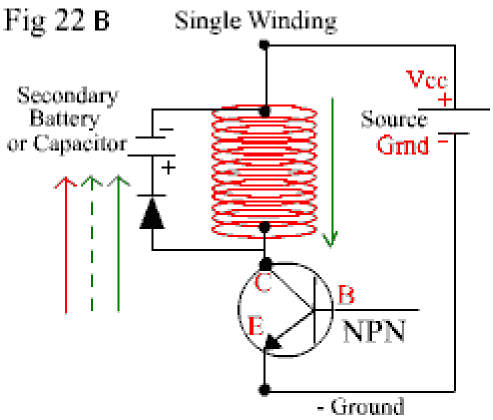
http://www.free-energy-info.com/Chapt6.html

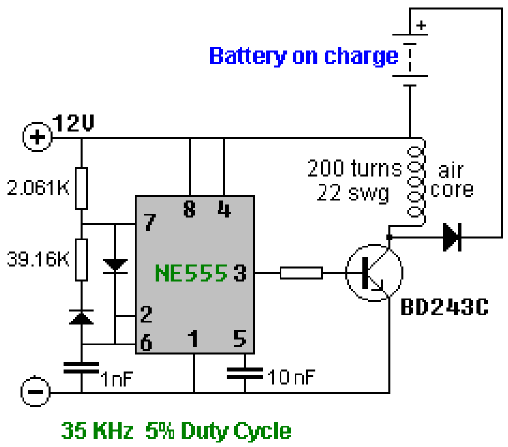
This is an extract of the E-Book update from **27th January 2016** (Ver.29.3)

Chapter 3 (Page 124). The inclusion of a pointer to a Russian translation of Don Smith's techniques.
Chapter 6 (Page 32**). The inclusion of a plug-board layout for the first Alexkor battery charging circuit.**
Chapter 6 (Page 63). The inclusion of a fast-charging version of the Joule Thief circuit.
Chapter 10 (Page 27). The inclusion of some details on efficient electrolysis.
Chapter 15 (Page 69). The inclusion of some details on the American "9-11" attacks in New York.

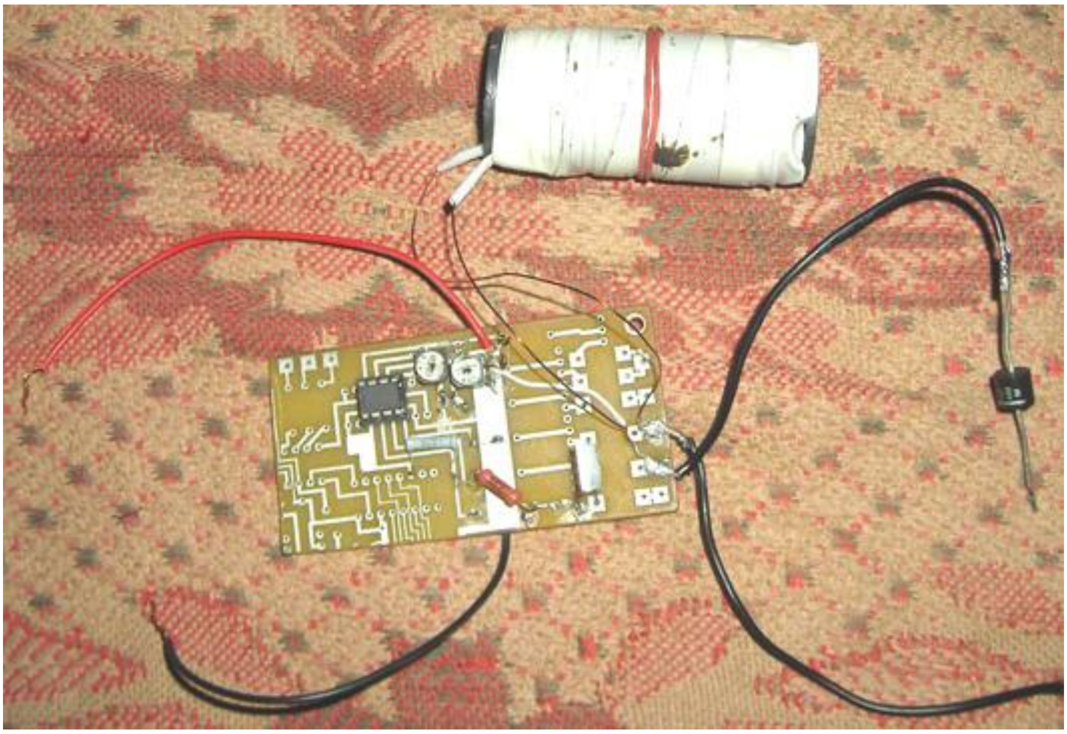
The "**Alexkor**" battery-charging system is **very effective, cheap and easy to build**. It is a version of the system described in Fig. 22B on page 7 of this web page:



