

NEW IDEAS

Simple Tesla coil

I'M SURE THAT MANY READERS FOUND the article on the recreation of Tesla's original experiments by Robert Golka (see **Radio-Electronics**, February 1981 issue) very interesting. I know that I did, especially since I built a small version of a Tesla coil not too long ago (although I'm only age 14). I'd like to share the details with you.

There is one important thing to keep in mind before we even begin: The Tesla coil described here can generate 25,000 volts so, even though the output current is low, **be very careful!**

The main component of the Tesla-coil circuit is a flyback transformer. You can get one from a discarded TV.

The first thing you must do is to get rid of any excess wire or other debris that's on the transformer's core, as shown in Fig. 1. Leave the high-voltage winding alone; but if there is a capacitor at the end, it should be removed.

After that, you can start winding a new primary coil. Begin by winding 5 turns of No. 18 wire on the core. Then

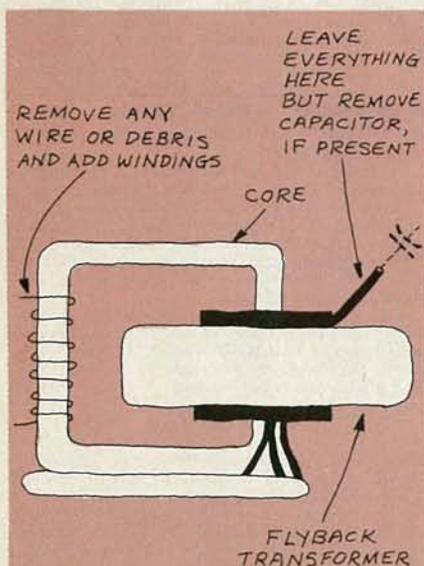


FIG. 1

twist a loop in the wire and finish by winding five more turns. Wrap with electrical tape, but leave the loop exposed.

A four-turn winding has to be wound over the ten-turn winding that you've just finished. That is done the same way. First wind two turns of No. 18

wire, then make a loop, and finish up by winding two more turns. Again, wrap the new winding with electrical tape, leaving the loop exposed.

When the windings are finished, the two loops shouldn't be more than ¼-inch apart (but take care that they do not touch). Connect a 240-ohm resistor between the two loops. The modified transformer now should look like the one shown in Fig. 2.

Connect the transformer as shown in Fig. 3. The 27-ohm resistor and the two transistors should be mounted on a heat sink and *must be insulated from it*.

The output of the high-voltage wind-

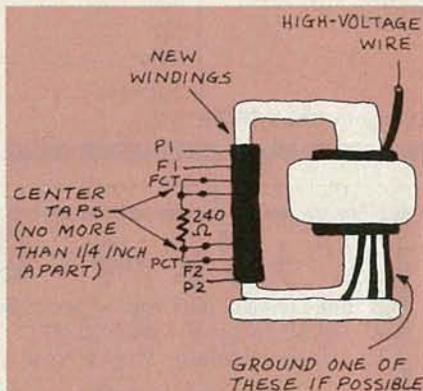


FIG. 2

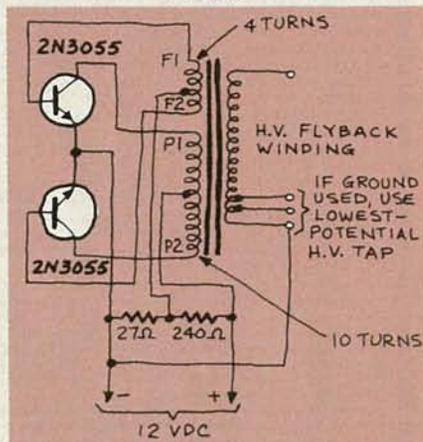


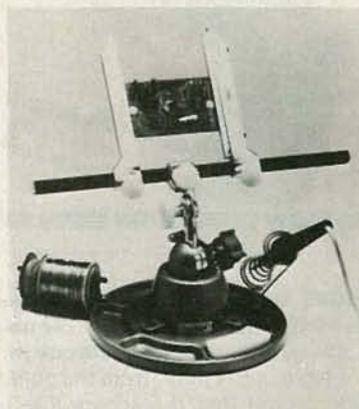
FIG. 3

ing should begin to oscillate as soon as the circuit is connected to a 12-volt DC power supply. If it does not, reverse the connections to the base leads of the transistors. In normal operation, you should be able to draw 1-inch sparks from the high-voltage lead using an **insulated** screwdriver.—Eric Wold

NEW IDEAS

This column is devoted to new ideas, circuits, device applications, construction techniques, helpful hints, etc.

All published entries, upon publication, will earn \$25. In addition, Panavise will donate their model 324 Electronic Work Center, having a value of \$49.95. It combines their circuit-board holder, tray base mount, and solder station (see photo below). Selections will be made at the sole discretion of the editorial staff of **Radio-Electronics**.



I agree to the above terms, and grant **Radio-Electronics** Magazine the right to publish my idea and to subsequently republish my idea in collections or compilations of reprints of similar articles. I declare that the attached idea is my own original material and that its publication does not violate any other copyright. I also declare that this material had not been previously published.

Title of Idea

Signature

Print Name

Date

Street

City

State

ZIP

Mail your idea along with this coupon to: **New Ideas Radio-Electronics**, 200 Park Ave. South, New York, NY 10003