

REPLIES IN BRIEF.

K.D. (Paekakariki).—You do not say whether your set will oscillate or not, consequently we are at a loss to define your trouble. Try varying the condenser to the grid of the valve. See also replies to other correspondents that have been answered through these and the construction columns. If the set is correctly constructed, the rheostat will cut off all current passing through the valve.

Success With Variometer Crystal Set.

I HAVE made the "variometer crystal set" (Vol. II, p. 26), I saw in last week's "Radio Record," and I can say that it is the loudest and best crystal set I have ever made. I left the celluloid out. What is the advantage of it? I also made a wooden frame for the stator, which I think is better.—**DONALD CIMINO (Blenheim).**

ANSWER.—The celluloid is used to support the coils, but other methods may be employed. The use of a wooden frame should be quite OK, providing the wood is properly dry. A coating of shellac would lessen the risk of a short across the wood.

Squawking in 'Phones.

I HAVE just made a one-valve receiver, and notice that when I tune the variable condenser round to certain spots, I receive loud "squawking" noises. Could you please supply me with information as to what this might be?—**K.D. (Paekakariki).**

ANSWER.—Evidently there are too many returns on the tickler coil. Try a reduction in number.

A Greasy Crystal.

A COVERING of grease will soon dampen the signals passing through a crystal. The thinnest covering of dust or grease is quite sufficient to prevent the received currents from flowing through a crystal. There are always thousands of dust particles flying about a room—even a clean, tidy room—and these may in time accumulate in sufficient numbers to cause the mischief. Also when adjusting the contact point on a crystal, or when taking it out of its socket to replace it by another, one usually transfers a minute quantity of grease to it. Everyone's hands are slightly greasy, and if they are constantly touching a crystal the latter will soon get greasy, too. It is a good plan to keep a small camel hair brush by you to dust the crystal periodically. Also, cover it up when it is not in use. A small cardboard box will serve the purpose quite well. To remove grease from a crystal wipe it gently with a soft, dry cloth. If you wipe it too vigorously small invisible particles of this cloth may adhere to it, thus providing another source of trouble.

"Dud" Crystals.

DON'T throw your old and seemingly "dud" crystals away. They can be utilised by grinding them up into a coarse powder, mixing them with a quarter of their bulk of litharge and adding a small sprinkling of fine, clean iron filings. Mix the components of the mixture together very thoroughly and then make it into a paste with water containing five drops of pure acetic acid to every ounce. Spread the crystal paste on the surface of small copper or brass discs, and allow them three days to dry. The crystal discs will afford great rectification if they have been so prepared.

Choice of Wire For Coil.

IN making up a set the constructor usually follows the specifications given, but in some cases this is not possible or convenient. It may be that he has on hand an amount of wire a couple of gauges finer or coarser than that specified, which he desires to use. Constructors should bear in mind that a point or two is not going to

READERS in difficulty, or who feel they are not getting the best from their crystal should send in their difficulties. They will be discussed in the Corner, that is providing they are not too particular to one case, when they will be replied to by post. If an owner has found a circuit he considers superior to the usual, send it in and if worth publishing it will be passed on to others. Remember, address all inquiries "Technical Editor," and mark the letters "Crystal Corner."

make much difference where a simple coil like that in the crystal set is to be employed. Generally speaking, 20, 22 and 24 gauge give the best results, and if the specifications say 20 gauge the constructor will not go far astray if he uses 22, though a few less turns will be required for the finer wire.

Likewise the number of turns; don't be concerned if the wire runs out, say, ten turns short of the number given, especially if tuning with a slider. If a condenser is used the tuning system is different, and the number given should be more nearly approached. If on tuning-in it is found that the slider brings in the loudest signals when it is at the end of the coil, a few more turns should be added. A soldered joint, provided it is a good one, will suffice to add a further length of wire.

If, when tuning with a condenser, the loudest point is at 100, add a few turns to the coil, but if the loudest reading is at 0 a few should be removed.

Choosing a Crystal Set.

