

LISSEN FOUR-VALVE PORTABLE

Circuit.—The H.F. valve, S.G.2V., met. (V1) is preceded by a frame aerial, of which the long wave section is short circuited during use on the medium waveband. An additional winding is included to give the necessary selectivity when an external aerial is used.

Bias for the valve is used to control volume by means of a potentiometer across the G.B. section of the battery. This control is ganged to the reaction condenser. H.F. coupling is by choke capacity filter to the grid coil of the following valve.

The detector valve HL2 met. (V2) operates as a leaky grid with reaction, and is coupled to the next valve by parallel-fed L.F. transformer, with anode decoupling.

The driver valve, L2 (V3), has an additional H.F. stopper in its grid circuit, and is followed by a typical driver transformer.

A BB220A (V4) class B valve is tone compensated by a condenser between the anodes and one between each anode and earth, the former acting as a tone control by means of a wander lead which connects it into circuit.

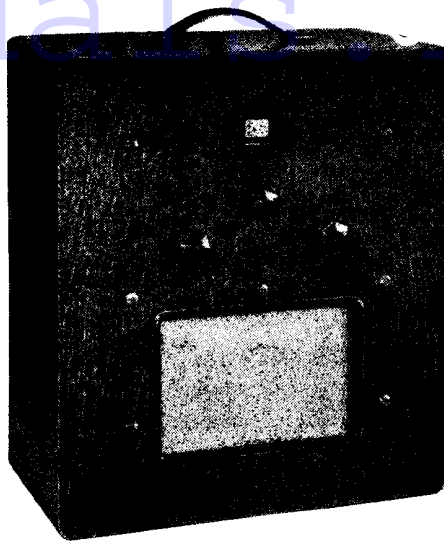
Special Notes.—The H.T. battery is a straight type, and the H.T.— and L.T.— lead is connected to the 9 volts positive socket so as to allow the requisite bias voltages.

Connections are: pink lead, H.T.+, 120 v.; mauve, 60 v.; black, 9 v.; white, 6 v.; yellow, H.T.—.

Note that the H.T.— is actually providing 9 volts negative bias.

Removing Chassis.—The most convenient method is to remove the frame, speaker and chassis in one unit. Remove the nuts from the six screws holding the front wooden frame to the cabinet. (These bolts have shaped heads on the outside.)

Remove the nuts from the supports at the back of the chassis, and those from the feet



The four-valve battery portable, made by Lissen Ltd.

of the frame aerial which are on the base of the cabinet.

Remove the control knobs (grub screw), and lift the assembly out.

General Notes.—In handling this set take care that the windings of the frame aerial are not disturbed. In any case it is advisable to regang the tuning condensers.

Replacing Chassis.—Stand assembly inside cabinet, replace rear bolts, and then those in front. Replace those in the base of the cabinet, and fix the control knobs.

VALVE READINGS				
V.C. max. but no reaction. No signal.				
Valve.	Type.	Electrode.	Volts.	M.A.
1	S.G.2V met (4)	anode	115	1.2
2	HL2 met (4)	screen	60	1.6
3	L2 (4)	anode	113	1.9
4	BB.220A.(7)	each anode	113	2.5

RESISTANCES		
R.	Purpose.	Ohms.
1	Decoupling V1 grid	10,000
2	In shunt with V.C.	2,000
3	V2 grid leak	2 meg.
4	V2 anode coupling	30,000
5	V2 anode decoupling	20,000
6	H.F. stopper in V3 grid	100,000
V.C.		5,000

CONDENSERS		
C.	Purpose.	Mfd.
1	Decoupling V1 grid	.1
2	Decoupling V1 screen	.1
3	H.F. coupling to V2 grid coil	.0001
4	L.W. pad on H.F. coil	.00001
5	V2 grid reservoir	.00005
6	V2 anode, H.F. by-pass	.0003
7	Decoupling V2 anode	.5
8	L.F. coupling to L.F. transformer	.1
9	Across H.T. battery	1
10	Tone control	.005
11	V4 tone compensating	.002
12	V4 tone compensating	.002

