

A.: The accumulator will froth badly, but if the rate of charging is low enough, no damage will result. Have you tried washing out the battery with pure rain water? Quite likely sediment has collected in the bottom and is short-circuiting some of the plates.

Screen-grid Short-wave Receiver.

I WISH to build a S.G. S.W. receiver, and have a .000125 condenser and another with two moving plates, and three fixed. Would the latter be about the same capacity?—"F.H." (Huntly).

A.: It is difficult to state the capacity of this condenser as it very much depends on the size of the plates. If the two look about the same, then it can be taken for all practical purposes that they are.

2. What number of turns and sized wire are needed for valve base coils with .000125 condenser, using .00025 for reaction.

A.: The sizes given in last year's "Radio Listeners' Guide" will be approximately correct. Allow a turn or two extra on the reaction coil for the smaller capacity.

Internal Short.

"B.C.A." (Alexandra) states that he has a popular three-valve set, which has given satisfaction, until now it appears that when the filament current is turned fully on signals fade away. The fuse between the A and B has blown out and been replaced by wire. He now finds that the set has stopped working altogether.

A.: Have you tried the detector and audio by placing your finger on the grid-leak? You should get a loud squawk if these are functioning. It appears that the screen grid valve has shorted internally; the elements were evidently very close to one another and when the electrons screen reached full strength when the filament was turned full on, it was so close to the plate or screening grid that this latter became clouded and the valve ceased to function. It now appears that the elements are touching. Give the valve a tap and see if this makes any difference. The fuse between the "A" and "B" should have been replaced by a very fine strip of good tinfoil. This makes splendid fuse, and safeguards the valves. The valves may have been blown out, owing to the absence of the fuse.

A Noisy Set.

I IMMEDIATELY I switch on my set there is a surging or grating noise such as would be caused by a loose valve. I have had a new detector and tried a new valve in each of the 222 sockets, "M.B.S." (Palmerston North).

A.: Your question is rather too meagre to permit of full explanation. Did the set always make the noise? Why did you get a new detector? Have you seen the local agent? Unless you supply this information, we cannot help you.

Resistances and Voltage Drop.

I PROPOSE changing the valves in my receiver, and wish to know the effects on the readjustments. The 7-valves each taking .1 of an amp, are wired in series, and are controlled by a 2-ohm resistance. They would require 7/10ths amp. Would the 3-ohm resistance still be all right?

A.: You have made a mistake somewhere. If the seven valves are wired in series the total consumption will be only .1 of an amp, whereas the total voltage will be 42.

2. If I leave the six-volt valve wired as at present, would a 20-ohm rheostat be suitable on the first valve, wired separately?—Yes.

What valve resistance should I use for the other six in series?—They would have to have 3/5ths of an amp, and I can't get this value in resistances anywhere, asks "Valve," Hastings.

A.: This question is most confusing. You state the six are in series, and yet require 3/5 of an amp, and state that you cannot get this value in resistance. We have presumed that they are wired in parallel, which is the normal method of wiring, in which case a 3-ohm resistance

"Buckled" Battery Plates

AN accumulator that has been allowed to sulphate to any extent is also extremely liable to a further dis-ablement known as "buckling." Taken by itself, sulphating, if it has not gone too far, is usually amenable to a little persuasive treatment, but when this doubly complicated stage has set in the case becomes a rather hopeless one, and it usually means that the positive plates at least—if not the entire cell itself—will have to be "scraped." Short-circuits are set up, the paste falls out of the grids.

Where buckling has set in to any appreciable degree it is advocated that the positive plates are at once replaced

CONSTRUCTORS—ATTENTION!

A comprehensive list of constructional items to be published in the "Radio Record and Electric Home Journal" during the coming season has been arranged. The articles will cover crystal, battery and A.C. sets, as well as numerous accessories. The following will appear in the course of the next few weeks:—

Advice on erecting an aerial (next week).

A "B" accumulator.

A power amplifier using resistance capacity coupled stages with push-pull in the last stage.

House wiring for speakers and phones.

A dynamic speaker.

ed by others, or else that the affected cell or cells be put out of service altogether. But where the sulphating is unaccompanied by buckling, or where the buckling is only slight, matters may be somewhat remedied.

The faulty cell should be charged at approximately half its normal rate. A sulphated cell placed on charge at normal rate almost inevitably buckles, so great care should be taken in this respect. Once on charge, the restoration of the cell to a healthy life is then very largely a mere matter of time. It is found that the electrolytic action of the charging current, which may be gradually increased as the treatment proceeds, slowly disintegrates the white, scaly deposits, until at length, after persistent application, it gradually disappears altogether.

On no account should current be drawn from the cell during this time, nor is it wise to stop or interrupt the charging current, unless perhaps it is to empty out the old acid once or twice and fill up again with new of correct specific gravity.

would be ample. You will probably have difficulty in securing a resistance of this value, so we advise you to get two 6-ohm rheostats and wire them in parallel. You can get these latter from Harringtons (Wellington), who are selling them off at present. You will have to be quick, however, as they do not propose to carry a stock, as they are rapidly going out of date.

Mullard
THE MASTER-VALVE

The only Valve with the wonderful P.M. Filament. Gives longer life — more power — greater volume.

RADIO DIRECTORY

What to Buy and Where

CITIES

- AERIAL MASTS** Domestic Radio Co., Ltd.,
300 Queen Street, Auckland.
- ALTONA & HAMMARLUND-ROBERTS SETS.** Johns, Ltd.
Chancery Street, Auckland.
- AMPLION LOUDSPEAKERS** . All Radio Dealers.
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- CROSLEY RADIO RECEIVERS** G. G. Macquarrie, Ltd.,
120 Willis Street, Wellington.
- CROSLEY RADIO** Abel, Smeeton, Ltd. Rep.: A. Temple
James Street, Whangarei.
- CROSLEY RADIO** Abel, Smeeton, Ltd.,
27-29 Customs St. E., 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.,
63 Willis Street, Wellington.
- 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 AT-WATER KENT SETS** Harrington's, N.Z., Ltd.,
138-140 Queen St., Auckland.
40-42 Willis St., Wellington.
- RADIOLA RECEIVERS** and Farmers' Trading Co., Ltd.,
Expert Radiola Service. Hobson Street, Auckland.

COUNTRY TOWNS

- CROSLEY RADIO** J. C. Davidson,
Main Street, Pahiataua.
- CROSLEY SETS** Abel, Smeeton, Ltd. Rep.: C. Ruscoe,
409 Devon Street, New Plymouth.
- CROSLEY RADIO** D. A. Morrison & Co.,
Victoria Avenue, Wanganui.
- MAJESTIC, ATWATER-KENT AND RADIOLA ELECTRIC SETS** Radio House, Hamilton.
G. S. Anchor, Manager.
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers.