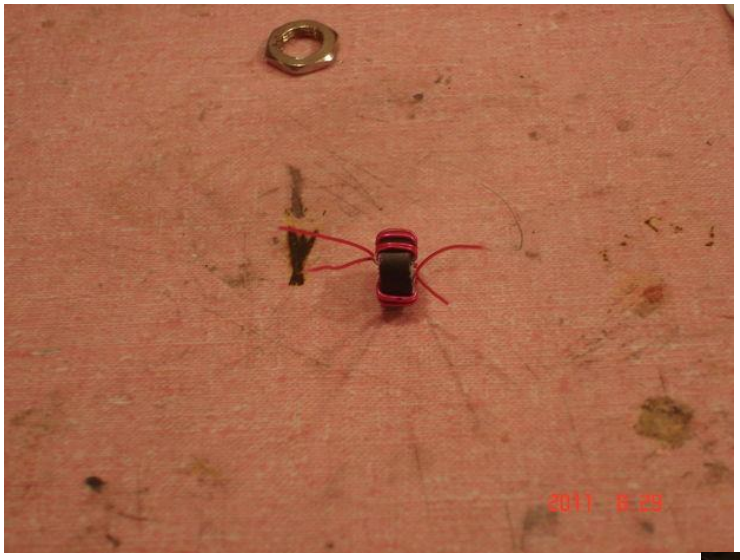
more times. Keep winding all the way around the core, and when you are done you should have four loose wire ends coming off the core.

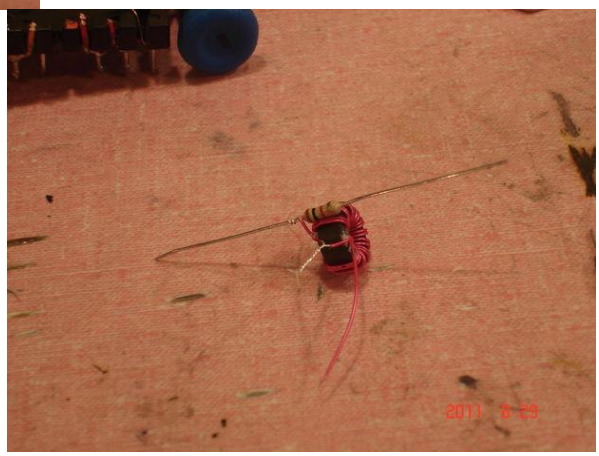
Step 3: Schematic

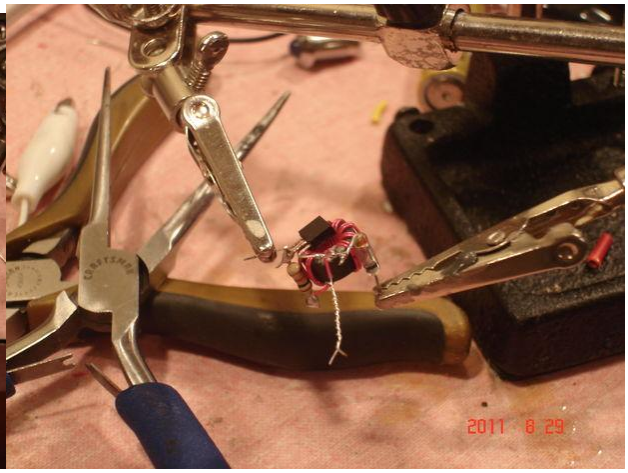
Now that the transformer has been prepared, its time to look at the schematic and begin assembling the circuit. The schematic is very simple. Its obvious which components are which, but just incase:
B1 is the AA, C, or D battery cell powering the circuit
S1 is a SPST switch
T1 is the toroid transformer
R1 is the 1K ohm resistor
Q1 is the 2N3904 transistor
D1 is the diode
the voltage out connection goes to the battery to be charged.



Step 4: Assmble the Circuit







Show All 7 Items

I chose to make my charger as small as possible, and designed to use any 1.5 volt battery as a power supply, and then be able to charge any other battery. This means that i did not use any battery holders, but if there is a specific type of battery you want to chrge or use as a power supply, you are welcome to use a battery holder. I also removed the switch from the circuit. If you want to make it small like I did, just refer to the pictures for how to connect the parts.