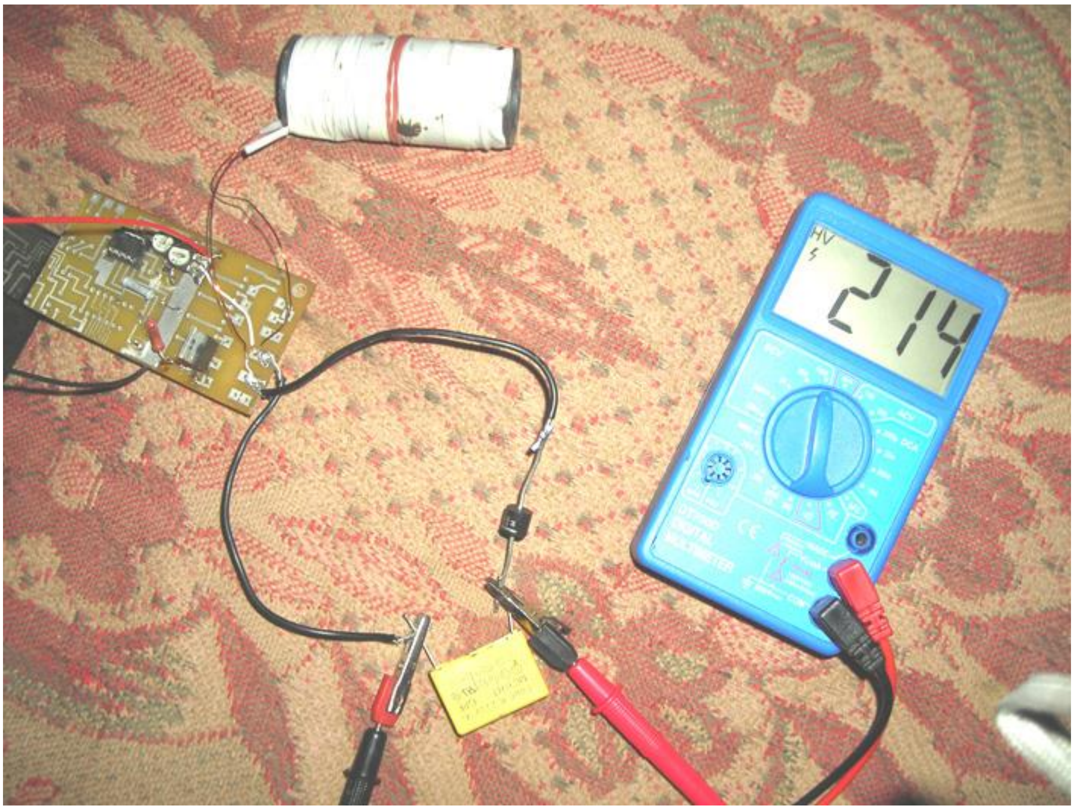
While this description has been around for years, it is part of a discussion on the principles of the operation of EMF magnetic fields and pulsing in coils. 'Alexkor' has developed a practical circuit which he says works very well. It can be constructed as a single unit as shown here:



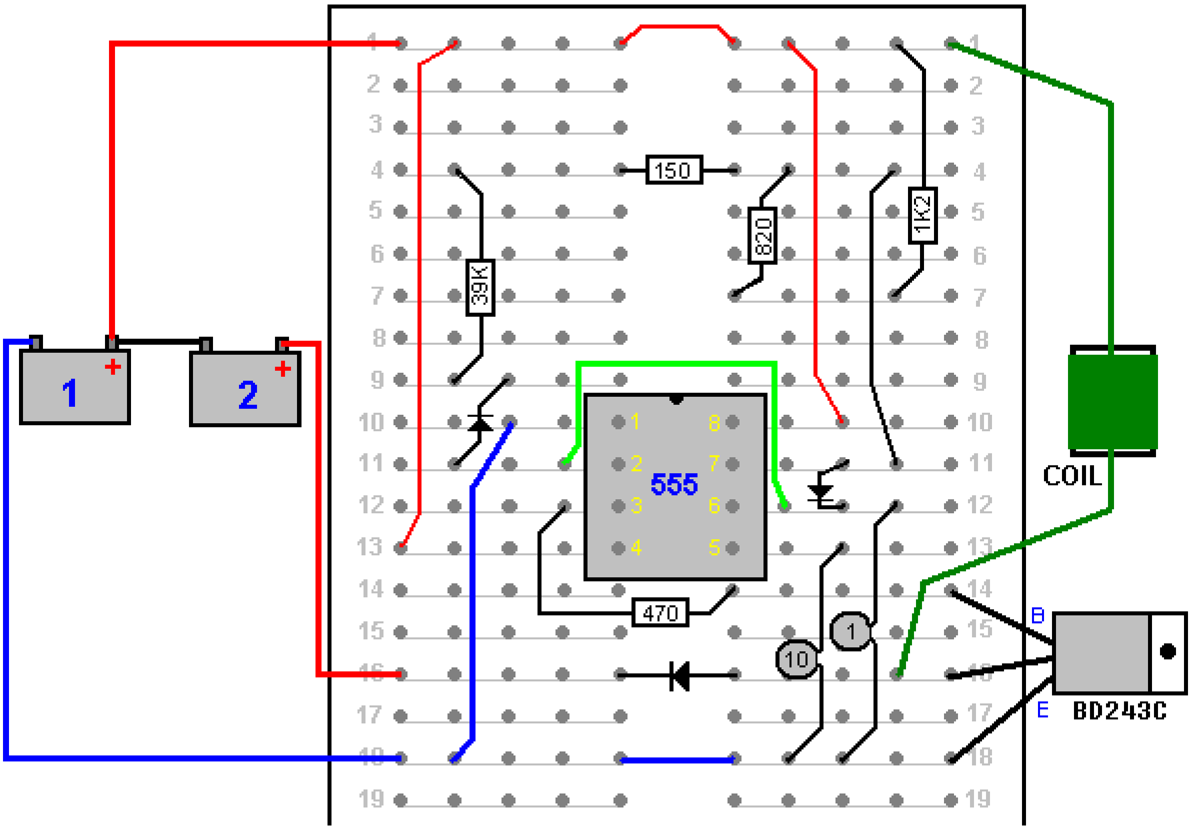
Here, the **coil is wound with 200 turns of 0.7 mm enamelled copper wire** and the actual construction is compact:



