"J.F.W." (Taumarunui) wishes to purchase an all-electric chassis fitted with gramophone jacks, and wishes to use it in combination with a gramophone pick-up. If he uses it connected permanently, and places a switch in the grid side, will this be all right?

A.: Yes, but it really does not matter in which side you have the switch.

"F.J." (Okatu) asks how he might use his battery charger in place of the "A" battery.

A.: You will require an audio frequency smoothing choke. This can be made from directions given in the "Radio Listeners' Guide," or it can be obtained at least from Ferranti's. Then you will need a 2000 mfd. electrolytic condenser. The smoothing choke is connected in series with one of the leads from the charger, and the smoothing choke is connected between this and the other terminal of the charger. The condenser is connected on the charger side of the choke. No transformer other than that embodied in the charger is necessary. The positive on the charger will be negative when it is used as a battery eliminator.

"L.R.S." (Invercargill) is not clear about the batteries to be used with the two-valve Browning-Drake, and he wants further particulars about winding the primary coil.

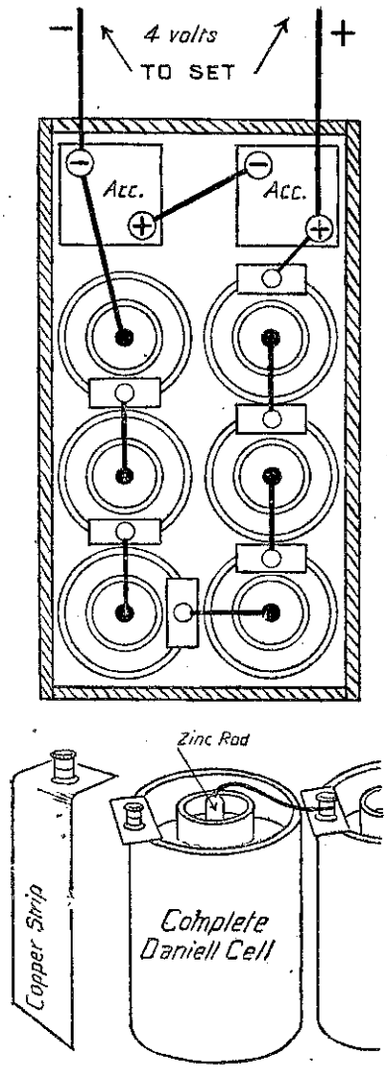
A.: We think the new "Radio Listeners' Guide" will clear up all your difficulties in this respect. There are three sets of batteries, the "A," the "B," and the "C." The "A" should be an accumulator, the plus is connected directly to the set, and the minus to the minus of the "B" battery to the plus of the "C" battery. One wire from these three connections is taken to the set, and is the common minus lead or earth connection. The highest B+ voltage goes to the radio valves, and 45 volts or even less, goes to the speaker. This is the detector voltage, for you have no audio if you are using the true Browning-Drake Two, that is, a radio and a detector stage. The primary coil is wound on a separate piece of former. It may be a ½-inch narrow strip of the ordinary former, with a section cut out so that it becomes smaller when the size of the cuts are drawn together. If now a sharp pocket-knife is run round this, and a group cut out, fine wire can be wound in this groove, and it will not project above the surface of the strip. About 15 turns are wound on, and the ends threaded through small holes in the former to hold them tightly. This is now slipped inside the main former, and it can be held in position by any convenient method. Stamp paper is quite effective, but there should be very little difference in diameter between the inside of the secondary coil and the outside of the narrow strip.

"G.L.E." (Wellington) asks how he might improve reception from 2YA.

A.: The set, although it has two valves, is really only a one-valve, as one is a rectifier. Add another stage as we have indicated in the sketch forwarded to you.

"C.M." (Te Kuiti) asks for fuller details of the battery charger described in our article by "Hard-Up."

A.: The charger consists of eight Daniell cells in series. A Daniell cell comprises a glass jar, a porous pot, a zinc and a copper rod, a saturated solution of blue-stone and a solution of epsom salts or sulphuric acid. The former, which is less corrosive on the zinc, was described fully in the article. Place the porous pot within the jar, mix up the blue-stone solution until no more will dissolve, and pour this round, but not in, the pot. Now mix up the epsom salts solution and empty this into the porous pot. Fill them as nearly as possible to cover their respective rods. The copper rod (positive) rests in the blue-stone solution and the zinc rod in the porous pot. Connect eight of these in series, and the resultant voltage should be about 8.5 or slightly more. By connecting in series, one negative rod is connected to the neighbouring positive and the positive of the battery so built up, is connected to the negative of the accumulator. This primary battery will need attention regularly. Fresh blue-stone must be added almost every week. The copper strips, which should be as heavy as possible, should be scraped often. The zinc will in time be eaten away. The system, however, works well.



A 4-volt. Daniell cell charger with two small accumulators in series.

"ZEDDER" (Masterton) asks where he might obtain a syllabus of the qualifications for the A.M.I.R.E. examinations, and where there is any college offering instructions in these subjects.

A.: There is no examination, but a candidate seeking admission to the institute must have served a certain portion of his time in radio professionally, he must have operated a station and be nominated as being proficient in wireless theory and practice by six well-known people connected with radio. The course given by Johnson's Wireless School, Wellington, would adequately cover the ground from the theoretical aspect.

"F.H.W." (Taihape) in whose set there is a noise the origin of which he cannot locate, finds that when he removes the aerial the noise still continues. Replacing a 4 megohm grid leak by a 3, made a slight reduction in the noise level.

A.: Was the grid leak replaced a new one? If not, it seems that the trouble is emanating from a defective grid leak, and this is probably the most common cause of noise within a set. We suggested several other courses you might adopt last time. Have you tried these out, and have they been successful?

2. Can I replace the 201A valve in my set with the new 221 valves without interefering with the resistances?

A.: Yes, although the resistances are designed to drop the voltage from 6 to 5 when ¼ amp. valves are used; there is very little drop when only .06 amp. is passing, and this can be neglected.

3. Is the 221 valve as light on "B" current as the 201A valve?

A.: If anything, it is lighter.

"H.G.C." (Wellington) wants to know where he can obtain particulars of a short-wave adaptor.

A.: The 1929 Radio Listeners Guide contains an excellent one, but omit the 1mfd. by-pass condenser.

"F.C." (Bay of Islands) wants to improve daylight reception and wants to know if he can use a UX245 valve for this purpose.

A.: We are afraid you cannot. The UX245 is in reality an A.C. valve. It requires a heavy filament current which would ruin your accumulator in very little time. Furthermore, you have not the requisite "B" voltage, and if you had you would probably be disappointed if you wished to strengthen your reception. Although this valve has greater amplification than most super-power valves, yet its main func-