The construction of a...

~Single Layer 'tapped' Air Core Coil~

The construction approach is twofold:

(1) A coil that is quick and simple to make.

(2) A coil that will hold up when when it is periodically or routinely squeezed and stretched for adjustment.

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Unlike typical tapped coils, where the tapped leg is soldered directly to the main coil, this tapped coil is one single piece of wire...that's all. There is no need to 'add' another piece of wire for the tapped leg. This, in turn, makes the coil stronger and less likely to come apart when periodic adjustments on the coil is needed for fine tuning your transmitter or receiver.

I will take you thru a step-by-step procedure (with pictures) in order for you to understand how a 'tapped' leg can be applied *without* having to solder a 'separate' piece of wire to the coil itself.

The Construction Plans

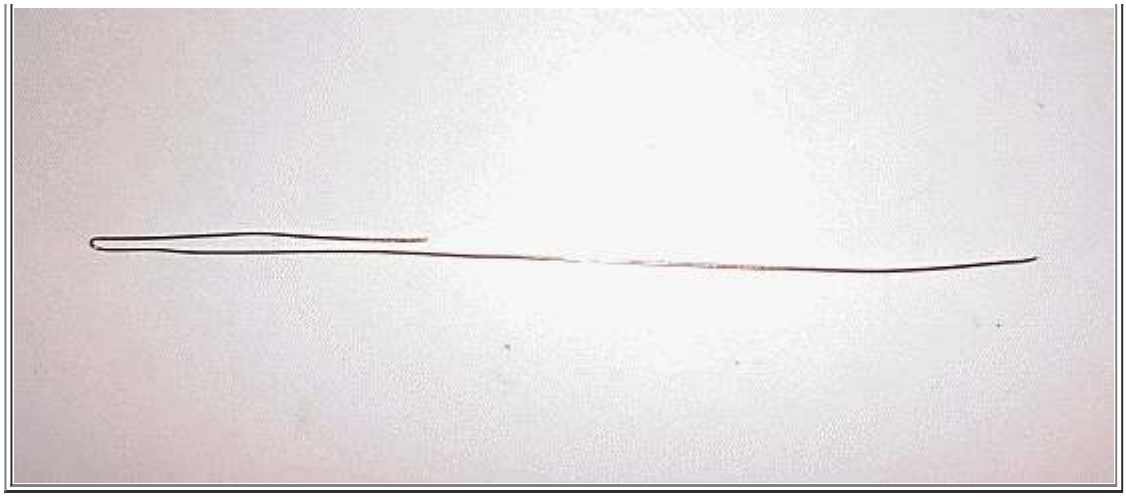
Let's make a 4 turn coil, with a 1 turn tap...

PLEASE NOTE

This webpage is intended HOW to make a tapped air core coil for the FM transmitters. If you are making the Radio Shack Special....please note that your DRAIN coil will be a 7 turn coil, with a 2 turn tap...using 22 gauge wire. View this webpage only as a guide in making a tapped air core coil. Once you understand that, you can then make a your own coil that is needed for your particular project.

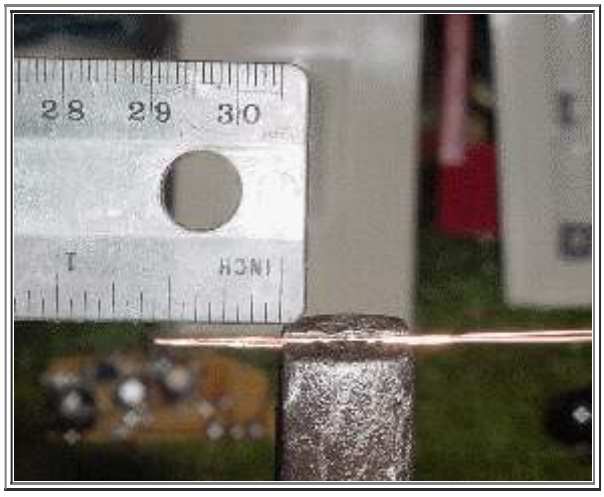
Let us begin...