And to get an idea of the performance, Alex uses a capacitor to see the size of the voltage spikes produced by the circuit:



If building a circuit with a soldering iron and one of the commercial versions of prototyping board with copper strips is too difficult, then the circuit can be set up **using a plug-in board like this:**



The battery marked "1" provides power to run the circuit and the battery marked "2" gets charged. The resistors are all quarter watt. The enamelled copper 22 swg wire has a diameter of 0.711 mm and the coil can easily be wound on a cardboard tube. With a 30 mm (1.25 inch) diameter tube about 20 metres of wire would be needed and that weighs about 70 grams. I would like the output diode to be a UF5408 diode as the "UF" stands for "Ultra Fast", but the wire leads are too thick to plug into a board like this and so the 1N5408 can be used, it is rated at 1000 volts and 3 amps.

This is the first step in the process as the same circuit can be used to drive many coils of this type. The resistor feeding the base of the transistor is about 500 ohms for the prototype, but using a 390 ohm resistor in series with a variable resistor of say, 1K, would allow a good standard resistor value to be selected for each transistor/coil pair:

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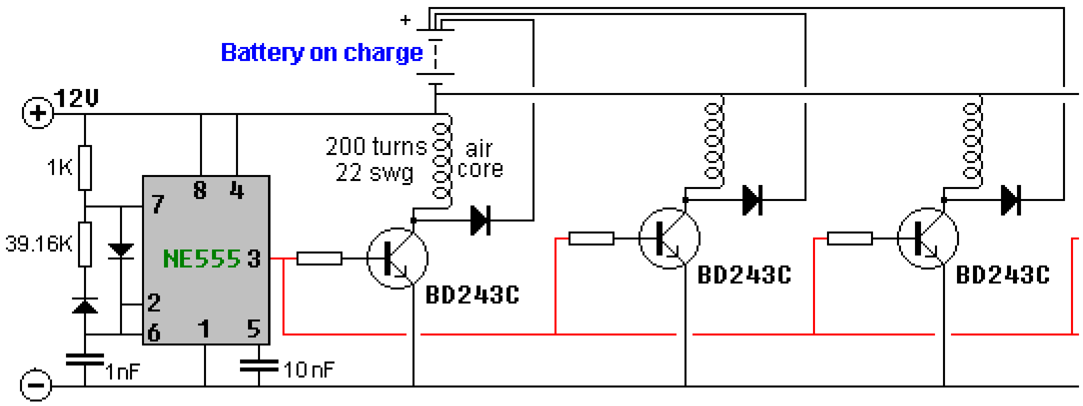
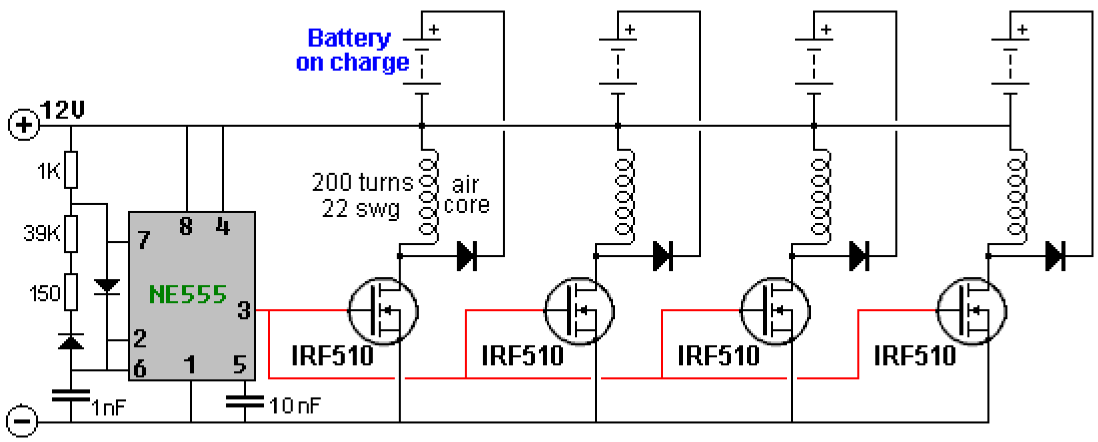
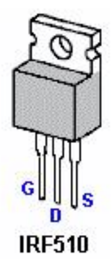


