

voltage is higher or lower than the operating voltages, the resistance of the cell banks is very low, and these currents are by-passed. For this reason the voltage remains constant, and a smooth current is delivered from the charger. For sets of more than five valves dry batteries are not satisfactory. The accumulators used need be of only very small capacity, and for a 4-volt supply they would of course be of that voltage.

Low Inductance Chokes.

FILTER chokes for A supply must be specially designed for the current they have to carry, and as this current is many times that carried by a B eliminator choke, the wire must necessarily be of much heavier gauge. Such a choke cannot be of high inductance value if of convenient size, because of the heavy current which tends to cause saturation of the core, even when its cross-section is liberal, and turns of wire are kept to a minimum. By increasing the cross-section of the core, the inductance is proportionally increased, and this allows of a small (inversely as the square) reduction in the number of turns, still obtaining the same inductance. Not only on account of saturation, but to keep down the d.c. resistance of the choke, must the turns be limited, because when working from a battery charger the available volts will not give much surplus over the six volts required for working the receiver. On this account the d.c. resistance must on no account be more than three or four ohms, and may very well be less. One commercial choke is advertised as having an inductance of .1 henry and a d.c. resistance of .3 ohm. No smaller gauge than 20's s.w.g. enamelled wire should be used to carry 1½ to 2 amperes continuously. Of this wire, one pound has a resistance of only 2 ohms, and less than a pound would be required on a stalloy core 1½ inches square. If the core is nearing saturation its inductance value is automatically lowered, and in such a case the gaps may be slightly increased by trial, and although this lowers the inductance, is preferable to saturation.

A Matter for Consideration.

THERE is one point that must receive careful consideration by anyone adopting an A eliminator. Such a piece of apparatus usually has "bad regulation," which means that when the supply to one stage or stages of the receiver is reduced, there is an increase in supply by that amount available, and this at once divides itself between the filaments of the other valves. This points to a different method of volume control being adopted in receivers where the R.F. filaments are used for control. Otherwise there would be a tendency for the detector and audio valves to receive too great a filament voltage on the R.F. filaments being dimmed.

Dry Rectifiers.

THE Kuprox dry rectifier arranged for full-wave rectification forms a very suitable means of producing direct current from A.C. mains, but a transformer and smoothing arrangement are required just as when a valve rectifier is used. Dry rectifiers of any type should not be overloaded, and the manufacturers' statements of carrying capacity should be taken as liberal if a reasonably long life is desired for the unit.

In using any dry rectifier there is a point to be remembered. These recti-

Tips and Jottings.

Artesian Well Earth.

A CARTERTON constructor says:—"My earth is a pump bore 35ft. into sandstone. Needless to say it gives great results, and at between 5 o'clock and 7.30 my dials are a solid mass of Yankee stations. I have given up all hope of sorting them out." This is a good tip for any listener near an artesian well to connect an earth wire to the pipe and note the result.

Aeroplane Radio Generators.

IN answer to a query, aeroplanes usually derive current for their radio transmitter from a small dynamo fitted with a propeller, which is driven by the air when the plane is under way.

Thoroughly "Dud" Output Transformers.

AN American dealer gave a wholesale firm a trial order for two output transformers at a low price. When they arrived he attempted to measure the resistance and found that the coils would pass one ampere at 85 volts! The cover was torn off and revealed two short coils of resistance wire connected from "in" to "out" on each side, consequently the inductance was practically nil. A block of pig-iron was included to give weight.

Coil-Driven Loud-Speakers.

AN American journal says: "We have already mentioned the superior qualities of the Magnavox and Jensen speakers. We have recently seen a curve which we believe to be truthful—which shows a uniform response from below 35 cycles to above 6000 when a unit of this type is used with a rather large and awkward baffleboard. We do not believe it necessary to go down to 35 cycles for excellent quality—but it is comfortable to know your automobile can go 75 miles an hour even though you haven't the nerve to drive it at that rate.

The trend toward dynamic speakers is already evidenced in the interest shown on Cordtlandt Street, the cut-rate market of New York. Here are a half dozen imitations of the real thing, which the gullible radio public is buying as fast as it can. It is reported that several receiver manufacturers, whose names are well known, are interested in the dynamic speaker, and that several have already made arrangements for using it in 1929 models.

B Eliminators not Suited for Short-Wave Reception.

THE sensitiveness of the detector circuit of a short-wave receiver, which is invariably built on the "low-loss" plan, makes it extremely suscep-

tible to alternating current variations of any kind, so that the slightest trace of ripple in plate current is made apparent. Even with a B battery in use, there is often trouble through the aerial or lead-in picking up a.c. hum from power lines or house-wiring, and this trouble is naturally far more pronounced when there is direct connection, or nearly so, between the receiver and the mains, per medium of an eliminator. On short-wave reception, too, the slight variation in plate current caused by line fluctuation, makes it impossible to maintain critical adjustment.

Aluminium Quality.

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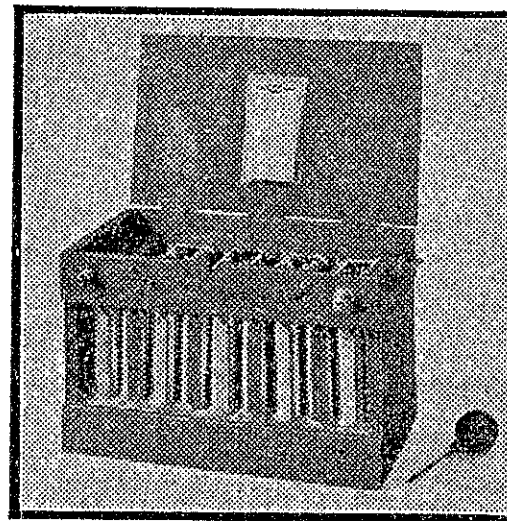
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