

Both young and old radio buffs usually start out with a crystal set . . .

OATMEAL BOX CRYSTAL

Fig. 1

Sliding contacts made from brass and steel.

6-32 x 1/4-in. flat-head brass machine screw, soldered to top of slider

Knob made from 1/2-in. wood dowel, and painted black

7/32-in. OD square brass tube or rod of the required length (see text)

SLIDER

1-in. length of 1/4-in. OD square brass tube that fits over rod

1/4-in. wide brass or steel band, bent as shown, and soldered to underside of slider

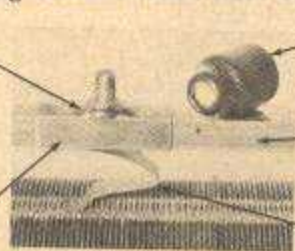
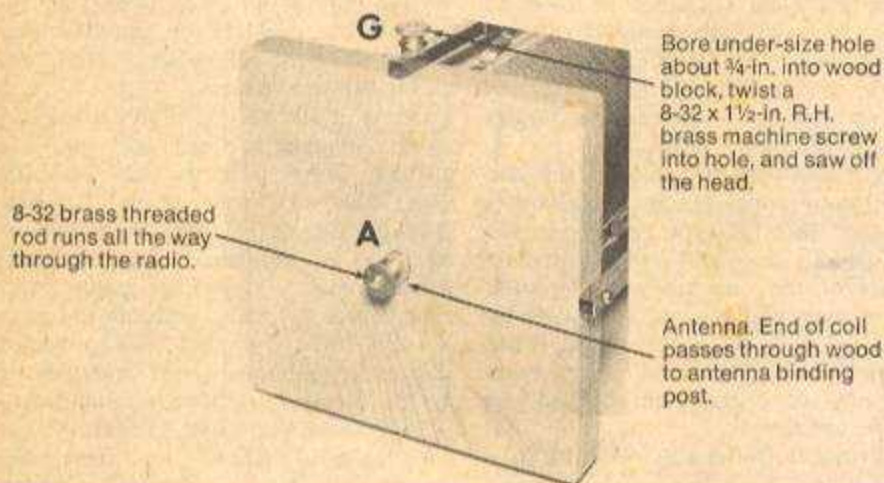


Fig. 2 Antenna and ground end of the Quaker Oats radio.



ASK JUST about any radio old-timer, including this writer, and he will probably tell you that his first radio was a home-brew slide tuning coil wound on an oatmeal box, a cat whisker and galena crystal detector, and a pair of earphones. This picture shows how to make such a radio, and it looks much like the writer's first radio built not long after World War I.

First, make the coil. Remove the two end covers from an 18-ounce, round Quaker Oats box, and cut the tube to a length of about 6 1/2-in. Give the tube a coat of shellac inside and out to moisture-proof it.

The writer used #21 single-cotton-covered enamelled copper magnet wire, and after the coil was wound the cotton was colored green by painting it with India ink to make it look like the old-time green silk-covered wire which is no longer being made. If you prefer, use #20 or #21 enamelled or nylon-coated copper magnet wire, and one pound should easily do it.

Get Going. Punch two small holes through the tube at each end, about 1/2-in. from the ends, to anchor the ends of your coil. To do a tight, smooth and neat job of winding the coil, tie the end

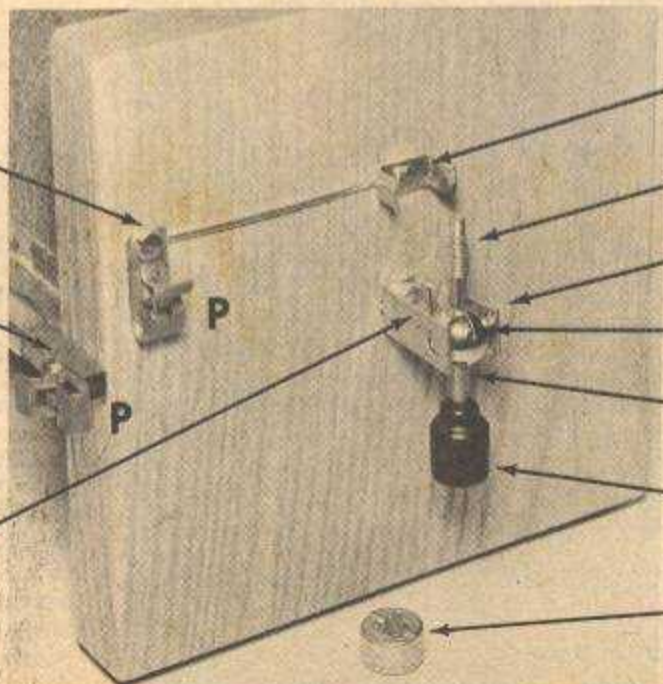
Fig. 3

Crystal detector end of the Quaker Oats radio.