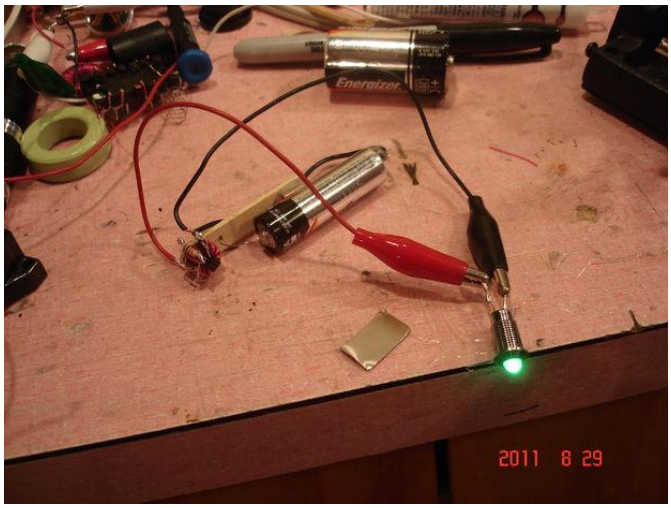
When connecting the transformer, you must pay attention to the phase of the windings. The dots on the schematic represent the phasing. I'm not going to go over the general idea of phasing, just give the specifics to this transformer. On the reansformer, you have coil A and coil B, and side 1 on the left and side 2 on the right. Each end of the coil should be on the opposite side of the transformer from the other. i.e., one end of A is on side 1 (A1) and one end of A should be on side 2 (A2) and the same is with coil B. Choose two ends, one from each coil and from opposite sides on the transfromer, and connect them. Putting it simply, connect A1 and B2 OR B1 and A2.
This forms the positive connection to the circuit. But which of the two ends of the transformer is connected to what part of the circuit does not matter for the rest of the construction.

Step 5: Finishing Touches

You can mount your circuit in an enclosure, or however suits your needs. I wanted my circuit to be flexible in terms of what battery is used as a power supply, so i mounted mine on a popsicle stick (very high tech) with a magnet to hold the popsicle stick to the power supply battery. A springy wire extends down to make contact with the positive battery terminal, and a wire with an attatched magent makes contact with the negative terminal. This allows the circuit to be mounted on a battery of any size. The voltage output terminals are just two wire with

alligator clips on the end, so the circuit can be hooked up to a battery holder for the battery that is charging or hooked onto the battery by some other means.

Step 6: Use it!



The circuit can now be used to charge batteries from a battery. This might seem silly, until you realize any batter up to 5 volts can be charged off a AA, C, or D battery. I have charged my ipod (almost fully) off a C battery, and my phone (up tp 1/4 full) off of a D, but this can also be used to charge batteries for other devices. the circuit might not be the most efficent boost-type charger circuit, but it uses very common parts and is great when you lose power and dot have any other options. Not only does it act as a charger, but a LED can be powered off of it like a traditional joule thief. (as a side note; I have found this circuit to not be compatible with certain cell phones, even when the battery is removed and charged seperately. Some cell phone batteries have protection circuits built in, and will only be charged while in the phone. Using this on a battery with a protection circuit built in could lead to the damage of that circuit. If the battery pack has more than 2 wires or contacts, then it probably has a protection circuit. aways test on an extra battery)

Congratulations on the completion of your new joule thief battery charger!

