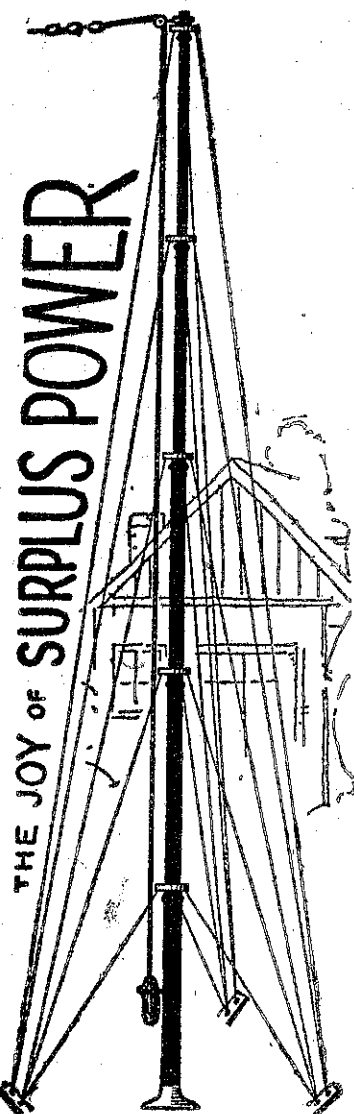


Notching Coil-Formers

ONE of the most popular types of low-loss coil former consists of two circular or hexagonal end-pieces joined together by means of six rods which serve to support the windings. In order to get the wire on neatly and with perfectly even spacing it is almost essential to notch the rods in some way, and one of the best methods of doing this is to put a screw thread on to them. If a thread with a suitable number of turns per inch is chosen, any gauge of wire can be wound on with the turns regularly spaced, and once the coil is finished the wire has no tendency to slip.



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Testing Grid Leaks

A Source of Interference

ALTHOUGH the average grid leak now sold is a thoroughly reliable little accessory, especially when purchased from one of the well-known makers with a reputation to maintain, there are occasionally cases where a noisy grid leak causes all kinds of trouble, frequently attributed to other sources, such as the "B" battery or accumulator. It is very easy to rig up an arrangement which will test whether your grid leak is noisy. All that is necessary is to connect a grid leak in series with the primary of an audio-frequency transformer and a couple of dry cells. The secondary of the transformer should be connected to a valve in the usual way, and preferably this valve should have another audio-frequency transformer in its output circuit (giving a two-stage amplifier following the grid leak).

For example, a three-megohm grid leak in series with the primary of a transformer and a couple of dry cells, if correctly graded and of good quality, should pass a perfectly steady current of approximately one micro-ampere.

If now we listen at the output end of the amplifier with a pair of telephones we should hear nothing whatever save when the current is started and stopped. If, however, the leak is faulty and "noisy" (which means constantly changing its value), the current passing through the primary of the transformer will vary with the variations of resistance in the grid leak, and we shall get noises and crackles.

The position of the grid leak in a receiver is such that it never has to carry more than a very small current, as the voltage applied to the grid of a detector valve is probably on the average considerably less than one volt, so it is not fair to test grid leaks, as some people do, with a "B" battery of 100 volts or so, for a grid leak which may be perfectly satisfactory for all ordinary receiving purposes is often ruined by such a test. Anode resistances and resistance-capacity-coupling units are, of course, tested with much higher voltages.

Laboratory Jottings

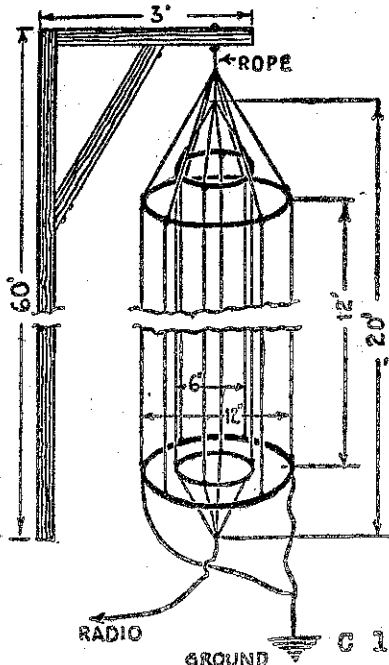
Atwater Kent Combination

A SPECIAL gramophone pick-up attachment has been added to the Model 60 Atwater Kent receiver, our report on which appeared in a recent issue. By rotating the dial to the "0" position the moving plates contact a cam which switches in the pick-up. A small alteration has been made in the wiring, and this has done much to improve the tone from the pick-up. The alterations made when a pick-up is added makes the audio side an excellent one for gramophone reproduction. The music is both brilliant and sonorous, covering a very wide musical range; in fact, we cannot recall having heard better reproduction from any other representative of this class of instrument.

Reducing Power-Line Grid-bias from Single Interference

THE following method of reducing power-line interference appeared in "Radio News" some time ago. It will no doubt interest some of our readers, though we do not know of anybody who has tried out the idea in New Zealand.

Mr. H. Morgan, of Los Angeles, California, says: "I have an aerial 60 feet high, with a vertical 5-wire cage 20 feet long, all enamelled. My aerial is within 100 yards of a 60,000-volt line;



so I had some trouble until I got two aluminium rings, 6 inches larger than the aerial, and hung one at the top and one near the bottom and grounded them. This improved matters so that I get good reception in the daytime. I got this idea from power engineers, who use this method near their transmission lines, and it might be of some help to those who live close to high-tension lines."

As the diagram shows, two earthed rings are suspended outside the vertical cage aerial, and the accompanying wires conduct away the induced high voltages.

Soldering to Zinc

A SINGLE cell is often used nowadays to provide the grid biasing potential for radio-frequency valves. Unless some special form of mounting with spring contacts is used, this necessitates, as a rule, the soldering of leads to the cell itself, a job which requires rather careful handling. It is very important that in the process of soldering the cell should not be unduly heated up or it may suffer internal damage.

There is not, as a rule, much difficulty about attaching a wire to the little brass cap which forms the positive contact, for in most cases this will be found ready tinned. With a clean, hot iron the job can be done so quickly that no serious amount of heating up occurs. The important point is that the iron should be hot. If it is not, it has to be applied for far too long before the solder will flow, and the cell is warmed up to an undesirable degree. Soldering to the zinc pot in order to make the negative contact is not so easy, and unless one is careful, a dry joint may be made which, though it may look all right, will come adrift sooner or later—probably sooner.

First of all the zinc should be thoroughly cleaned at the point at which the lead is to be affixed by scraping well with an old knife. A small amount of flux can be applied. After this, a little solder is run on, and the lead, well tinned, is fixed in place. It is quite useless to employ a small, light iron, for owing to the comparatively large area of metal to be dealt with, heat is absorbed from it so rapidly when it is applied to the zinc pot that almost instantly it becomes too cool to do the work properly. A medium-sized or a large iron does not lose its heat so quickly, and with such a tool, a good, sound joint can be made. After soldering leads to cells always be careful to give each a good pull in order to test its strength. One is not infrequently surprised at finding that a good-looking joint is really no joint at all.

SETS that have been out of action for a month or so nearly always develop bad contact, due to loose terminals, so they should be gone over carefully with pliers before being placed in service again.

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