Start by taking 12 inches of un-insulated 18 gauge (1.024 mm) solid copper wire. From one end, measure out 4 inches. At that point, bend the wire as shown in the picture below.

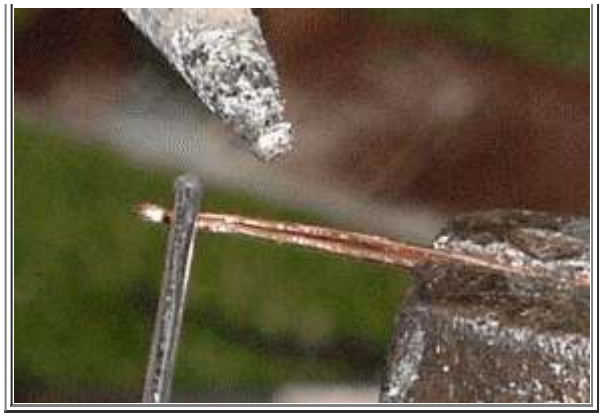


So now you have the upper end of the wire being 4 inches and the lower end of the wire being 8 inches.

Starting from the left end of the wire in the picture, take a pair of pliers and sqeeze the upper and lower ends together real close so that they touch each other. Back off your pliers a bit so that you leave the doubled-up wire extend 'out' from the pliers 1/2 of an inch making sure that you keep both portions of the wire (upper and lower)' tightly together. It is in this area (1/2 of an inch) that you will solder the wires (upper and lower) together. Take a look at the picture below. The picture shows how the pliers are positioned, so as to leave the said distance hanging out of the pliers. Even though the picture shows the extension to be slightly longer than 1/2 inch, 1/2 of an inch would be the correct distance.



The picture below shows the area to be soldered... with solder, soldering gun and positioning of the wire in the pliers to be soldered



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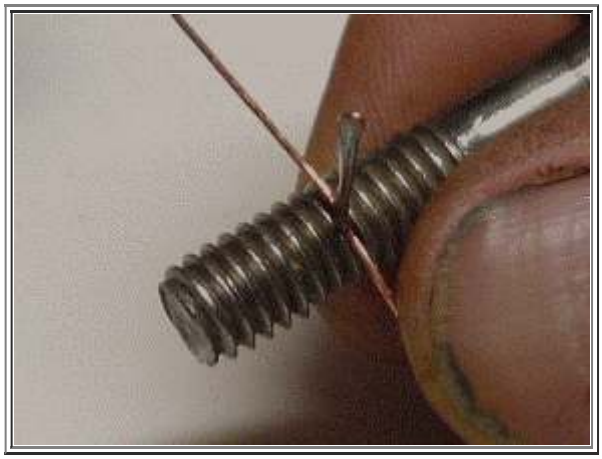
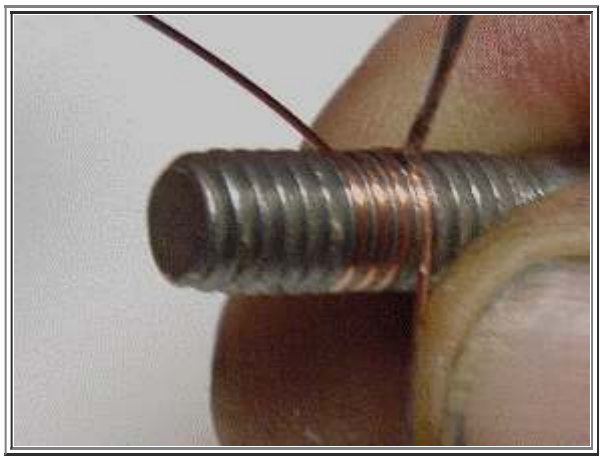
The picture below shows the portion of the wire that was soldered. It was soldered, then bent at 90 degrees (each wire) away from each other. This 1/2 inch soldered wire will be the tapped leg, when the coil is finished.