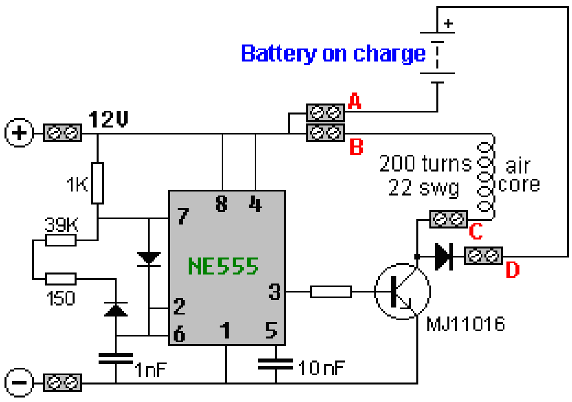
As can be seen from the photographs, **Alex uses preset resistors to adjust the settings** to their optimum values. The simplicity of this circuit makes it very attractive as a construction project and using more than one coil should make for impressive performance figures. Alex says that the best results are achieved with just the one (1000V 10A) diode and not a diode bridge, which is borne out by the teaching comments on the above web site.

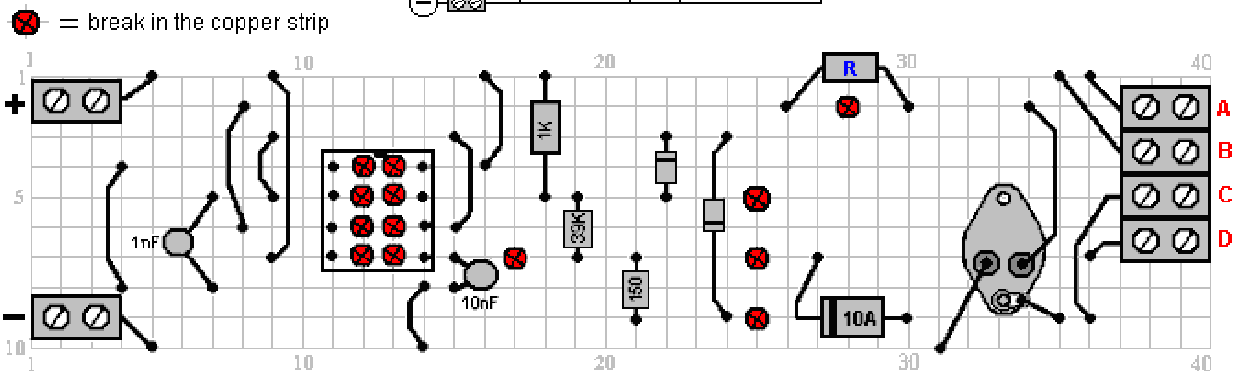
Further development by Alex **shows better performance** when using the IRF510 FET instead of the BD243C transistor. He also has found it very effective charging four separate batteries and he has revived an old NiCad drill battery using this circuit:



