

Introducing an Eliminator.

A COMPLAINT was recently made by an owner who had replaced his batteries by an eliminator, and since this, his "A" battery was found to run down very rapidly. He had to charge it up every night to keep it at full strength. On disconnecting the "A" +, which was connected to "B"—of the eliminator, a flash was seen, even though the filaments of the valves were shut off. This indicated a short-circuit—but where? The circuit was searched, but leakage was not found. On connecting the "B"—to "A"—the trouble ceased, the battery held its charge, and the spark could no longer be seen.

The explanation is that the negative of the eliminator was connected internally to the case which was in turn connected to the ground. Thus the positive potential of the "A" battery was connected to earth, and as the "A"—was earthed as is the usual practice, a short circuit was taking place through the earth.

The experience is an indication to others. Connect "A"—to "B"—and not "A"—to "B"—, although this latter may be stipulated by the set-maker—that stipulation referring to battery operated sets.

reception is distorted. Eventually a point is reached when the set becomes quieter, oscillation ceases, and reception becomes clear. This seems just the opposite to what it ought to be.

A.: By starting at the last part of the quotation and working back it will be seen that the phenomenon is perfectly in order. No oscillation, and reception clear; a quiet breathing sound, reception becoming distorted, the rushing noise becoming more distinct, and then quietness again. All this time the plates are being turned from full out to full in, and this is the normal state of affairs.

Power for the Dynamic Cone.

"H.E.L." has asked if the speaker would work from a crystal and one-valve amplifier (441), but we are afraid it will not.

50 Henry Choke.

D.R.H. (Dunedin).—The specifications for a 50 Henry choke to use with a power pack would be 3000 turns of 34 wire and 1 sq. in. core of stalloy with 1-16in. gap.

A Corner for Beginners

Fitting a Fuse.

BURNT-OUT valves are most undesirable, but there are times when even the most careful will cause a short circuit, resulting in the "B" voltage being placed across the filaments. This can be minimised by the introduction of a low consumption torch bulb, which may be used to act as a fuse, for it will blow out before enough current flows to fuse the valves. Such a fuse should be connected between the "A"—and "B"—. If the set is examined, it will be found that these two are joined together by a short, straight wire, which should be broken and the fuse inserted in series.

Types of Condensers.

THE beginner will probably be at a loss to know the relative advantages of the different shaped condensers. Of these, there are three main types.

The first type, straight line capacity, consists of semi-circular plates with the pivot in the centre of the diameter, so that the amount of the plates interleaved is in direct relation to the condenser reading. Thus, if the reading is at 50 and the dial graduated to 100, exactly half the plates will be in and half out, whereas with a reading of 75 three-quarters will be in and one-quarter out.

The next type, the straight line wavelength (S.L.W.), is arranged with the pivot a little to one side of the centre point of the diameter, and the plates are not perfectly semi-circular, with the result that the dial reading does not represent the proportion of the plates between the meshes.

The last type is the line frequency (S.L.F.). The plates are even more unsymmetrical than the straight-line wavelength type. They are smaller at the larger end and taper more slowly, with the pivot very near the larger end.

The beginner may ask why these variations? Do they sharpen tuning? The difference between them lies in the distribution of stations over the condenser

dial. The two latter types were evolved to prevent jamming of stations on one-half of the dial, leaving the other half with a very few. The S.L.W. condenser is so arranged that if a graph is plotted, showing the relationship between the wavelength and the dial reading the result is a straight line, while the S.L.F. type will give a straight line when dial reading and frequencies are plotted.

Types of Reaction.

THE tendency nowadays is for reaction to be condenser controlled instead of by the moving coil. The difference between the two is interesting, for one is controlled by electro-static methods (the condenser control) and the other electro-magnetic.

The use of a moving coil for purposes of reaction has several disadvantages. With this type of reaction (which, by the way, is still widely used) energy from the plate circuit of a valve is fed back into the grid circuit by means of the

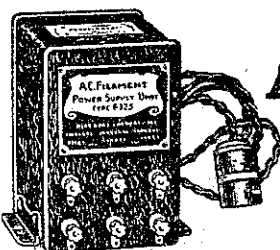
variably coupled coils. But any change in the coupling of the grid and plate coils results not only in a change of the volume of sound due to the feed-back, but also an alteration in the frequency to which the set is tuned, i.e., this form of reaction has a marked effect upon tuning.

Moreover, it is often a matter of difficulty to get the reaction just below the oscillation point, and such a set in the hands of an unskilled user is liable to be a nuisance, quite contrary to the user's intentions.

In capacity-controlled reaction the relative positions of the two coils are fixed and remain stationary, the variation being made by means of the amount of current passing through the variable condenser.

The capacity feed-back arrangement has the great advantage that it renders tuning very much simpler, for the reaction control affects only the volume of the reproduction and this for practical purposes, without effect upon the tuning, except on the very short waves.

If you charge your accumulator at home make sure that the charging board is situated in that mains lead which is earthed.



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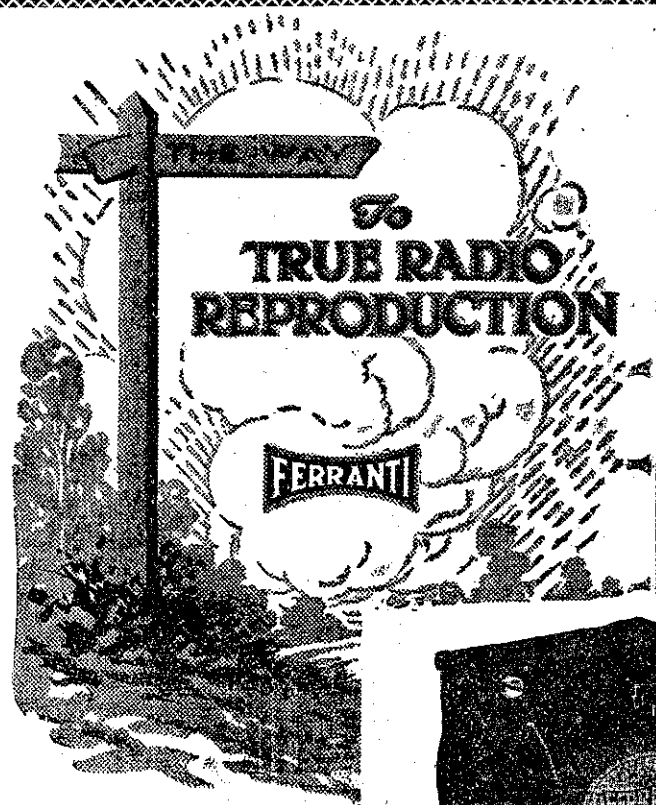
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