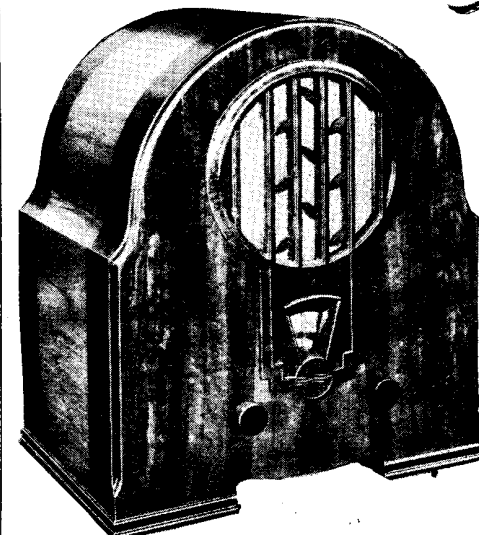
Switch Spring Adjuster

In the following manner a handy little tool can be made which enables switch springs to be adjusted without taking the switches to pieces.

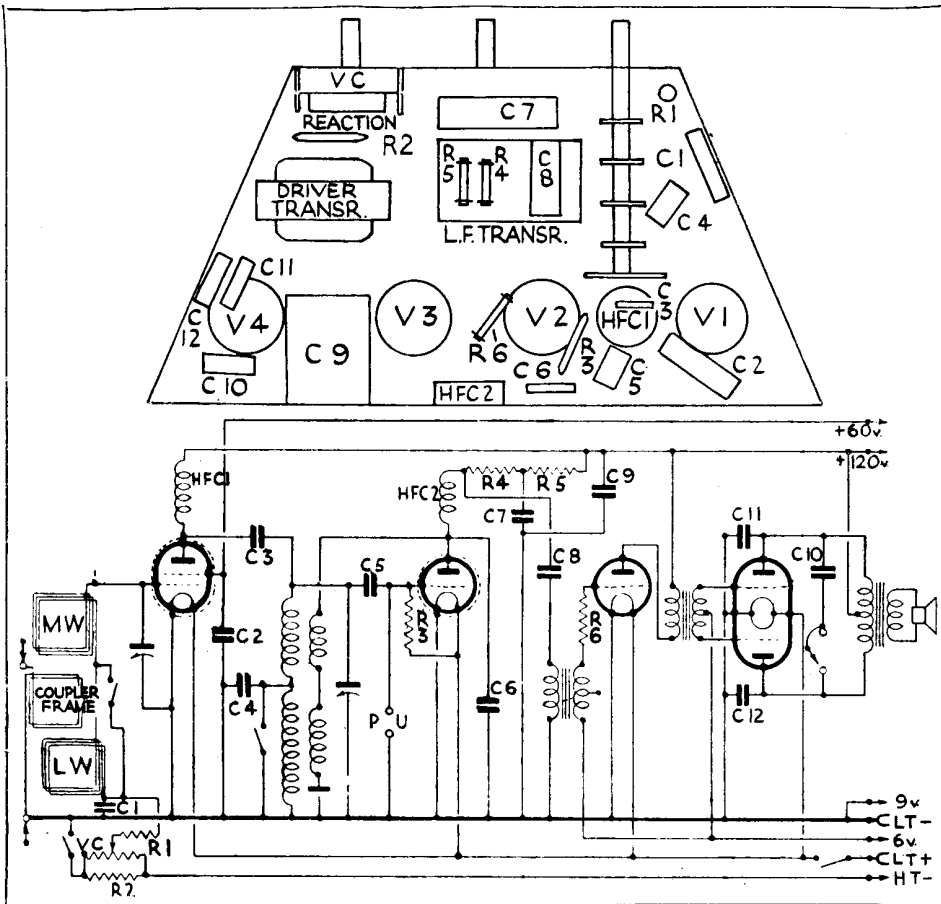
Procure a long thin key which has a solid shank. A blank is ideal. Cut down the front end and part of the wards so as to leave a small "flag" at the end of the key.

Down the centre of the narrow edge of the "flag," in line with the stem of the key itself, cut a slot with a fine-bladed hacksaw. Finally taper off the end of the key to facilitate use in small spaces.

Manipulation of the tool is simple: the faulty spring, held in the slot, is then quickly and easily adjusted. F. D.



This is the Philips 634 C receiver described in the February "Service Engineer." Be error the model 832 B was illustrated in the art.cle.



A straightforward circuit is utilised in the Lissen portable. The chassis diagram above shows the set with frame aerial detached.