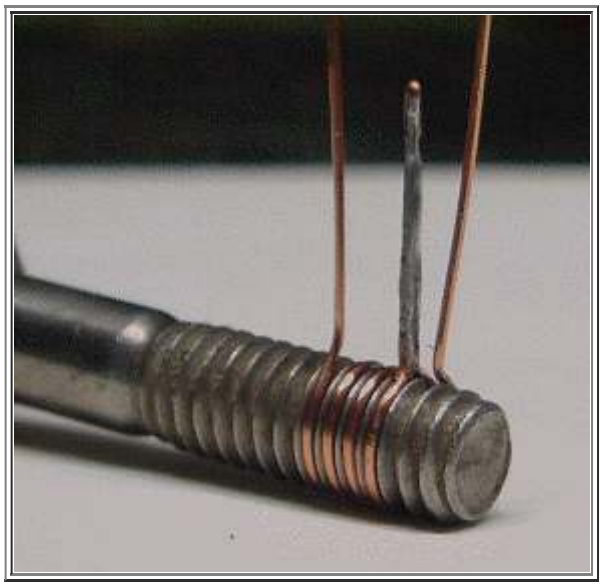
Now take your 5/16 of an inch standard size threaded bolt and place the wire into the threads of the bolt, with the tapped leg standing right on top of the bolt, as shown in the picture below.



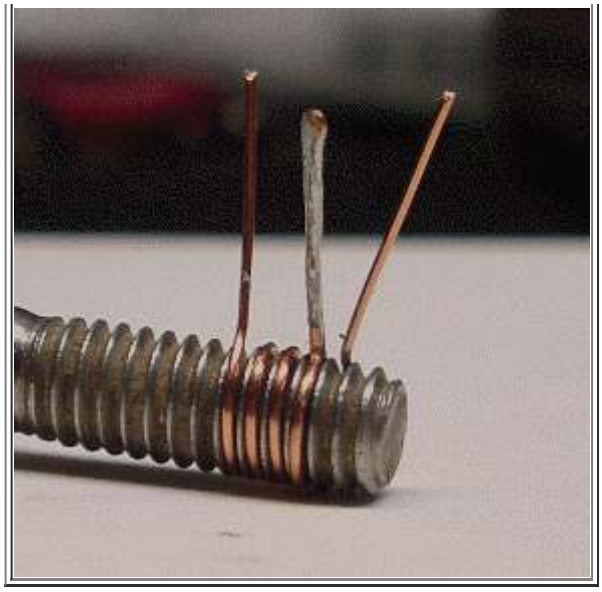
The shorter wire will be wrapped 1 complete turn around the bolt. The longer wire will be wrapped 3 complete times around the bolt. Count each revolution as '1', everytime you pass the tapped leg.



Once the proper wraps have been made (a total of 4), you may now bend each wire at a 90 degree angle. These two 90 degree bends will form the 'two outer legs' of the coil. Look at the picture below for a representation of the two bends.



Next, cut both wires to the same distance as the center (tapped) leg. It should be right around at 1/2 of an inch.



Now back out (unscrew) the coil from the bolt. overall height of the coil should be right at 7/8 of an inch, from the bottom of the legs to the top of the coil itself. For verification that you made the required 4 turns on the coil, by looking directly overhead at the coil...there should only be 4 turns of wire.

The picture above shows how the tapped leg need to be bent out, in relation to the two outside legs. This is need for proper placement on the transmitter projects. But do not bend the tapped leg as shown in the above picture, if you are going to use this for the Radio Shack Special. All legs should be pointing downward.

And there you have it my friend. Now go back to your project's webpage, and make your single layer 'tapped' air core coil to the proper turns/tap that is needed.

This concludes the construction plans of my single layer 'tapped' air-core coil. Should there be any concern or questions regarding this document, please do not hesitate to send me a letter. I will be happy to help out, should you need it.

and let the project continue...

...your friend, Patrick

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