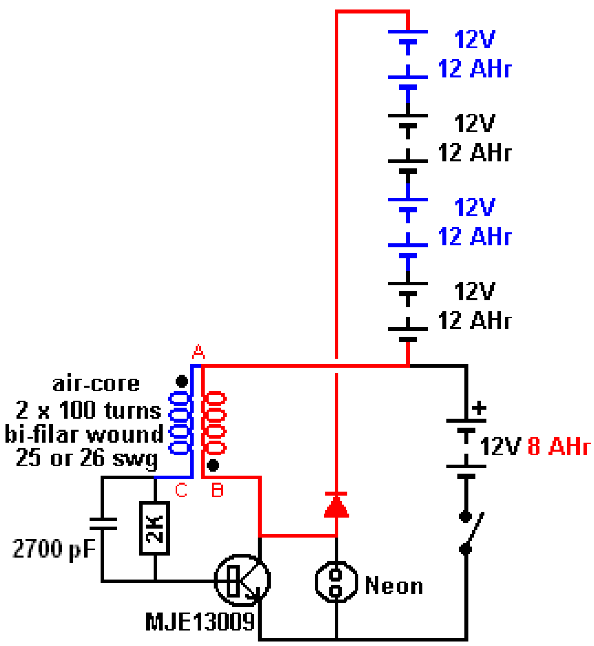


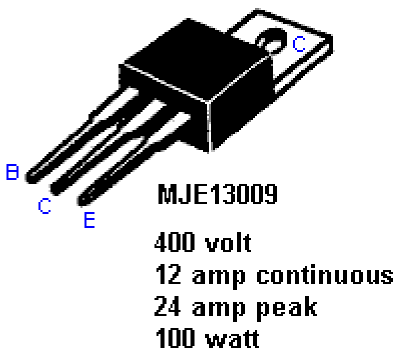
It is possible to use various different transistors with these circuits. As some people have difficulty in working out a suitable physical construction for a circuit, here is a suggestion for a possible **layout using an MJ11016 high-power high-gain transistor** on stripboard.



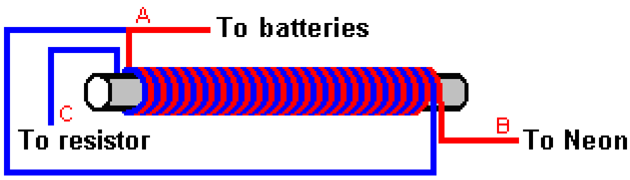


Alexkor's Self-Charging Circuit.
This is a particularly simple circuit which allows a 12V, 8 amp-hour battery charge a 48V 12 amp-hour battery with radiant energy, **in 20 hours using twelve times less current than a conventional charger would.** The circuit **can charge lithium, NiCad or lead-acid batteries** The circuit used is:

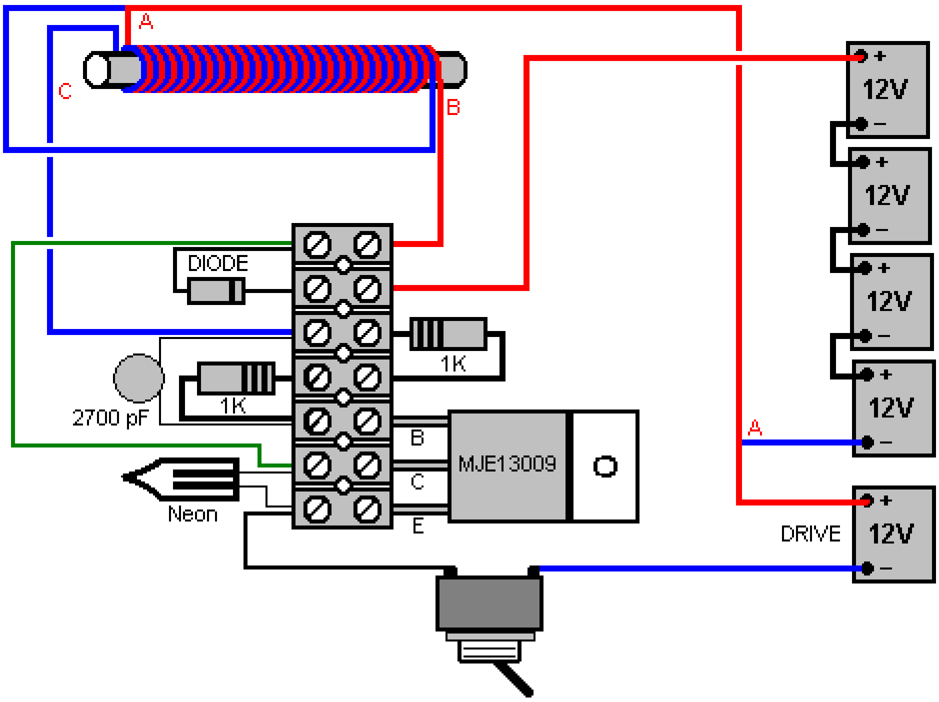




The coil is wound on a hollow former, using two separate strands of wire of 0.5 mm diameter, giving a resistance of just 2 ohms. The strands of wire are placed side by side in a single layer like this:

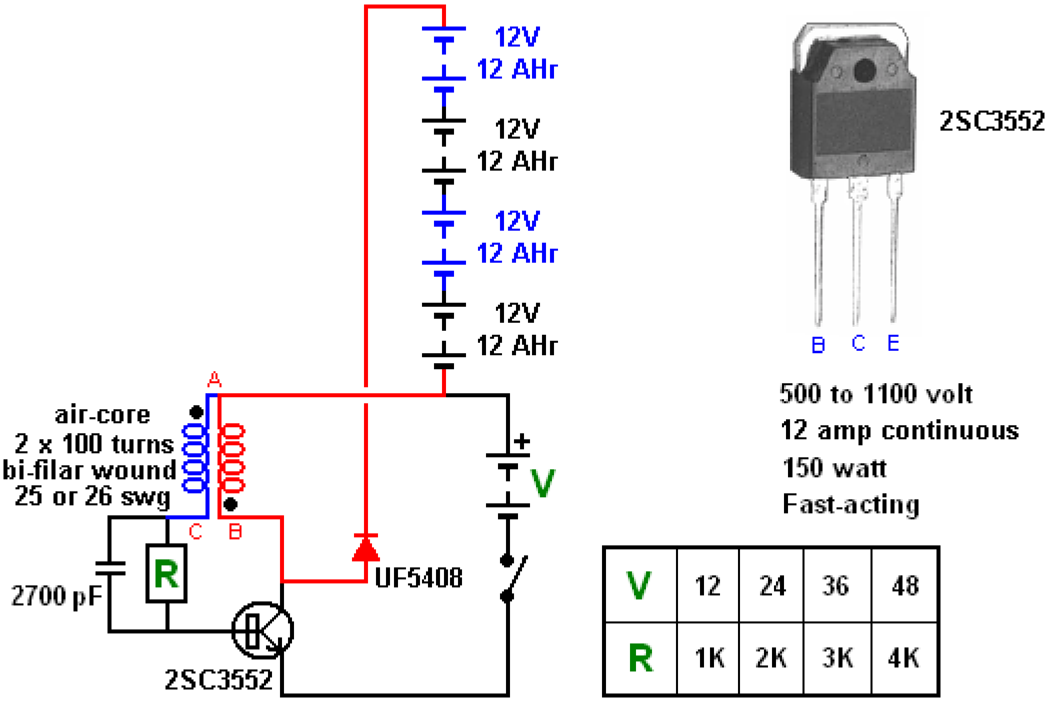


A possible physical layout using a small standard electrical connector strip might be:



If the coil is wound on say, a 1.25-inch or 32 mm diameter plastic pipe, then the outside pipe diameter is 36 mm due to the wall thickness of the plastic pipe, and each turn takes about 118 mm, so around 24 metres of wire will be needed for the 200 turns. If 13 metres (14 yards) of wire is measured off the spool and the wire folded back on itself in a sharp U-turn, then the coil can be wound tightly and neatly with close side-by-side turns. A small hole drilled at the end of the pipe allows the folded wire to be secured with two turns through the hole, and the 200 turns will take up a length of about 100 mm (4-inches) and the two loose ends secured using another small hole drilled in the pipe. The starting ends are cut apart and the ends of each coil determined using a continuity test.

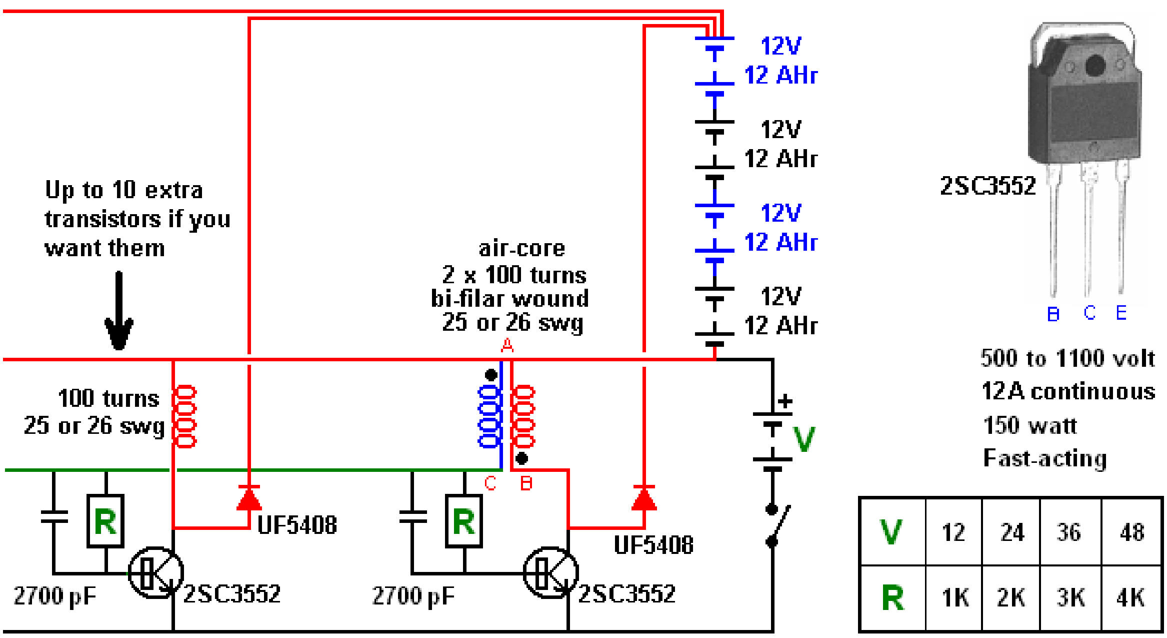
An even more advanced circuit from Alex has even higher performance by **using a high-speed transistor and a very fast-action diode**, and a neon is not needed to protect the transistor:



