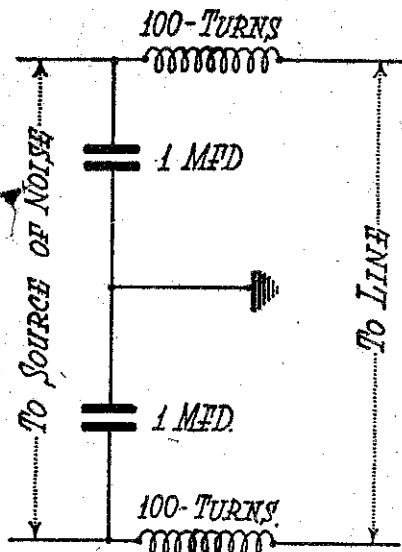
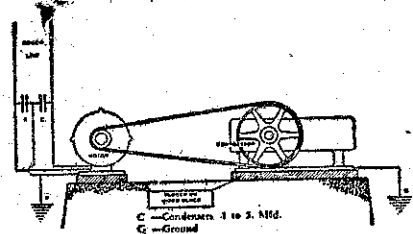


**T**HERE is another classification. Static brought about by belts and printing presses, although this interference is highly local and of little or no importance except where sets are operated in industrial areas, and quite a large number are. Condensers and chokes are of no use in the solution of such problems. Grounding the frames of the machinery is the first step. The second, to provide some form of brush collector that will remove the static charge from the belt or paper without sparking. A lead from the connector to the ground is the only requirement.

Investigations where farm lighting plants are in use shows that a large proportion of interference arises from poor grounds. In sandy districts, such as near some of our coasts, the problem is serious, as the soil is a reason-



have been dealt with are quite common. If there is a make and break contact device, it will have to be shunted by a condenser similar to Diagram 1. It has been found that .25 mfd. condensers are almost standard for all filaments affecting small motors. For larger motors a condenser of from 2 to 8 mfd. may be necessary, but these are not common, and usually fall under the supervision of the power boards concerned.

#### Recapitulation.

**NOISES** in a radio receiver may be classified into two broad groups. Noise within the set, and noise extraneous to it.

2. Noise within a set may be tracked down by systematic search. Noise outside the set, either by a complaint to a power board or other influential body, or by an examination of electric motors and other likely sources.

3. Most interference of this type is the result of defective contacts which result in high-frequency current.

4. This interference may usually be ended by the application of a filter.

5. A filter may consist of a simple fixed condenser, two condensers in series, with a ground lead from the point of their connection, or two condensers so connected and used in conjunction with a radio frequency choke.

### Rejuvenating Dry Cells

**T**HE following will, I think, enable dry cell users to get the last kick out of their batteries (writes Mr. W. H. Davies, Christchurch).:—Drill a small hole through the sealing compound in the top of the cells, and be sure the drill touches the manganese, as some of these cells are double sealed. Put a few drops of liquid ammonia into each cell with a medicine dropper. When this has soaked in seal the holes with paraffin or sealing wax. I noticed this tip in the "Popular Mechanics," and have found it to work with run-down flash light cells with considerable success.

### Simple Polarity Test

**B**USY amateurs on the look-out for a rough-and-ready, but nevertheless satisfactory test for determining the polarity of their batteries, cannot do better than employ the following method, which although, of course, not being as sensitive as the more refined chemical tests, works quite well on potentials of over four volts.

The test is simplicity itself. Take an ordinary potato and cut a slice from it. Apply to the surface of the slice the battery electrodes, keeping them about half an inch apart. After about ten seconds' contact with the freshly-cut potato surface the positive electrode will give rise to a dull-green mark, the area of contact of the negative electrode remaining unstained.

A freshly-cut onion gives somewhat similar results, the stain, however, at the positive pole, in this case, being brownish. The onion test, however, is rather less sensitive than the potato test, requiring higher voltages in order to give results.