With regards to the epilog laser challenge:

I do fabrication of miniature, portable, battery powered guitar amps for many of my friends who are in bands. When I was building one, someone questioned if they could have custom engraving on the front aluminum panel. Unfortunately, I do not have any means to engrave the panel, but if I win the laser engraver it could solve that! I also do custom woodwork to gun stocks, and being able to laser engrave stocks would really expand my capabilities for customizatio

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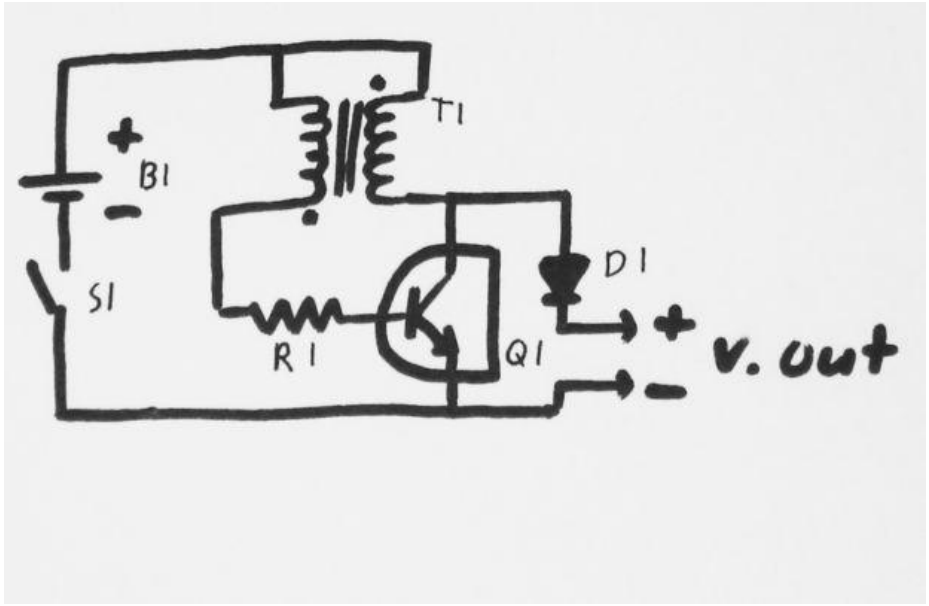
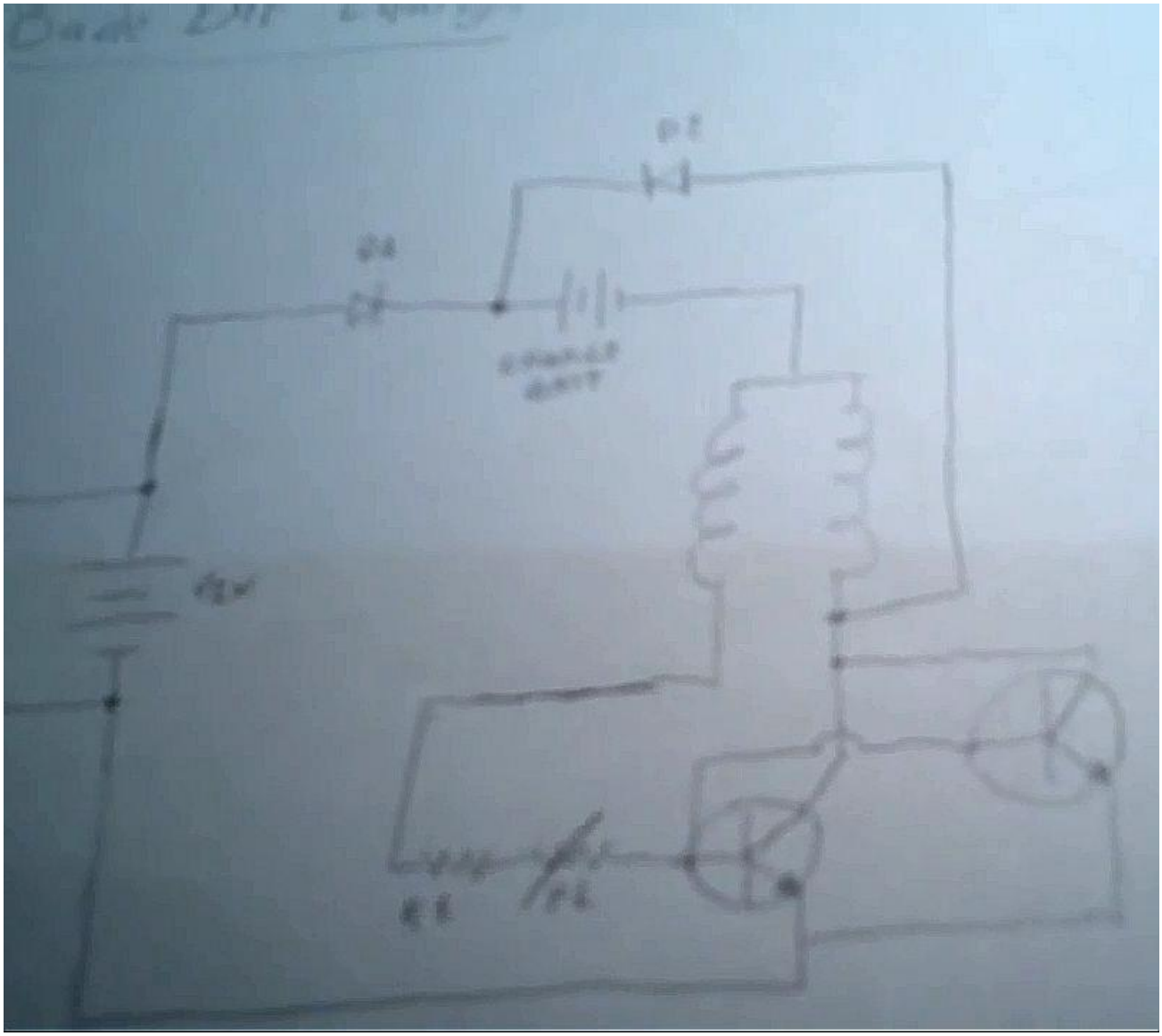
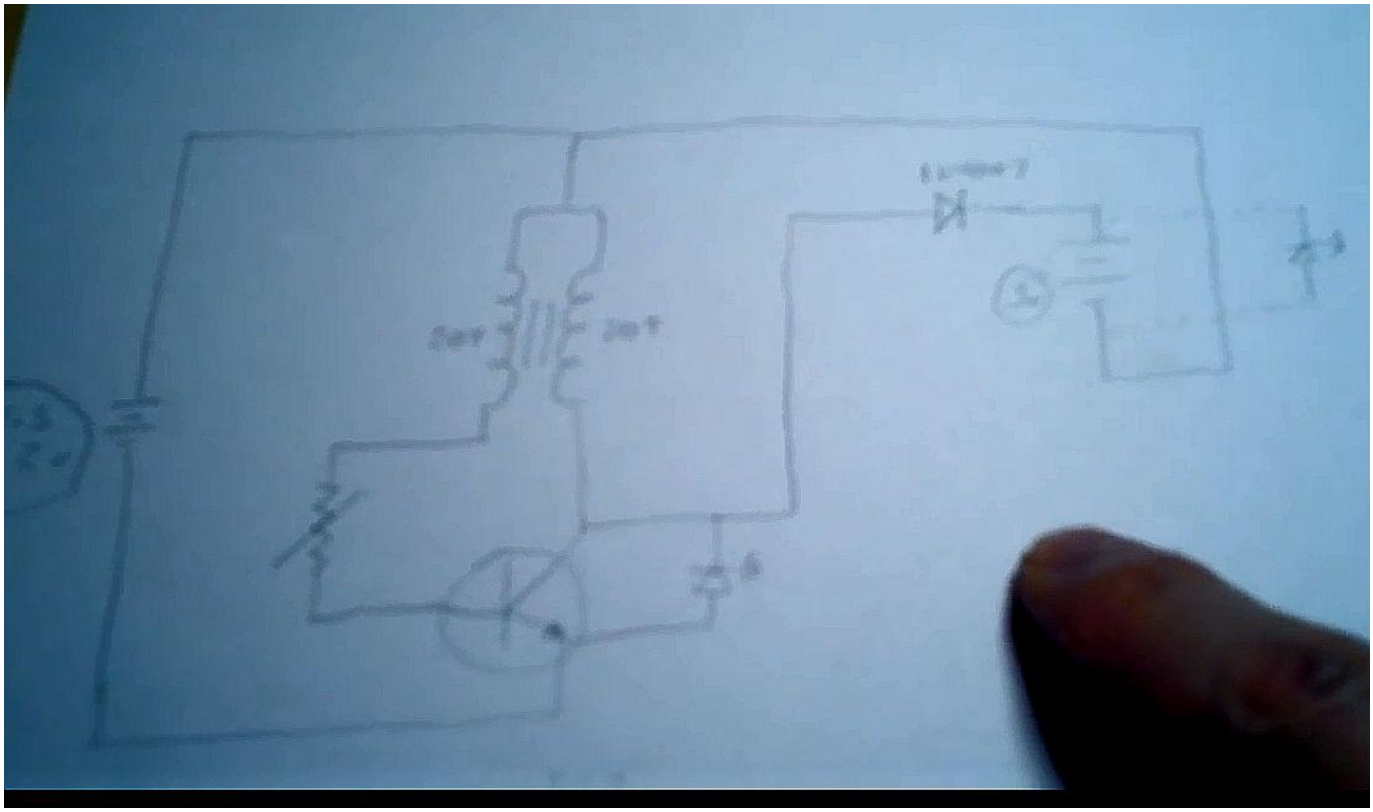
Additional Charging Circuits:





Back EMF charger above

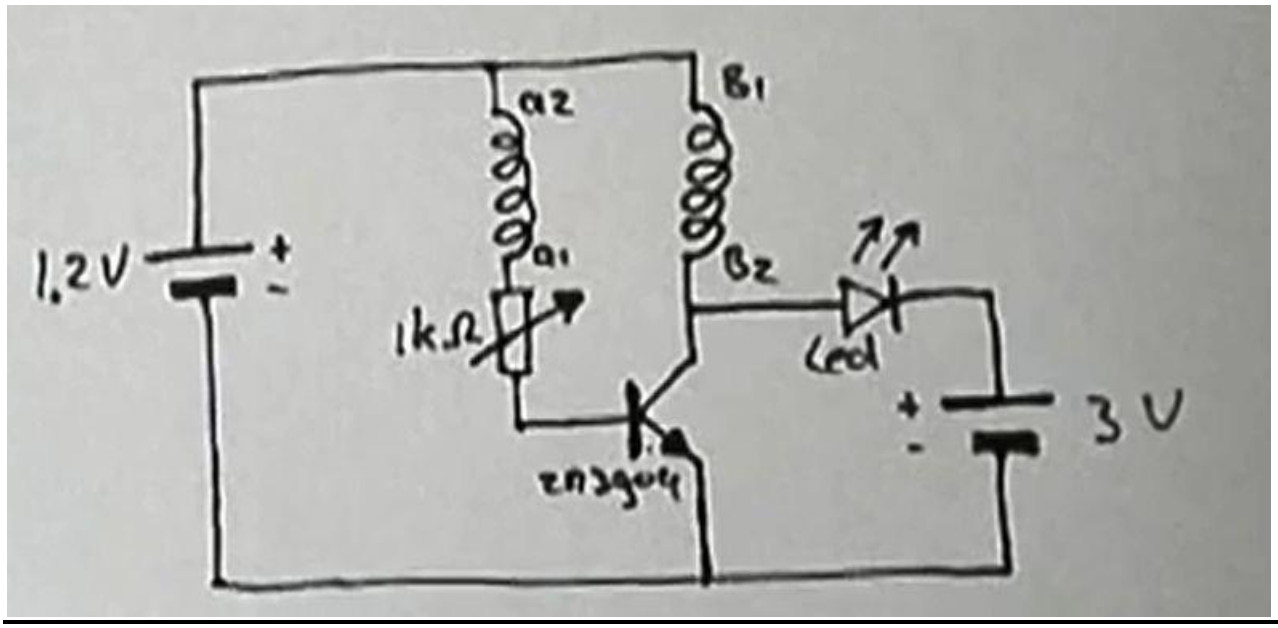
Battery charger below:



Video for above:
https://www.youtube.com/watch?v=Rs4sLw6zIAI

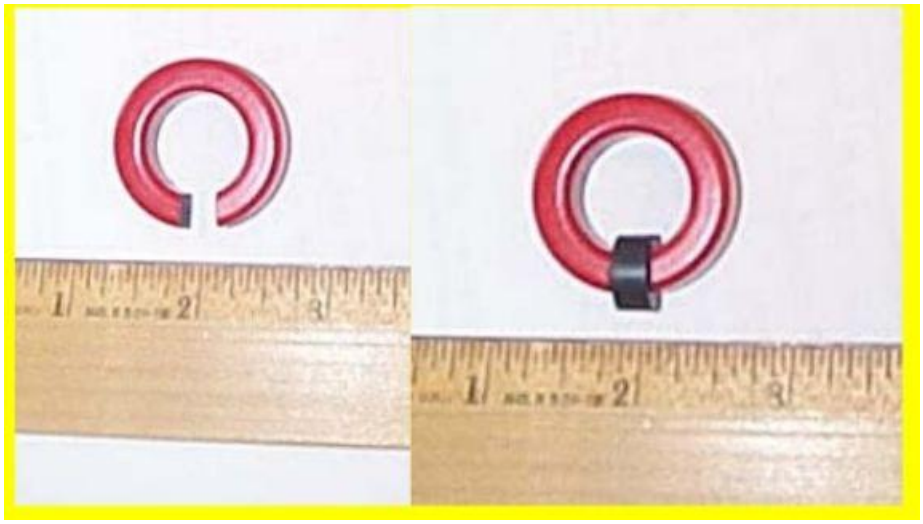
Video for below:
https://www.youtube.com/watch?v=VE0zUM_e4io

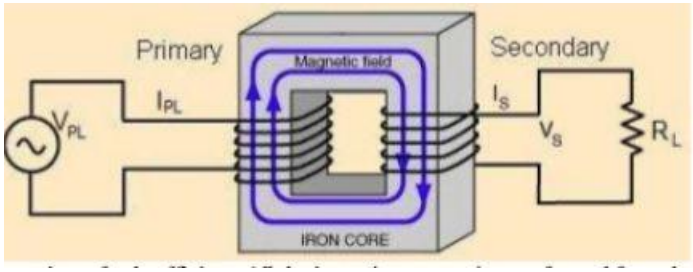
Joule Theif Battery Charger Circuit



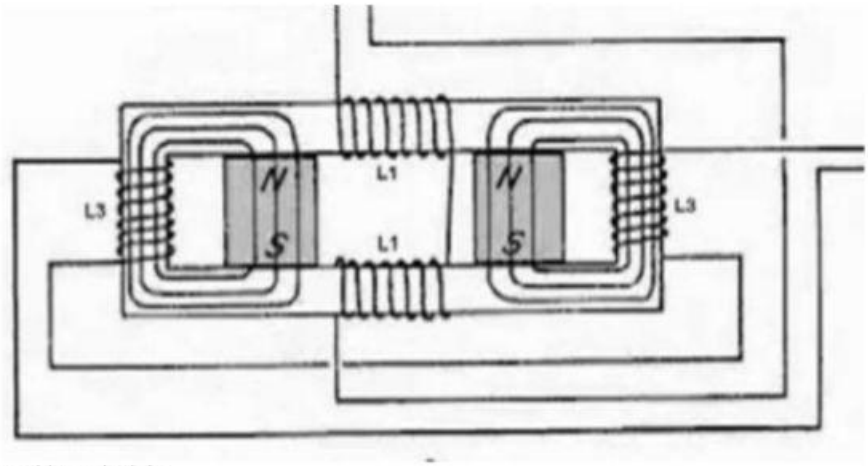
MEG

MEG coil made from Torroid. Book:
http://www.slideshare.net/steepling/motionless-electromagnetic-generator-meg





Charles Flynn Generator:



It has simple working principle:

This video shows putting magnets in a rodin coil to boost energy
https://www.youtube.com/watch?v=NsJ45P0iybE