V	12	24	36	48
R	1K	2K	3K	4K

The fast UF5408 diode used in this circuit **is available,** at the present time, on www.ebay.co.uk in packs of 20 **for £3.84 inclusive of postage.**

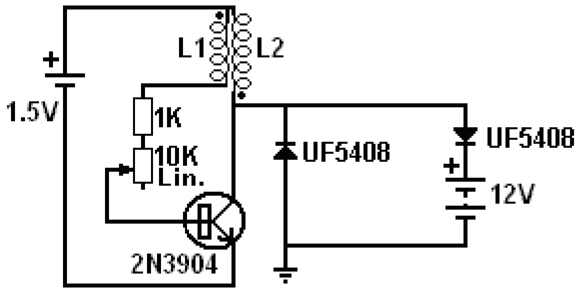
The transistor drive to the battery bank can be replicated for additional drive and an additional ten transistors could be used like this:



V	12	24	36	48
R	1K	2K	3K	4K

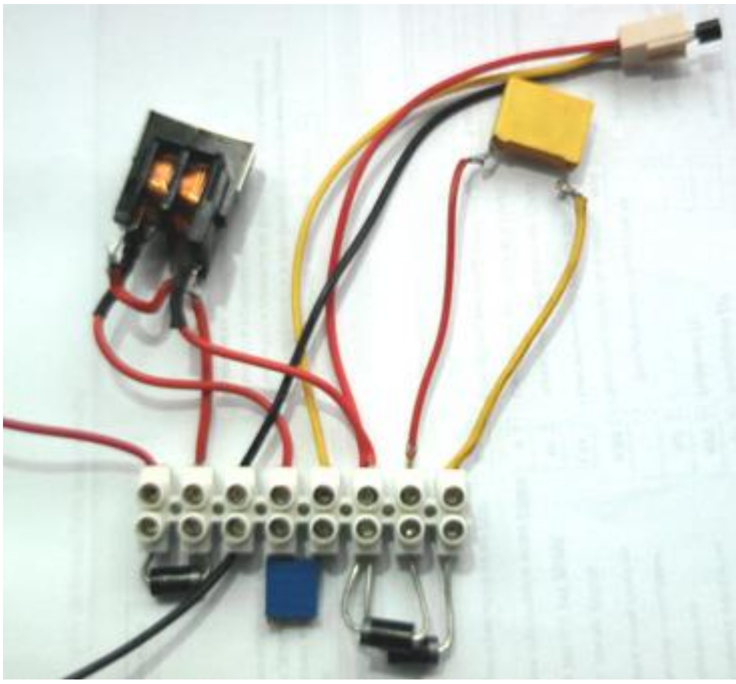
The 2700 pF capacitor is recommended for each additional transistor, but it is not an essential item and the circuit will operate ok with just the one on the bi-filar coil drive section.

A recent circuit design from Alexkor **uses the tiniest of inputs**; just 1.5 volts at a current which can be adjusted down from 4 milliamps to just 1 milliamp. This tiny circuit can charge a 12-volt battery, although admittedly, the charging rate is not very high as it takes ten hours per Amp-Hour to charge the battery. However, it is spectacular to get a input of just 1.5 milliwatts to charge a 12V battery. The circuit has very few components:



Coils: 0.5 to 1.0mm diameter solid copper
wire length: 1 to 2 metres bi-filar wound