# RADIO DIRECTORY

## What to Buy and Where

### CITIES

- AERIAL MASTS** ..... Domestic Radio Co., Ltd.,  
300 Queen Street, Auckland.
- ALTONA & HAMMARLUND.** Johns, Ltd.  
Chancery Street, Auckland.
- ROBERTS SETS.**
- ATWATER-KENT RADIO** .. Frank Wiseman, Ltd.  
170-172 Queen Street, Auckland
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- CROSLY RADIO** Abel, Smeeton, Ltd.,  
27-29 Customs St. E., Auckland.
- CROSLY RADIO RECEIVERS** G. G. Macquarrie, Ltd.  
320 Willis Street, Wellington.
- CROSLY RADIO** ..... Abel, Smeeton, Ltd. Rep.: T. MOSES.  
James Street, Whangarei.
- DAYTON All-Electric Radio** ... Superadio, Ltd.,  
147 Queen Street, Auckland
- EMMCO RADIO PRODUCTS** Johns, Ltd.,  
Chancery St., Auckland.
- EMMCO RADIO PRODUCTS** Thos. Ballinger & Co., Ltd.,  
Victoria St., Wellington.
- EMMCO RADIO PRODUCTS** L. B. Scott, Ltd.,  
Worcester St., Christchurch.
- KING RADIO RECEIVERS** ... F. J. W. Fear & Co.,  
33 Willis Street, Wellington.
- LISSEN RADIO PARTS AND KITS** ..... All Radio Dealers.
- LOUDSPEAKER AND TRANSFORMER REPAIRS** ..... A. E. Strange,  
404 Worcester Street, Christchurch.
- MAJESTIC RADIO RECEIVERS** Kirkcaldie & Stains,  
Chief Wellington Agents, Lambton Quay.
- MULLARD VALVES** ..... All Radio Dealers.
- PILOT 1930 PARTS AND KITS, ETC.** ..... Abel, Smeeton, Ltd.,  
27-29 Customs Street East, Auckland.
- PILOT 1930 PARTS—PILOT SUPER WASP KITS, GILFILLAN, KELLOGG and ATWATER KENT SETS** ..... Harrington's, N.Z., Ltd.,  
138-140 Queen St., Auckland.  
40-42 Willis St., Wellington.

- RADIOLA RECEIVERS** .... Chas. Bennett, Ltd.,  
619 Colombo Street, Christchurch.
- RADIOLA RECEIVERS and Expert Radiola Service.** Farmers' Trading Co., Ltd.,  
Hobson Street Auckland.
- RADIO REPAIRS AND SERVICE** ..... E. G. Shipley,  
185 Manchester Street, Christchurch.
- DIAMOND DRY BATTERIES** Royds-Howard Co.,  
553 Colombo Street, Christchurch.

### COUNTRY TOWNS

- CROSLY RADIO** ..... J. C. Davidson,  
Main Street, Pahiataua.
- CROSLY SETS** ..... Abel, Smeeton, Ltd. Rep.: C. Ruscoe,  
400 Devon Street, Palmerston North.
- CROSLY RADIO** ..... D. A. Morrison & Co.,  
Victoria Avenue, Wanganui.
- MAJESTIC, ATWATER-KENT AND APEX ELECTRICAL SETS.** Also Bremer-Tully, Radiola and Browning-Drake
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers.
- Radio House, Hamilton.**  
G. S. Anchor Manager.

ably good insulator. Moistening of the earth about the ground connections has little effect. It is recommended for such localities that the ground be attached to a pipe driven down into the soil at the bottom of a well. It might be attached to an artesian bore, or a windmill.

Interference from farm lighting equipment is sometimes difficult to trace because of the multiplicity of spark producers that may be found in such an installation. All of these plants consist of some driving mechanism, a dynamo, and a storage battery bank either active or floating in the system. The driving mechanism is usually a gasoline motor with spark plugs and magneto. In other cases, it is a water wheel.

The elimination of trouble in such systems will require a variety of treatment. A small condenser usually about .25 mfd. connected across the sparking contacts, in the ignition system, should end the trouble from that source. It may also be necessary to shield the magneto and ground the shield. Commutator troubles such as