WHEN an amateur wishes to enter the ranks of the wireless enthusiasts in the orthodox manner he sets about constructing for himself a simple set, usually a modest crystal. In setting about his first attempt the constructor usually procures a diagram from a journal and sets about copying it slavishly.

In the greatest number of cases the would-be listener sets about selecting a circuit that will bring in other stations. He has heard some of his friends say that the bringing in of stations other than the local is no difficult feat; he may even have read in the "Re-

cord" where an owner of a crystal was able to log several stations "on good 'phone strength." He therefore sets about constructing that set which is the most selective and that for which the greatest number of distant stations are claimed. He is usually disappointed, as was the writer when he found that he could not get beyond the local.

The fact is that a crystal owner who is fully expecting to get beyond the local is expecting too much from his set. Even with the addition of an audio stage it is difficult to pass the local station.

Bearing this in mind it is wise in selecting your circuit to aim for volume more than selectivity, although in some of the YA centres where there is a good B class station, selectivity would be an advantage, though a crystal would have to be very selective to cut out say 3YA and bring in 3ZC.

Applying these principles to the actual choice of the circuit it will be apparent that a circuit using a single solenoid coil is to be preferred to the types of loose coupled circuits. The permanent crystal or the semi-permanent are to be preferred to the cat's whisker, while the use of a condenser is hardly necessary, an efficient slider being almost as effective, sufficiently so for the average amateur.

Request for an Amplifier Circuit.

I WOULD like to know if you would supply me with a circuit for a one-valve amplifier. I have Galena's and Pentode's circuits, but would like to consider a few before I decide on which I will construct.—**C.R. (Newtown.)**

This correspondent has suggested a topic for the "Corner" which, it is believed, will interest a great number of crystal-owners—that is, the subject of amplifiers.

Comes a time when the owner of the crystal wishes to hear from the loudspeaker, and naturally he considers the means and ways this may be accomplished. The first step is to try and put the output of the crystal direct onto the speaker. Unless he is extremely fortunate, and lives under the shadow of a powerful broadcasting station, this will be an impossibility. The output of the crystal is that collected from the air, and is in no wise amplified. The crystal is incapable of amplification, it is purely and simply a detector as has already been explained in the "Corner."

Beginners will always look through all the new circuits to find a super-powerful one that can work the loudspeaker. In essence there is very little difference between the styles of circuits. The essentials are an inductance with a tuning arrangement to tune the aerial to the incoming waves, and a crystal to tune these waves down from rapid inaudible currents to slower audio currents, and a pair of telephones to translate the electric currents into movements of the ether which are perceptible to the ear.

Theoretically, there is only one circuit, the aerial coming into the coil passing through this resistance to earth, and setting up currents through the crystal which pass it on to the 'phones in a condition ready to be translated into soundwaves. The theoretical circuit is shown in diagram one. This has already been explained, and further explanation would be unnecessary reiteration.

THIS series of notes will be continued in the next issue.

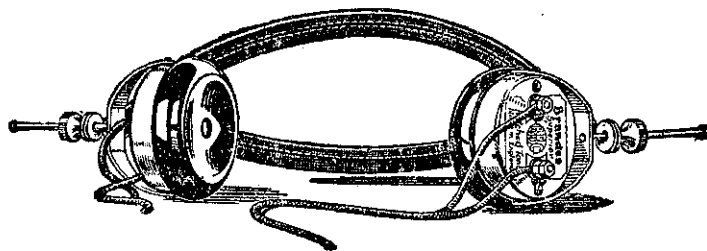
IN order to control volume by means of a potentiometer it is essential to use a high-resistance potentiometer of approximately the same ohmage as a grid leak. (The old-fashioned potentiometer as used for H.F. damping has a resistance of about 400 ohms, and is quite useless for volume control.)

Our Crystal Corner

By "Galena"

Brandes

The Name to know in Radio



Made in England
Price 15/-

OBTAINABLE FROM ALL RADIO DEALERS or
INTERNATIONAL RADIO Co. Ltd., Ford Bldgs., Wellington