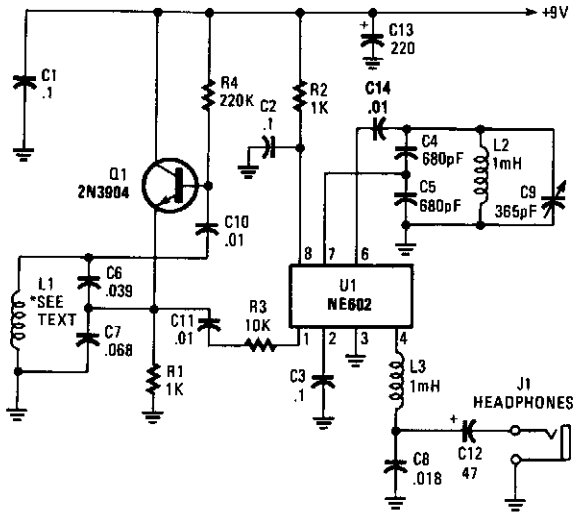
METAL DETECTOR

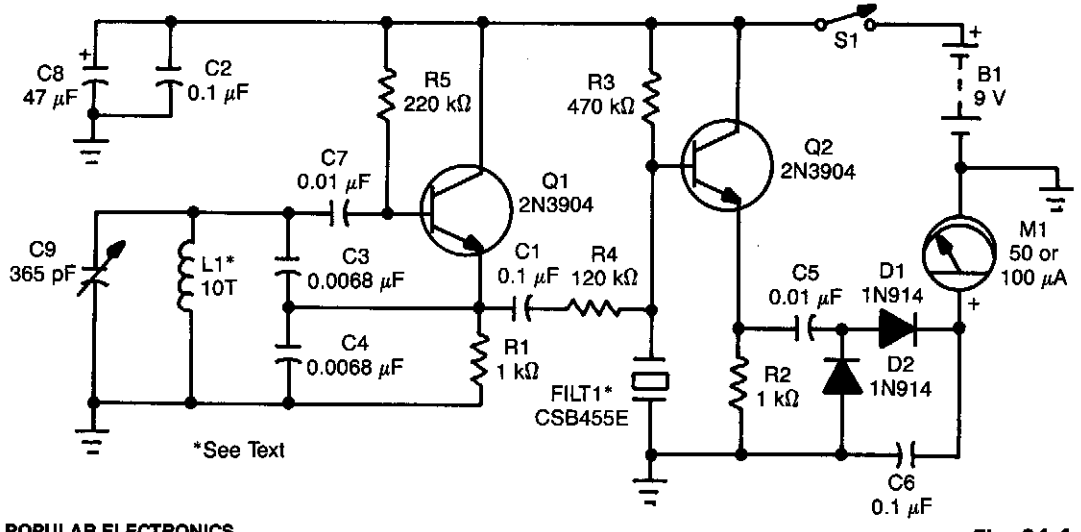


POPULAR ELECTRONICS

Fig. 24-3

An NE602 acts as a heterodyne detector and Q1 as a sense oscillator. When L1 is brought near metal, it causes a charge in loop inductance, shifting the resonant frequency of L1 C6/C7. L1 is 5 turns #20 wire on a 9" diameter wood or plastic form.

METAL DETECTOR



POPULAR ELECTRONICS

Fig. 24-4

Using an oscillator running at 455 kHz, the metal-detector circuit produces an indication on the meter M1. When the oscillator frequency changes because of metal in the field of L1, the change will show as an increase or decrease in frequency, which produces a charge in the meter reading. The ceramic filter FILT1 produces a selective bandpass that yields this effect. L1 can be a 4" diameter coil wound on a suitable plastic form. About 10 turns of #26 wire are required. Use a frequency counter to adjust L1 and verify that Q1 is operating on or near 455 kHz.