Variable resistor adjusted for minimum current 1 to 4 mA
Output is 40V spikes



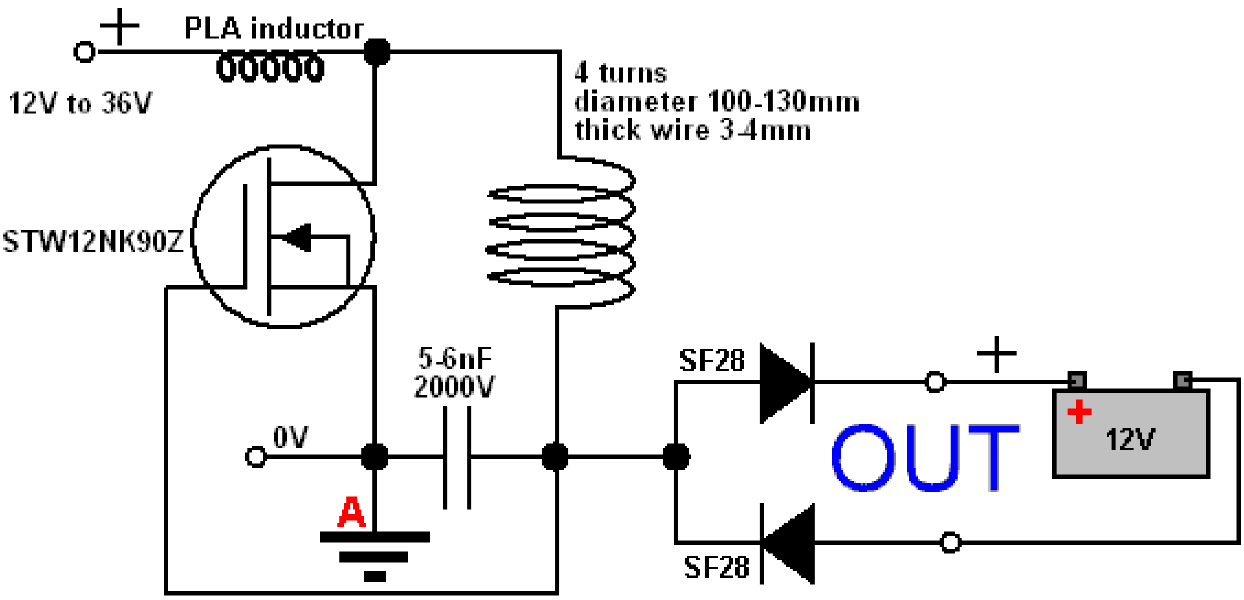
The coil is tiny, bi-filar wound on ferrite or with an air-core. In the circuit diagram, the dots on the coil windings indicate the start of the two side-by-side windings. This makes it clear that the start of one winding is connected to the end of the other winding as well as to the positive side of the 1.5V battery. The variable resistor could be omitted and various fixed resistors tried until the 1 milliamp current level is reached. It should be emphasised that there is just one earthing point and it is a real connect-to-the-ground type of connection. Simple arithmetic will show you that if there is a charging current flowing into the battery to charge it, then even with an imagined 100% efficiency of the battery, **the battery charge is many times greater than the draw from the battery driving the circuit**. The circuit runs at a frequency between 200 MHz and 300 MHz.

Alex uses a commercial "choke" from Farnell as shown here:

Type	PLA
Execution	with a single rail
Rated current, a	2
Rated voltage, v	300
Winding inductance, mH	1.5
Active resistance, Ohm	1500
Hull length, mm	18

Jes Ascanius of Denmark has replicated this circuit and he makes these comments: The 10K variable resistor and the additional 1K resistor need to be 250 mW types as larger wattages cause a greater current draw. Also, the quality of the earth connection is important as his very efficient earth produces 60-volt pulses from the circuit (70-volts at night) and just by touching the earth connection can boost those pulses right up to 92-volts and so further experimentation may produce some other interesting effects.

Alexkor's most advanced circuit to date is the one shown here:



This circuit uses the PLA inductor shown above. The initial reaction of somebody familiar with electronic circuits might well be “this is impossible as the battery being charged is ‘floating’ as it is not connected to either side of the driving battery”.

While that is true, **the circuit works very well indeed and a battery bank of ten 1.2V Ni-Mh batteries rated at 1100 mAHr capacity** which had been charged and discharged ten times before, is now charged by this circuit in just half an hour.

The input voltage can be anything from 12V to 36V without the need to change any of the circuit components. The choice of transistor is important and the STW12NK90Z is a very high-performance, high-voltage transistor (available at the present time from www.mouser.com), and while it is not cheap, I would strongly recommend its use if you decide to replicate this circuit. The SF28 diodes are also special components, rated at 600 volts and 2 amps, these are high-speed diodes, not to be replaced with any diode which happens to be available.

The coil is most unusual in that it is just four turns of very thick copper wire, 3 mm to 4 mm in diameter, although aluminium wire can also be used. This power cable is wound on to a spool of 100 mm to 130 mm (4-inch to 5-inch) diameter. The tiny 5 nF capacitor needs to be rated at a very high 2000 volts.

The real Earth connection at point “A” gives a 20% to 30% improvement in performance but if the circuit has to be portable, then it will work with the lower level of performance if the earth connection is omitted and point ”A” is connected to the 0V line of the input battery.

While the above coils are air-core to allow high frequency operation, coils are generally much more efficient with some form of magnetic core, such as iron-dust or ferrite. While it is not likely to be able to operate at frequencies as high as 35 KHz, a very good material for coil cores is the metal of masonry anchors or "sleeve anchors":

This metal is immune to rusting, easy to work and loses all magnetism as soon as the magnetic field is removed. You can confirm this for yourself by placing a permanent magnet on one end of the bolt or the tube and using the other end to pick up a steel screw. As soon as the permanent magnet is removed, the screw falls off as the metal does not retain any of the magnetism from the permanent magnet. These anchors are cheap and readily available from builder's supplies outlets, including those on the internet. It is unlikely that this material could operate at more than 1,000 Hz and the circuit above gains a lot of it's performance from the high speed, fast switching and very short "On" time duty cycle.

If you use the bolt section of one of these anchors, the conical bump at the end of the shaft will have a delaying effect on the build-up and release of the magnetic field and so it might be advisable to either file it down gently by hand, or to cut off the conical section. There will always be eddy current losses in any solid metal core, but that does not stop them being very effective in operation. As with everything else, testing an actual device is the key to good performance and sound knowledge.