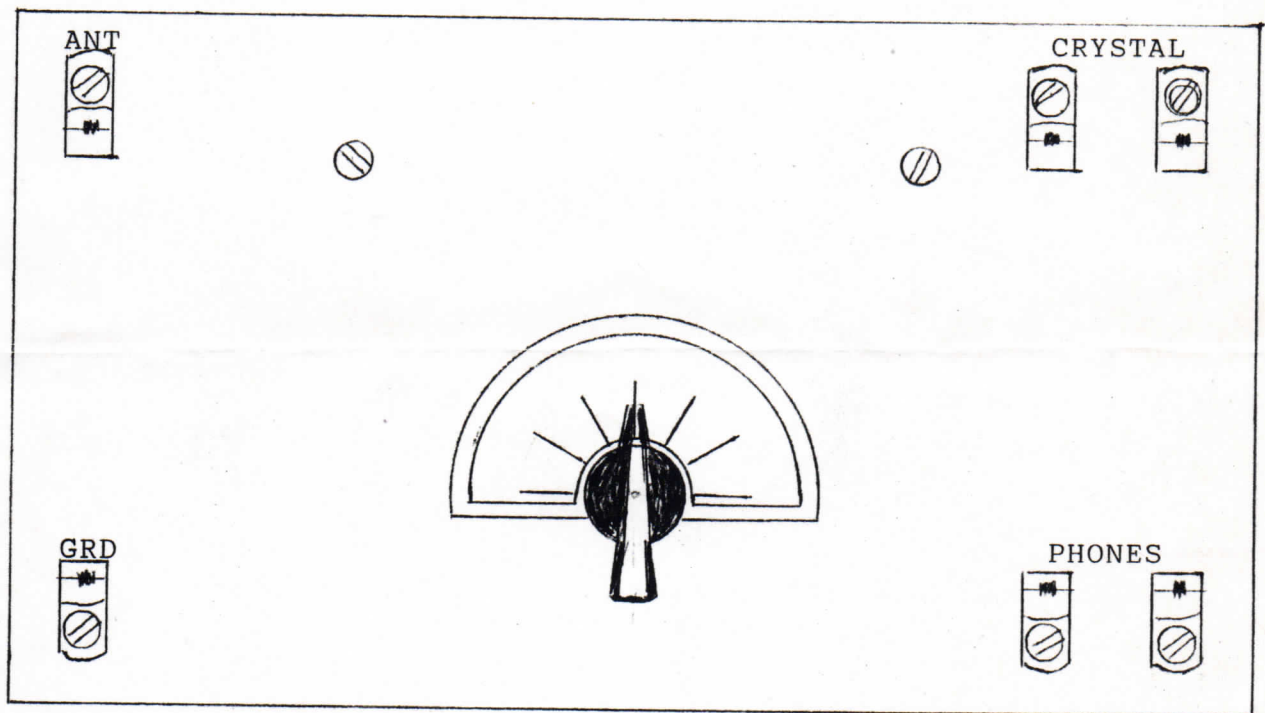
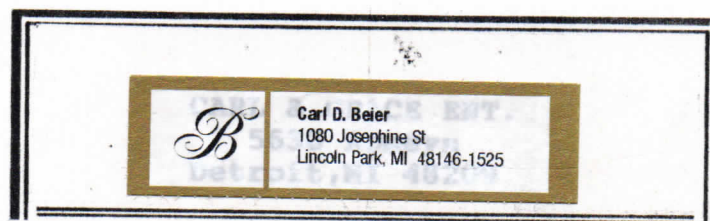


Construction Manual



CRYSTAL RADIO SET KIT.
model no. 2



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INTRODUCTION

Welcome to the hobby of building crystal radio sets. The crystal set is still the simplest type of radio receiver. A catwhisker touching a sensitive spot on a piece of galena or silicon mineral crystal and a tuning coil, form the basic parts of this radio. Radio signals from a nearby station are picked up via antenna and ground connections to the crystal set. The galena or silicon crystal detects the signals and the resultant audio is heard with headphones. No battery or electrical power is required.

GETTING STARTED

You will need a screwdriver, a pair of long-nosed pliers, a wire cutters, some rosin core solder and a soldering iron.

STEP ONE: PARTS LIST

Unpack the kit carefully and check the contents against the parts list.

- 1 365pf variable capacitors
- 1 2in. X 5in. tube coil
- 6 Fahnestock clips
- 6 #6 soldering lugs
- 3 #6 X 1/2 pan head screws
- 6 6/32 X 3/8 machine screws
- 6 6/32 nuts
- 6 #6 washers
- 1 6/32 X 1/4 flat head scr.
- 2 4/40 X 3/4 machine screws
- 2 4/40 nuts
- 4 #4 washers
- 2 nylon spacers

- 4 bumpers
- 1 pointer knob
- 1 ear phone
- 1 IN34A crystal diode
- 1 phone tag
- 1 ant. tag
- 1 grd. tag
- 1 crystal tag
- 1 4in. length of hookup wire
- 1 pre-drilled face panel
- 1 base board
- 1 red paper dial

STEP TWO: PANEL AND BASE

Assemble pre-drilled face panel and base board with three #6 X 1/2 pan head screws. After it is assembled, you can paint it the color of your choice. (I painted mine wrinkle black) After the paint has dried, go to step three.

STEP THREE: ASSEMBLING

We will now begin to assemble all the parts to the panel and base. First mount the 365pf variable capacitor, using the 6/32 X 1/4 flat head machine screw as in fig no.2. Next mount the fahnestock clips and soldering lugs for the antenna, ground, phones, & crystal as in fig no.2. We will next mount our coil. Care must be taken to mount the coil exactly as shown in fig no. 2&3.

STEP FOUR: WIREING & SOLDERING

The wireing of this set is fairly straight forward. See fig no.3 for back view of the wired set. You will probably find the wires from the coil a little longer then you need. You can cut them shorter, but

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take care you don't cut them to short. Keep the two wires from the primary section of the coil a little long as this winding has to move back and forth on the coil tube. This Primary winding should slide easily on the coil form. When this crystal set is finished, you can set the selectivity by moving this winding. A close setting makes it tune broad and loud, further away not as loud but much sharper. One quarter of an inch in the city is about right for most antennas, etc. In the country, you can put it much closer. When you find the right setting you can tape it down.

If you have not had any experience with soldering before, some rules should be of help.

It should be a good electrical and solid mechanical connection.

The surface of the wires or contacts to be soldered must be clean and free from dirt, grease and insulation.

After making a good mechanical connection, apply the soldering iron until all the parts of the joint are hot enough to melt the solder; then follow with the solder. After the solder melts and flows, remove the iron. Don't wiggle it until set. A correctly soldered joint will be bright and shiny. A poorly soldered joint will be dull or frosty.

DON'T FORGET:

The enamel on the ends of the coil wires to be soldered, has to be removed. You can scrape it off with a sharp knife. You need a clean wire to make a good soldered connection.

STEP FIVE: FINAL ASSEMBLE

We will finish our assembly by lightly glueing the red dial to the face panel. Next we will mount the pointer knob, and the ant. & grd. & crystal, and phone decals. Also don't forget the bumpers.

STEP SIX: ANT. & GRD.

A crystal radio works well only if you have a good antenna to trap the radio waves. The farther you live from a radio station, the better the antenna must be.

Run a 100-foot or longer wire (14 to 18ga) around the room or down the hallway. The best antenna is one that is long, high up, and outside.

The ground can be any piece of metal that eventually leads to the earth. A water pipe or radiator will make a good grd.

STEP SEVEN: OPERATING RADIO

After hooking up your ant. & grd, the next thing is to hook up your semiconductor diode. Attach the two leads of the diode, to the two fahnestock clips.

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A crystal detector of radio waves can be either a traditional catwhisker and natural mineral crystal or a modern semiconductor diode, like the one we have supplied.

Next hook up the 2000 ohms earphones.

You can get even better listening pleasure, by picking up a pair of headphones. The 2000 ohms headphones can be obtained from me, or at some electronic parts, mail order houses.

Remember that a crystal radio will not be as loud or get as many stations as a regular radio.

