

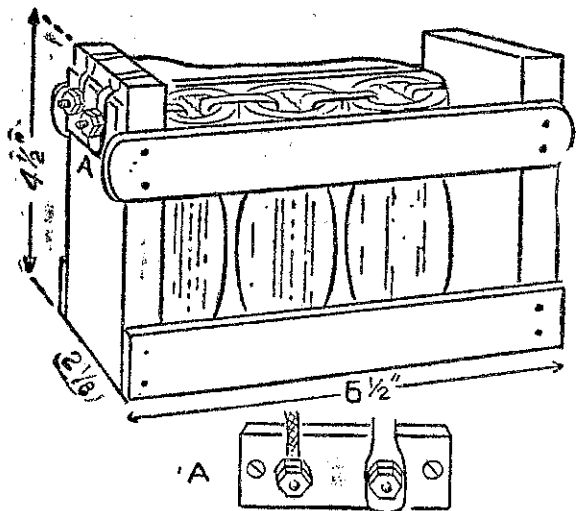
# Mainly About Construction

"By Megohm"

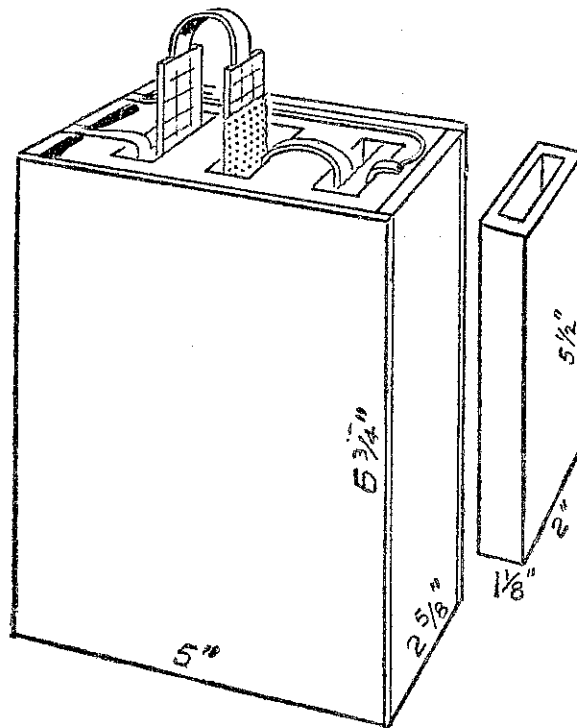
## B Batteries from Old Accumulator Plates.

JUST recently a scheme for utilising old accumulator plates to make up storage B batteries was described by Mr. Barrington, of Marton. The article was not illustrated at the time, but illustrations have been prepared and are here given with a view to helping constructors.

The idea of utilising old plates is one that has been thoroughly tested, and is no experiment, so that constructors



The first illustration shows the glass container type, with a square of fibre or ebonite to hold two bolts, forming the positive and negative termin-



may go ahead with perfect confidence that success will reward their efforts.

The wooden cells shown appear to be a novel and substantial way of housing the plates, but the smaller size in glass jars will appeal to the many, on account of less construction and greater simplicity.

Mr. Barrington's article appeared on page 9 of the September 14th issue.

als. The near bolt is the positive, and connects to the first plate by a leaden strip. The negative connects to the back plate through a rubber-covered wire shown.

The second illustration shows the larger type in wooden container slotted out by a chain mortiser. A pair of plates and perforated separator are shown raised up, giving a clear view of the connectors.

## Farm Lighting Systems

### For Filament Supply

MANY country homes have their own electric light plant, generally of low voltage, ranging from 32 to 110 volts, and usually direct current. This latter fact makes it a rather easy matter to obtain filament current from the house mains, especially in cases where the lights are supplied from a bank of accumulators, and not direct from the generator.

In whichever way the current is supplied, the two diagrams herewith show two alternative arrangements for cutting down the voltage of the supply for use on valve filaments.