1/2-in. long flat-head wood screw holds medium-size fahnestock clip

3/4-in. long R.H. wood screw holds rod and medium size fahnestock clip to wood block. This clip is for phones

U-bracket is held by threaded rod and hex nut. (A length of 8-32 threaded brass rod passes all the way through the radio)



1/2-in. long flat-head wood screw

Cat whisker

U bracket

Ball

Sliding rod

Knob

Mounted galena crystal fits into above crystal clamp

if your "taste" dates to earlier days, try—

RADIO

by Art Trauffer

of the wire to some object outdoors where there is plenty of room, and unwind a couple hundred feet of wire, and pull the wire tight to stretch out any bends in the wire. Cut off the wire and anchor the end in the two small holes near one end of the tube, and dab a bit of cement to hold it fast. Now wind the coil by turning the tube slowly while you walk towards the tied end of the wire, and when the tube is full of wire cut off the wire and anchor the end in the two holes at the other end of the tube and put on a dab of cement. This trick will give you a neat professional-looking coil.

As shown in the photos, the two wood end blocks for the coil measure 5 x 5 x 3/4-in. and are sanded smooth, stained, and varnished. The writer's first project used oak.

Bore a 3/16-in. hole through the exact center of each wood block; these are for the length of 8-32 threaded brass rod that passes through the coil and holds the wood end blocks. One end of the threaded rod holds the U-bracket of the crystal detector (Fig. 3), and the other end of the rod serves as the antenna binding post (Fig. 2).

Note in Fig. 2 that the end of the coil nearest to the antenna binding post passes through a small hole in the wood block and is clamped between the two washers of the antenna binding post; this automatically connects the coil end to the U-bracket of the crystal detector also.

Figs. 2 & 3 give details for mounting the slide rods, the earphone Fahnestock clips, the ground binding post, and the clamp that holds the galena crystal. The simple hook-up is shown in Fig. 4. Fig. 1 gives all details for making the two sliders that will contact the coil.

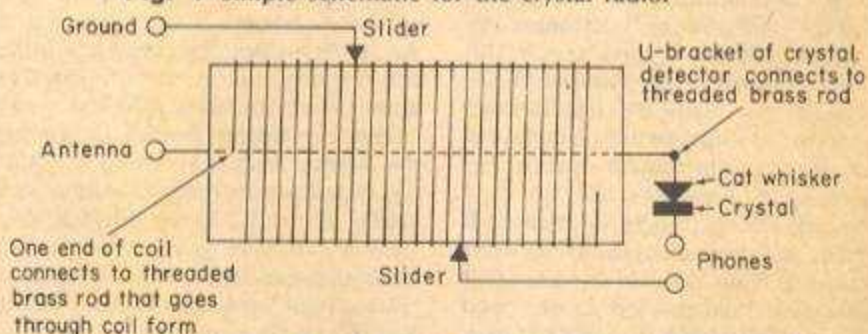
Contact. Perhaps the hardest job of all is to do a neat job of removing the insulation from the coil when making the two bare wire paths for the sliders. Use fine sandpaper and be careful not to sand off too much of the copper. When you are through brush away any fine copper dust between the turns of the wire. You will get a neater job if you use enamelled wire instead of cotton-covered wire.

For best results with this crystal radio, use a long antenna, a cold water pipe ground, a sensitive galena crystal, and a sensitive high-impedance pair of magnetic earphones.

Your basic materials may be the same, but the bucks required to buy them have certainly bounced upward from bygone days! It cost the editor 49¢ for this box which had four different prices on the top ranging from 49¢ up to 55¢.



Fig. 4 Simple schematic for the crystal radio.



BILL OF MATERIALS FOR QUAKER OATS BOX CRYSTAL RADIO

- 1 round Quaker Oats box (18 oz.)
- 1 lb. #20 copper magnet wire, for winding coil (see text)
- 2 pieces 5-in. x 5-in. x 3/4-in. oak, walnut, or mahogany (for coil end blocks)
- 1 foot of 8-32 threaded brass rod (to pass through coil form)
- 1 8-32 brass hex nut (holds crystal detector U-bracket to wood block)
- 2 12-in. lengths 7/32 OD square brass tubing or solid rod (for slider tracks)
- 3 3/4-in.-long round-head wood screws (hold brass rods to wood blocks)
- 1 8-32 x 1 1/2-in. round-head brass machine screw, with hex nut and ornamental thumb nut to fit (for ground binding post)
- 3 inches of square brass tubing to fit snugly over slider rods (for making the two sliders)
- 2 6-32 x 1/4-in. flat-head brass machine screws (to hold knobs to top of sliders)

- 3 inches 1/2-in.-wide brass band (for slider)
- 4 inches of 1/4-in.-wide brass band (for making slider contact blades)
- 2 medium-size fahnestock clips (for phones binding posts)
- 1 1/2-in. long flat-head wood screw (holds one fahnestock clip to wood block)
- 1 unmounted crystal detector stand (K/D Stand 9-14, Modern Radio Labs.)
- 1 mounted galena crystal for above detector stand (9-1 MRL Steel Galena, Modern Radio Labs., P.O. Box 1477, Garden Grove, CA 92642)
- 1 1/2-in. long flat-head wood screw (holds crystal clamp to wood block)

Note: Those who do not have near-by hobby shops or large hardware stores can get most of the above hardware from MRL, P.O. Box 1477, Garden Grove, CA 92642. Send them 25¢ for a copy of their catalog.