Thats it, the assembly is complete and you are ready to make the radio work. Choose a good location and try to identify the different stations you can pick up. Crystal radios are peculiar devises, sometimes you may pick up very distant stations or even broadcasts in a foreign language from overseas.

GOOD LUCK!

Primary winding

Secondary winding

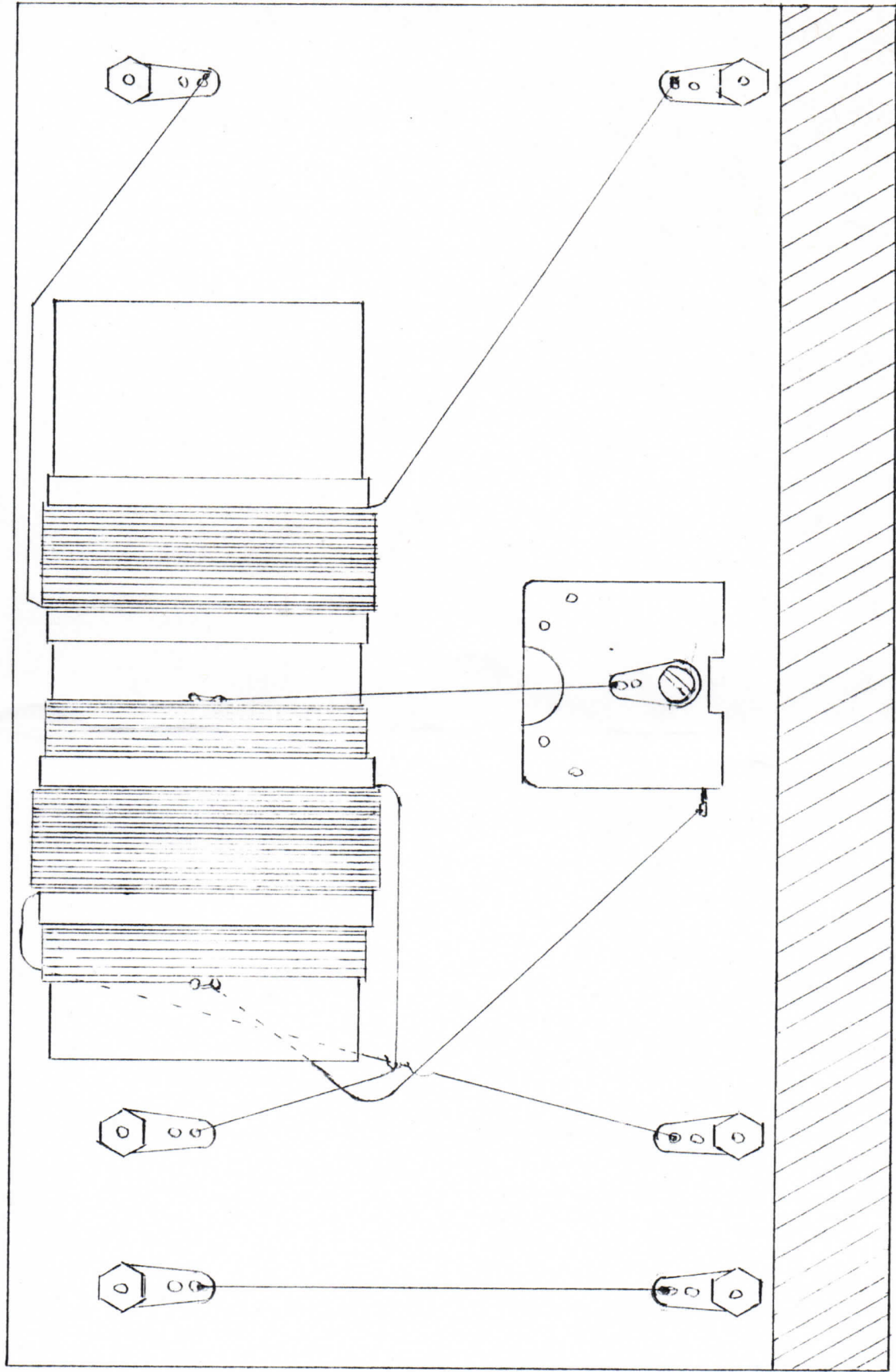


Figure no. 3