The essential factor is the correct resistance value used for the voltage

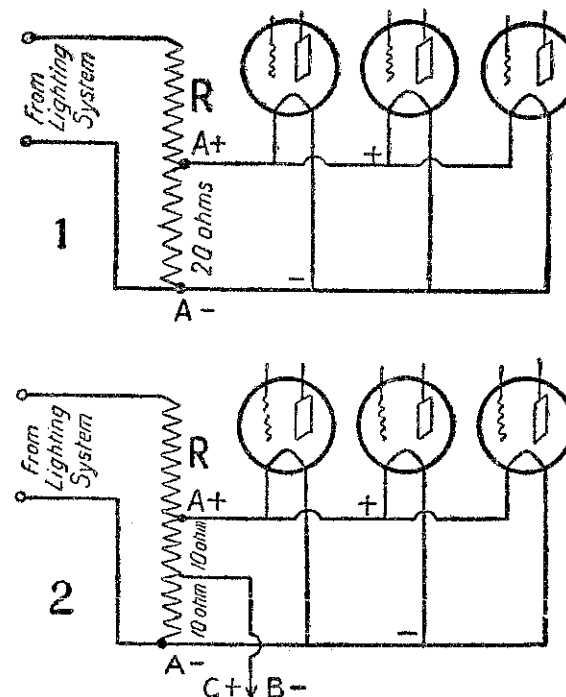
and with a reliable voltmeter as a check, voltages between 32 and 110 could be provided for.

Where the supply is not from accumulators, the usual smoothing arrangements for direct current must be provided, consisting of suitable low-resistance chokes and high-capacity condensers.

### The Alternative Schemes.

TWO circuits are shown in the diagram, of which No. 1 is the easier to use, but in the case of working direct from the generator may possibly give a certain amount of hum that can be heard in the loud-speaker. That being the case, No. 2 circuit should be utilised.

If No. 1 is used, a 20-ohm resistance is placed in series with the reducing resistance and the positive and negative terminals are connected to the respective terminals on the receiver. If No. 2 is used, the B negative and C positive leads are removed from where they connect on the receiver, and instead are connected to the centre point of the 20-ohm resistance. When this arrangement is used a positive bias is produced by the connection of the above-mentioned B and C leads to the centre of the resistance, and to compensate for this the C voltage on each valve to which it is applied should be increased by 3 volts.



### Protecting A.C. Valve Filaments.

TO protect A.C. valve filaments from mains overloading, especially where the main voltage is habitually higher than the manufacturer's recommendation, a fixed resistance to reduce the mains voltage to the correct value should be placed in series with one of the mains leads. Where the voltage of the mains is variable, a power rheostat of high value may form a handy resistance, as it can be altered to keep primary voltage constant in the receiver. An accurate A.C. voltmeter must be used to measure the mains voltage, but the trouble of proper adjustment is well repaid by the saving of valves from being burnt out.

### Burnt-out Tube as Neutraliser.

AN American journal states that a burnt-out valve may be used for a neutralising condenser in many r.f. circuits where the neutralising capacity must be approximately the same as the grid-plate capacity of the r.f. valve. No connection is made to the filament legs. The valve must be of the same kind as the r.f. valve to be neutralised.

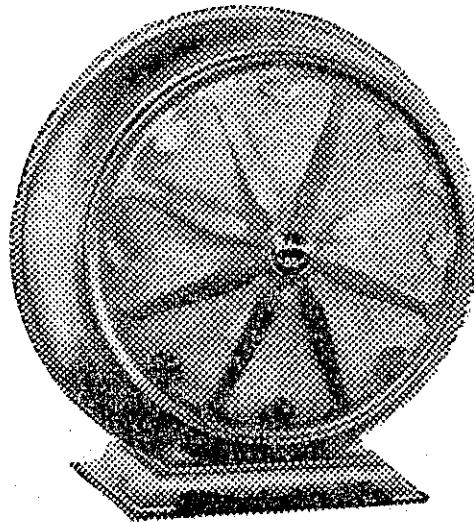
reduction, and this resistance is marked R in each of the diagrams. Its value in ohms is given in the accompanying table, and, besides being suited to the voltage of the house supply, varies with the number of valves employed, the six-volt type being provided for:—

No. Valves	32 volts.		110 volts.	
	R	W	R	W
1	51	15	190	57
2	35	22	130	84
3	27	30	100	105
4	21	37	80	135
5	18	43	65	160
6	15	50	58	190
7	13	57	50	210
8	12	66	45	240

In the above table the first column gives the number of valves in the receiver; the next two columns the resistance value of R in ohms and the watts passed by the resistance when on a 32-volt supply. The last two columns give the same particulars of resistance and watts for a 110-volt supply. Using these figures as a guide,

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